

**Exploring public health intervention strategies to address barriers and challenges in the prevention of avoidable blindness due to glaucoma in Anambra State, Nigeria.**

**A project submitted to School of Health and Education  
Middlesex University London UK**

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*By*

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Map of Anambra State



Map of Federal Republic of Nigeria

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## Abstract

*Renewed emphasis by World Health Organisation in recent times has heightened the need for countries to address the issue of eye health with increased effort. However, due to scarcity of both human and material resources in Nigeria and many other developing countries health care is often marginalised; especially eye health. This contributes to the rise in prevalence of avoidable blindness. Glaucoma has been identified as one of the major causes of avoidable blindness globally, yet many people still lack the awareness of this disease. Most often the disease attacks without any obvious symptoms, and by the time the person becomes aware of the problem, probably more than 50% of the vision has been lost. Public health strategy such as health promotion when properly coordinated proves to be a cost-effective approach in tackling the incidence of avoidable blindness.*

*This study assessed the population's health seeking behaviour and examined the factors and barriers which hampered the people in Anambra State, Nigeria from accessing knowledge and eye health services in order to prevent avoidable blindness due to glaucoma. It also explored how the policy makers and service providers could be prompted for positive actions.*

*This is a qualitative study that utilised face-to-face semi-structured interviews to investigate the level of glaucoma awareness and perception of its risk factors in the state. Purposive, non-random sampling technique was used to recruit 39 participants, [aged 21-73] for interviews. Three main stakeholders in eye health comprising of a sample of 28 key informants (the target population), 8 service providers (the eye doctors) and 3 policy makers were identified and recruited for this study. The resulting data were analysed using Nvivo 10 software and Interpretative phenomenological analysis framework. Eye health seminar was also delivered to the target population at two different venues in the state. The reason for the eye health seminar was to teach the attendees some good eye care practices that could contribute positively to blindness prevention.*

*Of the 28 key informants, 53.6% live in urban areas and 46.4% live in the rural areas; 39.3% of the participants were male and 60.7% were females. Glaucoma awareness appeared to be higher among people in the urban areas 39.3% than people in the rural areas 35.7%. People with higher education appeared to have better awareness than people with less education; 42.9% for people with university degree and above, 3.6% for diploma, 17.9% for people with secondary education and 10.7% for primary. Glaucoma was perceived as **“a dangerous eye disease that can cause blindness if not treated early; a serious eye problem; an incurable eye problem that can eventually result to blindness, and a dangerous eye problem that can easily render a person blind”**.*

*Poverty and inability to pay for eye care services has been the most prominent barrier among this population. Other barriers include distance of eye care service centres from the rural dwellers, fear of financial exploitation from the service providers, fear of negative treatment outcomes and the availability of other cheaper but unsafe treatment options. Other barriers identified were: the lack of awareness of eye diseases and the related risk factors, the inability to cope with eye disease, and the seriousness of the symptoms. Five a priori themes and fourteen emergent themes were identified in the analysis of the data.*

*The implication of these findings is that the incidence of glaucoma-induced blindness will continue to rise unless a robust public health policy and adequate resources are put in place to address the challenges and problems identified by this study. The result of the present study confirms that there is low awareness of the causes and consequences of glaucoma in the state. This, as well as the associated factors listed above have huge impact on economy and well-being of the population.*

**Key words:** *public health policy and strategies, culturally appropriate health promotion, avoidable blindness, glaucoma, empowerment.*

## **Glossary- Operational Definitions**

### **Avoidable and preventable blindness**

Avoidable blindness and preventable blindness are synonymously used in this study, and it is used to describe visual impairment due to conditions that are preventable through modification of known risk factors; or conditions which could have been prevented by either effective treatment or proper management of the cause.

### **Blindness**

Blindness is the inability of a person to see due to defective or diseased condition of the eye or visual pathways to the brain. It is severe loss of vision that affects a person's ability to do any work for which eyesight is essential. Blindness could be partial or total.

### **Couching**

A crude traditional method of cataract surgery that leaves the lens floating inside the anterior segment of the eye. It is a high glaucoma risk factor.

### **Health Promotion**

Health promotion involves all activities designed to support and advertise the physical, mental and social aspects of human health. Ottawa Charter defines Health promotion as the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment.

**Incidence** is a measurement of the number of new individuals who contract a disease during a particular period of time in a given environment.

### **Intraocular pressure**

This is the pressure the fluid inside the eye exerts against the walls of the eye. When this pressure is high, it can result to damage of delicate parts of the eye that help in the transmission of visual impulses. This is an important factor in the development of glaucoma.

### **Ophthalmology**

An ophthalmologist is a medical doctor (MD) who specializes in eye and vision care. Ophthalmologists are trained to perform eye examination, diagnose and treat disease, prescribe medications and perform eye surgery. They occupy the highest position in eye care practice. They also write prescriptions for eyeglasses and contact lenses.

## **Optician**

An optician is not an eye doctor, but opticians are an important part of the eye care team. Opticians use prescriptions written by an optometrist or an ophthalmologist to fit and sell eyeglasses, contact lenses and other eyewear.

## **Optometry**

This is an autonomous healthcare profession involved in the services and care of the eye and visual system, and the enhancement of visual performance. A person that studied optometry is known as an optometrist; they are highly trained health professionals who are qualified to examine the eyes, recognize diseases and prescribe and fit glasses and contact lenses; though, their training and scope of operation differs slightly in some countries. They are also known in some places as optometric physician. In the United States, Canada, Nigeria and Ghana, optometrists are trained as primary eye care professionals and are certificated as Doctor of Optometry [OD], and are held to the same legal standards as physicians. In all U.S. states optometrists are licensed to diagnose and treat diseases of the eye through topical diagnostic and therapeutic drugs, and oral medications in 48 of the 50 states. Doctor of Optometry are also able to perform certain types of laser surgery in some states.

## **Patent medicine vendors/dealers**

These are people that sell non-prescription medicines to the general public. In Nigeria, most of them do this in a shop just like an off-licence shops in the UK. They are not allowed by law to handle or sell prescription medicines. However, in Nigeria, patent medicine vendors could sell their medicines everywhere including along the streets, in the market places, on buses, in offices etc. they handle and sell from the least dangerous medicines to the most dangerous medications which they are not allowed to. Though, their relevance in the developing world cannot be over-looked.

**Point prevalence** is the number of individuals affected by the disease at a particular point in time.

## **Prevalence**

Prevalence is the number of all individuals affected by the disease at a particular time within a place.

## **Public Health**

Public Health is defined as the science and art of promoting health and well-being, preventing ill-health and prolonging life through the organised efforts of the society (Faculty of Public Health, 2010).

## **Refractive errors [myopia, hyperopia and presbyopia].**

This is a term used by eye professionals to refer to the inability of the refractive media of the eye [cornea, aqueous humour, lens, vitreous humour] to bend light properly resulting to blurry vision. The bending of rays of light by these parts of the eye results to either good or poor vision.

### **Myopia**

This is a refractive condition of the eye whereby the eye cannot see far objects clearly and distinctly, but closer objects can be seen clearly.

### **Hyperopia**

This is a refractive condition where the eye can see things that are afar very clearly and distinctly, but closer things tend to appear blurry. It is the opposite of myopia.

### **Presbyopia**

This is a refractive error associated with advancement in age. With age the eye crystalline lenses tend to lose elasticity, making it difficult for them to adjust and focus at different distances.

### **Vision impairment**

This is a reduction in quality of vision due to a diseased condition or any abnormality in the visual system.

## **Acknowledgement**

*“Who would have believed our report”* (Isa.53:1). Who could have made this journey possible for me if not God? My thanks and praise go to Him -the doer of impossible things. He has been the source of my confidence, strength and support.

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### ***Declaration***

I, Raphael Okoye hereby declare that this thesis is an original work done by me. Data used for the study were a combination of both primary and secondary data; where secondary data were used, proper reference and acknowledgement has been made. I also certify that this thesis has not been previously submitted to any other university before.

A handwritten signature in black ink, appearing to read 'Raphael Okoye', written in a cursive style.

Raphael Okoye

## **Chapter One: Introduction**

*“They have not even for one day organised a workshop or seminar about eye and its problems or what may cause eye problems” (Carol:88-89).*

### **1.0 The background of the study.**

In many countries especially in the developing world, eye health is often a neglected issue. This pattern of neglect spreads across different sections of the society causing problems on daily basis, especially blindness that could have been avoided. Nigeria as a developing nation still has a lot to do in order to promote and strengthen eye health. This problem of neglected eye health spreads across the entire country including Anambra State, which is the locale of this study. This does not mean that the government has completely abandoned eye health in the state, rather more effort and resources are needed in order to preserve the vision of the people in Anambra State. There is evidence that eye health in Anambra State has not received the priority attention it deserved (Nwosu and Akudinobi, 2011). If the current level of effort is not raised, many people will continue to go blind on a daily basis, which is a disaster to both the state and entire country. Renewed emphasis by the World Health Organisation [WHO] in recent times has heightened the need for countries to address the issue of eye health with increased effort (Faal, 2012). Since some forms of blindness are avoidable, one may ask this pertinent question, “What is the way forward?”

Avoidable blindness is defined as blindness which could either be treated or prevented by known cost-effective means (Riordan-Eva and Whitcher, 2004; Khurana, 2008; International Agency for Prevention of Blindness, [IAPB] 2013). There are several things that could cause avoidable blindness, but if people are aware of these and do what they could to avoid such things, the chances of becoming blind may be reduced. Though, this is not as simple as it sounds, because a lot of factors have to be considered especially where people are poor. More importantly is the individual’s attitude and health seeking behaviour; many people do not care



about diseases and health issues until they are suffering with such problems (Cook, 2009). People's attitudes to health issues sometimes put them at the risk of diseases. Some people do not do what they are expected to do in order to avoid certain diseases and health issues. The reasons may be due to ignorance, careless attitude, and lack of resources or supportive environment. This is particularly true with eye health especially in developing countries where meagre resources are allocated to eye health. Millions of people are becoming blind due to ignorance of diseases and conditions that could cause blindness, but with improved public health enlightenment and appropriately packaged health promotion, people could be made aware of these conditions. This is a cost-effective method of dealing with eye health compared to the impact of visual impairment or total blindness.

Up to 80% of World blindness is avoidable (IPAB, 2013). This means that for every five blind people, the sight of four of such people could have been saved if the right thing was done at the right time. Simple awareness could save millions of people that may have been crippled by blindness which could have been avoided. Despite the fact that mere awareness of causes of particular diseases may not give 100% prevention due to other confounding factors, yet creating the awareness still has a lot to contribute to the reduction in incidence of avoidable blindness. Evidence from other places shows that creation of eye health awareness has contributed immensely to the reduction of avoidable blindness (Hublely and Gilbert, 2006). Creation of awareness is an essential part of public health programmes and has been very helpful in many instances. For instance, the Ebola virus epidemic in West Africa is a case in point. When no medicines or vaccines have not yet been discovered to treat this disease, the fact that proper awareness has been created about how people could contract this disease and awareness of how deadly this disease could be, made people very cautious. For instance, in Anambra State where people normally shake hands when greeting each other, a heuristic technique to prevent Ebola was invented: - waving and slightly touching of closed fists! It does

not mean that this approach completely prevented Ebola, yet it helped! This is what is needed in eye health in developing nations, if the government, due to lack of resources, could not do much, at least the population could help by avoiding those things that could put them at the risk of blindness.

The major causes of preventable blindness include: cataract, glaucoma, age-related macular degeneration [AMD], diabetic retinopathy, river blindness, trachoma and vitamin A deficiency (World Health Organization, [WHO] 2013). Blindness could also be caused by some harmful traditional practices and self-medicating (Kalu, 2005). There are some ways some people treat eye diseases in Nigeria which, from professional judgement, could be dangerous. For instance, applying non-clinically certified substances to one's eye may sometimes cause more harm than good, and sometimes may even result to blindness (Nwosu and Obidior, 2011; Ebeigbe, 2013). Couching which is a traditional method of dislodging opacified lens from the suspensory ligaments is still being practised in Nigeria (Gilbert et al., 2010). Some people engage in couching as an alternative to cataract surgery. Considering these findings brings into context the relevance of awareness creation (public health strategy) especially health promotion in reorienting and empowering the people and encouraging them to take control of their eye health; thus, reducing the rising incidence of avoidable blindness.

High global prevalence of avoidable blindness necessitated the setting up of the Vision2020 with the aim of promoting eye health. The global blindness prevention initiative-Vision2020 [Right to Sight] was launched in February 1999. It was born out of the combined effort of the World Health Organisation (WHO) and International Agency for the Prevention of Blindness. The mission of Vision 2020 is to eliminate the main causes of blindness in order to give all people of the world, particularly the millions of needlessly blind, the right to sight by the year 2020, and their main priority areas were: disease control, human resource development and development of the appropriate infrastructure to enhance the provision of eye care services

(McGavin, 1999). Inasmuch as this initiative is laudable and has recorded some achievements, the possibility of achieving vision for all by 2020 is still slight. Since the launch of Vision2020, the WHO and IPAB have initiated a series of eye health programmes targeted towards global blindness prevention (WHO, 2010).

The Nigerian National Blindness Survey also found that the major causes of blindness and visual impairment in Nigeria include cataract, glaucoma, uncorrected refractive error and harmful traditional practices like couching [Abdul et al., 2009; Gilbert et al., 2010].

Glaucoma has been a major cause of avoidable blindness in Nigeria and has constituted a major barrier in the realisation of the mission of Vision2020- the right to sight. However; the awareness of this disease is low in different parts of the world; though the low level of awareness is higher in the developing world than in the developed world. Several studies (Cross et al., 2005; Altangerel et al., 2009; Sathyamangalam et al., 2009) have investigated the level of awareness of this disease in different parts of the world; generally, there is a low level of awareness of glaucoma globally.

Glaucoma is a group of diseases that damage the optic nerve head causing reduced vision and truncation of visual impulses from the eye to the brain (Gupta, 2005; Kanski, 2007). With progressive erosion of the optic nerve head and destruction of the ganglion cells, it gives rise to complete loss of vision and ultimately blindness (Kanski, 2007; Glaucoma Research Foundation, 2012).

In 2011, Nigeria had an estimated population of 164,294,516 (National Bureau of Statistics, [NBS] 2013), the population might be more. Within Nigerian population, (people 40 years and above), Kyari et al. (2009) found that about 1,130,000 are blind, 400,000 severely impaired, 2,700,000 moderately impaired; this means that a total of over four million are either visually impaired or blind. No account was given for people with serious eye conditions below the age

of 40. This indicates that far more people are blind in Nigeria than estimated in Kyari et al. (2009). Glaucoma has been a major contributor to visual impairment and blindness in Nigeria; it is responsible for about 16.7% of the total visual impairment and blindness (Rabiu et al., 2012). The prevalence of glaucoma is spread across the entire 36 states of Nigeria and has been an issue for public health concern both in Nigeria and Africa (Egbert, 2002; Cook, 2009; Kyari et al., 2015). Progressive sight loss culminating to blindness makes glaucoma a significant public health issue. Glaucoma in Nigeria is often a devastating and neglected issue especially in some areas. Both glaucoma and blindness have serious impact on people's lives in particular and the society in general. Thus, this study sets out to explore and identify ways of dealing with the barriers and challenges in the prevention of avoidable blindness due to glaucoma in Anambra State, Nigeria. Public health approaches aim to provide maximum benefit for the largest number of people. It is concerned with preventing disease or injury from occurring or reoccurring and promoting health. Therefore, this study is in agreement with the Ottawa Charter of health promotion [1986] which emphasises enabling people to increase control, and to improve their health; making them capable of changing or coping with the environment (World Health Organisation [WHO] 2009).

### **1.1 Rationale for the study and identified gaps in interventions relating to glaucoma.**

Findings from the Nigeria National Blindness and Visual Impairment Survey (Kyari et al., 2015) estimates that up to 1.4 million Nigerians have glaucoma, and the prevalence is highest among the Igbo ethnic group (7.77%); the prevalence among the Urhobo ethnic group that lives almost in the same region, is low (2.86%). The Igbos are the people living in the locality of my study, thus, there is need for more studies about glaucoma awareness and prevention among this group due this exceptionally high prevalence of the disease. Certain forms of glaucoma can be prevented, and some types could be managed well such that deterioration of vision is prevented. This depends on a number of factors which include early detection, proper

management and modification of life style and a change in the health seeking behaviour of the population. The saying “a stitch in time saves nine” holds true for the population in Anambra State. In my practice as a primary eye care provider in Nigeria, I have successfully intervened in several glaucoma cases in my area that would have resulted to additional avoidable blindness. I therefore became convinced that there is a need for creation of awareness about glaucoma as an eye disease in Anambra State. This would contribute to the reduction in the incidence of avoidable blindness due to this disease in the State.

There are also few documented studies in Anambra State that researched glaucoma awareness and prevention; hence there is an obvious need for more studies to be done in this area. This will go a long way in providing the necessary information to this population. Documented studies could give a snapshot of the level of eye health and also serve as a reference platform for planning eye health programmes in the state, and it is equally very relevant to policy making. More also, evidence from various government policies shows that the eye health programme has been relegated to the background. This increases the risk of blindness in the State. For instance, several recent development plans by the State Ministry of Health did not even mention eye health at all. The draft Anambra State Economic Empowerment and Development Strategic [SEEDS] Document (c.2004), the Anambra Strategic Health Plan (Nwosu and Akudinobi (2011), and a recent document from the State Ministry of Health (c.2011) did not include an eye health programme as part of the health care plan. Thus, there is a serious need for advocacy, lobbying and campaigning for proper integration of eye health programmes into the mainstream of the health sector in the state. This will help in providing essential eye health services and the much-needed information about different diseases of the eye and how to avoid them. Noting the importance of advocacy as far as eye health is concerned, the Nigerian Optometric Association dedicated its 2014 national conference to “Advocacy and advancing optometry and eye care in Nigeria”. Hence, this study was a timely coincidence.

With very small amounts of resources allocated to eye health, the only way of preventing greater number of people from going blind is through a comprehensive health promotion strategy, which is the main aim of this study. An ounce of prevention is said, to be worth a pound of cure. An empowerment message with relevant information about preventing the onset of eye conditions may be considered more useful to the majority of the population who are at the risk of developing eye diseases than large amounts of medication meant for treating those who already have eye problems. It is acknowledged that both prevention and treatment should be included in health plans.

According to Green and Thorogood (2004:4) the problems of public health is increasingly that of human behaviour. Thus; if the behaviour of the people could be influenced and changed, there might be an improvement in the general health of the population. Health education which is part of health promotion can help to create awareness about eye diseases, especially glaucoma and its risk factors, and further encourage the people to embrace the type of lifestyles that could cut down the incidence of the disease. If people are made to understand the risk they are putting their vision to by using certain forms of treatment options or by mere neglect, they may be prepared to make some effort to protect themselves. Inasmuch as this cannot provide all the answers and solutions, it can still cause some reduction in the incidence of blindness; the journey of a million miles begins with a single step. This first step is the awareness of the disease and its causes; other things will then follow. Emphasis, persistence and constant reminder are strong tools that could influence a change of behaviour.

## **1.2 Purpose of the study**

Creswell (2009:111-112) describes the purpose statement or purpose of the study as the intent of the study but not the problem or issue leading to the need for the study; it is also not the research questions. It is all about why one wants to do the study and what one intends to accomplish. Richards (2004:12) defines purpose in relation to the “why” doing the study in

terms of wider relevance of the study being undertaken. What and how is the study going to make a difference in the chosen area? This is consistent with the ideas of Bazeley (2013:7) who opines “we seek through the research to better understand our own experience; we wish to authenticate and share something new we have learned; or we want to instigate change so that others can benefit from our experience”. In line with the views of these authors, the main purpose of this study was explained in the aim below:

### **1.2.1 Aim**

The aim of this study was to examine the factors and barriers which hampered the people in Anambra State, Nigeria from accessing knowledge and eye health services in order to prevent avoidable blindness due to glaucoma.

### **1.2.2 Research questions**

Good research begins with asking pertinent questions; asking the right research questions helps in producing good and useful research design. The research questions are simply a statement of what actually the researcher wants to find out (Williams, 2003). The process of identifying the right research questions is always an essential first step in any project (David and Sutton, 2004). The research questions should be able to bring to the fore the purpose of the research, and must be consistent with each other, transparent, coherent and easily understandable by anyone (Mason, 2002). Framing and asking the right questions serves like a navigator or a compass, which will eventually lead the researcher to the desired destination.

In the light of the above postulations, the following **research questions** were asked:

1. How can people that live in Anambra State be helped to understand and avoid the risks associated with avoidable blindness due to glaucoma?
2. How can the policy makers and service providers be influenced towards positive actions?

### **1.2.3 Objectives: The objectives of this study were:**

- ❖ To obtain the population's level of awareness of the disease [glaucoma] and how they perceive it in order to educate and further enlighten them about the disease.
- ❖ To explore the health seeking behaviour of the population with regards to eye health in order to examine its relationship with development of glaucoma.
- ❖ To identify the possible glaucoma risk factors prevalent in the population and assess the populations' understanding of glaucoma risk factors.
- ❖ To identify the barriers to the uptake of eye care services, and what could be done to eliminate some of these barriers where possible, especially in glaucoma treatment and management.
- ❖ Plan and deliver a health education seminar to help this population to understand the blindness risks and take appropriate actions.
- ❖ To explore how the service providers', treat and manage glaucoma, especially in terms of available equipment, and issues of non-compliance with treatment.
- ❖ To identify gaps in policy relating to the detection, treatment and management of glaucoma.

### **1.3 Locality of study**

The location of this research was Anambra State of Nigeria. This state is one of the 36 states that make up Nigeria. It was created as a state in 1976 out of former East Central State. In 1991 the state was further split into two giving rise to Enugu State and the present Anambra State. The state derived its name from the Anambra River. It has a total land area of 4,416 sq. Km and a population of 4,182,032 (2006 estimate). It is bounded by Delta and Edo States to the West, Imo and Rivers to the south, Enugu to the east, and Kogi to the North (Federal Republic of Nigeria, [FRN] 2017). The capital of Anambra State is Awka, and other major towns include Onitsha and Nnewi that house the most popular markets in West Africa. Other towns include: Obosi, Nkpor, Ekwulobia, Igboukwu, Abagana, Adazi, Nnobi and others.

#### **1.3.1 People of Anambra State**

Igbos are the people living in Anambra State; they live in towns and communities with a king as their ruler. They are a set of very welcoming people; a typical Igbo man would welcome a



stranger or friend by handshake or/and presentation of kolanut (Achebe, 1958). By estimation, an Igbo man may have at least more than 100 handshakes in a day. Considering the level of hygiene of some people and issue of water scarcity, handshake may contribute to the spread of diseases that could affect the eye.

The original religion of the Igbos before the advent of Christianity was traditional religion (ancestral/idol worship). This had to do with their belief that the dead still have influence on the living and sometimes even come out to entertain the communities in the form of a masquerade (Achebe, 1958; 1963). They celebrate several festivals in honour of different deities/gods, and also celebrate the harvest of some special crops especially the yam. The new yam festival is the most prominent festivals in Igbo land. The Igbos also consult oracles and spirits of the dead ancestors whenever they have problems whether social, economic or health problem. Coming from Anambra State, I am aware that this type of consultation has not stopped as some people still make such consultations in different ways and places. Apart from individual consultations with some traditional spiritualists, there are places designated as popular consultation sites. For instance, the Okija Shrine [Alusi Okija] is famous in Anambra State; Agulu Lake Shrine is also famous for its spiritual consultations. They all have priests and people that hold consultations and minister to people there. Sometimes people attribute their health problems to supernatural causes believing that it might not be cured through modern medical practice; hence instead of seeking treatment from trained medical personnel, they go to consult the spiritualists. These people believe that some kind of sickness may have been inflicted on them through occultic means (magic, charms and witchcraft). In some cases, people with genuine medical cases wrongly attribute such problems to supernatural causes; thus, instead of receiving medical treatment, they engage in spiritual treatment. On the other hand, there is a strong presence of Christianity in Anambra State. The strong presence of Christianity, especially the influence of Pentecostalism could not obliterate ancestral worship

and paganism. People that believe that their problems were as a result of occultic practices try to pursue faith healing by consulting their pastors and clergy for prayers. There have been mixed results with both approaches.

#### **1.4 Outline of thesis**

This topic, exploring public health intervention strategies to address barriers and challenges to prevent avoidable blindness in Anambra State is comprehensively treated in eight chapters of this thesis. Chapter one provides the background of the study. It provides an explanation why this study was engaged upon, the gap that the study intends to fill, its aims and objectives; it also describes briefly the locale of study and outline of various chapters.

Chapter two is the literature review. It has explored and evaluated comprehensively some relevant literature surrounding avoidable blindness and its related causes. Various behavioural and non-behavioural glaucoma risk factors were explored and examined. Other ocular diseases identified as precursors of glaucoma were examined to understand their relationship with glaucoma. The level of awareness of the disease, signs, symptoms, management and treatment of glaucoma were examined, and the impact of visual impairment and blindness were also examined. This chapter also discussed the health seeking behaviour of the study population, gaps in health policy, different models and theories of health promotion and the theoretical framework that underpins this study.

Chapter three deals with the methodology; it tries to explain the philosophy behind the study and describes the research approach, epistemological orientation, the rationale for this choice and the reasons for rejecting other optional methodological alternatives. It also considers the research design, sampling method and strategy, data collection process and ethical issues. The chapter gives a description of how the research was done in a clear and simplified manner.

Chapter four presents the demographic details of the participants, presentation of data generated from the interviews and an analysis of the key informants' interviews. The data used for the study were presented in this chapter using tables and charts.

Chapter Five: Presents a detailed analysis of the Service Providers' interviews; while chapter six presents the Policy Makers interviews. All analyses were done using the IPA framework.

Chapter seven: Discussion of findings. Detailed discussion of the findings was done in this chapter. Effort was made to discuss in full and understandable ways the salient issues arising from the study.

Chapter eight: Contributions, Conclusion and recommendations. In this chapter, the contributions of this study as well as conclusions drawn from the study were presented; recommendations were also made based on the findings of this study.

This chapter has laid the foundation for the study. In the next chapter, the study will now discuss some relevant literature and other related issues that will further assist in understanding and appreciating the importance of this study.

## **Chapter Two: Literature Review**

### **2.0 Introduction**

Understanding the prevalent causes of blindness and the associated risk factors is very important in effective blindness prevention especially among this population. Deeper knowledge of the links between one cause of blindness and the other paves a way to better understanding of the various risks. Hence, the purpose of this review was to examine the existing literature on causes of avoidable blindness and their relationship with glaucoma; behavioural and non-behavioural risk factors associated with glaucoma, the people's level of awareness of the glaucoma and barriers to the uptake of eye care services. This review also explored the people's health-seeking behaviour, gaps in health policies, different models and theories of health promotion, and examined how health promotion could be used effectively to reduce the barrier and challenges in understanding and reducing risks associated with blindness due to glaucoma.

In this review, relevant published studies and articles from journals, conference papers, books and research publications from different databases in the last three decades were selected for review. During the search, the articles were filtered first by their relevance to the study, and then by the date of publication. The titles and abstracts were reviewed, and selection was made based on the relevance of each article to the topic of study. Apart from few older articles that were considered very relevant to this study, the majority of the articles were published between the years [2000-2015]. In addition, further hand searching of references of retrieved studies was carried out. Various databases like PubMed, British Journal of Ophthalmology, British Medical Journal and Science Direct were searched for relevant articles. The Research Highlights database was searched for relevant topics which were then searched for in the right journals. The Google Scholar and the Middlesex University Summon search engines were also used to search for articles. The key words used in the search were: glaucoma, glaucoma and

Nigeria, health-seeking behaviour, avoidable blindness, health promotion, and blindness prevention.

## **2.1 An overview of avoidable blindness**

The WHO and IAPB have been campaigning relentlessly for the elimination of avoidable blindness globally and have devised several strategies in order to achieve this; though the prevalence of avoidable blindness is still immense in developing countries. This points to the fact that prevention strategies could be easily formulated and yet difficult to apply or implement. In many countries, sound and laudable blindness prevention policies may have been formulated but implementing those policies might be a problem due to one reason or the other. This is the case in some countries or some areas in some countries. While the problem of implementation is the case in some countries, absence of such strategies and policies are the challenges in others. Blindness prevention strategies and educating people on how to protect themselves from becoming blind is an area that has not really been explored fully in some parts of the world. Until this is done, the struggle against blindness will always remain an unsurmountable challenge.

Avoidable blindness is visual impairment due to conditions that are preventable through modification of known risk factors; or conditions which could have been prevented by either effective treatment or proper management of the cause (Riordan-Eva and Whitcher, 2004; WHO, 2007; Khurana, 2008; IAPB, 2013). Blindness most often begins with gradual degeneration of different parts of the eye and the visual pathway, which may result to gradual reduction in vision and eventually truncation of visual impulses giving rise to blindness (Vernon, 1999; Kanski, 2007). This is exactly what happens in glaucoma and cataract. According to WHO (2010) millions of people are at risk of losing their vision due to lack of eye-care services; and of the total global blind and visually impaired about 90% live in low and middle-income countries. In most of these countries, accessing eye care services is sometimes

difficult. Sometimes it could be as a result of the absence of required facilities, eye care personnel, the required treatment or even finance. Robson (2014) noted with concern a village in Ethiopia where half of the villagers are at the risk of blindness due to poverty. The villagers are plagued by trachoma (a contagious disease that affects the eye lids, causing corneal abrasion and eventual blindness). Most of these people could not afford the cost of treatment.

Rising incidence and prevalence of avoidable blindness and visual impairment is increasingly becoming a serious global public health issue. Statistics from WHO shows that there has been a steep rise in both prevalence and incidence in the last four decades. For instance, the global estimate of blind people was 28 million in 1975; in 1990, the estimate was 38 million blind people with 110 million with low vision. This estimate was extrapolated to arrive at a 1996 estimate of 45 million blind and 135 million with low vision; however, the number of blind people is expected to rise to 76 million blind people by 2020 (WHO, 2007). According to the same source, the global prevalence of blindness in 1990 was 0.7% and it was estimated that about 7 million people become blind each year. The present estimate stands at 39 million blind people with about 246 million with low vision (WHO, 2013a). Even though these estimates may not be exactly correct, there is still a strong indication that the prevalence as well as the incidence of avoidable blindness is unarguably rising. The slight drop in the number of blind people [45 million to 39 million] could be due to death of some of these blind people or due to recovery of sight after cataract surgery or even correction of refractive errors (WHO, 2013a).

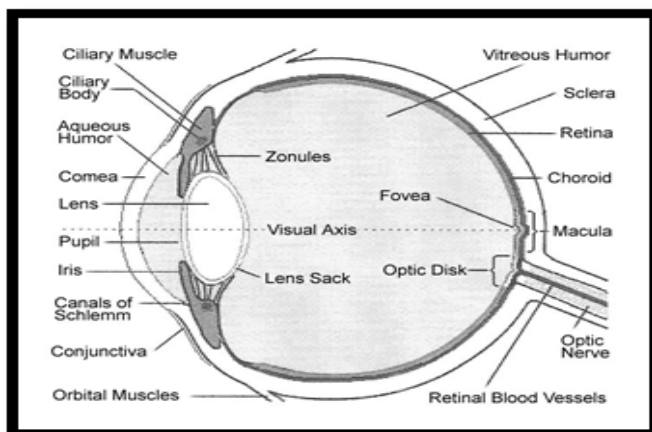
It is estimated that 1,130,000 individuals aged 40 years and above are currently blind in Nigeria; the prevalence of blindness in people of all ages was estimated to be 0.78% (Abdull et al., 2009). The estimated prevalence of blindness in Anambra State was 0.33% (Ezepue, 1997); though this was an estimate from a point prevalence study which may not give the real prevalence rate. However, most of the studies were done with adults from the age of 40 upwards and no consideration was given to others less than 40 years. Had this been taken into

consideration, the number of blind people in Nigeria would have been higher than that shown by these studies.

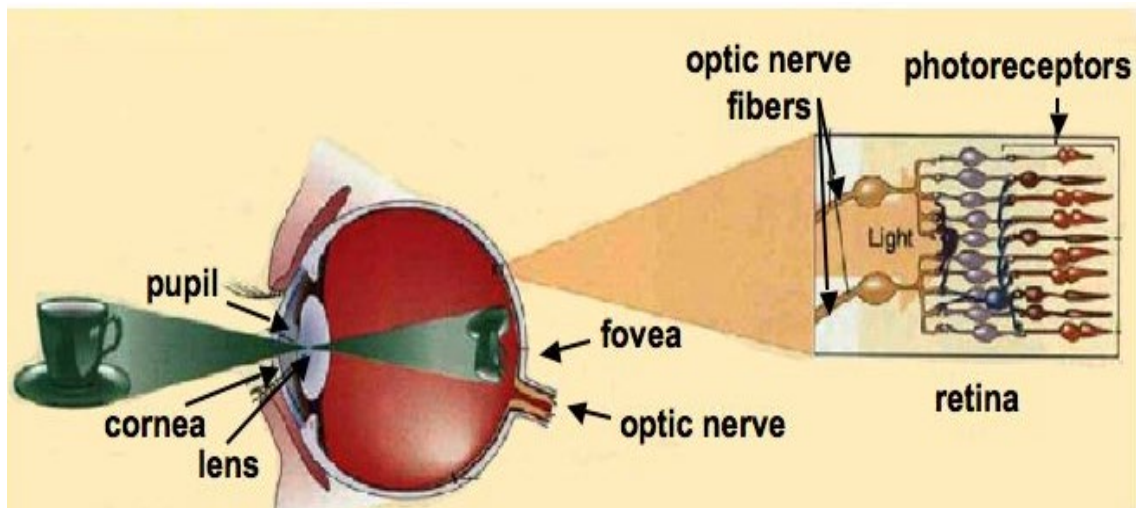
Before discussing the various causes of avoidable blindness, it might be useful to explain briefly how the eye sees. This will be helpful in understanding how a defect at a particular point would contribute to visual impairment and subsequently blindness.

## 2.2 The mechanism of seeing and the visual pathway.

In a normal eye, when parallel rays of light fall on the cornea [Figs. 2.1 and 2.2], they will be refracted (that is, bent towards each other). As these rays of light journey through the eye, further refraction will occur in the aqueous humour, at the lens and also at the vitreous humour; the light rays will then come to a point focus on the retina at the back of the eye (Hartstein, 1971; Pau, 1978; Bennett and Rabbetts, 1989; Leitman, 1994; Elliot, 1997; Grosvenor, 2002). At the retina, the light energy is converted into electrical impulses which are transmitted through the optic nerve down the visual pathway to area 17 of the brain where



*Figure 1.1 The structure of human eye.* Source: Glicksman, H. (2004).



*Figure 2.2 The mechanism of human vision* [Source: Heeger, D., 2006].

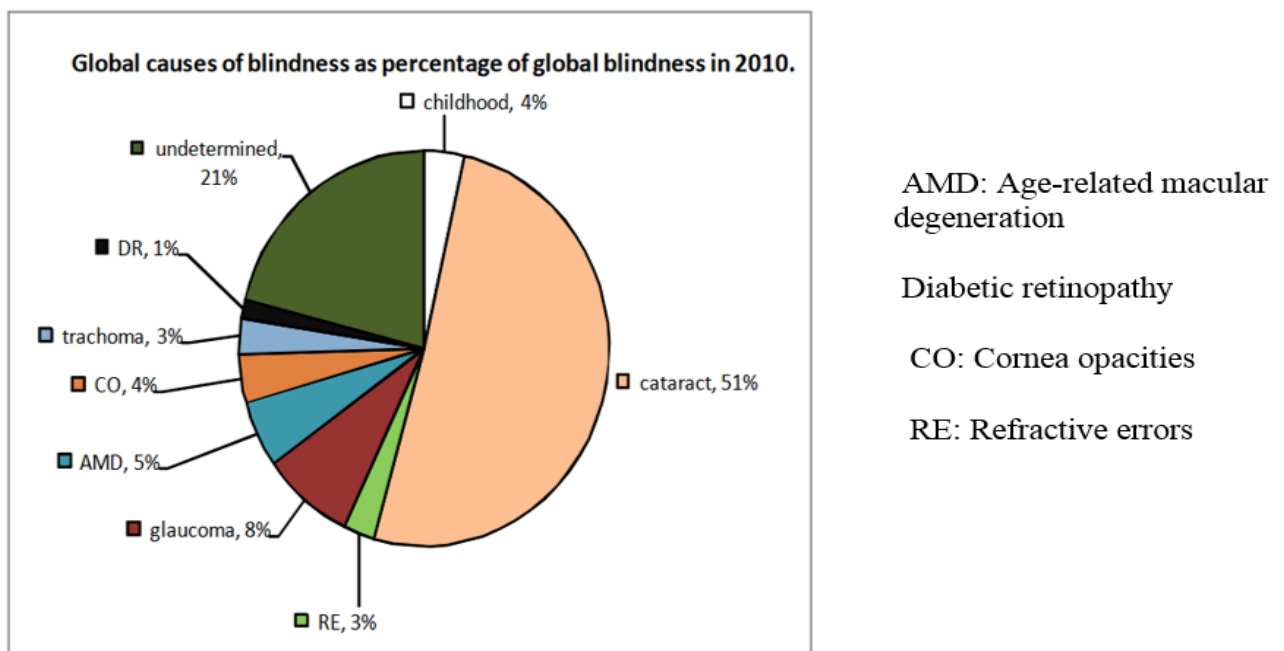
vision is interpreted. Problems at different parts of the eye give rise to different eye conditions resulting to reduced vision or visual impairment (Vernon, 1999; Grosvenor, 2002; Edgar and Rudnicka, 2007; Kanski, 2007; Hancock, 2008). Any problem on the cornea, for instance corneal abrasion in case of trichiasis, trachoma, harmful traditional practices or vitamin A deficiency may result to reduced vision or complete blockage of light rays (Vernon, 1999; Schwab, 2007; Nwosu and Obidiorzor, 2011). Inflammation of the uveal tract (the ciliary body and the iris) may result to anterior uveitis that could cause media haziness, and discharge of exudates that may cause clogging of the drainage channel resulting to glaucoma (Kanski, 2007). When the lens is opacified, it results in cataract, cutting the transmission of light to the back of the eye; lesions on the retina could give rise to retinal degeneration, retinal tear and retinal detachment, and lesion on the macula destroys the central vision; destruction of the optic nerve ganglion cells will result to truncation of vision (Kanski, 2007; Hancock, 2008).

### **2.3 Causes of avoidable blindness**

Generally, most ocular diseases cause gradual reduction in vision and visual impairment which may increase as the severity of the disease increases. Thus, visual impairment and blindness could be caused by anatomical and physiological changes and anomalies of different parts of



the eye or visual pathway. Most causes of blindness are treatable problems which could have been prevented if the proper treatment and management was applied at the right time. However, it might be interesting to explore how these conditions cause blindness and their relationship with the disease of interest in this research [glaucoma]. Since some of these other causes of avoidable blindness could predispose a person to glaucoma, it could be argued that understanding the risks associated with developing them is very relevant to understanding glaucoma risk factors. Fig 2.3 below is a chart showing the various causes of avoidable blindness globally, and the percentage contributions of each condition to global blindness epidemic.



*Figure 2.3 Causes of blindness* [WHO, 2010].

The WHO (2010) has identified the major causes of blindness globally [fig. 2.3] as cataract 51% of global blindness, refractive error 3%, glaucoma 8%, age-related macular degeneration 5%, corneal opacities 4%, diabetic retinopathy 1%, childhood blindness 4%, trachoma 3% and 21% from other factors; though, this was an estimate of many years ago which may have changed today, yet the prevalence is alarming. This is an indication that more effort is needed in eye

health promotion and blindness prevention. Glaucoma cannot be managed in isolation as different eye conditions may lead to glaucoma. Different studies (Kanski, 2007; Schwab, 2007; Xu et al, 2007; Freudenthal, 2013) have identified some of these causes of blindness as predisposing factors for glaucoma; the relationship will be explored in detail in the course of this review.

Vitamin A deficiency has been a serious public health issue in developing countries as pointed out by Maziya-Dixon et al. (2006). In a nationwide survey of vitamin A deficiency among Nigerian children less than five years, the researchers found that the prevalence of vitamin A varies across the different agro-ecological zones of the country. The highest prevalence was in the dry savannah with 31.3% as against the national prevalence of 29.5%. Recent study in Edo State by Atimati, Abiodun and Ofovwe, (2012) reported similar high prevalence, while previous research by Adelekan et al. (1997) in the South West reported adequate vitamin A intake among the children. No study was found on deficiency of the vitamin among the adults in the country. However, vitamin A deficiency remains the major cause of childhood blindness as observed by Rabiou and Kyari, (2002). It is very necessary for proper functioning of ocular tissues like the cornea, conjunctiva and retina, and lack of this vitamin also causes night blindness, xerophthalmia and keratomalacia (Shwab, 2007; Kanski, 2007). Xerophthalmia is a condition that results when there is a deficiency of vitamin A. This manifests in the form of drying of the conjunctiva and cornea. Keratomalacia is the worst form of vitamin A deficiency and manifests in the form of softening and melting of the cornea; cornea scarring, and cornea melting can cause irreversible blindness (Shwab, 2007). The shape and thickness of the cornea are relevant to the overall pressure of the eye (Herndon, Weizer and Stinnet, 2004); therefore, cornea melting and desquamation could in a way affect the rate of flow of the aqueous humour and can as well cause refractive errors especially astigmatism.

Astigmatism is an error of refraction in which the image of an object is not sharply focused on the retina due to irregular curvature of the cornea surface. Astigmatism, hyperopia and myopia cause difficulties in seeing fine details resulting in blurred vision (Bennett and Rabbetts, 1989; Leitman, 1994; Elliot, 1997; Grosvenor, 2002). Refractive error remains the most easily treatable cause of avoidable blindness. Most importantly, the cost of providing correction for refractive errors cannot be compared to the cost of treating other blinding eye diseases. Simple spectacles can restore sight to millions of people that are visually impaired due refractive problems; yet many cannot afford a pair of corrective spectacles due to poverty. Several studies have investigated the socio-economic and psychological burden of uncorrected refractive error (Holden, 2007). The prevalence rate of refractive error varies from country to country depending on the country's level of development and income. Freeman et al. (2013) in the World Health Survey [WHS] conducted in 70 countries to investigate the global burden of visual difficulties in low, middle and high-income countries found that the prevalence of refractive error is almost 50% higher in developing world than in the developed world 24% and 13% respectively.

Refractive error is oftentimes induced in the eye by traditional healers that engage in couching [crude cataract treatment]. When the eye lens is dislodged during couching, the eye becomes highly hyperopic if no lens correction is given [aphakia]. In a study to investigate the prevalence and causes of blindness and visual impairment in Sokoto State, Nigeria, Muhammad et al. (2011) identified cataract (51.6%), uncorrected aphakia (20.9%) and glaucoma (11%).

In Nigeria cataract is responsible for 43% of the total blindness and has a prevalence of 1.8% (Abdul et al., 2009). Cataract is the opacification (clouding) of the lens of the eye; this is often due to age; as a person advances in age, the protein in the lens tends to coagulate, causing reduction in vision (Kanski, 2007). Other causes are congenital abnormality as seen in new-

borns, trauma to the eye or eye areas, long exposure to ultraviolet rays, diabetes, inflammatory conditions such as uveitis, tobacco use, alcohol consumption, and the use of certain medications especially steroid (Kanski, 2007; National Eye Institute [NEI], 2009; WHO, 2014a; IAPB, 2014).

There are two main indicators that measure cataract service delivery: - the cataract surgical rate [CSR] and cataract surgical coverage [CSC] (IPAB, 2014). CSR is the number of cataract surgeries per million population per year, and CSC is the proportion of the visually impaired individuals with bilateral cataract who were eligible for surgery and who received it (IPAB, 2014). However, the CSR and CSC rate in Nigeria is still poor. Recent study by Odugbo et al. (2012) shows that only about 50% of this has been met. Though, other studies from different parts of the country show that much less coverage of both has been met; about 486 000 people in Nigeria have been estimated to be blind from cataract (Ubah, Isawumi and Adeoti, 2013). As good as meeting cataract surgical target is, the most important factor is to ensure that each surgery was properly done and that vision is restored in the patient concerned (Thomas, 2012).

Cataract could cause glaucoma, and quite often people that have cataract are diagnosed with glaucoma too. The pathogenicity of cataract has been investigated by different studies. Earlier work by Kwitko (1963) which was consistent with recent studies found that some forms of cataract could cause glaucoma, especially hyper-mature cataracts, and some lens conditions such as lens disintegration [glaucomflecken/cataracta disseminata subepithilias], leakage of opacified lens proteins and lens dislodgement. Any of these conditions could contribute to blocking of the drainage canal resulting to raised intra ocular pressure. This explains the poor visual outcome of couching as pointed out by Muhammed et al. (2011). Since there is a low cataract surgical coverage in the country, it implies that majority of these cataracts are left for too long without surgery. This neglect may cause complications that could predispose a person to glaucoma. The researcher has a cousin who is blind due to cataract-induced glaucoma. The

blindness could have been avoided if the right action was taken at the right time. Avoiding cataract may therefore also reduce the incidence of glaucoma among the population. Hence, awareness of this link is very important among this population.

Retinopathy is a degenerative disorder of the retina caused by non-inflammatory diseases of the eye. Such disorders could arise due some systemic diseases such as diabetes and hypertension (Pavan-Langston, 1985; Bennett and Rabbetts, 1989; Leitman, 1994; Vernon; 1999). Under such conditions, the retina tends to lose its power to respond effectively to both light and colour discrimination. Most often, there is some physical evidence of this degenerative activities; for instance, in cases of diabetic and hypertensive retinopathies and retinitis pigmentosa (Vernon, 1999; Kanski, 2007).

Diabetic eye disease is a common complication of diabetes referring to a group of sight-threatening eye problems that people with diabetes may develop; this include diabetic retinopathy and cataracts (Alvarado, 2011; De Jesus, 2012; Yau et al., 2012). Excess glucose in the ocular fluid may induce series of biochemical and cellular abnormalities which may cause vascular alterations found in diabetic retinopathy; this may be as a result of oxidative stress (De Jesus, 2012).

The relationship between glaucoma, diabetes and hypertension was examined by Stein and associates (University of Michigan Health System, 2011). In their study, records of about two million people 40 years and above were reviewed. The study focussed on the relationships between the various components of metabolic syndrome [obesity, hypertension, diabetes and hyperlipdemia], they examined how each of these components increased or decreased the risk of glaucoma. They found that people with diabetes and hypertension respectively have 35% and 17% increased risk of developing open angle glaucoma, while people that have both conditions have 48% increased risk of developing glaucoma. This finding was consistent with other studies, though there might be variation in rate of people affected.

Several writers (Millodot and Laby, 2002; Schwab, 2007; Alvarado, 2011; Freudenthal, 2013) have highlighted the invasive and destructive nature of diabetic retinopathy and pointed that it could damage tiny retinal blood vessels causing leakage which results in blurry vision; there might be growth of new vessels on the retina, vitreous and the iris; this proliferation of abnormal vessels may obstruct the drainage canal giving rise to glaucoma. This type of glaucoma is known by various names such as: neovascular, rubeotic or diabetic haemorrhagic glaucoma. During their lifetime, nearly 50% of all diabetes sufferers develop some degree of diabetic retinopathy; the global prevalence of blindness due DR is about 4% and about 93 million people have DR (Schwab, 2007; WHO, 2007; Alvarado, 2011; Yau et al., 2012).

Onchocerciasis is a parasitic disease caused by the filarial worm *Onchocerca volvulus*; it is transmitted through the bites of infected blackflies of *Simulium* species, and can cause corneal and retinal scarring as well as intraocular damage from uveitis (Millodot and Laby, 2002; Schwab, 2007; WHO, 2014). Adeoye, Ashaye and Onakpoya (2010) in their study in South-western Nigeria pointed that onchocerciasis was the major cause of bilateral blindness with devastating socio-economic consequences. Since onchocerciasis causes cornea scarring and uveitis, it can predispose the eye to refractive problems and glaucoma.

Trachoma is a chronic keratoconjunctivitis caused by *Chlamydia trachomatis*; it is related to poor hygiene and is a disease of poverty (Schwab, 2007). About 84 million are infected with the disease worldwide, with 8 million visually impaired and about 3.4 million already blind from the disease; infection spreads from person to person and is frequently passed from child to child and from child to mother, especially where there are shortage of water, numerous flies, and crowded living conditions (WHO, 2014b). Repeated episodes of infection cause chronic follicular conjunctival inflammation, which leads to corneal scarring and opacity.

## **2.4 People's health-seeking behaviour**

Health-care-seeking behaviour has been defined as any action undertaken by individuals who perceive themselves to have a health problem for the purpose of finding an appropriate remedy or as a sequence of remedial actions that individuals undertake to rectify perceived ill health (Olenja, 2003, Fomundam et al., 2012; Bahrami et al., 2014; Atashbahar, 2013; Chomi, 2014). Mechanic (1986) had identified a wide range of cultural and social factors influencing how people respond to health problems, among which are the following:

- Perceived seriousness of symptoms,
- Extent to which symptoms disrupt family, work, and other social activities,
- Available information, knowledge, and cultural assumptions and understandings of the evaluator,
- Needs competing with illness response,
- Competing possible interpretations that can be assigned to the symptoms once they are recognized and
- The availability of treatment resources, physical proximity, and psychological and monetary costs of taking action.

Mechanic (1986) findings agree with the findings of several studies on health seeking behavior carried out in Nigeria. These studies show that Nigerians have poor health seeking behavior that was caused by different challenges and barriers in easily accessing healthcare services. As a result, some people when they are sick waste too much time before seeking help or advice, making the situation worse which could have been remedied earlier (Osubor, Fatusi and Chiwuzie, 2006; Ige and Nwachukwu, 2008; Mmari, Oseni and Fatusi, 2010; Iyalomhe and Iyalomhe, 2012).

Ige and Nwachukwu (2008) studying health seeking behaviour among market traders in Ibarapa Central Local Government Area, Nigeria, found that out of 313 participants, 59% rely on self-medication when they are sick, 23% use herbs, 13% use resting and 5% use other options to find solutions to their health problems. Combining self-medication and the use of herbs raises the percentage of people in that community that use unconventional medical practices to 82%; even up to 95% as resting could not be considered a conventional medical practice or best way to treat an illness. However, this result may have been influenced by the type and size of the sample used yet; these forms of seeking solutions to health problems may not provide the best results.

In another study involving sexually transmitted infection [STI] treatment-seeking behaviour among youth in Nigeria, Mmari, Oseni and Fatusi (2010) found that of the 538 participants, men had better health-seeking behaviour than women (64% vs. 48%) respectively, and that health seeking behaviour was influenced positively by economic factors. Money has always been a major cause of poor health seeking behaviour but there could be other factors. For instance, this poor health seeking behaviour among women may be as a result of stigmatisation of women with sexually transmitted infection as seen as taboo in some cultures.

A later study by Iyalomhe and Iyalomhe (2012) claims that due to the environment in which the rural dwellers find themselves, their decision to seek healthcare, who to consult, and the form of healthcare are all influenced by a lot of factors relating to the socio-cultural environment, religious beliefs and the available facility. They suggested that in order to successfully manage the Nigerian rural patients, healthcare providers must pay attention to the patient's perception of illness and the underpinning health beliefs. Belief is really important as it determines to great extent how an individual would behave when experiencing any health issue. The belief people hold about causes of illness influences the way they respond and manage their health problems.



The reasons for poor health seeking behaviour among Nigerians are many and varied. Akande and Owoyemi, (2009) found that the major reason for delay in seeking treatment for ill-health was the thought that one could get over the ailment without treatment and a second reason was money. Waiting to be healed without going for treatment may be due to fear of taking medications or fear of the pains associated with a particular form of treatment, lack of time or even due to inability to pay for the treatment.

Poor health seeking behaviour due to obvious barriers has been identified as one of the reasons for late presentation of glaucoma cases in the hospitals in Nigeria (Ajibode, et al., 2012; Ebeigbe and Oveneri-Ogbomo, 2014; Abdull, Gilbert and Evans, 2015). Many people may neglect their health even in the presence of symptoms of illness until the illness escalates to a point they could not bear it any longer, this is the point where they begin to look for help. Money is one of the major reasons for poor health seeking behavior among Nigerians and poverty is a major constraint to the attainment of good health.

‘Poverty is the state of one who lacks a usual or socially acceptable amount of money or material possessions. Poverty is said to exist when people lack the means to satisfy their basic needs. In this context, the identification of poor people first requires a determination of what constitutes basic needs. These may be defined as narrowly as "those necessary for survival" or as broadly as "those reflecting the prevailing standard of living in the community.”’ (Dictionary.com, 2014).

Poverty is the major cause of inequalities in health especially in the developing countries. This is consistent with findings of Marmot (2010) in the UK that found poverty and deprivation as major causes of inequalities in health. Deterioration in health may set in when one fails to feed properly or use certain health care services due to lack of economic resources. In relation to eye problems, some glaucoma medications are so costly that many people may not afford to buy that as often as required, resulting to deterioration of the disease. Lister (2004) opines that

poverty as a material reality disfigures and constrains the lives of millions of women, men and children and it is best understood as a function of social, economic, and political structures and processes which create and perpetuate an unequal distribution of resources both within and, in a global context, between societies.

The Health Belief Model (Mechanic, 1986; Rosenstock, Stretcher and Becker, 1988), emphasises that for people to change their health behaviour, there must be an enabling environment; the enabling environment or conditions are not available to this population; hence, they try to make use of what was available to them. The social, economic, environmental and cultural aspects of a population must be adequately considered when planning a health promotion programme.

#### **2.4.1 Harmful traditional eye practices**

In spite of the effort in different countries to integrate safe traditional medical practice into the mainstream of healthcare services, the use of traditional medicine in the treatment of eye problems is still being debated. There is no doubt that some traditional medicines are good and may be helpful; that notwithstanding, there are some practices that could cause more damage to the eye than good. Before the advent of orthodox medicine, traditional medicine was the means by which illness was treated. Traditional medicine could be as good as orthodox medicine whereas orthodox medicine could be as dangerous as traditional medicines; it all depends on intelligent use of whichever. Some traditional medications are practically not safe to apply to the eye because of its delicate nature. Traditional medicine is freely practised in many countries of the world such as China, India, Saudi Arabia, and in many African countries such as Malawi, Ethiopia, Kenya and Nigeria (Klauss and Adala, 1994; Al-Ashban, Aslam and Shah, 2004; Ajite and Fadamiro, 2013).

A considerable amount of literature has been published on the impact of harmful traditional eye medicine in different parts of the world. Research finding of Nyenze, Ilako and Karimurio

(2007) in Kenya further confirms the dangers of some traditional eye practices. The authors set out to evaluate the prevalent eye care practices among the traditional healers, and to assess their ability to recognise ocular emergencies and make the necessary referrals. In an interview conducted with 87 traditional healers the preferred methods of treatment were: instillation of plant extracts for cataract, ocular injury and conjunctivitis. Chemical injuries are treated with breast milk from nursing mothers. Extraocular foreign bodies are removed by introducing the seed from a particular plant into the conjunctival sac; cases like ocular tumour and squint are treated by mixing traditional medicine with exorcism and rituals. However, some healers may decide to refer ocular tumours and cases of squint. The most commonly performed surgical procedures were piercing chalazia with a thorn or needle and making small incisions and applying some herbs for ocular swelling. Unfortunately, all these methods of treatment can cause more damage to the eye as pointed by other researchers. These methods can result to serious complications that could cause blindness.

In a population-based cross-sectional survey in rural Northern Nigeria to evaluate the practice of harmful traditional medicine as a leading cause of blindness, Kalu (2005) found out of 4320 adults examined, 850 were blind or visually impaired. Of this blindness, harmful traditional medicine was responsible for 496 (58.4%), cataract 200 (23.5%), glaucoma 62 (7.3%) and uncorrected refractive error 37 (4.4%). The sample population was mostly a group of poor nomadic farmers that live very far away from the cities where medical services were available. Moreover, due to the religion of these people that does not allow their wives and female children to mix freely with others in the society, most of their treatment for illness is usually traditional medicines. There is a great need for health promotion and eye health education. This should be followed with setting up medical practices and services that should be culturally appropriate within the entire population as opined by Papadopoulos (2006).

Ukponmwan and Momoh (2010) in another study to evaluate the impact of traditional medicines on the eye found that it was replete with a lot of disturbing results. In their study of 113 cases treated with traditional medicines, 54.8% had complications: corneal opacities 13.35%, staphyloma 9%, corneal ulcers 8%, including other complications like panophthalmitis, uveitis, cataract and bullos keratopathy. These findings are pointer that extra care must be taken when giving treatment for eye problems due to the fact that the eye is a delicate organ.

Similar study in Anambra State by Nwosu and Obidiozor (2011) found that out of 66 patients that used traditional medicines, 54.5% of the complications was as a result of conjunctivitis and cataract, visual impairment was 22.7% and 7.6% were blind as a result of complications from traditional medicines.

Ajite and Fadamiro (2013) in another study to assess the prevalence of harmful traditional medicine in Ekiti State, noted that out of 1420 patients that attended the hospital within the period of their study (January to December 2009), 48 (3.4%) applied various substances to their eyes after sustaining ocular injury. The substances applied included kerosene, cassava water, breast milk, personal urine and cow urine, which caused complete loss of vision in 50% of these patients.

Couching is still widely practiced in several places; this is a crude method of dislocating an opacified lens from the suspensory ligaments into the vitreous cavity with the aid of thorns or needles (Nyenze, Ilako and Karimurio, 2007). The substances often used by some traditional healers include plant extracts, human urine, animal products and other substances. Some of these chemicals could contain some strong compounds that could penetrate and damage the cornea thus; resulting to corneal opacity and blindness (Nwosu, 2005; Gilbert et al, 2010; Nwosu and Obidiozor, 2011; Ebeigbe, 2013).

Most of these traditional practices are embedded in people's beliefs and traditions. Sometimes advice and persuasion from sympathetic friends and family members could force one to believe and accept certain suggestions that may bring regrets in the future. Some of these practices may have worked by chance but with continuous mutation in pathogenic bacteria, this portends more danger to the ocular system. Of great concern is the fact that most of the traditional healers do not consider making referrals until the case becomes very bad, this is one of the reasons some patients present late to the hospital noted Abdull (2013). The use of traditional medicines for eye problems is sometimes through trial and error methods because no scientific tests were carried out for proper diagnosis of the problem, moreover, traditional medicines are not synthesized and refined as orthodox medicines. Thus, the chemical components of each concoction are not always known at least by the user. Some of the constituent elements may work against each other; some may react using the point of application as a reacting surface. Estimating the right dose of traditional medicine is always a problem thus; very often the right dosage of traditional medicine is not taken. The traditional healers should be able to recognise and refer cases that are beyond their ability to handle. Based on the results of these researchers, it is obvious that there is a great need for proper and sound eye health education for the general population, reorientation and providing basic teachings for the traditional healers.

Glaucoma has become a global public health issue due to the increasing number of people that have either been visually impaired or completely blinded by this disease. Most importantly, blindness due to glaucoma is irreversible. The loss of vision can never be quantified accurately as the person remains in 'perpetual darkness' and any attempt to estimate the value of this loss of vision may amount to just a guess. The way a person feels about his/her loss of vision can vary greatly from that of another; loss of vision has physical, psychological, emotional, financial and social implications, all of which combine to impact significantly on the quality of life of individuals; making them dependent and vulnerable.

## **2.5 Glaucoma: The sneak thief of sight and a major cause of avoidable blindness**

The reason glaucoma steals people's vision insidiously is because it attacks without symptoms. Moreover, many people do not know that having other eye problems can predispose them to glaucoma as already seen in this review. Glaucoma as a silent stealer of sight, causes loss of vision by the destruction of the ganglion cells of the optic nerve head (CN11) that help in the transmission of visual impulses from the eye to the brain.

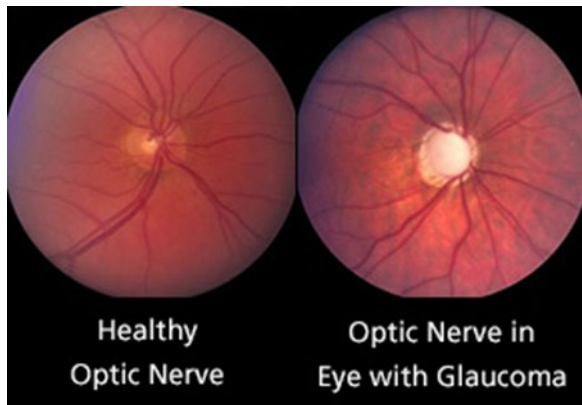
### **2.5.1 Types of glaucoma**

Glaucoma has many types and can be classified in different ways such as: open-angle or angle-closure, congenital or acquired, acute/chronic and primary/secondary glaucoma, but for the purpose of this study, it will be broadly classified as primary and secondary glaucoma. Primary glaucoma can be open-angle [POAG] or angle-closure glaucoma [PACG] according to the manner by which the drainage of the aqueous outflow is impaired (Kanski, 2007). In primary glaucoma, the mechanism for the disease is still being researched, and different explanations have been posited by many; while in secondary glaucoma, the disease could be as a result of another ocular or systemic disease like, diabetes, hypertension, cardiovascular problems, cataract, trauma, uveitis and disorders affecting the drainage and structure of the anterior chamber angle (Rudnicka and Owen, 2007; American Optometric Association, [AOA], 2014; Genetic Home Reference [GHR], 2014).

### **2.5.2 Clinical features and diagnostic tests**

Primary open angle glaucoma [POAG] is the most common type of primary glaucoma and constitutes about 74% of all glaucoma; while POAG does not have any visible symptoms at the initial stage, angle-closure glaucoma comes with some symptoms like: headache, tearing, redness, nausea and photophobia (Quigley and Broman, 2006; Kanski, 2007, American Optometric Association [AOA], 2014). However; the clinical signs of glaucoma include but not limited to: increased intraocular pressure [IOP], widely dilated pupil [in advanced

glaucoma], cupping of the disc, visual field loss and seeing haloes around bright lights (Kanski, 2007). The first and most important feature all eye professionals look out for is the optic disc cupping.



*Figure 2.4 Optic disc.* [source: Burk, Cohen and Quigley, 2012].

Ophthalmoscope is an important instrument employed to view the interior of the eye; it gives information about the optic disc which is very important in the diagnosis of glaucoma. The colour and appearance of the optic disc can indicate whether or not damage from glaucoma is present and how extensive it is [Fig. 2.4]. The optic nerve is the nerve that carries visual impulses from the retina to area 17 of the brain where vision is interpreted. This nerve is made up of millions of retinal fibres and exits the back of the eye through the optic disc; the centre of the optic disc is called the “cup” which is usually small when compared to the entire disc (Kanski, 2007). In glaucoma, when the retinal fibres begin to die, this causes the size of the cup to increase in comparison to the optic disc (Burk, Cohen and Quigley, 2012). The normal cup-to-disc ratio is about 0.3, anything up to 0.6 is seen as abnormal.

Glaucoma can only be diagnosed correctly by the use of the right instruments by trained professionals. The major diagnostic tests in glaucoma include: tonometry, ophthalmoscopy, gonioscopy, perimetry [visual field test], pachymetry and ocular coherence tomography [OCT] (Kanski, 2007; Glaucoma Foundation, 2018). Tonometry is done to assess the intraocular pressure [IOP] of the eye which is very important in glaucoma diagnosis. An IOP of below

21mmHg is considered normal but cannot rule out the presence of glaucoma. In normal tension glaucoma, there could be glaucomatous visual field damage with normal IOP. Pachymetry measures central cornea thickness CCT. Knowing the real corneal thickness helps in interpreting the IOP reading accurately; people with thin central corneal thickness may have IOP that may read higher when measured by tonometer; likewise, those with thick CCT will have a true IOP that is lower than that measured. Measuring central corneal thickness is also important since recent studies have found that thin CCT is a strong predictor of developing glaucoma in patients with high IOP (Glaucoma Foundation, 2018). Perimetry is a visual field test that produces a map of the patient's complete field of vision. Visual field test measures the extent of damage to the optic nerve from elevated IOP. There are several methods of testing the visual field.

Glaucoma can be managed medically by the use of medication to control optic nerve head damage or by surgery to reduce any obstruction to free flow of the aqueous humour; thereby reducing the destructive impact of increased IOP. The problem with medical management includes costs, discomfort and non-compliance; while the problem with surgical treatment is the issue of low acceptance due to fear and complications.

### **2.5.3 Prevalence of glaucoma**

Several studies have been done on the prevalence of glaucoma in different parts of the world, and data from these studies show that there is high prevalence among the black populations than in their white counterparts. The Baltimore Eye Survey (Tielsch, et al., 1991) found a higher prevalence of glaucoma in the black population 1.23% (for aged 40-49) and 11.26% (for 80 and over) compared respectively to 0.92% and 2.16% of their white population counterparts. The Barbados Eye Study (Leske, et al., 1994) reported prevalence of 7% among the black population as against 0.8% in the white population. Prevalence of glaucoma is lower in the Asian population than their black population counterparts; two studies conducted among the



Chinese residents of Singapore (Foster et al., 2000) and the Beijing Eye Study (Wang et al., 2010) found 3.2% and 3.6% prevalence respectively; though authors hinted that this could be an underestimation.

Studies in Africa show regional differences in prevalence rates. A cross-sectional survey (Rotchford et al., 2003) in urban South Africa (the Temba glaucoma study) reported a higher prevalence 5.3% compared to similar study (Rotchford and Johnson, 2002) in rural South Africa 4.5%. Temba Eye Survey in Ghana, West Africa found a prevalence rate of 6.8% in an urban population (Budenz et al., 2013) which is higher than the reported prevalence in Nigeria, which is 5.02% (Kyari et al., 2015).

#### **2.5.4 Glaucoma in Nigeria: A cause for concern**

As reported in many other places, glaucoma has been a serious health problem in Nigeria (Egbert 2002; Cook, 2009; Kyari et al., 2017). Globally, glaucoma as already mentioned is responsible for about 4.5 million blindness. It has been estimated that nearly 1.4 million people in Nigeria have glaucoma, most of whom are not aware that they have the disease, and with one in five being blind (Kyari et al., 2015); of all cases of glaucoma, secondary glaucoma is responsible for about 8%. However, glaucoma prevalence in Nigeria tends to vary according to ethnic groups; the Igbo, Ijaw and the Yoruba have 7.77%, 5.98% and 5.84% respectively; while the Urhobo has the least prevalence of 2.86% (Kyari et al., 2015). However, Ashaye et al. (2013) found a higher prevalence 7.3% among the Yoruba in Akinyele district of Oyo State, Nigeria. In a hospital [Namdi Azikiwe Teaching Hospital Eye Clinic, Anambra State] based review of patients seen over a 12-month period, glaucoma was found to be the second major cause of bilateral blindness 22.2% (Nwosu, 1994). In a previous report of 1992 point prevalence survey to determine the causes of blindness in Anambra State, Ezepue (1997), found that 17.65% of the total blindness was as a result of glaucoma. Both the number of people with glaucoma and the rate of glaucoma blindness is a serious challenge to eye health in Nigeria.

Concerted effort is therefore needed both in creation of awareness about the disease and stepping up intervention strategies. Most people do not know that they have glaucoma until the disease is very advanced, that is when they will be forced to attend hospitals due to stressing symptoms. Most of the time, patients with glaucoma are diagnosed during outreach programmes organised mostly by private eye clinics; yet when such diagnosis is made, some glaucoma patients refuse to go for treatments. This might be due to financial challenges.

Lack of awareness, distance of hospitals, poorly equipped hospitals, illiteracy and high cost of eye care services have been identified as major reasons for late presentation of glaucoma patients to hospital in Nigeria (Abdull, Chandler and Gilbert, 2016; Kyari, et al., 20016). Fear and cost as already seen in this review, are some of the reasons behind non-acceptance of services and compliance with treatment. In their study Abdull, Gilbert and Evans (2015) reported that out of 75 people offered glaucoma surgery, only five accepted and only one finally underwent surgery; the main reason for rejecting surgery was fear.

Effective management and care for glaucoma depends on the quality and functionality of the healthcare system, material and human resources needed to provide adequate services to those that need them. The healthcare system in Nigeria is plagued by serious financial challenges (Yanusa et al., 2014) moreover; there is shortage of standard hospitals and specialists in some areas of health like glaucoma. Eye care in Nigeria tends to receive less priority attention from the government than other areas of health (Nwosu and Akudinobi, 2011). Blindness due to glaucoma could be greatly reduced if glaucoma is managed properly, though, management of glaucoma in developing countries has been found to be a problem. Adekoya et al. (2015) in their study acknowledged that the management of glaucoma in developing countries is challenging; though, they agreed that these challenges are surmountable. The study also suggests improving awareness, affordability of treatment and availability of glaucoma medications, and also training and retraining eye care providers. Kyari et al, (2017) in another

study found that glaucoma management in Nigeria is quite challenging due to a number of problems arising from the health care system. However, they propose that the health-oriented approach could improve the future of glaucoma in Nigeria. As part of this approach, they suggest strengthening clinical services for glaucoma, investing more in glaucoma care, training, and improving early glaucoma detection. These two studies provide evidence that the incidence of blindness due to glaucoma could be reduced if the identified challenges are addressed.

Paying for healthcare services in Nigeria is often a problem to most people; especially in eye health. This forces many into seeking cheaper alternative healthcare services which sometimes results to more problems. Tafida et al. (2015) in a study of poverty and blindness in Nigeria, found that the poor are more likely to become blind than the affluent. In their study of 569 blind people, the prevalence for blindness was 8.5%, 2.5% and 1.5% respectively for the poorest, medium and affluent. However; absence of symptoms and financial challenge remain some of the major reasons reported for late presentation of glaucoma patients to hospital (Ajibode et al., 2012; Ebeigbe and Ovenseri-Ogbomo, 2014; Abdull, Gilbert and Evans, 2015).

Glaucoma stealthily steals away one's vision, hence the name "sneak thief of sight." The loss of vision in glaucoma begins with the loss of the peripheral [side] vision. The person having glaucoma may compensate for the loss in peripheral views by unconsciously turning the head to the side of vision loss and may therefore not notice the loss until significant amount of vision is lost. Secondary glaucoma can be prevented but blindness due primary glaucoma could be prevented by early detection and proper management and avoidance of exacerbating conditions. However, for health promotion to be effective in reducing the incidence of blindness due glaucoma, people should be made aware of the various risk factors and how to avoid them. Glaucoma risk factors are both behavioural [modifiable] and non-behavioural [of which most are non-modifiable]. Even though most of the risk factors are not modifiable,

awareness of these risk factors is still very important in prevention of blindness due to glaucoma. For instance, awareness of the link between familial history of glaucoma and the probability of developing the disease may prompt regular eye checks and adopting other preventive measures to prevent insidious loss of vision due to glaucoma.

### **2.5.5 Non-behavioural glaucoma risk factors**

Within the context of this study, non-behavioural glaucoma risk factors are those naturally occurring conditions that predispose a person to the disease such as age, ethnicity, myopia, sex, heredity, increased IOP, central cornea thickness and general anatomy of the eye. While these conditions may not be modifiable, awareness of the conditions is important to assist the population to understand the risk and take the necessary precautions.

Two important theories have been proposed regarding the causes of glaucoma; these are: increase in the fluid pressure inside the eye [IOP] and lack of adequate blood supply to the optic nerve; glaucoma is thought to develop when the eye's drainage system becomes inefficient over time due to structural abnormalities (AOA, 2014; GHR, 2014). This leads to an increased amount of fluid and a gradual build-up of pressure within the eye. IOP depends on a balance between fluid entering and leaving the eyes. It has been pointed out before that an increase in the IOP predisposes a person to glaucoma. The other theory of inadequate blood flow to the optic nerve explains the reason for normal tension glaucoma; in this case, the IOP appears to be normal yet, the ganglion cells of the optic nerve head are seriously affected and damaged (AOA, 2014; GHR, 2014).

IOP and central cornea thickness [CCT] are two significant factors that play great role in the development, progression and management of glaucoma; the lower the CCT, the more the advancement of glaucoma (Herndon, Weizer and Stinnett, 2004; Burk, Cohen and Quigley, 2012). The worsening of glaucoma with lower CCT may be due to the fact lower CCT may give lower IOP readings leading to under-estimation of the real IOP. Once treatment is based

on wrong IOP reading, it may be assumed that condition has been controlled whereas it is not really; CCT is actually very important in estimating the IOP. Later studies by Tharwat et al. (2010) and Sasan et al. (2014) are consistent with the earlier studies.

Age is another significant factor in the development of glaucoma. Different writers have investigated how advancement in age could predispose a person to glaucoma (Xu, et al., 2007; Glaucoma Service Foundation to Prevent Blindness [GSFPB], 2012). Increasing age leads to changes that affect different areas of the eye creating conditions that could lead to the development of glaucoma (Carter, 1980; Sasan et al., 2014). Primary open angle glaucoma [POAG] has adult onset, and the prevalence in any population increases with increasing age (Rudnicka and Owen, 2007; Kanski, 2007; AOA, 2014). In the Barbados Eye Studies Group, Leske et al. (2001) found that there was an increase in the incidence of glaucoma from 1.2% among 40-49 age groups to 4.2% among the 70 years and over. This shows a steep rise in prevalence with age.

Research generally agrees that the age of onset is from 40, though it may start much earlier especially among the Black people, African Americans and African-Caribbean's (AOA, 2014). People from Asian background are disproportionately affected by chronic angle-closure glaucoma due to anatomical disorder of the anterior segment of the eye characterised by permanent closure of part of the filtration angle as a result of iris apposition to the trabecular meshwork (Salmon, 1999).

Myopia increases the risk of glaucoma; people with higher degree of myopia have been found to be more susceptible to glaucoma than people without myopia. In the Beijing Eye Study, Xu et al. (2007) exploring the relationship between myopia and glaucoma found that the odds ratio for glaucoma frequency increases as the degree of myopia increases. In another study [the Tajimi Study], Suzuki et al. (2006) pointed that myopia is a very significant factor in the development of glaucoma. Furthermore, earlier study by Mitchell and colleagues (1999) [the

Blue Mountains Eye Study] found that people with myopia have more than two-fold increased risk of glaucoma compared to non-myopic subjects; in their study with 3654 Australians [aged 49-97], the prevalence of glaucoma among people with low myopia was 4.2% and 4.4% among people with moderate to high myopia, while the prevalence was 1.5% among people with no myopia

People with family history of glaucoma have higher chances of developing the disease; if one or both parents have glaucoma, the chances of some of their children developing glaucoma are high, and much higher for the rest of their children if one of them has developed the disease already (Mitchel et al., 1999; Kanski, 2007).

With regards to glaucoma prevalence and gender, different studies have presented differing results. Salmon, (1999), Quigley and Broman (2006), and Coleman and Kodjebacheva, (2009) in different studies concluded that women are affected more than men. However; other studies presented different results in relation to glaucoma gender prevalence. The Barbados Eye study (Leske et al., 1994) found higher prevalence in men than women. Likewise; a study of a Chinese population in Singapore (Foster et al., 2000) found higher prevalence among the men than in women. Recent study in Nigeria by Kyari et al. (2015) found similar high prevalence among men than women. However; many reasons have been adduced why women are more prone to eye problems than men: in most cases women live longer than men to experience most health problems that are related to age such as diabetes, hypertension, cataract, glaucoma and age-related macular degeneration; the anatomy of female eye structure is another contributory factor, while others include hormonal changes, use of contraceptive pills, postmenopausal hormonal change, and the use and application of eye makeups (Pasquale and Kang, 2009; Wong, 2009 ).

Sleep apnoea is another glaucoma risk factor; this is a sleep disorder where a person stops breathing for periods during sleep because of a blocked airway; this may last up to 10 seconds

or more each bout causing a drop in the oxygen level in the blood (Brandon, 2014). Recent research suggests that patients with sleep apnoea were 1.67 times more likely to develop glaucoma than patients without apnoea (Laidman, 2013). This finding is consistent with glaucoma theory which posits that decreased blood flow to the optic nerve could cause glaucoma.

Of great importance to the development of glaucoma is people's lifestyle and behaviour. People's lifestyle is modifiable, and their behaviour goes a long way in preventing glaucoma or exacerbating the latent conditions; a risk factor that cannot be modified can at least be managed.

#### **2.5.6 Behavioural risks associated with glaucoma.**

There are many things people expose themselves to that could predispose them to developing glaucoma or exacerbating already existing condition. When these risks are identified, avoided, modified or effectively managed, they reduce the chances of developing glaucoma or worsening an existing case.

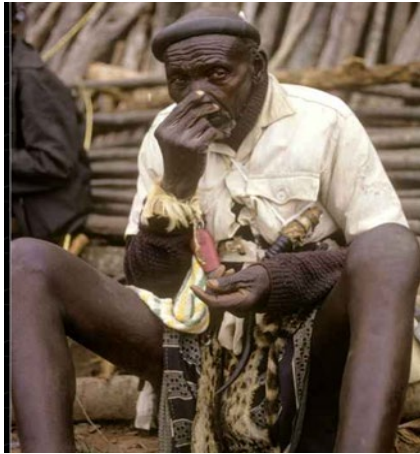
Smoking and tobacco consumption are important risk factors in the development of eye diseases especially age-related macular degeneration, diabetic eye diseases and cataract, which could predispose a person to glaucoma (Age-related Eye Disease Study Research Group [AREDS], 2001; Bennett, 2008; Pasquale and Kang, 2009). Tobacco use is widely recognized as a cause of health inequality (McIntyre, 2005). In a recent prospective observational study by Chiotoroiu et al. (2013) to investigate the impact of smoking and alcohol on the progression of glaucoma, the authors found significant changes in the visual fields of the group of participants that smoke, but no changes in the visual fields of those that take only alcohol; while smoking is found to affect the IOP and visual field, alcohol appears to be effective in reducing slightly the IOP. This suggests that there might be a connection between smoking and glaucoma progression. Several writers (Pasquale and Kang, 2009; Chiotoroiu et al., 2013) have reported

the effect of alcohol on the IOP [reduction of IOP]; though the treatment of glaucoma with alcohol still lacks good evidence.

Tobacco contains several different chemicals that could be injurious to health, and a smoker does not only put his or her health in danger, but also the health of people around the area where the smoking is taking place (Fowles and Dybing, 2003; US Food and Drug Administration [USFDA] 2012). A non-smoker who unconsciously inhales the smoke from a smoker's cigarette [second-hand smoke] is regarded as passive smoker. Yet another form of smoking is the third-hand smoke; this is the slight pungent smell of cigarette smoke which one usually perceives from the body of smokers or in places where cigarette has been smoked after some time (Ballantyne, 2009; Burton, 2011). Second-hand and third-hand smokes are both dangerous to the eye in particular and the entire body system in general. Because of the dangers of tobacco to the eye, the World Health Organisation has advised member countries to compel tobacco manufacturers in their countries to include warning about the dangers of tobacco consumption to the eye on the packets of cigarettes (WHO, 2003). Cigarette smoke contains gases and small particles that are deposited on almost every surface they come in contact with, such as the smoker's hair and clothing, or the environment the cigarette was smoked in.

In Anambra State, another form of tobacco consumption that is prevalent is the ground tobacco [snuff]. This form of tobacco consumption is very popular in the State. Tobacco leaves are grounded with some quantity of potash, the powder is then scooped into the nostril with the fingernail [see picture below in Fig 2.5]. The health effect of tobacco whether smoked or sniffed remains the same.





*Figure 2.5 An elderly man taking snuff* [Kulpers, 1970].

Several studies have investigated the association of glaucoma development with the types of things people eat. For instance, consumption of saturated dietary fats and caffeine have been found to raise the IOP, which is an important factor in glaucoma development (Coleman and Kodjebacheva, 2009; Pasquale and Kang, 2009). Certain things people eat today contain caffeine; for instance, kolanuts, coffee, tea and fizzy drinks (Richards and Smith, 2016). The same way an English person offers coffee or tea to a visitor, an Igbo person offers kolanuts to their visitors. It is a traditional thing that is practised on daily basis. There have been varying opinions regarding the effect of caffeine on the IOP.

Ajayi and Ukwade in a study in 2001 conducted with healthy volunteers found a significant increase in IOP after caffeine ingestion; however, Avisar, Avisar and Wemberger (2002) in another study found that ingestion of caffeine brought about increased IOP in patients with normotensive glaucoma and patients with ocular hypertension but no effect in healthy participants. Two later studies produced two conflicting results: Chandrasekaram, Rochtchina and Mitchell (2005) reported increase in IOP after ingestion of caffeine by participants with open angle glaucoma, but no effect on participants with only ocular hypertension. Chandra, Gaur and Varma (2011) however reported that caffeine did not produce any effect in the eyes of the participants used in their study. This result could be due to the method through which

the caffeine was introduced into the body. In their experiment, caffeine was not drunk as in other cases but was introduced as dilute eye drops. Conflicting results notwithstanding, various eye practitioners believe that caffeine should be taken with caution as far as eye health is concerned.

Essential vitamins are very important to the body; these could be got from different types of food we eat and are very important for different parts of the body to function properly. The anti-oxidant vitamins like A, C and E are very essential to the normal functioning of the eye. These vitamins are called anti-oxidant because they can reduce some destructive oxidative processes in the eye thereby giving some kind of protection to the eye (Glaucoma Research Foundation [GRF], 2012).

Inasmuch as these various anti-oxidant vitamins are necessary to maintain good eye health, their impact in the control or prevention of glaucoma has not been substantiated (Pasquale and Kang, 2009). Several clinical trials have found only weak evidence in relation to this. A study by Wang, Singh, and Lin (2013) in a population-based survey found no relationship between vitamins A, E and glaucoma; weak evidence suggests that vitamin C intake is associated with lower odds of glaucoma. Contrary to what people believe, anti-oxidant vitamins may be good for the proper functioning of the eye, but more research is needed to substantiate their impact on glaucoma prevention and treatment (Robertson, 2012).

Other aspect of human behaviours that is associated with rise in IOP is- playing of high resistance wind instrument for longer duration. Schmidtman et al. (2011) and Lanz et al. (2012) in different studies found that the IOP of all the participants that played high resistance wind instruments for more than ten minutes were temporarily raised; a rise in the blood pressure was also noticed. Lack of exercise and obesity have also been pointed as risk factors to glaucoma development; though substantial evidence is yet to be established for this claim

(Cheung and Wong, 2007); though obesity may contribute to excessive unhealthy fats in the body that could raise the blood pressure by clogging the vessels.

Certain classes of medications have been identified as contributory factors to the development of glaucoma through raising the IOP; especially the steroids and some forms of antihistamines. Several studies have explored the impact of steroids on the IOP, and on the development and worsening of existing glaucoma (Jones and Rhee, 2006; Kersey and Broadway, 2006). For this reason, caution must be employed in the use of medications especially by those who are at the risk of developing glaucoma.

Non-compliance has been a major issue in the management and treatment of glaucoma. The issue of non-compliance may be as a result of several problems. These may include poverty and inability to buy the medications. This will in turn affect the frequency of the use. There have been cases where patients were asked to use a particular medication a number of times per day, but instead of abiding by such instructions, the patient decides to reduce the dosage so as to make the medication last longer before he/she would go to see the eye doctor again. This is one aspect that causes blindness among the people that have glaucoma. Taylor, Galbraith and Mills (2002) in their study identified the following reasons for non-compliance with glaucoma medication: forgetfulness, lack of communication between the doctor and the patients and preference for less expensive alternatives. Robin and Grover (2011) opine that patients are more likely to comply with their medications if they understand the disease more and the rationale for treatment, and if treatment regimen was made simpler. While discomforts and adverse reaction are some of the reasons, financial difficulty is the most prominent problem especially in Nigeria.

A study of economic burden of glaucoma in Rivers State, Nigeria Adio and Onua, (2012) found that an average glaucoma patient spends about N16000 (\$105.00) monthly on both direct and indirect losses; this was an estimate and must have since gone up by many times this

amount. Even this amount will be very difficult for many people to afford for monthly treatment of glaucoma, hence non-compliance is most likely.

As already seen in this review, there are many traditional ways of treating eye problems that do more harm than good, that notwithstanding, traditional medicines are sometimes efficacious and good when properly managed. The major problem with traditional medicines is that it is sometimes not properly refined to be applied directly to the eye due to the delicate nature of the eye. Thus, the chemical components of each concoction are not always known at least by the user. Some of the constituent elements may work against each other; while some may react by using the point of application as a reacting surface. Estimating the right dose of traditional medicine is always a problem; thus, very often the right dosage of traditional medicine is not taken.

#### **2.5.7 Glaucoma awareness- how much do the people know**

Generally, there is poor awareness of glaucoma both in the developed and developing world; though this lack of awareness is more pronounced in the developing world. Several studies have been done to verify the level of awareness of this disease, but most of these studies point to low awareness of glaucoma globally. In a study in Birmingham to assess the level of glaucoma awareness among African-Caribbeans Cross et al. (2005) found that there was a poor level of awareness of this disease among the chosen population. In their study with 48 participants, inasmuch as 32 participants have heard the term “glaucoma” only very few were able to relate it to “build-up of pressure due to lack of drainage”; others described it as “weakness in the eye and something to do with the skin of the eye”; while majority said that they did not know anything about it. Altangerel et al. (2009) also in their study in Canada returned similar reports. In their study with 243 participants, 73% confirmed that they have heard the word “glaucoma” but only 29% could accurately define the disease. The level of awareness in this population could be said to be high compared to other places. This may be

connected with the level of education and language spoken in the country. This is consistent with the findings of Gyawali and Sarkar (2014) and Mbadugha and Onakoya (2014) that associated level of glaucoma awareness with better educational status however, people tend to understand better when communicated in the language where they are very familiar. In India, Sathyanagan et al. (2009) also reported poor awareness of glaucoma. In a study with 1926 participants, only 13% have heard about the disease, while just about 8.7% had some knowledge about glaucoma. The level of awareness here was alarmingly very poor in spite of the fact that the survey was carried out in urban Chennai. Tenkir, Solomon and Deribew (2010) in Ethiopia also reported low level of glaucoma awareness; out of 340 participants, only 8 people were aware of glaucoma. A later study in Korea by (Kim et al., 2016) found equally low awareness; of 710 participants diagnosed with glaucoma, only 8% were aware of the disease. Studies in Nigeria revealed similar trends; Adegbehingbe and Bisiriyi (2008) in a study to investigate the level of knowledge, attitude, and self-care practices associated with glaucoma among hospital workers in Osun State, Nigeria, the authors pointed that out of 125 medical doctors and 65 nurses that were involved in the study, about 38 doctors and 53 nurses could not tell whether vision loss by glaucoma was permanent or reversible. In another study with a rural population the same state, Isawumi et al. (2014) found that out of 259 participants, only 41 have heard about glaucoma; of these 41 participants, 20 could not tell the cause of the disease; while 10 said that it was “a curse from God”. However, low awareness of glaucoma should be expected since glaucoma is not a common disease. This is why creating glaucoma awareness alongside eye health education is very important in preventing blindness as a result of this disease.

## **2.6 The barriers to the uptake of eye care services especially-glaucoma.**

Evidence from studies around the world shows that people experience great challenges accessing eye care services; though this is more serious in the developing countries than in

developed countries (Jadoon et al., 2007; Ajibode et al., 2012; Hayden, 2012; Isawumi et al, 2014). In India, Fletcher et al. (1999) found that cost, reduced ability due to age, pressing family responsibilities and attitude of being able to cope with low vision and blindness were the major barriers to the up-take of eye services. Later study by Kovai et al. (2007) in rural South India found personal reasons, social and economic challenges as barriers. Cost was equally the reason for low up-take of eye care services in Ethiopia (Melese et al, 2004). In a study in Ghana Gyasi, Amoaku and Asamany (2007) found the following barriers: cost 91%, lack of escort 15%, fear 12%, coping with disability 9% and socio-cultural beliefs 8%. Poverty and financial challenge are influential factors that affect people's health in developing countries. In Fiji, the barriers people face in accessing eye care are: economic problems, being able to manage the eye problem, lack of awareness of available services especially in the rural areas, and the thought that nothing can be done to remedy the problem (Brian et al, 2012); the barriers are almost similar in most places. Inability to pay for conventional eye care services has forced some people into the use of cheaper options like traditional eye medicine [TEM] (Eze, Chuka-Okosa and Uche, 2009). In a report of recent studies done around UK Leamon (2014) pointed out the following as the existing barriers: racial differences, deprivation, financial problems, social status, and limited awareness and understanding of eye health and language problems. In Nigeria almost, similar challenges are faced by service users; Ajibode et al. (2012) identified the following challenges in relation to eye care services: cost, lack of access to services, transport problems, accommodation for escorts in situations where the patient was admitted, fear of surgery, fear of outcome, lack of escorts, dislike of hospital protocols, cumbersome tests, ability to cope with visual disturbance and lack of confidence in eye care team. Adekoya et al. (2013) found similar reports in a study in Lagos, Nigeria; fear of surgery, fear of ending up blind and availability of manageable vision as barriers to the up-take of glaucoma surgery. Understandably, fear of surgery especially eye surgery is very challenging and not everybody

can easily accept eye surgery except as a last resort. Most people prefer medical treatment to surgery due to fear (Abdull, Gilbert and Evans, 2015), but medical treatment can equally be very challenging in terms of costs, effectiveness and patient compliance.

## **2.7 Health Promotion Theories and Eye health promotion (Glaucoma).**

Theories and models are important landmarks in understanding human behaviour, especially with regards to health and wellbeing; health promotion theories and models can help to guide and bind together our observations and ideas and make sense of them and the findings (Raingruber, 2012; Nubtbeam, Harris and Wise (2014). According to Labaree (2013), theories and models are formulated to explain, predict and understand phenomena and, in most cases used to challenge and extend existing knowledge within the limits of the critical bounding assumptions; theoretical framework connects the researcher to existing knowledge and helps in addressing the questions of “why and how” and also specifies which key variables influence a phenomenon of interest; thus alerting the researcher to examine how those key variables might differ and under what circumstances. Health promotion models and theories help to understand and predict health behaviours thereby providing useful evidence for specific intervention that would address a particular health issue.

The Ottawa convention of 1986 defined Health Promotion as:

“The process of enabling people to increase control over, and to improve their health; for an individual to reach a state of complete physical, mental, and social well-being, an individual or group must be able to identify and realise aspirations, to satisfy needs, and to change or cope with the environment” (WHO, 2016).

The WHO has been canvassing for the application of health promotion especially in the form of health education and creation of awareness in combatting eye diseases. Baker and Murdoch, (2008) in a study conducted with an Indian population living in North-west London to

investigate whether public health intervention could improve awareness and health seeking behaviour for glaucoma, found that both awareness and health seeking behaviour to glaucoma were significantly improved after a media campaign. Media campaign in the promotion of eye health was said to have equally yielded useful results in India, Ghana, and other African countries (Hubley and Gilbert, 2006). No matter how good this may sound, information alone may not work adequately in certain settings. An Igbo proverb says “onye osisi hara onu dagburu, nti chiri ya” [meaning: a person that was killed by a noisily fallen tree must have been deaf]. Poverty and inability to afford conventional eye treatment as already seen in this review, forces people to either cope with their visual problems or to look for cheaper alternatives. Thus, in some cases, the symptoms of the disease may be strong enough to warn a person to go for an eye examination, but if the money to pay for such services is not there, the person may decide to ignore the symptoms. In a situation like this, some forms of health promotion models become ineffective hence; there is a need for an inclusive health promotion model.

Impaired vision and blindness are two significant factors that could profoundly affect a person's health and impede the realisation of one's aspirations in life. This review so far has revealed among other things prevalent glaucoma risk factors, level of glaucoma awareness and the people's health seeking behaviour; hence it is evidently clear that health promotion is highly needed in the fight against global blindness. It is however very difficult to change certain traditional ways of life that have been in constant use by people for a very long time. Hubley and Gilbert (2006) suggest that planned educational programmes encouraging the adoption of certain positive eye health behaviour, increased eye services up-take, and discouraging unhealthy eye health behaviours would be very beneficial. Public health intervention strategy such as health promotion has been used successfully to minimize the morbidity, the impact and spread of certain health conditions; these models developed by different theorists include the following:



**The Health Belief Model [HBM]** (Rosenstock, Stretcher and Becker, 1988; Naidoo and Wills, 2000). HBM builds on the premise that beliefs individuals hold about health and diseases or causes of illness shapes their behaviour. Their personal experiences and social identity determine how they will respond to changes regarding a particular health condition. The knowledge one has about something determines to an extent how the person reacts to certain situations, especially in matters of health. Knowledge provides information about some health conditions, the causes and consequences of such health issue. Armed with this knowledge, the person may decide to have a change of behaviour which may be positive or negative.

The Health Belief Model has six constructs that would prompt an individual to act after due consideration: Perceived susceptibility (determining whether an individual is capable of being affected by the condition), Perceived severity (this consideration helps the individual to determine the seriousness and consequences of the health issue), the barriers (that would prevent the individual from deciding for a positive change of action), the benefits of taking positive actions, the cues for actions (things that could push or encourage the person to take action (like picture of an AIDs patient at the terminal stage) and self-efficacy (that is, the ability to take the expected actions).

However, some studies have attested to the usefulness of this health promotion model. Najjimi and Golshiri (2013) in a study to determine the knowledge, beliefs and preventive behaviours regarding influenza A among students in Iran, concluded that HBM could be useful in improving preventive behaviours of influenza A among the population. Other studies by Johari, et al., 2014; Jalilian et al., 2014; Harooni, Hassanzadeh and Mostafavi, 2014; Asif, 2014 shows that HBM could be very effective means of promoting health by influencing people's attitude and lifestyles in certain societies. However, the problem with health belief model is that the burden is on the individual, and other enabling factors were not adequately considered.

**The Theory of Reasoned Action/theory of planned behaviour** (Naidoo and Wills, 2000; Nutbeam, Harris and Wise, 2014). This theory presumes that a person is likely to have a change of behaviour if they believe that this could impact positively on their health, and that the change is what is socially desirable in their immediate society. Having a change of behaviour improves not only their health but also self-respect and image. Beliefs and social pressure are the driving force in this model. It is a decision to change one's attitude to health issues after giving considerations to certain associated benefits. Theory of reasoned action could work with people that have reverence to the norms and acceptable practices but not for people that do not care about what others think about them.

People's change of behaviour is also partly determined by societal attitude to such behaviour; an individual's attitude to a specific action and the intention to adopt it is influenced by beliefs and motivation which comes from the person's values, attitudes, drives and the influences from social norms (Naidoo and Wills, 2000:220). Belief is based on the information a person has about something, and values are acquired through socialization (Naidoo and Wills, 2000). These two factors play essential role in changing people's behaviour. The value the society places on particular health issue may be a driving force towards people avoiding being victims to such diseases or health problems.

The issue of blindness and visual impairment for instance, is regarded as a serious health, social and economic problem. Anybody that is seriously affected by such problem is seen as a vulnerable, helpless, and dependent person. Nigeria is different from the developed world; the way people regard blindness in Nigeria is different from what is obtainable in the UK and other parts of the world. More than 95% of blind people in Nigeria are completely vulnerable and dependent on their relatives for assistance. Hence in a society where everyone is struggling to survive, people could do their best to avoid getting into such situations as blindness.

**Trans-theoretical model [stages of change model]** (Ewles and Simnett, 2003; Frost, 2008).

This model discusses the different stages that are involved in behaviour change. Before an individual could eventually have a change of behaviour, they must have consciously or unconsciously undergone through different stages which include: precontemplation, contemplation, preparation, action and maintenance. Precontemplation stage is a stage where the individual has not even given any thought to the issue, no matter how serious and persistent the messages for change might be. The next stage is the contemplation stage; this is a stage when the individual has started considering the information received about the health issue. Preparation stage is a stage when the individual has started making serious plans on how to change; then come the time for action. When the change has taken place, some effort is needed to sustain the change. Health promoters must be aware of these stages of change to be able to give some time for the whole process to come through.

Other relevant health promotion theories and models include: The Protection Motivation Theory (Rogers and Prentice-Dunn, 1997), Precaution Adoption Process Model (Weinstein et al., 2008) and (Diffusion of Innovation Theory (Rogers, 2004).

Health promotion has also been classified in terms of the approach to health models; while the **Biomedical Model of Health** focuses on physical and biological aspects of diseases and illness, the Social Model of Health focuses on policies, health education and health promotion (Adibi and Cowan, 2014). Biomedical Model focuses on activities that tend to reduce morbidity and premature death; targeting the entire population or groups at risk. It is preoccupied with the promotion of medical intervention to prevent the progression of conditions through three levels of approach: primary prevention, secondary prevention and through tertiary prevention.

In addressing glaucoma risk factors, three levels of health promotion intervention have been identified: the primary, secondary and tertiary interventions. Adekoya et al. (2015) and Kyari et al. (2017) have discussed these levels of intervention with reference to the developing world.

The primary intervention is needed in preventing glaucoma (secondary glaucoma) through influencing health seeking behaviours, and altering unhealthy lifestyles through health education, avoiding or effectively managing other ocular or systemic factors that can predispose one to glaucoma. Secondary intervention involves reducing the impact of glaucoma through early detection and effective management to slow progression; while tertiary intervention involves rehabilitation of low vision glaucoma patients through the provision of low vision aids and providing training for Activities of Daily Living (ADL).

The Biomedical Model in considering only biological or physical aspects tends to overlook other determinants of health which may impact adversely on the health and wellbeing of people living in a particular environment.

On the other hand, the Social Model of Health partly captures the (Ottawa Charter 1986) of health promotion which emphasises consideration of other wider determinants of health in planning effective health intervention (WHO, 2009). It acknowledges the fact that the socioeconomic environment can impact both positively or negatively on the health of a population; therefore, good attention is paid on healthy policies that promote health and wellbeing. Social Model tries to provide an enabling environment to the population to make healthy choices. The Ottawa Charter proposed the 'Hesiad' framework; which is an acronym for: health education, service improvement and advocacy. The planners of any health promotion strategies should be able to bring on board these three important aspects. While health education is very important channel of getting health information across, provision of improved health services and the advocacy through better policies are equally very important. This is particularly very important in the case of glaucoma with its irreversible loss of sight and high cost of management.

It is important to note that neither the above models nor the Ottawa charter refer to the importance that culture has on people's values, beliefs and practices, all of which influence health and wellbeing at individual and group levels (Papadopoulos 2006).

## **2.8 Gaps in health policy**

Strong, reliable and closely monitored health policies could be instrumental in achieving better health and well-being of a population. Nigeria has had series of health policies that were underachieved. According to Adeji (2016) many health policies have been set up by the Nigerian government in the last fifty-five years yet; these policies have either not been implemented or under-achieved. This has caused a lot of problem to the health care in the entire country resulting to different types of unrest in the health sector, including series of industrial actions by the health care providers. According to Enabulele and Enabulele (2016) the 2014 National Health Act was an attempt to address some problem issues found in previous health policies. Inasmuch as constant changes have been made to previous policies, it begs the *“question how effective is the current health policy?”*

The gaps in Nigerian health policies and selective implementation of health policies are major factors that encourage the growth of un-professional practices, quackery and proliferation of counterfeit and fake drugs and medicines in the country. The Federal Ministry of Health [FMH] is the over-seer of health issues in the entire country; this is coordinated through the States Ministries of Health (which are responsible for health issues in the states) and the health department of the Local Governments. In an attempt to further ensure that food and medicines either manufactured or imported into the country are genuine, an additional agency- the National Agency for Food and Drug Administration and Control [NAFDAC] was introduced. NAFDAC is responsible for regulating and controlling the manufacture, importation, exportation, advertisement, distribution, sale and use of food, drugs, cosmetics, medical

devices, chemicals and packaged water (Victor, 2018). In fact, each of the above-mentioned products must be registered with the agency with an identifiable or unique number before the manufacturers could turn them over to the public. Despite NAFDAC efforts, fake food and medicine still overwhelm the entire country. Surprisingly, all these fake products have NAFDAC seal of approval on them; this is a proof that there are obvious gaps that have not been covered. The Director-general of NAFDAC in admission of defeat said that Nigeria has the largest market for counterfeit drugs in developing countries (Naira Land, 2019). The issue of fake medications in Nigeria is worrisome; there are speculations that over 70% of medicines sold in Nigeria are fake (Alternativeafrica, 2019).

One of the most serious defects in health policy is the sale of medicines in the open market; all forms of medication could be bought freely from the open market by anybody in Nigeria, including prescription medicines, controlled drugs and injections. The Head Bridge Market in Onitsha, Anambra State is the largest single open drug market in Nigeria, and there are many more like it in Lagos, Aba, Enugu, Kano and other parts of the country.

Activities of patent medicine dealers are not properly monitored, giving them undue opportunities to act beyond their legal permission and abilities. Some patent medicine dealers set up practices similar to a one-room hospitals, where they operate like trained medical doctors; giving all forms of medical treatments to people that come to consult them. However, the helpful nature of patent medicine vendors to rural communities is not in doubt due to scarcity of proper health institutions, but the dangers they pose is also quite considerable due to the way they practise as reported by different studies (Oshiname and Brieger, 1992; Brieger et al., 2004; Oyeyemi, Ogunnowo and Odukoya, 2015).

There is evidence that due to inexperience, they dispense medications that are contraindicated to unsuspecting patients. For instance, steroids (Jones and Rhee, 2006; Kersey and Broadway, 2006) can be a direct cause of glaucoma; while antihistamines are contraindicated in persons



*Figure 2.6 Doses of medication from a Patent medicine dealer.* [Captured on my iPad].

with glaucoma; if a person with glaucoma must use it, then it must be under strict supervision. Patent medicine vendors are not aware of this, and most often these are some of the medicines patent medicine vendors give out on daily basis to their customers (Beyeler, Liu and Sieverding, 2015). Figure 2.6 captures how patent medicine dealers dish out a mixture of different medicines for patients that have come to consult them for one particular ailment or the other. This is done without proper tests to confirm that the medication being given would serve the purpose for which it was dispensed for.

Most countries have workable policies that are often closely monitored and implemented. For instance; in the UK, the health policy is clear regarding the roles of different professionals in the treatment and management of different diseases. There are several clinical benchmarks and minimum standards. Moreover, professional practices are licensed and supervised by different professional bodies like the General Medical Council (GMC), the Nursing and Midwifery Council (NMC), the General Optical Council (GOC) etc.

Corruption and collusion are problems in Nigeria; every facet of the society is corrupt, and as such, the country has been ranked 144 of the 175 corrupt countries of the world by Transparency International (Trading Economics, 2019). This corruption has also affected the

healthcare industry, resulting to non-implementation of certain health policies or under-achievement. This could explain why some fake medicines still bear NAFDAC seal of authority. Odi et al. (2019) posit that corruption in healthcare in Nigeria has several faces.

Limited resources are allocated to health. In turn this becomes an issue as few resources are allocated to eye healthcare, making it impossible to adequately address the challenges in this area of health.

## **2.9 Culturally competent health promotion**

Cultural competence is defined as the ability of providers and organizations to effectively deliver health care services that meet the social, cultural, and linguistic needs of patients (Health Policy Institute [HPI], 2019). This is very important for better outcome and increased patient satisfaction. A culturally competent health care system can help improve health outcomes and quality of care and can contribute to the elimination of racial and ethnic health disparities (Betancourt et al., 2002). In this current era of increased health inequalities among people of diverse financial, ethnic, religious, social and cultural differences, some people may face some kinds of marginalisation that could further cause deterioration in their health. In order to prevent this, there is a need for the providers of health services to be aware of these diversities and try to design and provide their services in a culturally competent manner.

It has been found that a large percentage of ethnic minority groups tend to develop chronic diseases that need a lot of contacts from the health care providers; according to HPI (2019) African Americans and other ethnic minorities report less partnership with physicians, less participation in medical decisions, and lower levels of satisfaction with care, and the quality of patient-physician interactions is lower among non-White patients, lower quality patient-physician interactions are associated with lower overall satisfaction with health care. People from other ethnic background believe that they are not being treated well by the health



providers due to cultural differences. Individual values, beliefs, and behaviours about health and well-being are shaped by various factors such as race, ethnicity, nationality, language, gender, socioeconomic status, physical and mental ability, sexual orientation, and occupation. This issue may have arisen due to inability of these healthcare service providers to use the culturally appropriate approach in the delivery of their services. The goal of culturally competent health care services is to provide the highest quality of care to every patient, regardless of race, ethnicity, cultural background, English proficiency or literacy. Truong and Selig (2017) also emphasised the relevance of cultural competence of professionals in order to be able to provide level of care that would be satisfying to the individual.

Papadopoulos and Lay (2006), defined culturally competent health promotion as those policies and practices that have the capacity to provide effective health education, health protection and disease prevention, taking into consideration people's cultural beliefs, behaviours and needs; they concluded that to achieve culturally competent health promotion within any community there is a need for partnerships (local people, service providers and policy makers) for the identification of the extent of the health issue (in this case the prevention of avoidable blindness due to glaucoma), the provision of services based on the local population's need and their ability to access them, information to raise awareness about the topic in written form or other culturally appropriate form such as through word of mouth, as well as information on the whereabouts of services and how to use them.

However, some studies have argued against the better outcome ideology ascribed to the culturally competent approach. Lettlow (2008) in a study found that inasmuch as culturally competent community-based programmes are capable of working in partnership with the communities, only minimal improvement in health outcome was observed. Though, this may

have to do with a lot of issues, including the number people used in the study and how well the participants knew about the programme.

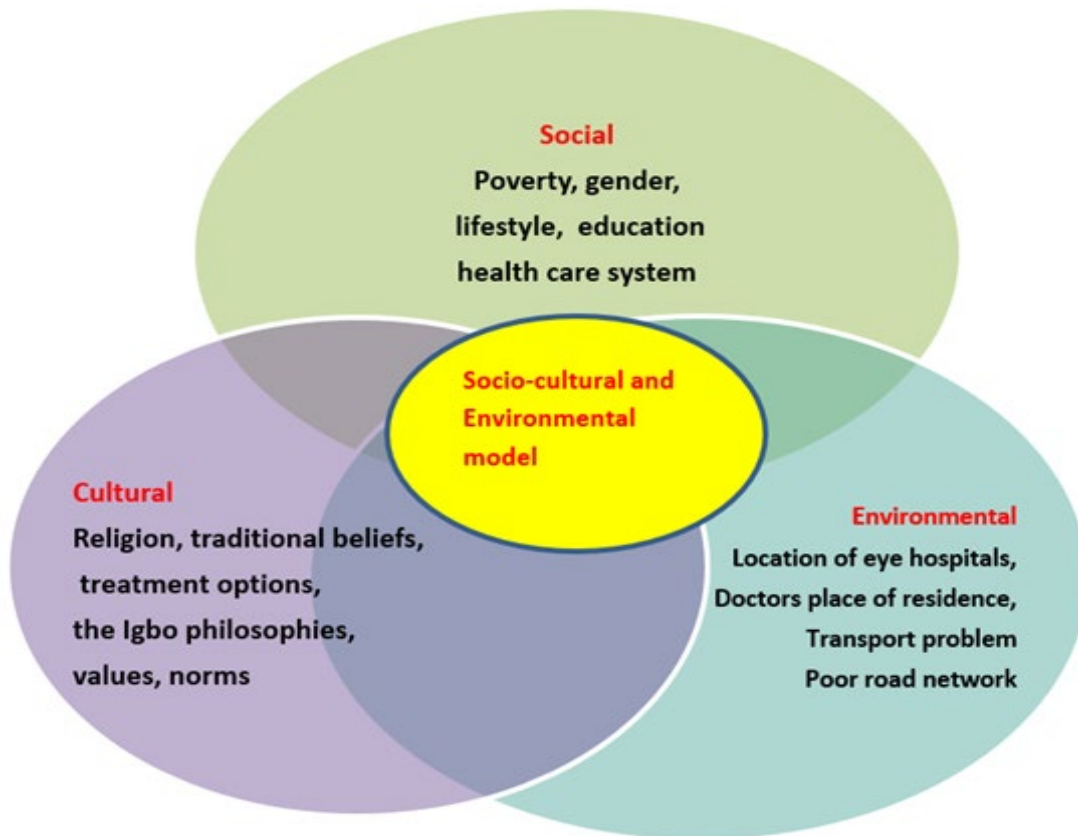
However, for effective health promotion strategy in glaucoma intervention, the planning and execution of the health programmes must be properly worded and must be targeted at the right audience. Krumeich et al. (2001); Papadopoulos and Lay (2006); Huff and Kline, (2008) emphasise the relevance of using a culturally appropriate approach in packaging and delivering health services including health promotion.

There was something that a team of mobile patent medicine dealers did in my village when I was a child that I still remember today. This team came from a neighbouring town and was trying to get the people to buy a brand of multivitamin tablets that they came to sell. In order to engage the local people about the benefits of the tablets, they used a metaphor which they knew that the audience would understand. This consisted of dropping one of those tablets into a bottle of Coca Cola; the whole liquid started rushing out of the bottle as the carbon dioxide in the liquid was being released into the air. These sellers told the onlookers that the way the liquid rushes out of the bottle, every sickness in their bodies would be pushed out of their bodies in similar way! When I grew up, I discovered that this was a lie! However, they were able to capture the attention of this population by making this people believe that the body needs to be “cleansed and rinsed” once in a while. The approach used by these mobile sellers was a deceit and must not be used anyway, but some people are difficult to approach, and an appropriate method must be used to reach them and engage with them. Thus, understanding the study population’s culture and beliefs will go a long way in addressing effectively their health concern. This is where socio-cultural and environmental model may prove very appropriate. To be able to improve health behaviour, it is important to understand what beliefs the study population holds about disease causation, their perceptions about susceptibility and severity of a health threat, perceived advantages and disadvantages of preventive actions, and

the barriers they face in adopting the suggested actions (Krumeich et al. 2001). Expressing a health promotion message in culturally appropriate terms, could serve as motivation for behaviour modification. Obviously, many people in the Anambra state of Nigeria may know what they should do about glaucoma, but economic problems prevent them from acting on that knowledge. The socio-cultural and environmental model of health promotion consider wider social determinants of health when planning a health promotion programme; most importantly, how the beliefs and culture could be tapped from. The relevance of exploring the people's beliefs and tapping from their culture will be discussed in the contributions of this research. Health is determined not only by the absence of diseases but also greatly influenced by other factors such as housing, age, gender, education, race, transport and even health policies operational in places where people live (Dahlgren and Whitehead 1991).

#### **2.10 Theoretical framework (Sociocultural and Environmental Framework) for this study.**

Several different theories and models have been discussed in this thesis; each of them has its own contribution towards promoting health but could not as a “stand alone” model serve the purpose of this study. However, having considered professional experiences, findings from literature review and some information from early data collected, a decision was made to use a combination of different models (Sociocultural and Environmental Framework) to be able to consider all relevant areas of this population's challenges of health issues. The Socio-cultural and Environmental Model focuses more precisely on the challenges facing this particular study population, from the inclusion of the context and their cultural beliefs as well as other major challenges such as poverty, and the lack of infrastructure. The way people behave is often rooted in traditional lifestyles and customs which are imbibed from their childhood and from the surrounding environment. Beliefs and behaviours thus rooted, are often very difficult to change, though with culturally appropriate health education, changes may be effected.



*Figure 2.7 Socio-cultural and environmental model.*

This model [fig.2.7] combines the principles of the social, cultural and the environmental models of health promotion. The social component considers how social issues like: level of education, gender, lifestyle choices, level of poverty or affluence could impact on health and well-being, and how it can influence the health seeking behaviour of the population. Socio-economic status is defined by the type of work one does for a living and this may in turn be determined by the level of education. When a person can secure a rewarding employment, the chances of making good money is usually high. With good remuneration, many might be able to live the type of life that could encourage good health. But when one is poorly paid or even unemployed, it affects the person's health seeking behaviour thus, creating an inequality in health. Good jobs and better remuneration could guarantee opting for the right treatment for glaucoma, hence reducing the chances of becoming blind from the disease. While the poor are faced by scarcity and want, the rich are faced with too much supply. This may give rise to

overeating, obesity, intake of too much alcohol and possibly drug use. Thus, both the rich and poor need health education to understand the reasons for eye conditions and to prevent visual impairment or blindness.

The environmental component addresses concerns like the nature of the environment, location of hospitals and eye clinics, the transport system, the nature of the roads network, and the nature of electricity and internet networks. The environmental component of the model explains the necessity to improve the existing resources and if necessary, to provide more in order to meet all people's needs. The public are encouraged to act and use what is readily available within the community but to also to become aware of better options and make use of these if they are relatively easy to access and affordable.

The cultural component addresses things like religion, traditional beliefs, traditional treatment options, values, norms and customs of the people. How people respond to illness is often rooted in their beliefs about disease causation. People that believe that their illness was as a result of "punishment from god" might act differently from a person that believes in natural and scientific causes of illness. People's health belief translates into self-caring practices and health seeking behaviours. Good knowledge of the ways people understand, interpret and conceptualize their illness experiences, can better equip health professionals to communicate with them and assist effectively in their care (Moon and Gillespie, 1995). This is particularly important when treating glaucoma, especially because many people believe that some forms of eye diseases are punishment from the god or the work of evil spirits. Perceptions of health and illness varies considerably across cultures and this is affecting the health seeking behaviour. Other factors affecting one's health seeking behaviour are those connected to the individuals' perceptions about the personal costs and benefits of seeking care and treatment (Moon and Gillespie, 1995).

Inspiration for the choice of Sociocultural and Environmental Model came from the Health Belief Model (Rosenstock, Stretcher and Becker, 1988; Naidoo and Wills, 2000), Social Determinants of Health (Dahlgren and Whitehead (1991), and Marmot (2010) Report on Health Inequalities in the UK. They found that health and illness should not be considered only within the confines of biological factors but within the context of other wider determinants of human health. The World Health Organisation has recently directed great attention towards social determinants of health and has emphasised the importance of integrating them into the health care plans (WHO, 2015). These social determinants of health include: socio-economic, cultural and environmental conditions broadly divided into living conditions (work environment, education and food production) and working conditions (unemployment, water and sanitation, health care services and housing), social and community networks, individual lifestyles and others like age, sex and genetic makeup. Thus, health is determined by the socio-economic and cultural environment surrounding a person. To effect any change in health seeking behaviour of any population, the underlining factors must be understood and addressed.

Better understanding of this theoretical framework led to the decision of a qualitative research design, making use of a modified participatory action research approach. The implications of this choice of methodological approach was discussed in detail under the research design.

## **2.11 Summary of literature review**

In this review, literature from different parts of the globe including Africa, Asia, America, Europe and Australia in relation to avoidable blindness, glaucoma and its related factors were reviewed. Findings reveal that there are many eye conditions that could cause avoidable blindness; that most of these causes are equally major risk factors in the development of glaucoma. Moreover; blindness as a result of glaucoma is not reversible. This makes it very necessary to prevent all its related risk factors. While the risk factors of the disease are high in Nigeria, the awareness of the disease and its risk factors appears to be low both in Nigeria and

other parts of the world. This review also found that the study population has poor health seeking behaviour as a result of their beliefs, level of awareness of risk factors and prevailing economic factors that pose major barriers and challenges to service uptake. The social and medical approach to health in addition to different models and theories of health promotion such as: Health Belief Model, Stages of Change Model and Theory of Reasoned Action were reviewed. Culturally competent health promotion was also reviewed, highlighting the relevance of Socio-cultural and Environmental Model which was the underpinning model for this study. Gaps in health policies were also identified, and how these gaps have contributed to the current poor health seeking behavior of the population was also explored.

## **Chapter Three Methodology**

### **3.0 Introduction**

This chapter deals with the methodology used in this thesis. It provides an explanation of the philosophy behind the study and describes the research approach, the rationale for this choice and the reasons for rejecting other methodological alternatives. It considers the epistemological orientation, the research design, sampling method and strategy, data collection process and ethical issues. Based on the literature reviewed and the researcher's experiences from professional practice, this chapter was carefully designed to use appropriate approaches to achieve the aim and objectives of the study.

As different types of buildings have different purposes, hence different styles, shapes and designs, likewise, research studies could be approached or designed according to the purpose of the investigation and what it aspires to achieve. Just like the building plan that the builders use in erecting a house, research design is the guide and road map to the issue being investigated. The research design serves as a guide to the researcher and provides a framework for observation, data collection, interpretation and analysis (Hakin, 1987; Nachmias and Nachmias, 1992; Bryman, 2012). Several published studies, books and book chapters were reviewed during course of this study; some are (Mechanic, 1986; Cross et al.; 2005; Papadopoulos and Lay, 2006; Kanski, 2007; Ige and Nwachukwu, 2008; Akande and Owoyemi, 2009; Nwosu and Obidiozor, 2011) and information gathered from some of these studies informed the choice of the design and methodology adopted for this study.

### **3.1 Method and research design**

Method is the process of gathering and analysing data, and methodology is the strategy, action plan, design and a road map that will enable the researcher to achieve the aim of the study (Crotty, 1998; Bryman, 2012).



Methodological issues are very important in research process, and I was very careful in my choice of methodology for this study. The issue of knowledge has been the central theme of most social research. Different schools of thought have their perspectives of how best knowledge should be studied and acquired. This gave rise to different theoretical frameworks and different approaches to research studies (Sarantakos, 1998; Gray, 2009). The desire to investigate naturally arises most often from the desire to find an answer to a phenomenon or happenings around us (Ige and Nwachukwu, 2008; Iyalome and Iyalome, 2012; Abdul, Gilbert and Evans, 2015). By asking questions the researcher reasons and develops thoughts and theories on what the possible answers could be and, sets out to develop the strategy that will help in finding answers to those questions raised. Theory informs methodology; hence, the theoretical perspective of the researcher determines the approach the researcher takes in doing the research. It determines who would be involved in the research and their levels of involvement.

There can be fundamentally different approaches to a research study, and the differences among these approaches are seen in the methods used in observing, measuring and understanding the social reality being studied (Bryman, 2012). For instance, a participatory action research [PAR] approach tends to empower the population by involving them to a great extent in the research activities. The participants play roles that would help them in solving their health challenges. The choice of methodological approach will therefore depend on the researcher's epistemological leaning and what the researcher wants to investigate, that is the scope, nature, aims and objectives of the particular study (Bryman, 2012). The main purpose of this research was to find out how the people in Anambra State could be helped to understand and minimize the risks associated with avoidable blindness due to glaucoma. The study was interested in human behaviour, and it has been argued that this is best understood qualitatively (Flick, Kardorff and Steinke, 2004; Bryman, 2012; Gray, 2009). The study was interested in

finding out why this people behave the way they do with respect to eye diseases and blindness (Nwosu and Obidiorzor (2011). This brings to the fore the reasons for their actions, their beliefs and perceptions of eye diseases and blindness (Cross et al; 2005). Since this study was aimed at empowering the population, a participatory action research [PAR] approach was adopted. More details about PAR was discussed below.

Research could broadly be classified into three major models or paradigms (Bryman, 2012): Quantitative – also known as traditional, positivist, experimental, empiricist or scientific method, qualitative method and a combination of both quantitative and qualitative methods known as mixed methods. There are different perspectives underpinning what sometimes is called “Qualitative method”, but the interpretative approach is the key version. Quantitative research seeks to find answers to an inquiry by compiling numerical evidence; it counts and classifies components and creates models to explain what is observed (Bryman, 2012). On the other hand, qualitative approach attempts to understand human behaviour and the rationale that governs it, the data is often generated verbally, and interpretation of these data is done based on the context of the behaviour and the assigned meaning (Denscombe, 2010). Conversely, mixed methods approach tries to combine both perspectives to make a better judgement of issue of interest though; this has its pros and cons (Johnson and Onwuegbuzie, 2004). Mixed methods research is an approach that tries to integrate quantitative and qualitative research approaches; through the combination of quantitative and qualitative methods and data, the researcher gains in breadth and depth of understanding and corroboration, while offsetting the weaknesses inherent to using each approach by itself (Johnson and Onwuegbuzie, 2004; Creswell, 2009; Bryman, 2012). The approach provides an opportunity for data triangulation; providing different methods of studying same phenomena.

The positivist paradigm of exploring social reality originated from the ideas of August Comte who argues that the society operates according to the general laws like the physical world

(Crotty, 1998; Sarantakos, 1998). He posits that the only way of arriving at an authentic knowledge is through observation and experimentation [scientific approach]. The major contention of positivism is that human behaviour should be studied the same way research is carried out in the natural sciences, that is through scientific method. Thus, positivism argues that this is the best way to acquire knowledge and, posited that knowledge must be tested and must be verifiable; otherwise it should not be accepted (Bryman, 2012). The positivistic approach to the study of human behaviour tends to assume that the society can shape human behaviour completely through socialization. Positivism emphasises objectivist epistemology (Mathews and Ross, 2010). To them, reality exists independent of the observer or the researcher, and reality is only waiting to be discovered by human as it is already in existence (Crotty, 1998; Esterberg, 2002) thus, through the application of scientific method those realities will be discovered. Under the positivistic approach, the researcher is seen as “a detached scientist intent on avoiding any action that might tarnish the results” (Gray, 2009). Unfortunately, human behaviour cannot be studied like the natural sciences because in natural sciences, substances for study can be kept and maintained under similar nature and conditions, but it is often very difficult to maintain human being under same condition for most experiment. Moreover, substances used in research such as chemicals or their constituent elements may have same chemical characteristics, but they do not have emotions and cannot attribute meanings to events and actions (Mechanic, 1986). There is no standard measurement for emotions like happiness, sadness or anxiety; any of these can only be measured by estimation, thus there is always some differences in the way people view and understand things (Akande and Owoyemi, 2009; Ajibode et al, 2012). This makes quantitative approach not suitable for this study hence, the choice of a qualitative approach.

On the other hand, qualitative methodology emphasises interpretivist’ epistemology (Bryman, 2012; Mathews and Ross, 2010). Social interaction is based on three principles: consciousness,

action and unpredictability (Livesey, 2006). This means that as human beings, we are aware of ourselves as unique individuals, and our relationship with others. Because we have this consciousness, we can make deliberate choices about how to behave depending on the prevailing circumstance. This can make our behaviour unpredictable; hence, difficult to study through the positivistic approach since it may generate the wrong results under certain circumstances. Two people could take the same action for different reasons. For instance, two people that applied the same local concoction to their eyes may have different reasons. One may be to test the actions of the said concoction, while the other may have done that due to inability to afford orthodox treatment; thus, room must be given for explanation of human behaviour. Because of these reasons, qualitative methodology has been considered more appropriate for this study. Qualitative research is exploratory in nature, its aim is to understand a phenomenon rather than measure it (Flick, Kardorff and Steinke, 2004; Bryman, 2012; Gray, 2009). Words and opinions are best interpreted and evaluated within the context of the participants.

Generally, every research methodology has its own limitations; qualitative methodology has been criticized for lacking objectivity and generalization. Ryan, Coughlan and Cromin (2007); Bryman (2012) argue that there are multiple truths as far as the investigation of social realities is concerned. They therefore posit that generalization could result in misrepresentation of facts and results as people are capable of behaving differently under same or different situations and times. Therefore, a researcher, they suggested must ensure credibility, and trustworthiness through the adoption of the standard procedure and through “thick” description employed in qualitative research. Qualitative methodology has also been criticized for lack of transparency, too subjective and influenced by personal bias. It is also difficult to replicate but replication is not always an aim unless the study is part of longitudinal research.

The mixed methods approach is essentially important due to the fact that it provides multiple opportunities to look at the same issue in such a way that increases the credibility of the results. However, mixed methods design could be complex, and might require more time and resources to accomplish. Users of the mixed methods must be knowledgeable in both methods so as to have the ability to resolve discrepancies that may arise in the interpretation of the findings. Mixed methods approach enhances the credibility of the research findings. Each research method has different rules for reliability; thus, the mixed methods must be used if one understands the rules that guide each approach.

### **3.2 Credibility and trustworthiness**

A research must be done within the canons of good practice for others to accept the findings (Bryman, 2012), otherwise the credibility will be in doubt. Since qualitative research holds that there is no single absolute account to social reality, the approach used in arriving at the findings determines how acceptable they will be. In this study, to ensure credibility and trustworthiness, meticulous attention was paid to the research process from the start to finish of the project through the discussions with, and reviews of my work by experienced supervisors. Moreover, three sets of stakeholders were interviewed- the key informants, the service providers and the policy makers. The interviews provided the opportunity to compare their different perspectives of the problem being researched; hence providing the pedestal for data triangulation. This type of approach is often very revealing; thus, making great contributions to the issue being researched.

### **3.3 Confirmability**

Confirmability is a process of ensuring that the research was done with a fair degree of objectivity, avoiding personal values and bias from affecting the study (Bryman, 2012). While it is impossible to eliminate completely all elements of personal bias, confirmability was

maintained within the limits of sound reasoning. Hammersley and Atkinson (1995) advise that in order to avoid over-identification with the population being studied as well as bias, the researcher should adopt a marginal position of simultaneous insider/outsider and be intellectually poised between familiarity and strangeness. Although these recommendations are difficult to put into practice, by adhering to the principles of human rights as well as through regular reflection every aspect of the research was honestly done, and results presented without fabrication or falsification of data. This is partly the reason for applying for ethical clearance, which was adhered to throughout the conducting of this research. Furthermore, my experienced supervisors validated the analysis by analysing interviews from two different participants each and comparing these with corresponding versions in my analysis.

### **3.4 Authenticity**

According to Bryman (2012) authenticity is thought provoking and has certain points of affinity with action research. Authenticity addresses wider political impact of research like fairness, ontological authenticity, educative authenticity, catalytic and tactical authenticity. In line with this, the study fairly accommodated the views of the different stakeholders, and it also helped the various stakeholders to better understand the perspectives of other members. Catalytic authenticity has to do with prompting the population into engaging in action research to change their circumstances. This was actually the main gist of this research. Tactical authenticity deals with the issue of empowering the population to take the necessary action in order to improve their health. The health education and health promotion aspect of this study were employed for the purposes of empowering the entire population.

### **3.5 Transferability**

Bryman (2012) posits that qualitative findings tend to be oriented to the contextual uniqueness and significance of the aspect of the social world being studied. Thus, findings in a qualitative

research study may differ in a different context or within the same context at different time periods. However, transferability could still be achieved through detailed description of all the research processes. The procedures of this research were intended to be very clear and can be followed by anyone that is interested in replicating the same study in this locale of study. Though, there might be slight differences due to different levels of understanding, emotions and beliefs about diseases and best methods of treatments. Further, this study provides an exemplar for others who wish to undertake similar research, whilst the findings could be useful for similar stakeholders who may either provide similar services, or using similar services, or trying to develop policy and strategies in similar contexts.

### **3.6 Dependability**

Dependability was ensured by adopting auditing approach as suggested by Guba and Lincoln (1985). In line with this, complete records of the research process were kept. These included: the selection of the research participants, the interview schedule, field notes, tape-recorded interviews and their transcripts which were submitted to the supervisors for verification.

### **3.7 Ethics**

According to Sarantakos (1998) social research is a dynamic process that involves researchers and participants, which is based on mutual trust, understanding and cooperation of both parties, and the process is conducted through well-accepted conventions and expectations. The research participants hand over themselves to be used for the study based on the understanding that the researcher will approach the research process very professionally and within the confines of accepted conventions. To guarantee this, every effort was made to ensure that this research was carried out according to the standard research ethics and protocols.

An application for ethical approval was made to the University Ethical Committee and the Anambra State Ministry of Health. This is an essential requirement of any good research that

involves collecting data directly from people or collecting personal data about living people (Marshall and Rossman, 1999; Darlington and Scott, 2002, and Denscombe, 2010). Ethical approval is given when the committee has considered all possible sources of harm and satisfy themselves that the researcher has thought through all the relevant issues relating to the safety of the participants and protection of the integrity of the institution providing the supervision (Darlington and Scott, 2002). The ethical approval was given by the Health and Education Committee of School of Health and Education, Middlesex University, London. An application for another ethical clearance was made and obtained from the Anambra State Ministry of Health, Awka, [see appendix A and B].

The study adhered to the tenets of the declaration of Helsinki, which emphasises respect for individual, their right to self-determination and the right to make informed decisions regarding participation in research, both initially and during the course of the research. To ensure this, signed informed consent was obtained from every participant. Every participant was made aware that they have the right to quit at any point if he/she feels so. All individuals involved were assured of their safety, data protection and confidentiality, and anonymity was strictly maintained (Flick, 2007; Bryman, 2012) using pseudonyms instead of their real names or identities.

The informed consent is the prospective participant's signed agreement to participate in the research after having full explanation of what is involved and all the essential information that will enable the participant to accept to participate freely or refuse to participate at all (Bryman, 2012; Denscombe, 2010). The informed consent consists of four major elements: the disclosure of essential information, understanding the information, the competency and the willingness to accept or reject it.

Protection from all forms of harm, intrusiveness or invasion of privacy and deception are all important parts of ethical issues to consider while doing research. The participants should not



be used just for the selfish interest of the researcher (Flick, 2007). Harm and discomfort could be physiological, emotional, social or even economical. The degree of these should be balanced with the benefit of the research to the participant or the immediate community. In this regard, the aim of this research was to create more awareness about the causes of avoidable blindness in the state, provide assistance within the available resources of the researcher, and also serve as a voice for the entire state in advocating for better eye health. In this regard, the potential risk of the study will be minimal when compared to the expected benefits.

The issue of rationing eyeglasses did not raise any concerns, because in a traditional Igbo society, people are very sympathetic such that many will like to make some sacrifices in order to help a person in a more difficult situation. Hence, those that did not get free eyeglasses were happy with the free eye test and written prescriptions.

The scientific integrity of Middlesex University was duly protected by diligently carrying out this research according to standard research protocols. Every material consulted was properly referenced, there was no fabrication of data, and also the field notes were kept safe to be provided for verification if the need arises.

### **3.8 The Pilot Study**

The pilot study was conducted using an optometrist colleague from Nigeria who was studying a masters' degree programme in the UK, and another Nigerian person living in the UK who was not an Optometrist. I carried out the pilot study myself using the two samples mentioned above. Piloting my interview schedule was very helpful because it highlighted a number of improvements that needed to be made. I realized that I had to take a critical look at my interview guide and rephrased some questions that were not appropriately worded. Some questions were removed, while some were added. Most importantly, the sequence of the questions was re-arranged. In the first schedule, I started with the level of glaucoma awareness, the pilot study

suggested that I should first investigate the person's health seeking behaviour before asking questions about glaucoma. Questions on "*what do you think would work in your area*" and "*how do you* [key informants, Service providers and policy makers] *plan to make unique contributions towards reducing blindness in your area?*" were added. The pilot participants suggested that answers to questions like these would reveal the extent and the level of knowledge and preparedness to address challenges which the two Nigerian pilot participants considered important.

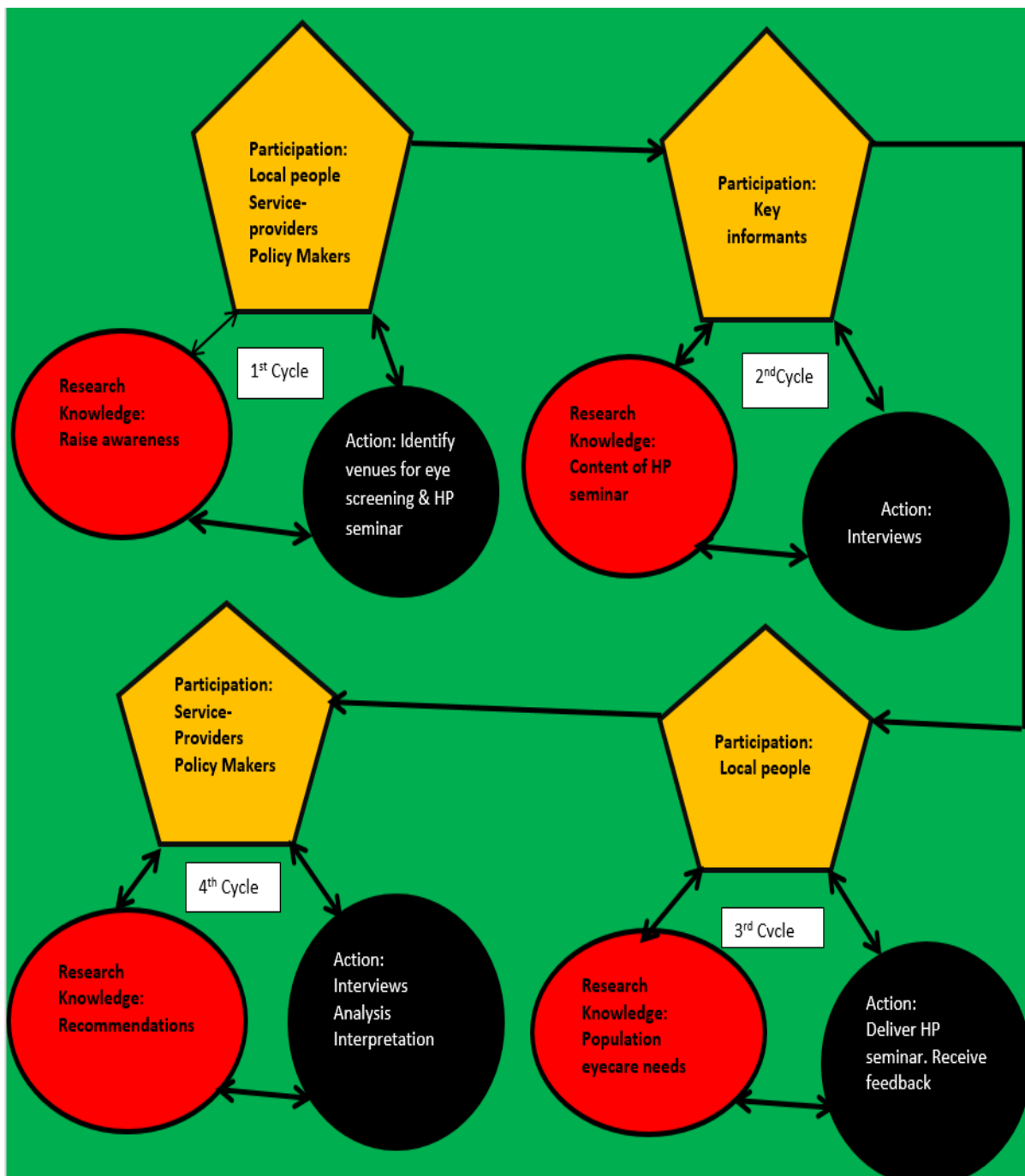
The pilot made me realise the importance of my interview technique and how this may encourage the potential interviewees to become more involved in their community's eye health. The pilot study was also very helpful in considering the duration of the interview. Making it too long would have posed a problem of data management as well as being tiring to the participants who were volunteering their time; making it too short would have made it impossible to collect in-depth explanations and real examples and personal experiences that would provide data for analysis.

### **3.9 Participatory Action Research**

Participatory action research (PAR) enables researchers to work in partnership with the research participants, for example to bring about a desired change in health of the concerned community (Bergold and Thomas, 2012). PAR empowers the participants and makes them feel valued and respected. Arnstein (1969) in her study of "ladder of citizen participation" discussed the relevance of involving different stakeholders in issues that concern them. This creates an atmosphere of mutual respect, effective planning and decision making that might be acceptable to the wider population. However, it is acknowledged that there is not one standard way of conducting PAR research. It is also acknowledged that the three components of PAR (participation, action, research) are not linear steps but rather they are circles which overlap with each other. This study applies the PAR philosophy, which is based on the recognition of

grassroots people experiences, their participation in research, and their empowering to produce knowledge which is useful to them and will produce meaningful change. This study used a variation of participatory action research which was more suitable to the context, the resources and time available to the researcher. The components of PAR have been used to compile the diagrammatical representation of the research design, showing the key participants, the key stages of the research, the aims of actions taken and the reflection on the results of actions taken. Subsequent actions, participation and reflection is repeated until enough data are collected (fig.3.1).

For this level of collaborative effort, Sociocultural and Environmental Model of health promotion provides an enabling framework. Baum, MacDougall and Smith (2006) point that PAR differs from most other approaches to public health research because it is based on reflection, data collection, and action that aims to improve health and reduce health inequities. Some of the participants were involved at different stages of this study and the information gained from them informed the next level of action taken. For instance, suggestions from some of the service providers and the policy makers were utilised in planning and selecting the venues for the eye health seminar.



**Figure 3.1 Research design and process.**

Furthermore, some of the key informants interviewed before the eye health seminar provided some useful information which were acted upon during the seminar. For instance, the key informants provided information regarding their health seeking behaviour and some of the challenges people in the community face when in need of eye healthcare. They also provided some information about how eye care could be improved in the community to benefit them

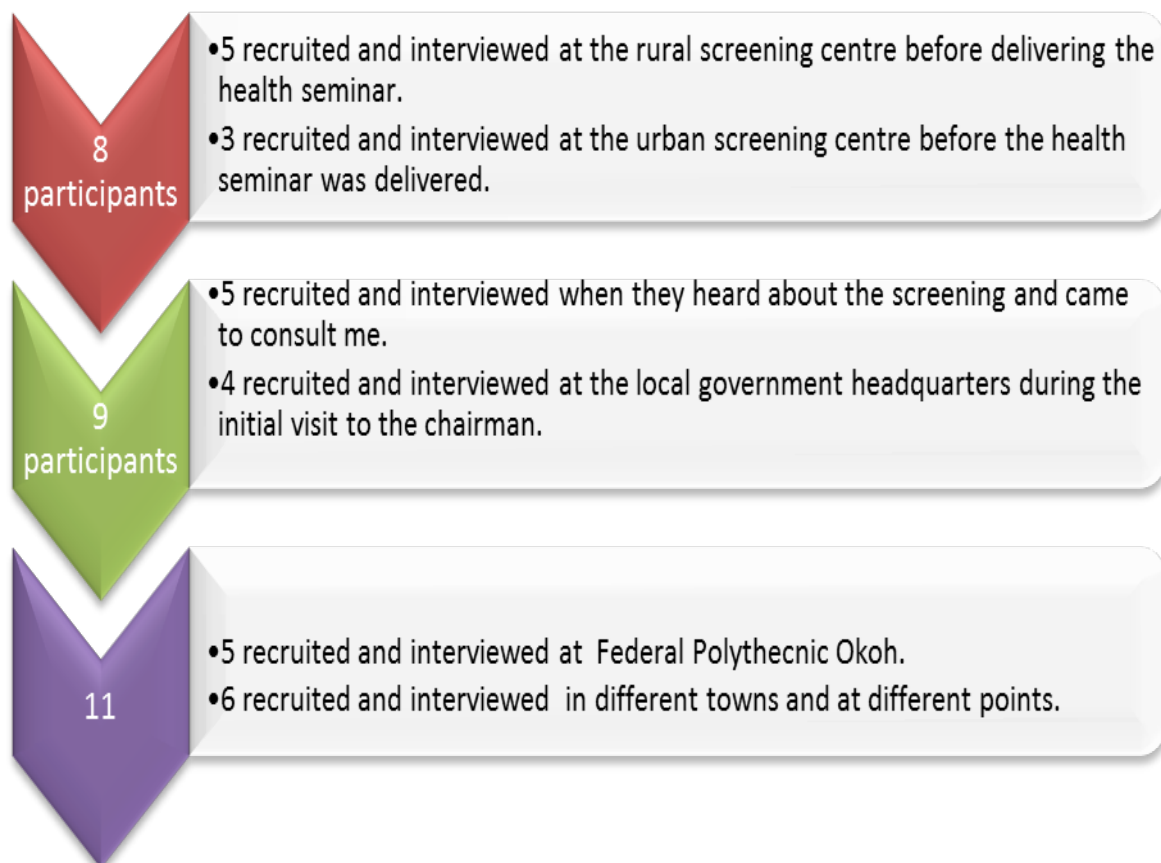
most. This was utilised to modify the interview prompts for the service providers and the policy makers. Regarding how to sustain eye health promotion in the communities, most of the key informants who participated in the semi-structured interviews accepted to be canvassers and campaigners of good eye practices in their various communities. The service providers when confronted with the challenges the people are facing, agreed to be providing regular eye health education to patients when they come to consult them, and to engage in regular community eye screenings. They also agreed to extend credit facilities to those that do not have immediate cash to tackle their eye health issues. On the part of the policy makers, they all promised to adopt eye health seminar as an annual event in order to maintain regular awareness of eye problems in different communities. In this study, the researcher and the researched formed very active collaborative partnership during the research process, from helping to shape the interview schedule, helping with the recruitment of participants, raising awareness about the study and the eye seminar, to providing data and even in taking the role of advocates of good eye health.

### **3.10 Sampling and data collection**

#### **3.10.1 Sampling method and strategy**

Purposive sampling method was used to recruit the participants for this study. Effort was made to reduce personal bias to the barest minimum during the recruitment of the various participants. Three important groups of stakeholders to eye health in the state were duly represented in the sample, so as to provide different but important perspectives to eye health issues among this population. Bias could be introduced in purposive sampling by failure to recruit the participants that met the set criteria for the study, thereby introducing distortion in the results of a study. Inasmuch as the sampling method was purposive, effort was made to recruit a sample that reflected the demographic characteristics of the study population. Therefore, diversity sampling technique was applied to accommodate participants based on their gender, age, occupation, location and educational level, availability and willingness to participate, and the

ability to communicate experiences and opinions in an articulate and expressive manner [fig. 3.2]. Furthermore, this study utilised exploratory sample as it served the purpose of the study instead of representative sample. According to Denscombe (2010) an exploratory sample is used as a way of probing relatively unexplored topics and as means of discovering new ideas and generating new insights. The study was concerned with finding out how much the people know about the eye disease being researched, how much they know about the causes and risk factors in order to find ways of helping them through awareness programmes. In this sense, any reasonable number of participants that could give this information could be deemed a good sample.



**Figure 3.2 Recruiting process of the key informants.**

Initially, a total of 40 key informants were approached and 28 were eventually interviewed. The decision on the number was based on the consent and availability of those that were approached, the principle of saturation, and the resources available to me including financial and time constraints. In terms of the saturation principle, I noticed that at a particular point some of the interviews started to return similar responses. For instance, from their responses on health-seeking behaviour, glaucoma awareness and awareness of the risk factors, I was able to identify a pattern that convinced me that these responses were similar and would have been able to address my research questions.

In addition to the participants, two other stakeholder groups [the service providers and the policy makers] were involved in this research. Ten service providers were scheduled for an interview, but two could not keep the appointment due to personal commitments. Likewise, only three policy makers were eventually interviewed instead of the proposed five, due to their unavailability during the time available for the researcher in Nigeria.

### **3.10.2 Inclusion and exclusion criteria.**

The demographic characteristics of individuals and their places of residence were used as the basis for inclusion and exclusion. People that were ordinarily resident in any part of Anambra State, and aged 21-80 years were included in the study; while people below or above this age range were excluded. Furthermore, people within the given age bracket but who were not resident in Anambra State were also excluded, this was because the study was specifically concerned with assessing the level of awareness of glaucoma in the Anambra State and also to examine how people that live in the state perceive and understand glaucoma risk factors. Secondary, in Nigeria a person is considered an adult from the age of 21; hence, this research sought data from adult participants. The upper age limit was decided to accommodate the elderly who are still able to communicate coherently and some of them may even have glaucoma. Thus, in addition to the inclusion and exclusion criteria, there was a focus on

different characteristics of the sample members: occupation, gender, level of education, place of residence and the ability to respond to the interview questions; these are some of the sample characteristics that were hoped to address the research questions. Inasmuch as the sample might be small, a close look at the sample reflects inclusivity and diversity. I was particularly interested in involving more women in the sample because, they are the first “teachers” and “doctors” children normally have in life, and even through life, a mother continues to teach her child (Castro, 2009). This is unarguably true in Nigeria. In most cases mothers most often have closer relationship with their children than the fathers, especially in the early years. Hence, any problem a child may have most times is often discovered and handled by the mother before the father is even aware of it. In Igbo traditional society, a mother would always try to solve the child’s problem if it is within her powers. Thus, sometimes, the father may not get to know that the child had a problem. Likewise, in the issue of health, the mother may have deeper stories to tell more than the father. Therefore, the chances of having revealing interviews with women are very high in this regard. And information got from them during the interview was very relevant in preparing the health education seminar.

### **3.11 Action plan and the research timeline**

Fig. 3.1 shows the action plan of this study. I opened communication with my links in Nigeria [my professional colleagues, friends and relatives in Nigeria], and informed them about my intended research and asked for their help through the planning stages. Through them, I got in contact with some of the policy makers and some important people in the locality such as community and religious leaders that would use their influence in the society to assist in this study; these are people in the communities that have the ability to influence and mobilise the target population. Working collaboratively with these people, important decisions about this study were made. This is what Amdam, (2012) referred to as communicative planning in health promotion. Through this initial contact, useful pieces of information were collected that



assisted in developing a clearer and concrete plan. The policy makers to be involved in this study were identified and contacted personally when I arrived in Nigeria. Two centres for screening/eye test and seminar presentation were also identified and selected. One of such centres was in Igbo-Ukwu for the rural area, and Ekwulobia was selected as the venue for the urban area. Ekwulobia was chosen because it was the headquarters of Aguata local government area [LGA] and has higher probability of greater and diverse population; while Igbo-Ukwu was selected because I came from this town and would like my people to benefit from the eye health programme. The next stage was planning how to reach the target population through creation of awareness. This was achieved through announcements in the local churches, and by the word of mouth spread through the villages by those who heard the information from the church. Flyers [Appendix G] were printed and distributed and four announcement slots were also aired by the Odenigbo Radio, which is a popular FM radio station in this state.

The key informants were recruited and interviewed at different places and at agreed times. A few of key informant interviews were conducted before the screening day. Scanning through previous interviews with some of the key informants provided more insight regarding the questions to be included in the interview prompts for the service providers, while the key informants and service providers interviews provided some important information that helped to modify the interview prompts for the policy makers. Reflecting on the findings helped in preparing appropriate health seminar for the population.

The next stage was the interview with the policy makers, and after this, I started transcribing the recorded interviews. Detailed analysis of the transcripts for each set of stakeholders were done, and findings recorded accordingly. Self-evaluation of the whole research process led to my reflection of the entire PhD journey. Recommendations were made based on the findings of the study. In line with the research objective, this study was presented as research-in-progress at the 2014 National conference of Nigeria Optometric Association. Three papers

based on this study have been published in peer-reviewed journals; three more are being prepared for publication.

**Table 3.1 Timeline**

Event	Start	End
Opened communication with my contacts in Nigeria.	June 2014	June 2014
Contacted some influential people in the communities	June 2014	July 2014
Identified the policy makers to be involved	June 2014	June 2014
Pilot study	June 2014	June 2014
Travelled to Nigeria for data collection	July 2014	September 2014
Initial visits to the policy makers	July 2014	
Creation of awareness for the study and recruitment of participants	July 2014	July 2014
Interview of the key informants started	July 2014	
Preparation for eye health seminar	July 2014	
Interview of the key informants continues, seminar/presentation and screening at the rural centre	July 2014	July 2014
Interview of key informants continues, seminar presentation and eye screening at the urban centre	July 2014	July 2014
Conclusion of key informant interview/started the service providers interview	July 2014	
Presentation at the Nigerian Optometrists National Conference	July 2014	
Conclusion of service providers interview	August 2014	
Policy makers interview started	August 2014	August 2014
Transcribing the interviews	October 2014	March 2015
Analysis of key informant interviews	May 2015	July 2015
Analysis of service providers interviews	October 2015	December 2015
Analysis of policy makers interviews	February 2016	March 2016
Writing up	October 2016	March 2017
Revision of thesis and publications	September 2017	December 2018

### **3.11.1 Developing the interview prompts**

A semi-structured interview guide (interview prompts) was informed by the literature including the interview questionnaires used by previous studies including Cross et al. (2005); Tenkir, Solomon and Deribew (2010) and Chukwunke et al. (2012). It was also informed by my own emic perspective and years of experience as an optometrist in that region of Nigeria. Finally, it was greatly improved by the contributions of the two pilot participants. The development of the interview guide was motivated by the desire to ensure that the participants were given a wide latitude to express themselves and room for follow-up questions. The original interview prompts were modified after the pilot study. Further adjustment was made to the interview guide of the service providers and that of the policy makers after gaining some information from the first few interviews with the key informants. The aim of the interview was to elicit the participants' accounts of their knowledge and experiences of the barriers they encountered regarding eye health and preventable blindness. In summary, the main factors which guided the development of the interview schedule were:

- Information and key issues identified in the previous studies reviewed for this research.
- Ideas emanating from some theoretical concepts and health promotion models reviewed in this study.
- Suggestions from pilot participants and the key informants.
- My professional experience from practice.

#### **Professional experience and facts from practice**

As an eye health expert in Nigeria, I treated eye problems in my clinic and through that, I was aware of what people experience and what people do in relation to eye problems (Taylor, Galbraith and Mills, 2002; Gyasi, Amoaku and Assamany, 2007; Adekoya et al, 2013). I was extremely interested in investigating and documenting problems such as risk factors, health seeking behaviour and barriers to accessing eye health services, as part of my objectives and

therefore, with the participation of some members of the study population, as well as the enlightenment I gained from the literature I reviewed, I formulated open ended interview questions and prompts) in order to collect data that would help me describe, interpret and document the health seeking behaviours, and the extent and type of the barriers which affected people from obtaining the knowledge and care they needed to avoid blindness.

### **Information and key issues identified in the previous studies reviewed for this research**

The review of literature undertaken for this study was quite extensive and facts and information from these sources helped in formulating some of the interview prompts. Studies like Ige, (2008); Akande and Owoyemi, (2009) provided some information about health seeking behaviour and this was picked as an important aspect to be investigated among this population. Cross et al. (2005) and Tenkir, Solomon and Deribew, (2010) provided some information about the awareness of glaucoma; this was picked up as one of the key issues to explore among the study population. Ebeigbe and Ovenseri-Ogbomo, (2014); Abdull, Gilbert and Evans (2015) and many more, discussed issues around barriers to accessing eye health services and ways to improve eye health services, which was also considered as a relevant issue to be examined.

### **Ideas emanating from some theoretical concepts and health promotion models reviewed in this study.**

Several theories and conceptual models were reviewed for this study including: Health Belief Model (Rosenstock, Stretcher and Becker, 1988), Stages of Change Model and Theory of Reasoned Action (Nutbeam, Harris and Wise, 2014), Culturally competent health promotion model (Papadopoulos and Lay, 2006), and the Social Determinants of Health (Dahlgren and Whitehead, 1991, WHO 2017). These models partly inspired the formulation of questions around health seeking behaviour, barriers to accessing eye health services and ways to improve eye health services. Having reviewed these models along with the rest of the literature, I

became very aware that they all contributed useful but partial explanations of the issues I aimed to investigate but none provided a holistic and contextual vision which would help me gain and explain the key issues and challenges that my emic and my professional perspective as well as the perspectives of members of the study population provided prior to, during and after the data collection. Having reflected on the key concepts found in the literature I concluded that these could be grouped into the following three large categories: cultural, social and environmental. I identified a number of key concepts for each of the large category, to which I added some Igbo/Anambra specific ones. It became obvious that the three large categories were complimentary to each other and they also overlapped with each other. I synthesised all this information into a diagrammatical representation of a model which I aptly named as the ‘Socio-cultural and Environmental model’ for describing the health seeking behaviours and the barriers to eye health services of people living in the Anambra state of Nigeria (see fig. 2.7).

### **3.11.2 Data collection**

Semi-structured interviewing was used to collect data from participants. Semi-structured interview was a method of choice for this study because, it provides a guide and clear set of instructions during the interview. It also provides reliable and comparable qualitative data while giving the participant an opportunity to express themselves on the question asked. In semi-structured interview, the interviewer could prompt the interviewee further when exploring any point that is revealing. It also allows the interviewees the freedom to express their views in their own terms (Flick, Kardorff and Steinke, 2004; Bryman, 2012; Denscombe, 2010).

Data was collected from three sets of stakeholders as already stated; a total of 39 participants-comprising of 28 key informants, 8 service providers and 3 policy makers. Most of the key informants were approached directly and told about the study. Detailed explanation was given as contained in the participant’s information sheet [PIS] (**Appendix B**). Those who were able

to read were given a copy to read and keep, after which they signed the informed consent letters (**Appendix C**). For those unable to read, the participant's information sheet was read and explained to them. The contents, terms and conditions were fully and clearly explained to each participant to whom all indicated clear understanding of the study procedures. For each participant who was happy to participate in the study, the informed consent letter was also read and explained. The interview was audio-recorded with the permission of each participant. However, assurances were given to each participant that the recorded interview would not be used for any other purpose other than what it was explained to be used for. Anonymity of all participants was maintained in accordance with standard data protection procedures. Fig 3.2 shows the recruitment process of the key informants. Data from the service providers was obtained through face-to-face semi-structured interviews at the agreed places and times. Interviews with the policy makers were all booked and held at the arranged dates and venues. Prior to the interview, the participant's information sheet and a request for an interview were submitted at the time of making the appointment. The informed consent letter was signed on the day of the interview.

The majority of the key informants' interviews were conducted in English and a few were conducted in the local language [Igbo] depending on which language the interviewee was very familiar and comfortable with. As the researcher, I speak and understand the local language very well; therefore, the interviews were translated to English by me. One of the translated interviews was translated back to Igbo language by another fluent Igbo language speaker to ensure credibility and assure the quality of translations [**Appendix H**]. Table 4.1 provides key characteristics of the entire sample for this research.

### **3.12 Method of data analysis**

For the analysis, a pseudonym was chosen for each of the participant. Their transcripts were line-numbered to indicate the position of any excerpt from the transcript in order to locate them

precisely. The approach adopted for the analysis was the interpretative phenomenological analysis [IPA]. This approach aims to explore in greater depth how participants make sense of their personal and social world; the meanings, particular experiences, events and states, hold for participants (Smith and Osborn, 2007). With IPA framework, the participants' views and actions were closely examined, understood and interpreted. This approach was necessary in this study because it helped in finding out how to help the target population with their eye health problems. Hence, there is a need to understand their actions, and why they engaged in such. Some actions may appear bizarre and meaningless unless you understand the context. The people in Anambra State make use of different treatment options which have their roots in their traditional beliefs of disease causation. Thus, through the observation and interpretation of their lived experiences, I was able to understand and appreciate their circumstances.

This analysis was achieved both manually and through the use of two different analysis software: Nvivo 10 and SPSS v21. SPSS was helpful in building the tables and doing some calculations that were considered necessary for clearer presentation and interpretation of results. Some descriptive statistical analysis, such as those related to the sample's demographic characteristics was done in order to provide clarity and context. A manual initial analysis (familiarity stage of IPA) of the transcripts was conducted during the first reading of the transcripts before importing them into the software and undertaking a more detailed coding. The consultation of both the hard copies and soft copies of the transcripts gave me confidence and a feeling of control over the process.

The transcripts were prepared with the apriori themes before they were imported into the Nvivo for coding using the same themes. The apriori themes were based on the key areas which were included in the interview schedules. From these themes, I was able to have a closer look at different parts of the transcripts. It was necessary to code the transcript initially to gather similar

points together for further coding and proper analysis. Various authors referred to this as data reduction (Richards, 2004; Smith and Osborn, 2007).

Saldana (2013:3) describes a code in qualitative research as:

"A word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data. The data can consist of interviews transcripts, participant observation field notes, journals, documents, drawings, artefacts, photographs, video, Internet sites, e-mail correspondence, literature and so on"

### **3.13 Health Education seminars**

The health seminar was delivered first in the rural centre with 94 people in attendance. The seminar slides were projected on a screen while the presenter talked to the audience through the slides. The main focus of the seminar was that in most cases blindness is preventable if only right action is taken early. In particular, blindness as a result of glaucoma can be prevented through early detection and proper management. Furthermore, great emphasis was laid on understanding glaucoma risk factors which may lead to modification of lifestyle, resulting to low glaucoma morbidity. The presentation concluded with what the attendees could do to help in promoting eye health and preventing blindness, these include:

- Help to educate others about eye health
- Go for regular eye checks, and also encourage others to do likewise.
- Quit smoking if one smokes, and also to stay away from second-hand smoke.
- Assist people with eye problems to access treatment.
- Avoid the use of non-professionally certified substances as eye drops.
- Avoid self-medication.



Some of the attendees were given evaluation sheets [Appendix E] to fill out and make comments. The essence of this was to identify what was really helpful to this population, and what needs to be improved upon when delivering this type of programme in future. There was also further oral evaluation with different individuals during the eye testing stage. A Senior Community Policy maker [SCP] who was in attendance highly commended the health seminar, the free eye tests and free eyeglasses given to the people after the seminar; he said that it will take his community a long time to forget this event. A second health seminar was delivered at Ekwulobia, the local government headquarters. This had greater attendance, 198 people. Similar approach was used to evaluate the effectiveness of the programme; responses from the attendees were similar to those received from the rural area, in addition, they requested a periodic visit to keep the programme on track. A Senior Local Government Policy maker [SLP] attended the seminar and was highly impressed by the quality of the programme; he promised to make it an annual event for people within Aguata LGA.

## **Chapter Four: Data presentation and analysis of key informants' interviews**

*“It affects their sight and that is when they know that their sight is not normal but for me that my sight is normal, why will I go and be looking for problem while there is none around?” (Ezenwata:47-49).*

### **4.0 Participants' demographic characteristics**

The key informants were made up of people from different areas of residence and various occupational backgrounds. They were purposively chosen to ensure that varied responses were given to different questions. The demographic details of the participants and other variables are presented in tables below. Table 4.1 displays the demographic details of the participants. 28 key informants (n=28) were interviewed, with 17 (60.7%) females and 11 (39.3%) males. More females were deliberately recruited in line with my decision in the introductory chapter where I mentioned that a woman is most often the first nurse a child normally has, thus women may have better information regarding certain treatments and management of the health of children than men. The mean age was 45, while the median and the age range were 48 and 52 respectively. The minimum age of the participants was 21 and the maximum age was 73.

The eye care service providers (n=8) were made up of seven males and one female; selection was based on availability at the time of scheduled interview.

The three policy makers were all males; two were civil servants, while one was a senior community leader.

**Table 4.1 Socio-demographic characteristics of all participants n=39**

Characteristics	Frequency	Percentage (%)
<b>Key Informants (Target population)</b>		
<b>Sex</b>		
Male	11	39.3%
Female	17	60.7%
<b>Age (in Years)</b>		
21–30	5	17.8%
31–40	6	21.4%
41–50	6	21.4%
51–60	7	25%
61–70	3	10.7%
71–80	1	3.6%
<b>Occupation</b>		
Driver	1	3.6%
Technician	2	7.1%
Farmer	1	3.6%
Retired	2	7.1%
Trader	6	21.4%
Student	3	10.7%
Civil servants	13	46.4%
<b>Place of residence</b>		
Rural area	13	46.4%
Urban area	15	53.6%
<b>Eye care service providers (Optometrists)</b>		
<b>Sex</b>		
Male	7	87.5%
Female	1	12.5%
<b>Policy makers</b>		
<b>Sex</b>		
Male	3	100%
Female	0	
<b>Occupation</b>		
Civil servants	2	66.7%
Community leader	1	33.3%

The key informants consist of 12 (42.9%) civil servants, 6 (21.4%) traders, 3 (10.7%) students, 3 (10.7%) technicians, 2 (7.1%) retired, one driver and a farmer.

**Table 4.2 Distribution of key informants according to level of education.**

<b>Level of education attained</b>		<b>Frequency</b>	<b>Percent</b>
<b>Valid</b>	<b>Primary</b>	<b>5</b>	<b>17.9</b>
	<b>Secondary</b>	<b>7</b>	<b>25.0</b>
	<b>Diploma</b>	<b>1</b>	<b>3.6</b>
	<b>University degree and above</b>	<b>15</b>	<b>53.6</b>
	<b>Total</b>	<b>28</b>	<b>100.0</b>

This sample consisted of a higher percentage of people with university education. Fifteen (53.6%) had university education, 7 (25%) had secondary school education; while 5 (17.9%) of the participants had primary education, (Table 4.2). the high percentage of people with university education could be either a coincidence or a reflection of the higher literacy rate of people from the South Eastern Nigeria [84.2 for women and 91.2 for men] ICF International, 2014).

Some specific questions about glaucoma were asked to ascertain the participants' level of awareness of glaucoma. Among these participants, 21 (10 males and 11 females) had heard about glaucoma; while 7 (1 male and 6 females) said that they had not heard about glaucoma. Of the 21 that had heard about glaucoma, only 7 (4 males and 3 females) had some awareness of the disease, while 14 had only heard the disease mentioned and never knew any other thing about it. For the purpose of this study, mere hearing about glaucoma was not regarded as being aware of the disease; though some studies considered otherwise. This will be commented on later. Only the 7 participants were regarded as having some level of awareness of glaucoma.

**Table 4.3 Educational level and Hearing about glaucoma. n=28**

Educational level	Heard about glaucoma		Total
	Not heard about glaucoma	Heard about glaucoma	
Primary	2	3	5
Secondary	2	5	7
Diploma	0	1	1
University degree and above	3	12	15
<b>Total</b>	<b>7</b>	<b>21</b>	<b>28</b>

Table 4.3 presents the participants hearing about glaucoma according to their educational levels. Of the 21 participants that had heard about the disease, 13 had tertiary education. Of the 7 participants that had some awareness about glaucoma, 5 had university degrees, one had diploma, while one had secondary education.

**Table 4.4 Place of Residence and Hearing about glaucoma. n=28**

Place of Residence	Heard about glaucoma		Total
	Not heard about glaucoma	Heard about glaucoma	
Urban	4	11	15
Rural	3	10	13
<b>Total</b>	<b>7</b>	<b>21</b>	<b>28</b>

Table 4.4 shows the distribution of the participants according to place of residence in relationship with hearing about glaucoma. Of the 15 participants living in the urban area, 11 had heard about glaucoma while, 4 had not. Out of the 13 participants living in the rural area, 10 had heard about the disease while 3 had not.

**Table 4.5 Occupation and Hearing about glaucoma. n=28**

Occupation	Heard about glaucoma		Total
	Not heard about glaucoma	Heard about glaucoma	
Civil servant	4	8	12
Trader	2	4	6
Student	0	3	3
Technician	1	2	3
Retired	0	2	2
Other	0	2	2
Total	7	21	28

In table 4.5 above, the civil servant was the group that had the greater number of participants that had heard about glaucoma; the next were the traders, then the students and the technicians.

In order to see whether there was any association between these informant characteristics, all the data for the 28 informants was entered into SPSS. Crosstabulations with chi-square tests were done for each of the variables (educational level, place of residence, gender and occupation) crossed with whether the person had ‘heard about glaucoma’ (yes/no). The results were checked for statistical significance (p-value  $\leq 0.05$  level) and Fisher’s exact test was also calculated, due to the small sample size, none of the chi-square tests showed actual significance, but in the cross-tabulation for gender x ‘heard about glaucoma’, there is some evidence of a trend towards male informants being more likely than female to confirm they had heard about

glaucoma [fig 4.6], judging by the differences between observed and expected counts and adjusted residuals. This was further discussed in the findings. The first three tables above [4.3-4.5] therefore provide a simple count of whether or not informants had heard of glaucoma according to their educational level, place of residence and occupation.

**Table 4.6 Chi Square Test Gender \* Heardglaucoma Crosstabulation**

Gender	Heardglaucoma	Yes	No	Total
Male	Count	10	1	11
	Expected count	8.3	2.8	11.0
	% within Gender	90.9%	9.1%	100.0%
	% within Heardglaucoma	47.6%	14.3%	39.3%
	Adjusted Residual	1.6	-1.6	
Female	Count	11	6	17
	Expected count	12.7	4.3	17.0
	% within Gender	64.7%	35.5%	100.0%
	% within Heardglaucoma	52.4%	85.7%	60.7%
	Adjusted Residual	-1.6	1.6	
Total	Count	21	7	28
	Expected count	21.0	7.0	28.0
	% within Gender	75%	25%	100.0%
	% within Heardglaucoma	100.0%	100.0%	100.0%

Chi-Square Test	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.446a	1	.118		
Continuity Correction b,	1.248	1	.264		
Likelihood Ratio	2.714	1	.099,		
Fisher's Exact Test				.191	.131
Linear-by-Linear Association	2.358	1	.125		
N of Valid Cases = 28					

#### **4.1 Analysis of key informants' qualitative data**

As already mentioned in the methodology chapter, the participants were given pseudonyms and all the transcripts were line-numbered for easy location of the excerpts which were extensively quoted throughout the analysis to make the voices of the participants heard. Throughout this analysis, effort was made to keep the research questions in mind. This helped to maintain a focus towards providing answers to these research questions thereby helping in achieving the aims and objectives of the study (Auerbach and Silverstein, 2003). Recall that the main research questions were:

- *How can people that live in Anambra State be helped to understand and avoid the risks associated with avoidable blindness due to glaucoma?*
- *How can the policy makers and service providers be influenced towards positive actions?*

The framework used for this analysis was interpretative phenomenological analysis (IPA). The aim of IPA is to explore in detail how participants are making sense of their personal and social world, and the main currency for an IPA study is the meanings that lived experiences, events, states hold for participants (Smith and Osborn, 2007). With IPA framework, the participants' views and actions were closely explored, understood and interpreted. This approach was considered appropriate for this study because it helped in identifying and understanding the reasons behind certain health behaviours; thus, exposing the areas where the population might need some assistance with their eye health problems. Hence, there is a need to understand their actions, and why they engaged in such. Some actions may appear bizarre and meaningless unless you understand the context. The people in Anambra State make use of different treatment options which have their roots in their traditional beliefs of disease causation. Thus, through the exploration and interpretation of their lived experiences, I was able to understand and appreciate their circumstances.



The very first steps in doing good qualitative analysis is to ensure that the interviews were transcribed properly, read over and over again before commencing the analysis. This was actually what I did. Having transcribed all the audio interviews, I became familiar with each of the interviews. Once all the interviews were transcribed, I read the transcripts carefully making first impression notes. I followed the Kleiman's (2004) recommendations as a guide through qualitative analysis which was compatible with the principles of IPA. He suggested that the researcher should:

- Read the interview transcript in its entirety in order to get a global sense of the whole.
- Read the interview transcripts a second time - this time more slowly - in order to divide (code) the data into meaningful sections or units.
- Integrate those sections/units (themes) that you have identified as having a similar focus or content and make sense of them.
- Subject your integrated meaningful sections/units to a process that is known as free imaginative variation.
- Elaborate on your findings - this includes descriptions of the essential meanings that were discovered through the process of free imaginative variation [see fig. 4.1].

The transcripts were coded and grouped into meaningful units which were eventually grouped into themes. These themes formed the parent codes from which other sub-themes emerged. Five apriori themes, eleven emergent themes and four super-emergent or super-ordinate themes were identified.

**Table 4.8 Outline of themes**

<b><i>Apriori themes</i></b> Health seeking behaviour Risk behaviours Glaucoma awareness Barriers to accessing eye services Improving eye health services
<b><i>Emergent themes</i></b> Participants engagement with conventional medical treatments. Participants engagement with non-conventional medical treatments. Traditional beliefs and healthcare practices. Prevalent glaucoma risk factors Blindness risk factors. No awareness of glaucoma. Some awareness of glaucoma. Challenges in accessing eye care services and Factors that influence who to consult when having a health problem. Towards better eye care services and Assessing government efforts.
<b><i>Supper-emergent themes</i></b> Poverty and health inequalities Fear and health inequalities Socio-cultural and environmental determinants of health A need for health promotion and eye health education

The apriori themes were those themes identified and picked from interview questions, they served as starting points for coding the interview transcripts. The emerging themes were new themes that emerged from the interview, while the super-emergent themes were produced by overlapping of two or more themes. They were themes that reflect major concepts that are common to most of the major themes. All the themes were colour-coded in the diagrams for easy identification. The apriori themes were coded brown, while the emergent and super-emergent themes were coded blue and green respectively.

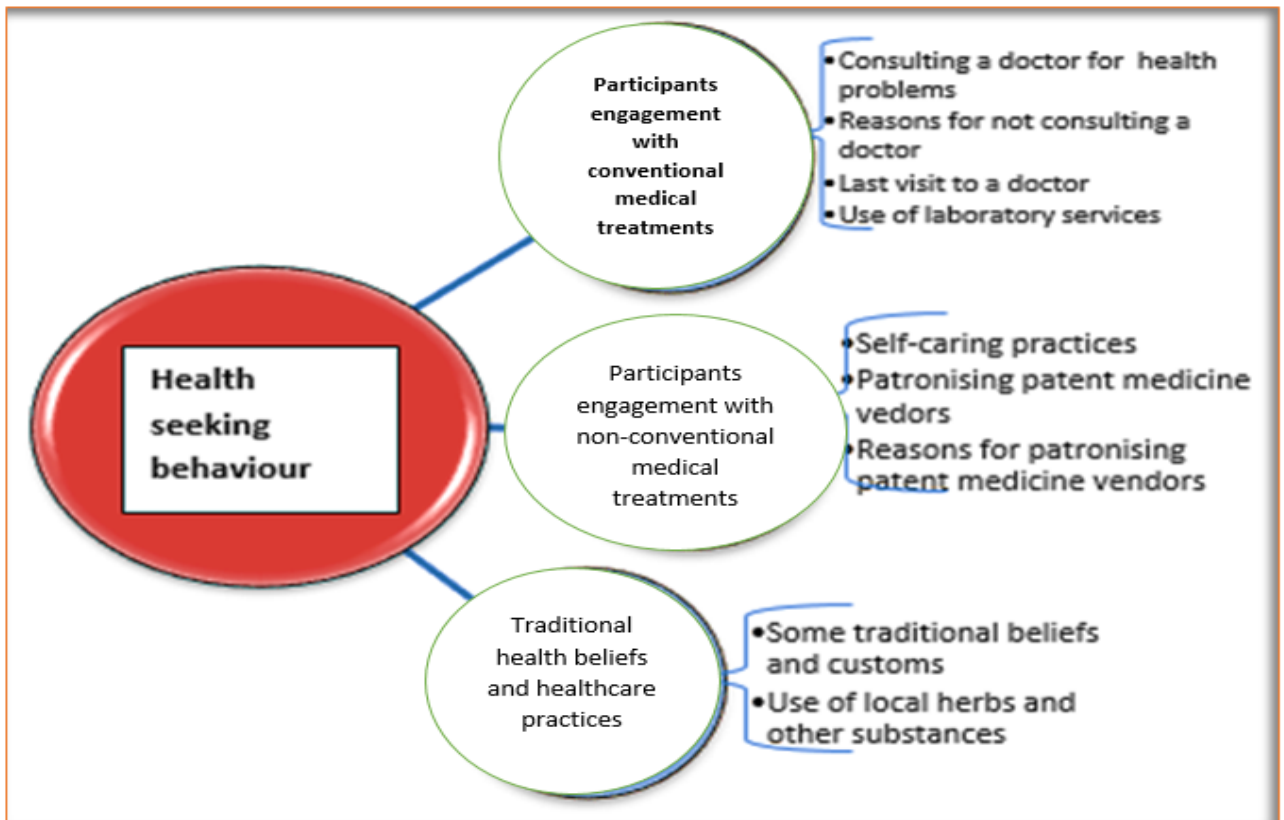
#### **4.2 Health seeking behaviours**

From health seeking behaviour emerged several sub-themes that were refined and reduced to produce three emergent themes:

- (1) Participants engagement with conventional medical treatments.

(2) Participants engagement with non-conventional medical treatments.

(3) Traditional beliefs and healthcare practices.



*Figure 4.1 Health-seeking behaviour.*

Responses from the study participants have shown the various ways and means through which the population seeks solutions to health issues. Some participants engage in conventional medical treatments such as consulting the right professionals for their health problems without minding the costs; some engage in non-conventional medical practices like patronising patent medicine vendors, while some apply traditional health beliefs and healthcare practices. The health seeking behaviour of this population is quite revealing, it shows what these people do, what they believed and who they consult when having any health problem.

#### **4.2.1 Participants' engagement with conventional medical treatments.**

Most participants reported they consult doctors while some never do. While some explore other options before going to the hospital for any illness, some go straight to the hospital to consult a doctor on discovering any symptom of illness. For instance, this participant said:

“I do normally go to the hospital straight” (Benjamin:10).

Surprisingly among those that consult doctors for their health problems, some of them have not consulted an eye doctor in their entire life. Their reason for this was that they believed that they did not have any eye problem.

#### **4.2.2 Participants' engagement with non-conventional medical practices**

Some of the participants use other non-conventional medical practices to take care of their health concerns. While some prescribe and buy their own medication, others consult patent medicine vendors for prescription and treatment.

*“When I am sick, depending on how I feel, I sometimes go to health centre. Sometimes if I feel it is malaria; because I know the symptoms I normally have when I have malaria, I do buy drugs [malaria medications]” (Maureen:5-7).*

Maureen has several choices she explores each time she has health problems. The choice of treatment depends on how severe the problem is. Other participants also spoke of their choices of treatment.

*“When am sick, like many other people here do, first we go to the patent medicine stores and when that one fails then you go to any closest hospital or health care centre or clinic around you and if that also fails to give you the relief you need, then is either you suggest to the doctor or the doctor will suggest to you to go for a laboratory test on it” (Ezenwata:5-8).*

From Ezenwata's response, it was clear that most of the rural dwellers first choice of treatment was the patent medicine vendors. People tend to consult them first, but when that fails, then, they may search for the next viable alternative. Though, for most of the participants, it was money and the type of sickness that determine who to consult in any situation. For someone

like Johnson, if he does not have money, he simply believes and accepts any type of medication that was given to him by the patent medicine vendors as he portrayed in his response below:

*“There is a type of sickness it might be and I will just take them [his children] to hospital if I have the money but if there is no money, I will just take them to a patent medicine dealer. The truth is that I am not familiar with any medications so any one they give me I will just take believing that they have given the right medication” (Johnson:4-7).*

Poverty plays a great role in the health seeking behaviours of this population. It makes them ignore some obvious risks that should have been ordinarily considered. Giving their reasons for patronising patent medicine vendors, most of the participants said that it was cheaper, flexible and easily accessible. With the patent medicine vendors, you have a choice of asking for any medication or to ask for their own prescription; with the professionals, you can only go by the professional’s advice. As a matter of fact, the patent medicine vendors can be found very easily in virtually every part of any town. They are readily available, and sometimes helpful. In fact, the villagers call them “doctors”.

Zenda while giving his reason for not consulting doctors for health problems expressed fears that the doctor must surely discover one problem or the other in the body whenever a person pays them a visit. He believes that no one is completely free of sickness. So, because of this fear, he was of the opinion that staying away from the doctor might save one some money. He might not be the only one holding this opinion. Ezenwata also reiterated this point when he retorted “why should I be looking for trouble where there is none?” These all revolve around poverty and un-affordability.

#### **4.2.3 Traditional health beliefs and health care practices.**

The population’s health seeking behaviour is partly rooted in their traditional beliefs. Some of the participants have spoken about different traditional methods of treatment of illness. Jecinta, Ogonna, Gerald and Zenda spoke about the use of herbs and traditional medicines for the

treatment of certain diseases. Anthony, Akuobi and Philip narrated how their relatives treated different eye diseases in the past. From their stories, the use of traditional methods for the treatment of eye diseases resulted to serious pains and more blindness than actual healing. Especially in situations where substances were applied directly into the eye.

*“They will get something like mmiri okwe (that is, something like milk from a plant), immediately you rub it in your eye it will pain you. It causes more harm. Though it will cure that thing, later it will cause the person what we call “anya mkporu ego” [cataract]” Anthony:78-79,87-88.*

Anthony was talking about the treatment of an eye itchy disease in a traditional way that eventually results to blindness due to cataract. Some traditional treatments for eye problems tend to cause more problem than the problem being treated.

Interestingly, Ezenwata, Fatima and Uju talked about traditional eye treatments that worked well for them. While Fatima and Uju talked about simple use of oral traditional medication, Ezenwata narrated how his mother (who was a traditional healer) usually extracts “worms” from the eyes of people with such problems.

The use and application of other noxious substances were reported by some participants. Some have applied urine, sugar solution, plant extracts, palm kernel water, Holy water and breast milk. Most importantly, the use of these substances was as a result of suggestions received from relatives and friends.

### 4.3 Risk behaviours



*Figure 4.2 Risk behaviours*

Out of **Risk behaviours theme** emerged:

- 1) Prevalent glaucoma risk factors and
- 2) Blindness risk factors.

Findings from the interviews identified several risk behaviours that were brought about due to the population's health seeking behaviour, level of awareness of causes of blindness, poverty and socio-cultural and environmental issues. From the risk behaviours theme emerged blindness risk factors and prevalent glaucoma risk factors.

#### 4.3.1 Blindness risk factors

The participants identified several blindness risk factors prevalent in this study population. These included the use of non-professionally prescribed medications, use of herbs and plant extracts as eye drops and rubbing the eye with dirty hands. This was actually identified by Agnes. People could do different things that could contaminate their hands, and due to the fact

that water is sometimes not readily available, they could shake other people's hands with the same dirty hands or even rub their eyes with it.

The participants further pointed out other blindness risk factors prevalent in the population. Among these were: eating habits, diets, consumption of kola nuts and alcohol, taking of snuff, cigarette smoking and second-hand smoke. Not wearing the proper protective equipment while doing certain jobs was also pointed out as a prevalent risk factor in this population.

*“Poor feeding, dirty environment, and sunshine can equally cause eye problem. Flies, insects might equally cause it like if you are riding a motorbike, dust or maybe accident can cause eye problem” (Carol:44-46).*

*“I understand that exposure of one's eye to strong breeze for example one who has a routine job like the okada riders (that is the commercial cyclists) some of them don't wear glasses; though I ride motorcycle and I don't use glasses (that is sun shade) too but am not a commercial cyclist” (Ezenwata:94-97).*

#### **4.3.2 Prevalent glaucoma risk factors**

Although most of the identified blindness risk factors these are equally glaucoma risk factors. Some do indulge in eye practices that could be classed as glaucoma risk factors without being aware of this. One of the participants responded in the paragraph below when she was asked if she was aware of some of the glaucoma risk factors.

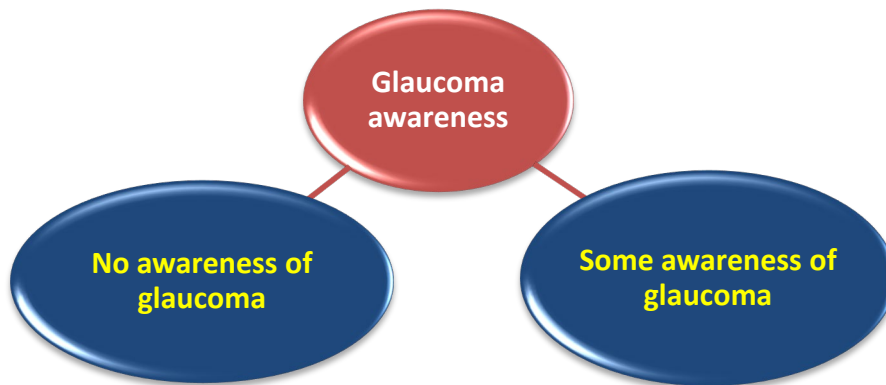
*Agnes: I do self-medication like going to the chemist and sometimes when it gets serious, I go to the hospital... Like when my child was having conjunctivitis, I used breast milk...*

*I can't just say but I know that when one uses some drugs without prescription on the eye could cause blindness and some people do use herbal medicines while some use urine or something like that on their eye sometimes those things could cause blindness (Agnes: 5-6, 17, 41-43).*

As already seen in this study, many people consult and use the services of the patent medicine vendors who are unlikely to consider effects of certain medications on glaucoma.



#### 4.4 Glaucoma awareness and its emergent themes



*Figure 4.3 Glaucoma awareness themes*

This theme produced two emergent themes:

- (1) No awareness of glaucoma.
- (2) Some awareness of glaucoma.

Considering the theme Glaucoma awareness, the analysis was based on the two emergent themes: (a) those with no awareness and (b) those with some awareness of the disease. The 28 participants interviewed for this study showed varied levels of awareness about the disease. Overall, 21 participants had heard about the disease while 7 participants had never heard about it.

##### **4.4.1 Some awareness of glaucoma**

Of the 21 that have heard about it, only 7 have some level of awareness of glaucoma. Describing their level of glaucoma awareness, some of the participants responded as follows to the question:

*Have you heard about the eye disease called glaucoma? If yes, what is your understanding of the disease?*

*“Yes I have heard about it and it is too dangerous...according to the information I have heard so far about glaucoma, they said it is dangerous that it causes blindness without symptoms” (Gerald:41;45-46).*

*“I know that glaucoma is an eye problem that causes blindness if not treated early, and that many people go blind because they didn’t know that they have it” (Fatima:47-48).*

*“I don’t really have any knowledge about the origin of the disease, but I have heard that it is a very dangerous disease and could easily render the person concerned blind” (Benjamin:33-34).*

These participants could not define what glaucoma is, but they have heard about it and were also aware that glaucoma is a dangerous eye disease that can cause blindness. For this reason, they were considered to have some awareness of the disease. These 7 participants could not link glaucoma to increased pressure in the eye or associate it with optic nerve head damage or visual fields defects. However, many other participants merely heard about glaucoma and were classed as having no awareness of glaucoma.

#### **4.4.2 No awareness of glaucoma**

About 50% (14) of the participants have heard about glaucoma without knowing what the disease is all about. They did not know both the risk factors and the extent of damage the disease could cause. They were therefore classified as having no awareness of glaucoma.

*“Yes, I use to hear about it, but I don’t know what it is, I don’t know how it works” (Anasta:19).*

*“I hear people discussing about it, but I have not seen it” (Carol:35).*

Regarding the issue of glaucoma awareness or knowledge, I considered that merely hearing the name of this particular eye condition could not have given the person the idea of what the disease condition is all about. Therefore, for the purpose of this analysis, merely having heard the name "glaucoma" mentioned was not regarded as being aware of this eye condition.

Awareness as defined by The Free Dictionary (2017)

"Having knowledge or discernment of something, attentive and well informed"

Considering the Phrase "well informed" One may be tempted to ask, "how well informed is a person that has just heard glaucoma mentioned by others without knowing anything further about the disease?" For instance, when Agnes was asked if she has heard about the eye condition, she said "yes", but when she was asked to give more information, she then said that she did not know more, that she only heard people mentioned it. Likewise, others, they only heard about the name of the disease which did not provide enough information to qualify them as having good knowledge of the disease.

*"I don't even know what glaucoma is, is just that sometimes people do mention it" (Agnes:85).*

*"Not really, I have heard about the disease called glaucoma, but I don't know anything about it" (Augusta:21-22).*

Some of the participants claimed to be aware of glaucoma whereas they do not. For instance, Philip and Zubby that claimed to have some knowledge about glaucoma later showed in their responses that they knew nothing about the disease.

*"Yes, because am into that line (meaning that he deals on eye glasses) I know the sickness" (Zubby:25-26).*

Zubby claimed to be aware of glaucoma simply because he deals on optical frames and will have heard the disease mentioned by eye doctors who patronize him. However, when he was asked to say more about glaucoma, he responded:

*"No, I don't have an idea because I am not a doctor" (Zubby:28).*

Philip also showed lack of awareness even though he had heard about the disease, he confused glaucoma with another eye disease.

*"Yes, I have heard about it" (Philip:27).*

When asked to tell more about the disease, he described completely a different eye condition.

*“The glaucoma is white in colour and it covers the black part of the eye and when you leave it there for so long then it will cover the whole of your eye and you can’t see with your eye again. That’s the idea I have about that” (Philip:30-32).*

What Philip described above was the appearance of a mature cataract, which is a different eye condition that comes with both signs and symptoms. Thus, having heard about glaucoma has stirred in some of the participants a false feeling of the knowledge of glaucoma. A person could have glaucoma while still feeling that his/her sight is okay. Ezenwata considered going for eye check when one sees very well as “looking for trouble where there was no trouble!”

*“It affects their sight and that is when they know that their sight is not normal but for me that my sight is normal, why will I go and be looking for problem while there is none around?” (Ezenwata:47-49).*

Considering awareness of glaucoma according to gender, men in this study were more aware of glaucoma than women. The number of women that said that they had not heard about glaucoma was higher than that of men (6 females:1 male). Though this sample is very small to make comparisons, the finding is consistent with that of similar studies carried out in Asia and Africa respectively by Thamos, 2012, and Tenkir and colleagues (2010).

Residing in the urban areas, being a civil servant and having a university degree had a direct effect on the level of glaucoma awareness. Those residing in urban areas may have better access to health care facilities and information media which both play great part in glaucoma awareness (Baker and Murdoch, 2008). The reverse is the case in rural areas where there is reduced presence of the media and health care facilities and hospitals. In addition, most health seminars are held in the large and developed cities than in the rural areas. This creates the opportunity for people to attend seminars and learn. Gerald while talking about how he heard about glaucoma gives an insight:

*“There was a program organised at Enugu by Vanessa the one speaking at Dream FM Enugu. So, there was a time she called people to come around for the program. I was not able to go there but according to the information I have heard so far about*

*glaucoma, they said it is dangerous that it causes blindness without symptoms” (Gerald:43-46).*

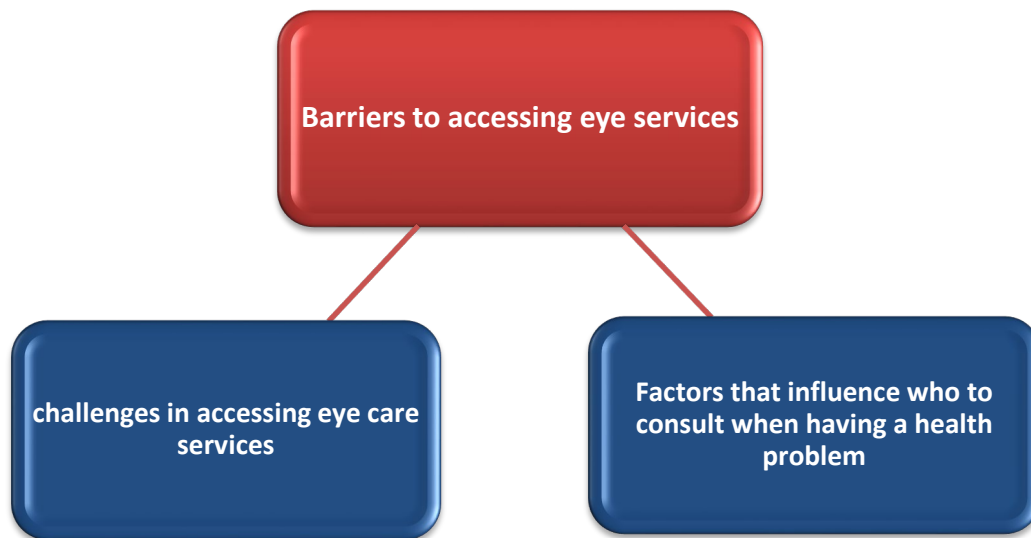
However, two participants from the rural areas complained of non-availability of such opportunity in their areas:

*“They have not even for one day organised a workshop or seminar about eye and its problems or what may cause eye problems” (Carol:88-89).*

*“If the government can build eye clinics, provide eye health services for the people and conduct something like eye seminar or workshop on eye I think that would be better for us” (Akuobi: 123-125).*

Thus, with lack of amenities and opportunities in the rural areas, the rate of awareness of any disease is expected to be higher in the urban areas and lower in the rural areas. Though some people might argue differently, lack of opportunities to attend health seminars always plays a role in determining the level of awareness of some diseases. Civil servants seemed to have a better knowledge of glaucoma than people in other profession. This could be due to the fact that majority of the civil servants involved in this study were particularly educated to the university level. Among the 7 participants that have some awareness of the disease, 6 of them had higher education. This finding is consistent with the studies of Altangerel et al 2009 and Sathyamangalam et al 2009 who reported higher level of glaucoma awareness among people with better education.

#### 4.5 Barriers to accessing eye services



*Figure 4.4 Barriers to accessing eye services.*

This theme produced two important emergent themes:

- (1) Challenges in accessing eye care services and
- (2) Factors that influence who to consult when having a health problem.

People in Anambra state are faced with different types of problems that prevent them from accessing proper eye care services. These barriers were categorized into two emergent themes:

- (1) challenges in accessing eye care services and
- (2) factors that influence who to consult when having a health issue.

##### **4.5.1 Challenges in accessing eye care services.**

The major challenges identified by the participants were poverty and inability to afford the cost for treatment. There are strings of protocols to be observed when a patient goes to consult a doctor or an eye expert. These include registration, paying for hospital card and series of tests that should be paid for by the individual. More also, all these tend to take a lot of time that

some patients tend not to like it. Sometimes people are not patient enough to go through the whole process. This was one of the reasons the participants gave for having preference for patent medicine vendors.

*“I think their drugs [medications] are cheaper, they don’t collect high consultation fees.... Is still money and protocols -that is, ‘the issue of come today come tomorrow’” (Hilda:89;97).*

Hilda was particularly concerned about ease of access and ability to afford payment for the treatment. Some participants also reported that some professionals are sometimes impatient to wait and hear out their complaints.

For cost of medications, all participants agreed the cost was prohibitive, so they are forced to search for cheaper options. Ogonna pointed this in her response.

*“Why we are doing it is that sometimes we think that going to the hospital is more expensive and we go to the cheaper and quick one” (Ogonna:22-23).*

The cost for medical treatment is borne by the individual involved, there is no government-sponsored healthcare in Nigeria; though the government hospitals may charge less money for treatment. However, most government hospitals that would have provided cheaper treatment are not functioning properly even though the government claims otherwise. Distance of hospitals from the rural population is equally a problem. Most of the hospitals and standard eye clinics are located in the heart of urban areas where they intend to make better money. Most health institutions where people could go for expert treatments are not found in the villages. In addition to the problem of distance, cost for transportation is also an important factor. So, these factors combine to pose great challenge to accessing eye care services in the state, even to the point of forcing some of them into trying to “endure the sickness” to see if it could heal without any treatment as pointed out by Johnson.

*When it gets to a stage that it is unbearable, we start looking for what to do about it like then when I was having that eye problem we sold some of our properties in order*

*to raise money before I go for that visit and if the problem is still manageable then the person could still be managing it until there is money (Johnson:84-87).*

#### **4.5.2 Factors that influence who to consult when having a health issue.**

In addition to challenges being faced by the population, the nature and type of eye problem determines whether the person should go straight to an expert or explore other treatment options. Most people though would not hesitate to consult an eye expert when they have serious eye problems. So, seriousness of the eye problem is often a trigger for consulting a professional. Some participants considered blindness as the worse sickness and will do everything within their power to avoid being victims. The outcome of the treatment also influences who people consult when they have an eye problem.

*Because sometimes when you will be asked to come for check-up, and you know that this may involve a huge amount of money again, you may decide not to go because your first visit didn't improve your problem. You many think that there is no need wasting your money for the second visit (Maureen:93-96).*

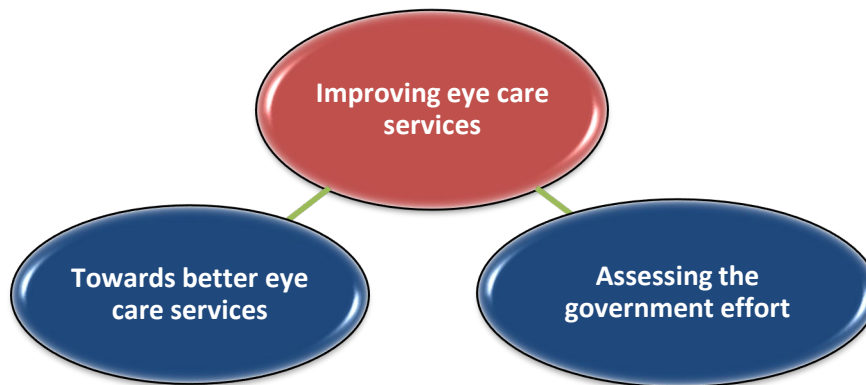
Good outcome encourages people to consult more and poor outcome results in less consultation. For instance, Maureen mentioned positive treatment outcome as a prompter to accepting the doctor's invitation for follow-up treatment, but Ezenwata was convinced that glaucoma is always known for poor treatment outcome; thus, it will be difficult to convince him to treat such disease if he had them.

*That is becoming very rampant especially in our area now and I learnt that it is very bad and in most cases incurable. You don't operate it because if you do it worsens it and the few people that I know that had it gradually became blind with their eye wide open but they have lost the whole sight (Ezenwata:39-42).*

For some of the participants, no matter how serious the eye problem is they fear to go for proper treatment because they cannot afford that.



## 4.6 Improving eye health services



*Figure 4.5 Improving eye care services themes.*

Findings from the interview point to the fact that eye services in this state need to be improved. Improving eye services was explored under two themes that emerged fig 4.6: (1) Towards better eye care services and (2) Assessing government efforts.

### 4.7.1 Towards better eye care services

The participants suggested several ways to improve eye services in the state, especially in the individual communities. Some of the ways identified by the participants are so good that they can be explored in places where cost for treatment has always been a challenge. Anthony made a very important point that needs to be encouraged. He said that inasmuch as money could be a problem in accessing good treatment for an illness, that there is this family and brotherly care and kindred fraternity that exists among people in his own community [they help themselves to solve health problems]. People tend to help each other especially when it comes to the issue of ill health.

*Yes, because in my family they help each other (Anthony:110).*

If many people could help each other to prevent going blind due avoidable circumstances, this will go a long way in reducing the incidence of avoidable blindness in this population. More also, the determination one has in getting a problem solved determines to an extent how far the person succeeds. This participant sounded determined to do all it takes to avoid preventable blindness.

*Ehmm... I want to be safe, if I treat it locally I might get blind, I prefer going to a doctor that is a specialist on it and the doctor will now recommend the type of treatment and give me the right drugs (Susan:138-140).*

When this question was asked:

***“What do you think that could work in the state as far as eye health is concerned?”***

Many of the participants voiced varying opinions. Some suggested subsidizing treatments for the population, provision of good medications, opening new eye treatment centres, provision of free treatment and eye health promotion seminars. It is understandably clear that money has been a problem militating against easy access to good eye health services in the state. This was evident in the responses of Maureen, Fatima, Ogonna, Benjamin; in her response, Carol said:

*“Hey! I want them [the government] to organise seminars, workshops, bring medicine, create awareness, tell people about likely things that can cause blindness. Educate people because people don’t know. Ignorance is very big disease. Even some of us that are educated don’t even give special attention to our eyes. So, it is very necessary they wake up from slumber and do something very very important patterning our eyes because if you don’t have your eyes, you can’t do anything” (Carol:91-95).*

#### **4.7.2 Assessing governments’ efforts in the state.**

As part of improving eye health services in the state, the participants were asked to assess and rate the state government’s efforts with regards to eye care in the state. Most of the participants rated the state government’s effort very poor. On the scale of 1-10, most of the participants gave a rating of 4 and below. This is an indication that the people are not satisfied with the efforts of the government as far as eye health service in the state is concerned.

*“Huh! In my assessment, they have done nothing! At least, within this Igbo-Ukwu, I am from Isuofia and I am residing at Igbo-Ukwu. They have not even for one day*

*organised a workshop or seminar about eye and its problems or what may cause eye problems” (Carol:87-89).*

*“I will say maybe that they are trying their best but that doesn’t mean that they are doing enough, they still need to put more efforts because I know so many people around me that are having eye problems but maybe money has been keeping them away from treating those eye problems but, I think that with the help of government that such people will be able to regain their sight as soon as possible” (Mercy:110-114).*

The people are expecting much more from the government, and in some ways feel disappointed with services they were getting.

*My rating of the [government effort] is 1 out of 10, I think one is even too much Hilda:116).*

The responses of the participants have shown that the government has made certain provisions to help but sabotage from government officials tend to destroy some important government programmes. This according to them was due to inadequate supervision and proper monitoring of projects; making it easy for some unscrupulous persons to high-jack and derail the programme from the original intention of the government.

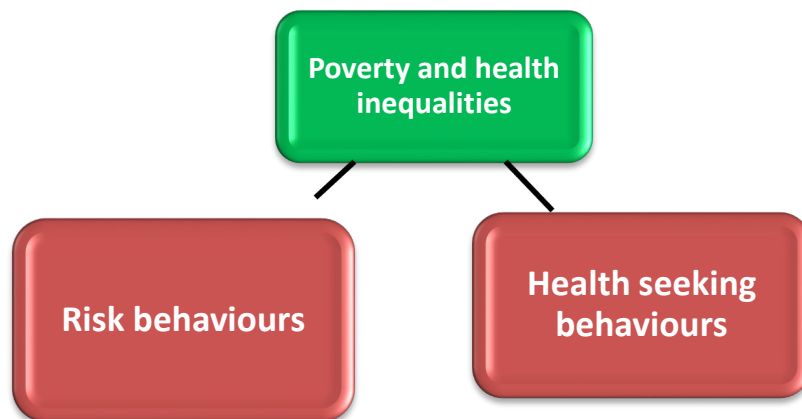
*The last time I visited home, I heard my grandparents complain about the one that they brought to village, that those that still have their eyes end up losing it that nothing good comes out from the campaign and that they always collect money from them (Hilda: 121-123).*

Additionally, most of the government hospitals are not properly and adequately equipped. In areas of policy, the government has not actually done well.

#### **4.7 Super-emergent themes:**

As already mentioned, some of the themes overlapped to produce super-emergent themes that cut across most of the themes. These themes are very relevant in understanding deeply the health seeking behaviour of this population and the reasons for such behaviours.

#### 4.7.1 Poverty and health inequalities



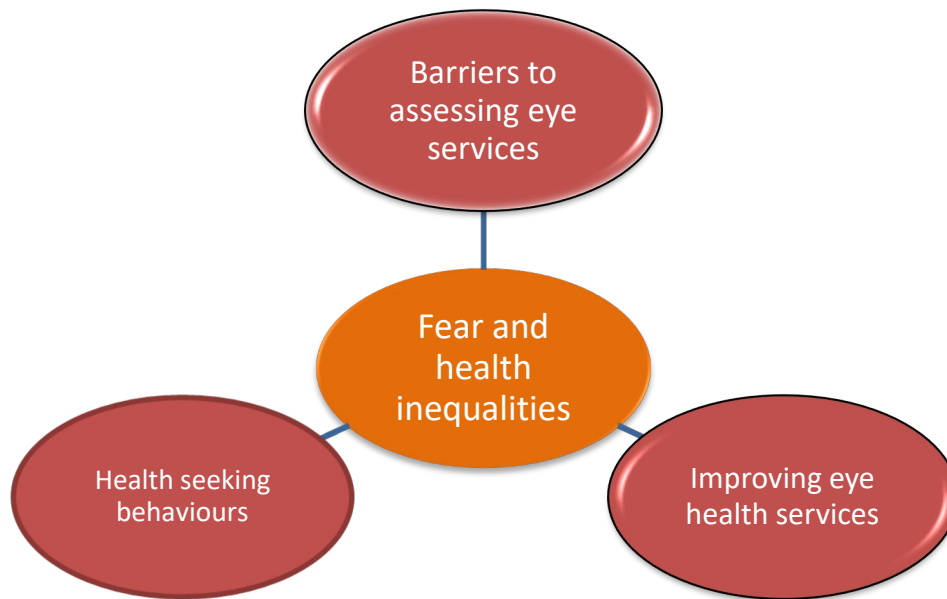
*Figure 4.6 Poverty and health inequalities.*

Poverty as a major determinant of health in this population was evident in the two themes: health seeking behaviour and risk behaviours, they overlapped to produce the super-emergent theme- poverty and health inequalities.

*“There is a type of sickness it might be and I will just take them [his children] to hospital if I have the money but if there is no money, I will just take them to a patent medicine dealer. The truth is that I am not familiar with any medications so any one they give me I will just take believing that they have given the right medication” (Johnson:4-7).*

Poverty as a major determinant of health was expressed by participants in various ways. Because of poverty, people make use of certain things which are free, and they can be found easily within their environment like firewood instead of gas cookers or electric stoves. Poverty is also the reason for adopting unhealthy treatment options in this population as evidenced in the previous sections of this chapter.

#### 4.7.2 Fear and health inequalities



**Figure 4.7 Fear and health inequalities**

Three major themes: barriers to accessing eye services, health seeking behaviour and improving eye health services jointly produced the super-emergent theme- fear and health inequalities [fig 4.7]. Fear has been expressed by the participants in different ways. Some participants are afraid of going to see an eye doctor for number of reasons. Some have the belief that the doctor must eventually find something wrong with them in order to exploit them.

Zenda expressed this fear when he said

*“You know that we the Africans or we the local people use to feel that if you carry yourself to a doctor that doctor must find a fault, that’s why we are afraid of going to a doctor” (Zenda:27-29).*

Zenda later acknowledged “that nobody is well”. This means that inasmuch as these people knew that they need the services of a medical expert, they are still discouraged by the fear of discovering a frightening health condition. The fear that the doctor would discover some problems could have been the reason Ezenwata believed that going for an eye check to him means looking for trouble where none exists, and he finds solace in just letting sleeping dog

lie. This is not the best approach as the familiar Nigerian saying “a stitch in time saves nine” provides a good health promotion metaphor that can be applied to eye problem. Some were afraid of the nature of the eye treatments, especially with regards to surgery. Some people fear poor outcome, hence, the lack of interest. Ezenwata speaking on glaucoma outcome said,

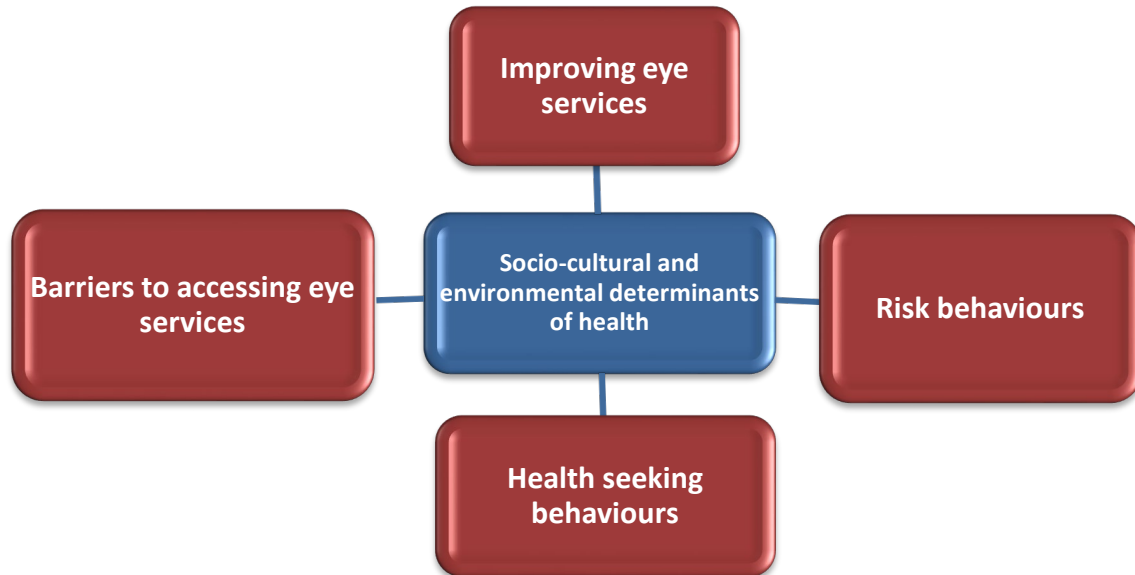
*That is becoming very rampant especially in our area now and I learnt that it is very bad and in most cases incurable. You don't operate it because if you do it worsens it and the few people that I know that had it gradually became blind with their eye wide open but they have lost the whole sight (Ezenwata:39-42).*

Egbert (2002) reported this in his findings in Ghana where the majority of the patients do not have confidence in the eye experts on grounds of incompetence.

Fear of exploitation was also expressed by another participant regarding the way some health workers sent to the rural areas to dispense free eye medications turned it into a money-making venture by selling the medications instead of giving them out free as instructed by the government. This derails the intended purpose of the project. Yet, another participant expressed fears about persecution or punishment by government authorities should he speak or express his opinions about how badly the government is doing in relation to eye health in the state.

*The last time I visited home, I heard my grandparents complain about the one that they brought to village, that those that still have their eyes end up losing it that nothing good comes out from the campaign and that they always collect money from them (Hilda:121-123).*

### 4.7.3 Socio-cultural and environmental determinants of health



*Figure 4.8 Socio-cultural and environmental determinants of health.*

From overlapping of four apriori themes emerged the super theme- socio-cultural and environmental determinants of health. This theme explores how the population’s socio-cultural values, health beliefs and environmental conditions within their given geographical confines influence and impact on their health. Four apriori themes clearly showed that the study population’s environments, social status and cultural beliefs determine their health status to a great extent.

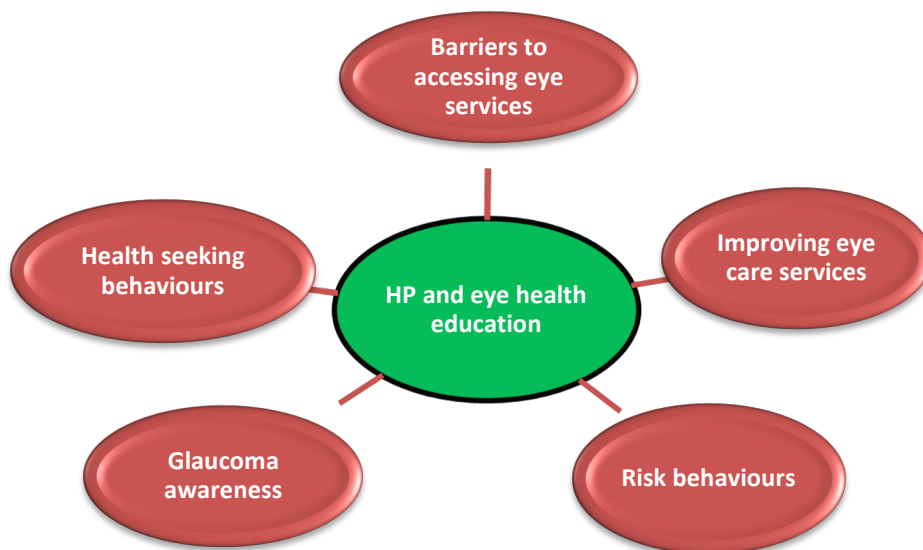
*That reminds me, there is this woman I went to when I was having eye problem I have forgotten her name but there is this liquid stuff that she dropped into my eye. It was so very painful that I was unconscious for some minutes and I thought that I will be blind (Johnson:69-71).*

The participant above described how some forms of eye problems were treated in his community. Because of people’s belief in their culture, it is sometimes easy to persuade someone to use traditional means of disease treatment, especially when the person cannot afford conventional treatment. As already seen, some of their cultural beliefs are actually

blindness risk factors, and some of these risk behaviours are embarked upon partly due to barriers in accessing good health care services, in the course of time, some of these behaviours begin to be adopted as normal or acceptable ways of treatment for health issues. As part of environmental challenges, transport to places where hospitals are located is sometimes a problem due to prohibitive costs and poor road network. Ogonna, below pointed that monetary problem is the main reason why they patronize alternative sources.

*“Why we are doing it is that sometimes we think that going to the hospital is more expensive and we go to the cheaper and quick one” (Ogonna:22-23).*

#### 4.7.4 A need for health promotion and Eye health education



**Figure 4.9 Health promotion and Eye health education.**

The five apriori themes overlapped to produce another important emergent theme- A need for health promotion and eye health education. Evidence from the five apriori themes indicates that there is a great need for health promotion with particular emphasis on eye health education among this population. This participant acknowledged that some practices are very dangerous to the eye.



*Like people that put urine in their eyes, I believe that this was an invitation for an eye problem (Fatima:57-58).*

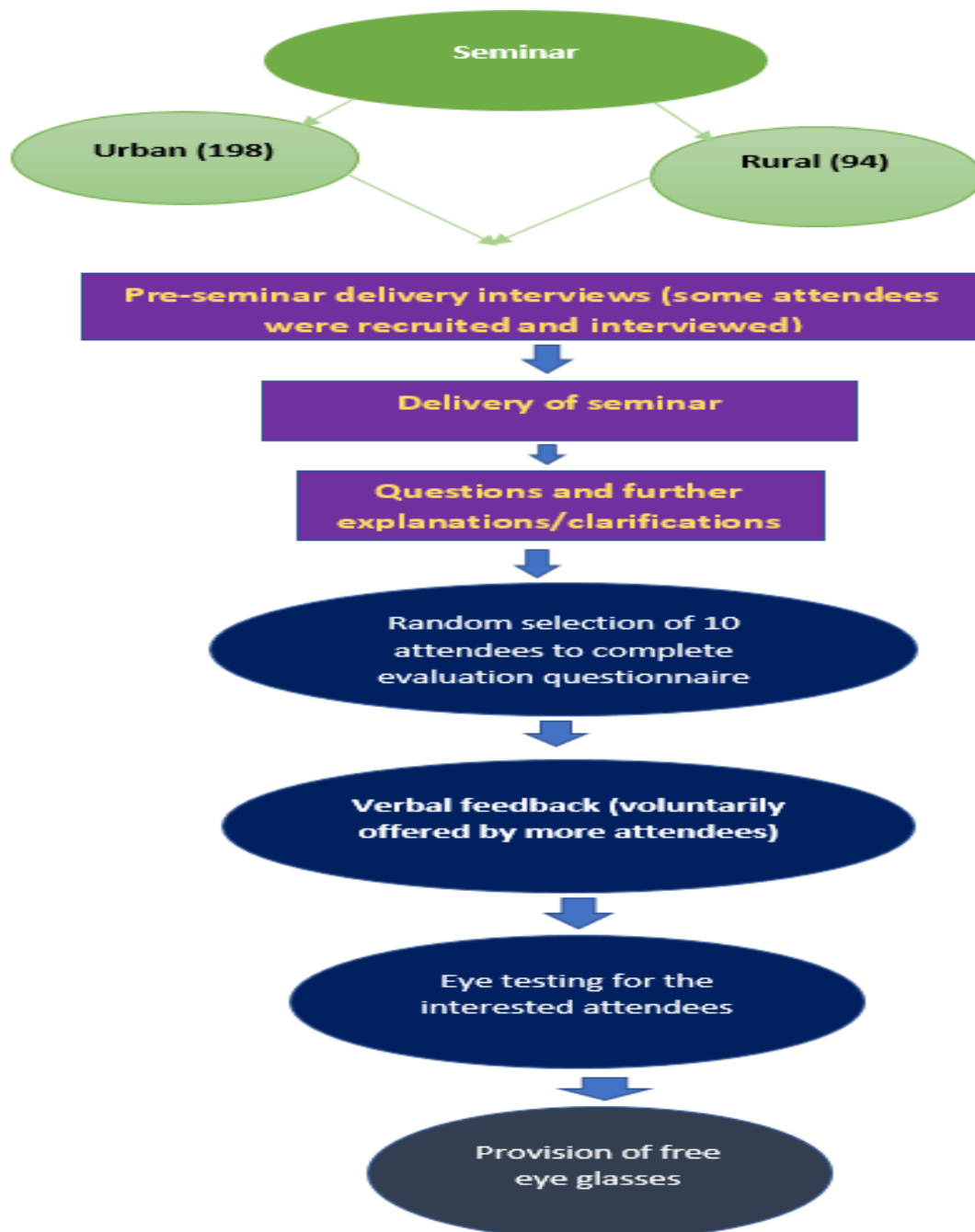
Having critically examined these themes, it is evident that there is a need to educate the people about the causes of blindness, especially that of glaucoma which often develops without warnings, and the risk factors emphasising how these risk factors could be managed to prevent blindness. Considering the health seeking behaviours, risk behaviours, level of glaucoma awareness, it is evident that there are some obvious gaps to fill if the fight against avoidable blindness in the state is to be won. One of the participants, Carol responded:

*Yes, my message to the government is that they should listen to the people's problems and cries, and should think about the people they govern, looking at their problems especially in terms of eye problems, and finding a way of assisting them, creating awareness about eye problems and how lifestyles could contribute to this. This will go a long way in preventing blindness (Fatima:113-117).*

#### **4.8 Analysis of the health education seminar**

As already mentioned in the previous chapter, the health education seminar was delivered in two centres, and at the end of each of the seminar, 10 attendees were randomly selected from each of the two centres to evaluate the health seminar delivered to them. Evaluation could be done to assess the process, the outcome or the impact of a programme (CDC, 2014). In this case, the outcome of the health seminar was the aspect that was evaluated. The essence was to assess how useful the seminar was to the population and the lessons that would help in better organisation of such seminars in future. All the questionnaires were completed and returned. Reading through all returned questionnaires revealed almost similar contents expressed in different ways. Attendees expressed their personal judgement about how good or poor the health seminar was. Unfortunately, all the questionnaires got lost due to moving home twice within the period of this study. The only two questionnaires available for this analysis were those ones that were retained in the computer as samples of the overall feedback from all the

questionnaires. One questionnaire was considered to contain a bit more of positive feedback while, the other contains a bit more of negative feedback.



**Figure 4.10 Processes of seminar delivery and analysis of data**

Fig. 4.10 represents the processes of the seminar delivery already discussed in the previous chapter. Some attendees were recruited and interviewed using the chosen inclusion and exclusion criteria prior to the delivery of the health seminar.

Evaluating the health seminar, some important points raised in the questionnaire were rated using the Likert's scale and a provision to make additional overall assessment in the respondents' own words. The points raised were quite interesting and revealing, and some of these were discussed around the following themes:

### **The relevance of the health education seminar**

The relevance of the seminar was rated as "very good" on the Likert's scale by the two attendees in terms of how helpful the seminar was. Regarding what they had learnt from the seminar, one attendee left it vacant; while the other attendee said that the lesson learnt was about regular eye check and modified lifestyle in relation to what people eat and drink. In relation to how the seminar would boost the information about blindness prevention, both agreed that the seminar was excellent. This was in agreement with findings from the data collected from the attendees during the interview. People did express the need for eye health education and blindness awareness programmes in different communities. Two of the policy makers also made an oral evaluation as already discussed in the report about the seminar, expressing their gratitude and the usefulness of the seminar.

### **The seminar contents and the delivery**

The seminar contents and delivery were both rated as "good" by one attendee, while the other rated them "excellent" and "good" respectively. In terms of overall rating of the seminar and how the speaker handled the attendees' questions, both points were rated as "very good" by one attendee; while the other rated both as "excellent". People make sense of events according to individual capacities to understand issues. Since these individuals were in dire need of such programme, the tendency to speak well about the programme may be a source of encouragement to the researcher for repeating it in the future.

### **Time as a factor**

Regarding timing, the participants had different opinions too; while one rated the timing as “poor”, the other participant rated it as “good”. Time has been an issue in this population as many people may have several things competing for their time. This may explain why many use the patent medicine vendors as this is always a quicker method of accessing health services. However, there was an issue with time as the seminar did not actually start on time due to the need to complete the pre-seminar interviews with some of the attendees.

### **The attendance**

The programme was well attended by 98 attendees in the rural centre, and 198 attendees in the urban centre. The reason for better attendance in the urban centre could be as a result of people coming to work in the city from different locations and towns. Furthermore, the dissemination of information about the programme was more effective in the urban area than in the rural area due to better and regular supply of electricity that enabled them to access news and information from both radio and television.

### **Verbal feedback**

Many of the attendees gave verbal feedback, expressing their satisfaction with the entire programme. Overall, they were happy that such programme was organised for them, they expressed appreciation about the free glasses given to them and wished that such programme could be organised for them from time to time.

## Chapter Five: Analysis of Professional Service Providers' interviews

As already stated, a total of eight Service Providers (qualified professionals) were interviewed; analysis of the interview produced five apriori themes 16 emergent and two super-emergent themes. These themes were illustrated and analysed below. It should be noted that the same analytical framework was used for the analysis of all the interviews in this study.

**Table 5.1 Outlines of themes**

<b><i>Apriori themes</i></b> Health seeking behaviour Risk behaviours Glaucoma awareness and patient education Barriers to accessing eye services Improving eye health services
<b><i>Emergent themes</i></b> Treatment options Consulting patent medicine vendors Determinants of who to consult. Poverty and high cost of treatment Nearness and availability of service Glaucoma policies and treatment guidelines Detecting and managing glaucoma Level of practitioner's experience and the ability to make referral on time Necessary diagnostic equipment Concept of good practice Non-compliance issues Fake products and fake drugs Implicating the patent medicine vendors Glaucoma policies and treatment guidelines Service Providers' efforts towards better eye care services in the state Governments' efforts towards better eye services in the state
<b><i>Supper-emergent themes</i></b> Avoidable blindness Non-uniformity of practice

## 5.1 Health-seeking behaviour

The Service Providers expressed their opinions regarding the population's attitude towards searching for good eye health. This information collaborates with the information from both the service users and the policy makers to paint a clearer picture of the target's population's actual health-seeking behaviour. The population has different ways through which it seeks for solution to its health issues. Its approach to health solution is seen as undesirable by most of the service providers, although there is some recognition of the challenges faced by the public.

*“Yea, the health seeking behaviour of people in Anambra state is very poor compared with what we see in advance countries and especially in eye health; their behaviour towards the general health of their eyes have been very poor. They don't usually seek medical care as regards to their eyes. Sometimes they run to patent medicine dealers and other quacks without coming for routine eye examinations and routine checks, and because of that so many of our people in Anambra State have been losing their sights in one way or the other that contradict the treatment options that they are supposed to receive from the primary eye health providers” (Dr Babao:4-11).*

*“Ok well, in Anambra State people, there is tendency for average Anambranian to neglect his eye health until when it is in a later stage (that is in terms of a stage whereby the vision or sight or the condition of the eye is in a deplorable state” (Dr.Yugos: 4-6).*

One service provider, Dr Mike rates the population's health-seeking behaviour as “good” but his follow up statement contradicts this rating. He points that the people begin with self-medication and consultation with non-professionals and may come to consult the eye doctors only when they failed to get solution to their problem. This is really a problem and may seem inappropriate to the professionals, but the people have some reasons for trying other methods. Dr Smith in his opinion maintains that the health-seeking behaviour depends on where the person is residing. People resident in certain areas go for eye professionals anytime they have problem; while people from certain areas treat such problems with less seriousness.

In analysing the service providers' views on the health-seeking behaviour of this population, some important issues emerged. These are treated under the following emergent themes: treatment options, consulting patent medicine vendors and determinants of who to consult.

### **5.1.1 Treatment options**

This population according to the opinions of the service providers has several treatment options that may have contributed to poor health-seeking behaviour among them. These options swing from self-medication, traditional practices, consulting traditional healers and consulting spiritualists; others include patronising patent medicine vendors and consulting the professionals. Being faced with this variety of treatment choices could sometimes pose a problem of identifying the right treatment approach to take when one has an eye problem.

*“With regards to eye health, I think especially people from the remote areas, initially they like doing self-medication. Most times you see somebody giving breast milk, putting breast milk into his eye, sometimes you see them making concoction out of roots and herbs, and sometimes you even see them putting early morning urine into their eyes and when the case gets worst you see them looking for an eye doctor” (Dr. Rita:5-9).*

The concerns raised by Dr Rita above confirms findings from the key informants' interviews already seen in the previous chapter. Most people practise self-medication, especially with traditional medicines. Sometimes, the non-availability of hospitals and experts within an immediate environment may contribute to people making use of other available alternatives; this is understandably very clear in this population. Most of the eye experts live and practise in the urban areas, making it a bit difficult for the rural dwellers to reach them easily. Furthermore, people tend to try out certain remedies due to recommendations and suggestions by friends and relatives. Most often, they put across these suggestions and encourage friends and relatives to accept them. Sometimes these remedies work and sometimes, they fail, causing more harm. Eczemata's mother used certain herbs to treat eye problems in her days but nobody knew how it may have contributed to either sight improvement or blindness. However, people that have

eye problems around the area may consider her as the saviour of their time, because she might be readily available and relatively cheap too. However, the use of non-scientifically refined traditional medicines is still not recommended.

### **5.1.2 Determinants of who to consult**

In chapter four, three major things were identified as the major determinants of who to consult when one has an eye problem in the state. The first one is inability to pay for standard treatment; secondly, inability to access certain treatment locally and thirdly, lack of essential diagnostic equipment. People that could not either afford to pay for the treatment or people that could not access the treatment tend to resort to any alternative options available to them; while the rich ones that could afford proper treatment are discouraged by lack of essential diagnostic equipment; thus, they travel abroad for better treatment.

*“Some group of people due to poverty fail to go and see the primary eye healthcare provider even when the problem is so severe; because of economic background they cannot afford requisites- drugs and eye glasses that could help them. Then on the other group are the group I may call the bourgeoisie. Most of the bourgeoisie may find it difficult to meet the primary eye health providers; most of them prefer to go to abroad because of one reason or the other” (Dr. Owelle: 6-10).*

### **5.1.3 Consulting patent medicine vendors**

Patent medicine vendors have been the most regularly consulted groups in this population’s search for solutions to their health problems. Most of the service providers that describe them with different grades of pronouns point to this. For instance; some refer to them as “quacks, patent medicine dealers, chemists, local doctors, road side drug sellers” etc. However, no matter how this group of health care auxiliaries are regarded and described, they are still as helpful by the population. The service providers also acknowledged that the population tend to seek the patent medicine vendors because they are often available to assist them whenever they



have the need. Two major reasons why the population consult patent medicine vendors are: poverty and availability of service.

*“Ok, that has been so fine, but we have some challenges; people needed to access some professionals but because of the poverty level in the state they would resort to “local doctors”, if they didn’t find remedy they will now move up to the professionals in the state” (Dr Sam: 4-6).*

*“Yea people that have problems in the eyes especially in the rural areas, they don’t have good access to eye care and whenever they have issues in the eyes instead of may be going to the eye care practitioners most of them do resort to self-medication, ...and most times also they approach some of these chemists, quacks” (Dr Okafor: 4-9).*

Reacting to the issue of poverty and affordability of proper treatment, Dr Okafor argues that quality things and services are usually costly and not always very easy to procure. He cited an axiom that says, “If education is very costly, then go for ignorance.” The fact remains; if people could not afford the proper treatment, they do not fold their hands to die in pains but search for other options that may be available and affordable, even if it is only palliative. It is pertinent that the Service Providers should design proper ways of assisting this population instead of heaping blames on them.

## **5.2 Barriers to accessing good eye care services**

It was obvious that this population are faced with series of challenges that prevent them from easily accessing good eye care services in the state; this was acknowledged by the service providers. Poverty, high cost of treatment, nearness and availability of services are among the prominent challenges this population faces. All these issues were discussed in detail in chapter four.

### **5.2.1 Poverty and high cost of treatment**

Procuring good eye care services in the state has been cited both by the key informants and the professional service providers to be very costly. The cost is even much higher when treating eye conditions such as glaucoma and without taking the right action at the proper time,

blindness is often inevitable. The correct diagnosis is a very essential phase in avoiding blindness due to glaucoma. Correct glaucoma diagnosis entails carrying out several tests which may be costly; while right diagnosis is very costly. However, haphazard examination and wrong diagnosis is potentially an open invitation to blindness.

*“no no no they do pay a token; you know all these equipment, and they involve money to procure them.... eee the consultation is one thousand Naira then couples with the test I will run making it up six to seven thousand Naira” (Dr Owelle: 80-81; 101-102).*

Glaucoma detection and diagnosis involves series of tests which incur a cost for each test done as noted above. The amount of money required for glaucoma tests in an eye clinic in the state is a major hurdle that most service users find very difficult to jump. It is often higher than what an average service user could conveniently afford. While some doctors consider this challenging for the service users, some consider it as “paying a token”

*“Yea we charge money to run these tests; for instance the ophthalmoscope forms part of the routine eye examination in the clinic and to do that there is no charge attached to that, then to do the pressure test using the non-contact tonometer, we charge a fee ranging from 1000-3000 Naira (on average 2000 Naira) then the central visual field test using the auto-perimeter we charge 4000 Naira for that test”. (Dr Okafor: 113-117).*

Considering the estimated costs for tests and consultation, as an insider, I can confirm that the amount is quite a large lump sum for the service user to pay before thinking of payment for the required medication or other essentials. This explains why the population has preference for patent medicine dealers that provide them with easy and cheap unregulated services which may have poor or even dangerous results; though this is an open invitation to blindness. Furthermore, high costs for treatment and financial difficulties have been the major reason behind non-compliance with medication. Some patients may probably refuse to go for a follow up treatment due to the cost involved. Dr Babao testifies to this fact.

*“Yes, yes, finance has been a major problem and non-compliance. You know, some of these patients that have this problem they don’t have enough finance to buy these drugs e know these drugs are very expensive; like here in Nigeria, here in Anambra, a bottle of Xalathan goes for like 3000-4000 naira and some of these patients are farmers who cannot even afford it (drugs that will last for like just two weeks and is off). So, finance is a major problem here in Anambra State in the management of glaucoma” (Dr Babao: 98-103).*

Some of the service providers have devised some ways of assisting the service users make good use of the available services. This will be considered later in the course of this analysis.

### **5.2.2 Nearness and availability of service**

Findings regarding this emergent theme confirm the findings reported in chapter four regarding the challenges faced by the population, especially those living in the rural areas to access services. Some of the essential eye care services are not usually available in rural areas where the local people that need them may be able to access them more easily. This must have been a great challenge to the rural populace and could be a compelling factor for the search for optional alternatives.

*“Yea people that have problems in the eyes especially in the rural areas, they don’t have good access to eye care” (Dr Okafor:4-5).*

Most services are more available in the cities than in the rural areas. Nearness of services at locations where those that need them reside makes it easily accessible. Due to challenging logistics, many people might not be prepared to travel far in search for cure; rather may decide to utilise what is available within their communities. More also, the roads are bad and transport quite expensive; thus, some people prefer not to travel very far for treatments especially where repeated visits are required.

### **5.3 Risk behaviours**

Several risk behaviours were identified by the service providers interviewed. Some of these include unhealthy lifestyles involving what people eat, drink or smoke.

*“Most of the times they don't usually know have the proper knowledge of hygiene or a proper knowledge of the eye health; you see sometimes they go around shaking people's hands and after that they would rub their eyes with the unwashed hands; at the end of the day their eyes are contaminated. Sometimes people smoke recklessly, and even those that don't smoke but stay where smokers are and inhale those dangerous smokes, and by the end of the day they are prone to retinal problems” (Dr Babao:36-41).*

Handshake as a custom of the people has been identified as one of the focal points of eye infection in the population. It was pointed that people go about shaking hands and would at some point use the dirty hands to rub their eyes when they have an irritation; thus, inoculating the eye with some pathogens, resulting to eye infections.

There is strong evidence that many people in the state are not yet aware of how second-hand smoke could cause damage to their eyes (Lois et al., 2008). This could be one of the reasons people still smoke cigarettes in crowded places, exposing indifferent non-smokers to second-hand smoke. As already seen in the literature review, smoking and second-hand smoke can cause serious damage to a person's eyes. Other identified risk behaviours in the state are late presentation of eye problems, and mismanagement of long-standing eye diseases like uveitis.

*“We have some other glaucoma that come because of the mismanagement or some of the cases that people with long-standing uveitis; we know that are not properly managed and treated and at the end of the day, the inflammatory exudates block up the drainage angle” (Dr Babao: 67-70).*

The service providers pointed that by the time some patients present at the eye clinic or hospital for treatment, the condition is always too bad to be remedied. In cases of long-standing uveitis, the inflammatory exudates from the uveal tract tend to clog the drainage channel- the trabecular meshwork that drains the aqueous humour. Once this is blocked, pressure will start to build inside the eye providing a fertile ground for the development of glaucoma that may eventually lead to blindness if not properly managed.

Anambra State is in the heart of Igbo land and is preoccupied with important Igbo tradition like presenting visitors with kolanuts, just the same way people in the UK would offer tea or coffee to visitors in their houses.

*“Well, in the State, Anambra, the prevalence of eye conditions like cataract and glaucoma is on the increase, then coming to the behavioural risk factor especially our environment; the environment we live in is very dusty; the pollutions and pollutants in the environment pose a lot of health risk to the people, and it also goes a long way to causing infections. Then on the behavioural aspect; like smoking, intake of alcohol and then mostly in villages where the practice of eh kola nut; kola nut has form part of our tradition and culture so people in the rural areas mostly see it as a way of life. So this type of behavioural attitude and cultural inclination of people to an extent affects the eyes because it leads to some debilitating eye conditions like glaucoma which I have mentioned is one of the prevalent eye conditions in the state” (Dr Okafor:35-44).*

Eating of kola-nuts as part of the people’s tradition could have an effect on the eye pressure due to caffeine content; thereby predisposing the person concerned to glaucoma. However, this depends on the amount of kolanut and frequency of such consumption. Failure to use protective eye goggles in a dusty environment such as in Anambra State is another risk behaviour that the people are yet to appreciate. The environment is dry and dusty such that the dusts and other pollutants swept into the air tend to enter the people’s eyes; this can cause infections, inflammations and other eye conditions.

Dr Owelle also noted some traditional games like wrestling that could cause people to injure their eyes during such games. This in turn could give rise to trauma-induced cataract.

#### **5.4 Glaucoma awareness and patient education**

As discussed in chapter four, the level of glaucoma awareness is generally poor in the state. Many people do not know much about glaucoma or what causes it. According to the service providers, the closest the people could get to the causes of glaucoma was that it could be hereditary; this might be due to the fact that eye problems tend to be a recurrent issue in some

families. Some people even believe that glaucoma could be as a result of ancestral curses.

Acting on these beliefs could cause a complete detour from the right treatment of glaucoma.

*“The patients sometimes think that it is a hereditary problem, sometimes they think is man-made; may be as a result of some ancestral curse and some other beliefs we have here; sometimes they feel that it is out of their reckless habit, may be drinking and smoking that brings about these problems” (Dr Babao:50-53).*

*“Some of them cannot say for sure, some of them don’t even know that they have glaucoma until the last minute. So, that is why it is called “the thief of sight” (Dr Sam:63-64).*

According to the service providers who participated in this study, many people also believe that eye conditions and blindness is the handiwork of their enemies, who must have inflicted such problems on them through occultic or magical means. Many people that have eye problems such as glaucoma sometimes think that it must have been caused by occultic manipulations of evil-minded people that do not want them to see the light of the day; this is the worrying aspect of the problem. Due to this belief, many instead of seeking and utilising conventional medical treatment go in search for spiritual and traditional healing. Experience has shown that most of these spiritualists and traditional healers may not ask them to go for conventional medical treatment rather they will continue until the situation is very bad and probably irremediable.

*“They will normally believe first that it is witchcraft and after some time they will come to realise that that could not be witchcraft and by that time it will be late before they now consult professionals” (Dr Mike:19-21).*

*“So, a lot of them think it is errm spiritual; a lot of my people here believe that glaucoma is as a result of witchcraft” (Dr Owelle:60-61).*

*“To a lay man who has not had proper information or knowledge about the condition they see it as an evil attack. Most people they tell you “is the enemy one place or the other that is attacking them spiritually” or thereabout not knowing that it is a condition that is coming as a pathology in their eyes. So, their first thought will be like ah! Somebody is poisoning them, somebody is attacking them spiritually but with proper education and information the patient comes to know that this is a condition of the eyes not a spiritual attack” (Dr Okafor:77-82)*

Belief in spiritual attacks and demonic manipulation is widespread in Anambra State due to increased Pentecostalism. Most people attribute different sickness to either demonic attack or evil manipulation of the enemy. Believing that glaucoma is due to the handiwork of one's enemy or as a result of demonic attack portrays ignorance of the risk factors and possible causes of glaucoma. Evidently, educating the people about eye diseases appears to be of particular relevance to this population. Some service providers stated that they explain why some tests are required and the result of the tests to the patients each time they have such tests. It is suggested that this will go a long way in educating the patients and also encourage active participation and cooperation in avoiding and preventing blindness.

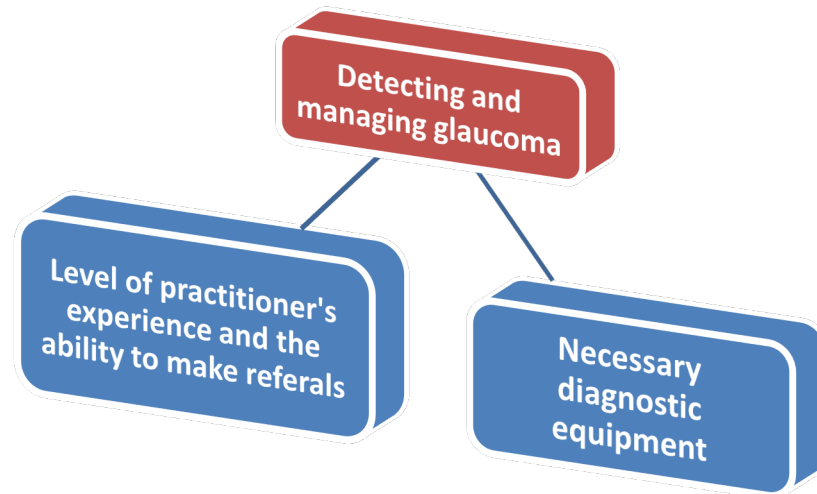
*“I think it is on individual bases, personally, I explain the whole test I run on patient and whatever my diagnosis is, and educate the patient because I think that is primarily, the basic thing we should do as primary eye health providers is to educate the patients on the basic things they should do and educate them on the need for a routine examination and they should know the state of their eyes any time they visit the clinic but I think is only on individual bases, but I know that a whole lot of other professionals sometimes don't do that” (Dr Babao:17-22).*

Many of the practitioners interviewed made valuable point about this all-important issue- “patient education”. Patient education is not just about the importance of routine eye checks, but also about the effect of unhealthy lifestyle, dangerous practices, implications of non-compliance with medications and clarification of certain beliefs and misconceptions. For instance, the belief that an enemy could inflict glaucoma on someone through witchcraft and magical means could be refuted, and the real causes and risks explained. This could go a long way in preventing people with glaucoma from seeking and utilising wrong and dangerous treatment options.

### **5.5 Detecting and managing glaucoma**

Two things are very important for effective glaucoma management, and these are: early detection, correct diagnosis and effective management. To achieve this, the level of the

practitioner's experience and ability to make referrals at the right time matters a lot and secondly is the availability of the necessary diagnostic equipment.



**Figure 2.1 Detecting and managing glaucoma.**

### **5.5.1 Necessary diagnostic equipment**

For glaucoma to be correctly diagnosed, there must be proper equipment for running the necessary tests. Some of this equipment may include: an ophthalmoscope, slit-lamp, tonometer, visual field analyser, gonioscope and pachymeter. According to some of the practitioners, most of this equipment are very expensive to purchase and maintain, resulting to most of the practitioners making use of some basic ones rather than the entire diagnostic set of equipment.

*“We use three basic equipment; we use the ophthalmoscope, we also use the Peckings hand-held tonometer and we also use the visual field analyser” (Dr Mike:62-63).*

*“Errm we have our ophthalmoscope, we have our tonometer non-contact but for the visual field analyser which is expensive...” (Dr Sam:57-58).*

*“Ok, when it comes to equipment, e know this place is not like the western world where you use all these sophisticated equipment but we try our best. We use the ophthalmoscope to view the fundal background to check the optic disc to know if it is cupped or not. E know....we use the tonometer, we have got the Scholtz's; e know in this part of Nigeria*



*of course, is the Scholtz that we are still using, is just in few places that you can get appellation tonometer” (Dr Rita:86-90).*

*“Well, the truth is that in my own private clinic, I have tonometer and ophthalmoscope and I have eeh tangent screen that is for the tonometry” (Dr Yugos:101-102).*

Effective glaucoma management is dependent on early and correct diagnosis; this is not possible without making use of proper equipment. The service providers confirmed that there is shortage of the necessary diagnostic equipment which begs the question: “faced with unavailability of the required diagnostic equipment, how reliable is the diagnosis then?”

### **5.5.2 Level of the practitioner’s experience and ability to make referrals on time**

The level of experience the practitioner has aids in effective detection and correct diagnosis of the disease. Even if the whole equipment is available but the practitioner does not know how to use them effectively for diagnostic purposes, or even how to interpret the readings, the equipment will not be of any use. Experience is very important in glaucoma management, as this enables the practitioner in acting proactively.

*“Glaucoma is managed in our clinic at our own level, we prescribe medications for glaucoma but such cases or types that will require surgery, we refer to other centres where the surgery can be done” (Dr Mike:54-56).*

Experience is very important in identifying and recognising certain landmarks in glaucoma diagnosis and this will enable the doctor to make referrals when deemed very necessary.

*“Yes errm... inasmuch as you want to manage glaucoma, drug is not the final bus stop; for me, I cannot manage you more than 6 months and I refer you to the ophthalmologists who now perform the trabeculectomy which will save you cost and help your eyes as long as you will live” (Dr Sam:81-84).*

*“My initial treatment of glaucoma when I notice that there is pupillary constriction, I mean dilation, pupillary dilation and the two angles are blocked, I still after using the normal routine drugs like timorol, diamonx, vitamins and yeast and still the pressure has not gone down enough or still remains where it is, then I employ use of pilocarpine with caution” (Dr Yugos:112-115).*

Some of the doctors may wish to refer out their patients as soon as possible in order to preserve their vision, while some could be reluctant, battling with the situation. However, the ultimate goal in glaucoma management is to preserve vision and prevent blindness; every effort should be made to achieve this goal. Thus, referrals are very important as soon as the practitioner sees the need for this. Above responses from some of the practitioners portrays their levels of experiences and abilities; most especially the readiness to take the relevant decision that is most beneficial to the patient.

## **5.6 Concept of good practice**

As part of the effort to identify good practice for effective glaucoma management, a question was put to the service providers to explain what they understand by the concept of good practice. Their responses were quite interesting and revealing.

*“My understanding of good management is: you knowing that you can’t provide everything to every patient, knowing the patient who you can give the best and knowing the patient who the best can be gotten from another institution especially tertiary institution. Am taking my own hospital as a case, in the case of glaucoma for instance which you cited, if I see that the patient will benefit more from surgery, good practice will make me not hesitate in either arranging for a surgeon to come and perform the surgery or the patient is referred to a centre where surgery is done on routine bases. So, not keeping patient beyond the scope of your practice or your facility is what I see as good practice” (Dr Mike:92-99).*

*“If I have such patient and I found out that I don’t have the facilities to manage the patient properly, what I would do is to advice the patient to go for an exhaustive test probably go for an ophthalmologist so that we can have a second opinion” (Dr Smith:36-38).*

If actually the service providers follow these steps as some of them mentioned, it will benefit the patients and save unnecessary loss of vision due to lack of adequate care. According to Cambridge Dictionary (2019) good practice begins with the practitioner recognising his/her capabilities and carefully watching the progress of the treatment; then knowing when to refer to a specialist. The problem here is the ability to recognise on time that this or that patient needs

to be referred out immediately. This was hinted by Dr Mike who appears to be conscious of providing the best assistance for his patients. For this to happen, he has to recognise his capabilities and the availability of the necessary equipment to help him manage the disease. Dr Smith on the other hand will suggest to the patient to go to a place that has more facilities to assist him/her. Proper and timely management of glaucoma is very important in preventing glaucoma-related blindness among any population.

### **5.7 Non-compliance issues**

Patient non-compliance has been an issue of concern among the practitioners in the state. This involves ignoring the service providers' instructions regarding how to use the medications and failing to come back for the next follow-up appointment.

*“Statistically speaking, most of our patients are not compliant and even especially when it comes to the case of glaucoma management in Anambra State. Most of the patients when they come, you explain to them but after taking the first dose of the drugs, you won't see them, they won't come back because of the financial challenges. So, actually 60%-70% are not compliant with the drugs and medication” (Dr Babao:26-30).*

It was reported by the service providers that some patients when given medications to be used within some specified period try to skip some doses to make the given medication last for longer time before the time they were advised to come for follow-up treatment. The idea behind this is to stretch the medication over a longer period before returning to the doctor for follow up treatment. People have no choice but to employ whatever philosophy that they believe will assist them psychologically and financially. Since the cost for medication is well out of the reach of an average person, all kinds of strategies are employed to get around this difficulty. Though, this does not provide for effective management of the disease.

*“Fine, those of them that are educated comply with the instructions given to them by the doctors, but those of them that are not educated; that is where we have problem....” (Dr Owelle:32-34).*

*“As I have said before, poverty is a challenge; for instance somebody has glaucoma, you diagnosed a patient with glaucoma and [you know glaucoma is not treated once*

*unless that person has opted for surgery]; you give the patient a drug and tells the patient “apply one drop of this medicine two times daily”, and may be the drug costs about six thousand naira; the patient goes back and say “ah! let me apply it one alternate day so that it will last me for about two months!” That thing is not compliance and as a result you won’t achieve any success in treating the patient. So, poverty is still playing a role in that question” (Dr Sam:23-29).*

Poverty has been pointed to be the major reason for patient non-compliance, there could be other reasons. The educated are said to be more compliant than the less educated. The reason might be due to the fact that an educated person may have more opportunity for better job and earnings, better knowledge of eye problems and s/he even better understands the threat of blindness. How can this issue be tackled and how can these people be helped should be the pertinent questions to ask.

*“Ok problem of non-compliance? Well, that is just the big problem we have. Most patients really don’t comply with the dosage of their drugs, and personally what I do is, I try to extend the way I give my prescriptions, e know to inculcate the fact that they don’t adhere to drug taking, ok? They don’t really comply with that, so, I put it into consideration that this person may not be able to do this so, I give the person a closer date to return to clinic so that I will monitor the person; how he/she uses the medications/prescription like instead of giving 2 weeks for example, I will give the person like 4 or 5 days please come back” so that I will still maintain and make sure that the person does that. Most times if I have the persons’ number, I can give a call to remind the person to do this or do that, hope you are still doing this or you are still doing that and at the end of the day you are grateful” (Dr Rita:22-31).*

Dr Rita has devised different ways of dealing with non-compliance issues among her patients. This involves altering the prescription by giving short doses to force the patient to come back to the clinic after some couple of days. Sometimes, she calls to remind them of their medications and the importance of adhering to the given instructions. This sounds very good, but the root of the problem may not have been addressed. For instance, if the reason for non-compliance is due to financial problems, how could telephone reminder about the next visit solve this problem? Furthermore, asking the patient to return for follow-up treatment may crash with the patient’s other activities as the patient may now see the treatment as taking major slots in his/her weekly or daily schedules.

## 5.8 Fake products and fake drugs

The issue of fake and adulterated drugs has been a recurring issue in Nigeria, and has been causing problems, not just in eye health but also in other areas of health. The painful revelation about this is that people that unknowingly bought the fake drugs continue to use it believing that it was genuine, with the result that their condition worsens from lack of treatment.

*“Yes, it has done a lot of damage because the truth is that some patient feel that they are smart and when they come to your clinic you give them drug, then they end up not coming to your clinic, they go to buy drugs for themselves and at the end of the day they buy fake drugs, they buy fake drugs and then they are actually practising self-medication” (Dr Yugos:121-125).*

The National Agency for Food, Drug Administration and Control (NAFDAC) is responsible for ensuring that proper and genuine food and medicines are produced, imported or exported in the country, yet in spite of their efforts, fake food and medicine still overwhelm the entire country. Worse still, some medications approved by NAFDAC are sometimes found to be substandard. The pertinent question is “who shall we run to?” if some medicines with NAFDAC approval seals are still fake, how could one identify the real medicines?

*“Eh.... first the relevant body in Nigeria (i.e- NAFDAC- National Agency for Food Drug Administration and Control) should be up and doing; they have been doing well but they can still do better, ensuring that all the drugs are genuine” (Dr Mike:82-84).*

*“Ok, you know for now we have a lot of drugs to manage glaucoma but now the NAFDAC have been doing so well but still a lot of fake drugs abound. It is now very difficult to access the real drugs for this glaucoma because sometimes you will go ahead giving patient drug thinking that it is the real drug not knowing that it is just ordinary water being produced in our state here too” (Dr Sam:70-74).*

Dr Sam expressed this concern as a big challenge in his practice. According to him, one may prescribe and dispense a particular medication believing that it was containing the right medicines inside without knowing that it was an adulterated medicine. This is very possible because the medication might look as real as the original with all the right labelling and

endorsement from the relevant authorities. However, if the service providers sometimes find it difficult to distinguish between fake and real medication, the challenge will even be more difficult for patients who go out to buy their medications from the open market. This indicates a lapse in policy; a serious issue for concern as far as the fight against blindness is concerned.

### **5.9 Implicating the patent medicine vendors**

Fake products may not be taken literally here but could include the dispensing of the wrong medications. Dr Mike cited an instance where most patent medicine vendors give out what they have in their shops for every form of eye problem. They stock mostly chloramphenicol and gentamycin eye drops, and these are what they always prescribe for every single eye problem that come their way.

*“Of course, they don't, the patent medicine vendors prescribe normally what he/she has in his/her shop; for every complaint they will prescribe gentamycin and chloramphenicol for you without proper diagnoses. Of course, the patient goes back home thinking that what he has been given will have an effect but is only after a long time that he finds out that what he had been getting from the patent medicine dealer actually does not help him but rather create more problems, because he goes home thinking that it is improving while the problem continues to increase.” (Dr Mike:118-124).*

*“The government and then the health institutions involved like the health bodies as per the Nigerian Optometric Association [NOA] and the Nigerian Medical Association [NMA] they should come together to put up a law and work with drug agency in the government to get rid of people that patronise and people that bring out these fake drugs” (Dr Yugos:127-130).*

The influx of substandard and adulterated medicines is believed to be master-minded by unscrupulous pharmacists in connivance with money-conscious patent medicine vendors and other private individuals who ensure the distribution of the fake products. The fact that the government still allows the sale of medicines in the open market is equally fuelling the situation. However, Dr Yugos opines that the only way out of this problem is by working together with

the relevant agencies in the state. By this they will be able to stem the rise in fake and adulterated medicines in the state

### **5.10 Glaucoma policies and treatment guidelines**

Most of the practitioners were not sure if there are any standard policies and guidelines set out by the government directing how glaucoma should be treated and managed in the state.

*“We only have our standard policy as professionals but as for the state, the Commissioner for Health; I don’t think that they have come up with any new guidelines except the professional guidelines” Dr Sam:100-102).*

In the UK for instance, the NICE clinical guidelines stipulate who handles what, and how glaucoma should be detected and managed by various eye professionals. The absence of clear glaucoma policies in the state is obviously a worrying situation. However, most practitioners acknowledged that for one to be able to treat and manage glaucoma, the person must be trained in eye care either as an optometrist or ophthalmologist.

*“Glaucoma should be managed by an eye care provider and is not just any doctor; you must have to be either an optometrist or an ophthalmologist to venture into the detection or management” (Dr Mike:108-110).*

Dr Mike stressed that whoever is involved in the management and treatment of glaucoma must as a matter of necessity know his/her limits of operation; while optometrists deal with the detection, management and referrals of glaucoma patients, the ophthalmologists deal with both management and surgical aspect of the disease.

*“...for now we don’t have any edict for that except may be surgery is involved. If you now talk about glaucoma surgery, surgery that is used to help a glaucoma patient; the ophthalmologists are there. The optometrists are not the one to do the surgery but as for prescribing drugs provided that the proper diagnosis is made and confirmed, the doctors in eye business- optometrists I think they are the ones giving drugs though the ophthalmologists can also give drugs but on the side surgery, I think we are restricted there” (Dr Smith:79-85).*

In Nigeria, the optometrists are clinically trained to treat and manage different types of ocular diseases including glaucoma. They can diagnose and manage glaucoma, but they are not trained to carry out surgeries. However, the level of experiences varies and everyone that is involved in the detection and management of glaucoma must aim at getting a positive outcome.

### **5.11 Improving eye health care services**

The findings from the interviews show that there is much need to improve eye care services in the State. The service providers all agreed that there is a need to do that. This improvement should include both the provision and the up-take of eye services in the state. Doing this would require the collaborative efforts of the three major eye stakeholders in the state: - the Population, the Service Providers and the Government.

#### **5.11.1 Service Providers' efforts towards better eye care services in the state**

Early detection of glaucoma has been the major weapon to guarantee preservation of vision. This can only be achieved when the population at risk is conscious of their eye health; thus, acting accordingly by way of seeking and utilising the services available is a helpful approach.

*“Through my practice, I will be able to reach out to the populace which we have been doing already; going to the villages on public enlightenment campaign; I think that is where we need to centre [focus] more. It is because when the populace is enlightened, when they know what they should do at any point in time, in schools, in villages, when they know what they should do and where they should know consult professionals, I think the risk of blindness would be reduced” (Dr Babao:144-149).*

Most of the service providers interviewed highlighted that creation of awareness in the rural areas, in the schools and organising eye screening and outreaches would be the best way to achieve this. Through enlightenment programmes, the people will come to learn about the causes of glaucoma, its risk factors and the relationship between glaucoma and other eye diseases.

*“...The contribution is already being made but like I would always say creation of awareness, constant creation of awareness. I will always emphasise, going just beyond*



*where we call our catchment area, the closest communities to our clinic but going to places where clinics are not located to screen them and let them know what they can do to prevent advanced glaucoma. That is the little I feel I can contribute at the meantime at least if people get to know what their problem is they will get to know how to solve it” (Dr Mike:156-161).*

There are places that are very difficult to reach, and these areas are often poor that no professional would like to practise there. These are places to be targeted and assisted through the provision of eye health seminars and community outreaches. Most practitioners are in the business to make a living and to be able to sustain their clinics, so without financial support they may not be willing to go to these places where obviously they may lose some money doing seminars and outreaches. Dr Mike suggests that service providers should make effort to move beyond their “catchment areas”, some incentives might encourage the service providers in doing so.

Improving eye health services also require continuous professional development. Providing efficient and excellent treatment for ocular diseases and conditions will help in reducing avoidable blindness. With respect to professional development and service improvement, different professional bodies organise seminars and hold conferences periodically where lectures and updates on practice is given. Dr Okafor said that they do attend such conferences to have updated teachings and current information about various eye diseases.

*“Well the government should come in to assist the people; this is what I am advocating for. I don’t see the reason why people should be travelling to abroad for treatment. Their major reason might be to detect this disease at the early stage, and then commence treatment. So government should bring the necessary equipment and the man power, our people will benefit from it and thank government of the day for giving them such opportunity” (Dr Owelle:143-147).*

Advocacy was also pointed out by most of the practitioners as an important instrument in achieving improved eye care services. Appealing to the government for provision of essential diagnostic equipment could equally make some differences. Furthermore, some of the

practitioners posited that the government should sponsor different awareness programmes in the communities and possibly assist the indigent with their surgical expenses.

Dr Rita spoke about training some local people to take up the duty of teaching others in the community; this according to her would take the pressure off the practitioners who may now pay more attention to delivering seminars periodically to the target population. This idea seems good if people in different communities could accept to undergo some eye health seminars that will equip them effectively to process and pass same information to the members of their communities.

Dr Sam as part of his contribution towards improving eye health in the state has introduced a special package that can assist patients in accessing the required services even if the patient do not have ready cash.

*“Ok, like in my clinic now we now have a form because as I said abinittio poverty is the cause of all this blindness. In our clinic now if you don't have your money, you fill a form for us. In this form your bio-data; every information about you is there and the way that you will pay this money. So that if we treat you we keep treating you and you keep complying in your own little way. ...this package is a new package and it is working for us though we are counting losses somewhere, you cannot gain everything. So, with this, patients now access this clinic, take their drugs, when they pay them, some of them are being owned arrears, so when they pay them they come and clear up their debts and they are still seeing” (Dr Sam:87-96).*

With such package as introduced by Dr Sam, things might change for some people. According to this service provider, some people could not pay because these workers are owed arrears of salaries. So, this provision makes it possible for them to access and utilise treatment and will come back to pay when they receive their salaries. The snag here is the ability of this eye clinic to continue with the package because there are chances of some people abusing such privilege.

One of the service providers, Dr Smith emphasised going back to the roots; that is giving more attention to teaching about glaucoma to the students so that they will be much grounded and very conversant with the disease.

*“I think we should build up our teachers (the lecturers), when we equip them, they equip us with the equipment we equipped them with. Let them educate us more on this condition called glaucoma, let them communicate to us about some new researches that are available on how to handle this glaucoma. Then when we come out, we will be able to manage glaucoma properly” (Dr Smith:60-64).*

Dr Smith opines that due to the seriousness and destructive nature of this disease, special attention should be paid to the teachings about glaucoma while in training; such that after training, the practitioner would have been adequately equipped to manage the disease.

### **5.11.2 Governments’ efforts towards better eye services in the state**

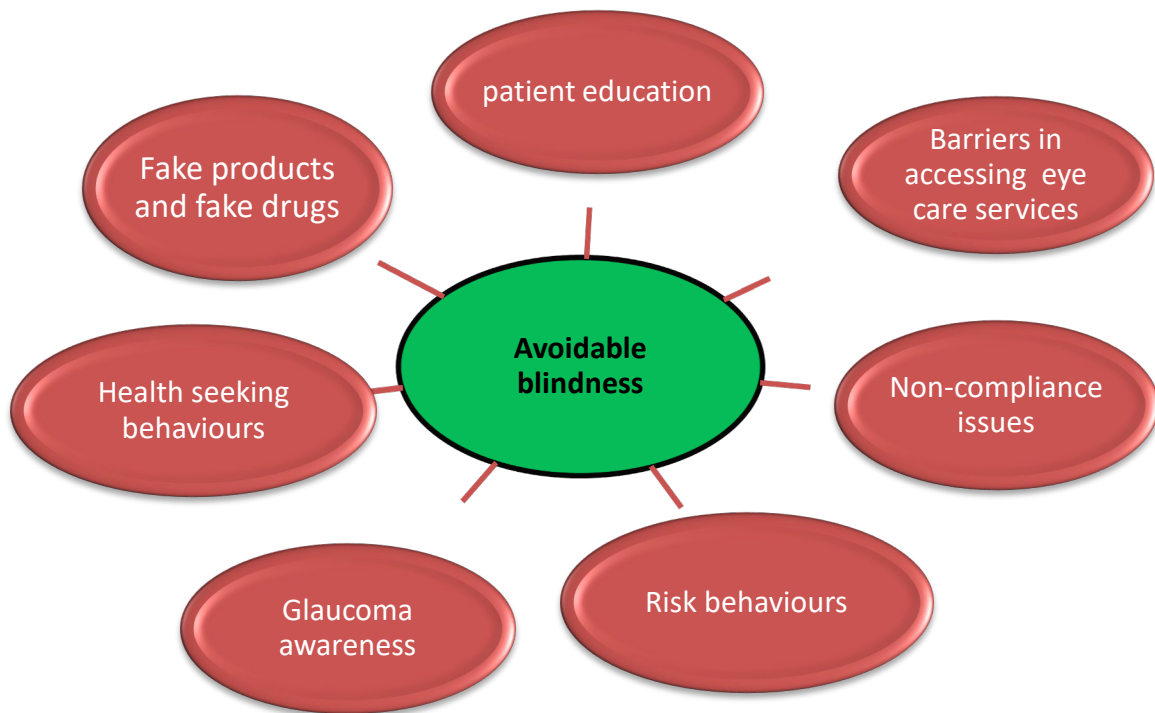
The government seems not to be doing enough in the state as far as eye health is concerned. When asked to rate the efforts of the government on the scale of 1-10 as far as eye health is concerned, some of the service providers rated the effort of the government as low as 4 out of 10. This means that the government has been acting below the expectations.

*“I don’t think; the government has not been doing enough because the population is quite much and even in Anambra State the eye care facilities we have are not enough when you compare to the population. So, I think that the government should intensify more effort” (Dr Babao:111-114).*

Dr Babao argues that the government needs to step up their effort as this is inadequate. He also stresses the employment of more eye care professionals and decentralising the services to the rural areas; providing eye health facilities and making services available in most rural areas will go a long way in curbing avoidable blindness in the state. In fact, the argument of most of the practitioners revolve around providing eye care services to people around the entire state, setting up screening centres and equipping the various eye health outlets with standard diagnostic equipment. This will actually improve eye care services in the state and help immensely in curbing the rising incidence of avoidable blindness in the state.

## 5.12 Avoidable blindness

This very important super-emergent theme came from the overlapping of some of the apriori and emergent themes.



**Figure 5.2 Avoidable blindness.**

Most people need patient education because they are not aware of the causes of blindness, including the causes of glaucoma. Without proper eye health education and affordable treatment choices, the people may continue with some unhealthy treatment practices which can result to blindness. Moreover, some people indulge in certain risk behaviours that can put them at the risk of blindness.

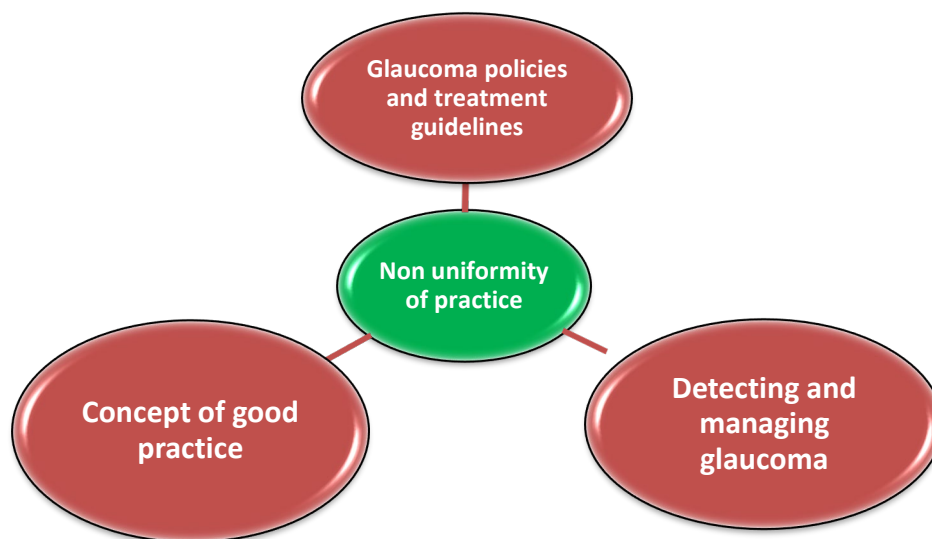
*“Yea people that have problems in the eyes especially in the rural areas, they don’t have good access to eye care and whenever they have issues in the eyes instead of may be going to the eye care practitioners most of them do resort to self-medication, they employ lots of traditional practices which are very dangerous and risky to the eyes and most times also they approach some of these chemists, quacks and native doctors whose practices and mode operations to me are very dangerous and not to the health of the eyes” (Dr Okafor:4-9).*

*“The illiterate ones most times like cheating on themselves; I say cheating on themselves because most times when you give them eye drop for one month, they can use it for more than a month, give them eye drop for two weeks they will like to use it more than two weeks and that is not what you want” (Dr Yugos:40-43).*

Poverty is the major barrier to accessing conventional eye health services; it has also been implicated as the major cause of non-compliance with medication. All these factors work against effort for effective blindness prevention in Anambra State, giving rise to blindness which could be ordinarily avoided.

### 5.13 Non-uniformity of practice

Concept of good practice, detecting and managing glaucoma, and glaucoma policies and guidelines overlapped to give rise to another super-emergent theme- Non-uniformity of practice.



**Figure 5.3 Non-uniformity of practice.**

The absence of standard glaucoma policies and treatment guidelines gives practitioners the freedom to diagnose, treat and manage glaucoma the way they deemed reasonable. This in turn brought about non-uniformity in the treatment and management of glaucoma in the state.

*“Ok, when it comes to equipment, e know this place is not like the western world where you use all these sophisticated equipment but we try our best. We use the ophthalmoscope to view the fundal background to check the optic disc to know if it is cupped or not. E know....we use the tonometer, we have got the Scholtz 's; e know in this part of Nigeria of course, is the Scholtz that we are still using, is just in few places that you can get appellation tonometer” (Dr Rita:86-90).*

*“Well, the truth is that in my own private clinic, I have tonometer and ophthalmoscope and I have eeh tangent screen that is for the tonometry” (Dr Yugos:101-102).*

*“We use three basic equipment; we use the ophthalmoscope, we also use the Peckings hand-held tonometer and we also use the visual field analyser” (Dr Mike:62-63).*

Positive outcome of glaucoma treatment depends on the right diagnosis, and right diagnosis is dependent on the use of right equipment and the level of knowledge of the practitioner. This is evident in the responses of three the practitioners above. All three do not have the necessary equipment which could guide in complete diagnosis of glaucoma; this could result to non-uniformity of practice.

## **Chapter Six Analysis of Policy Makers Interview**

### **6.0 Introduction**

Three policy makers at different levels of the society [the state, local government and community leadership] were identified and recruited for this research. Their names and official designations were anonymised thus, they are represented in this study as: A Senior State Policy Maker [SSP], a Senior Local Government Policy Maker [SLP] and a Senior Community Policy Maker [SCP]. These three policy makers represent the hierarchy of policy making at the state, local government and community levels.

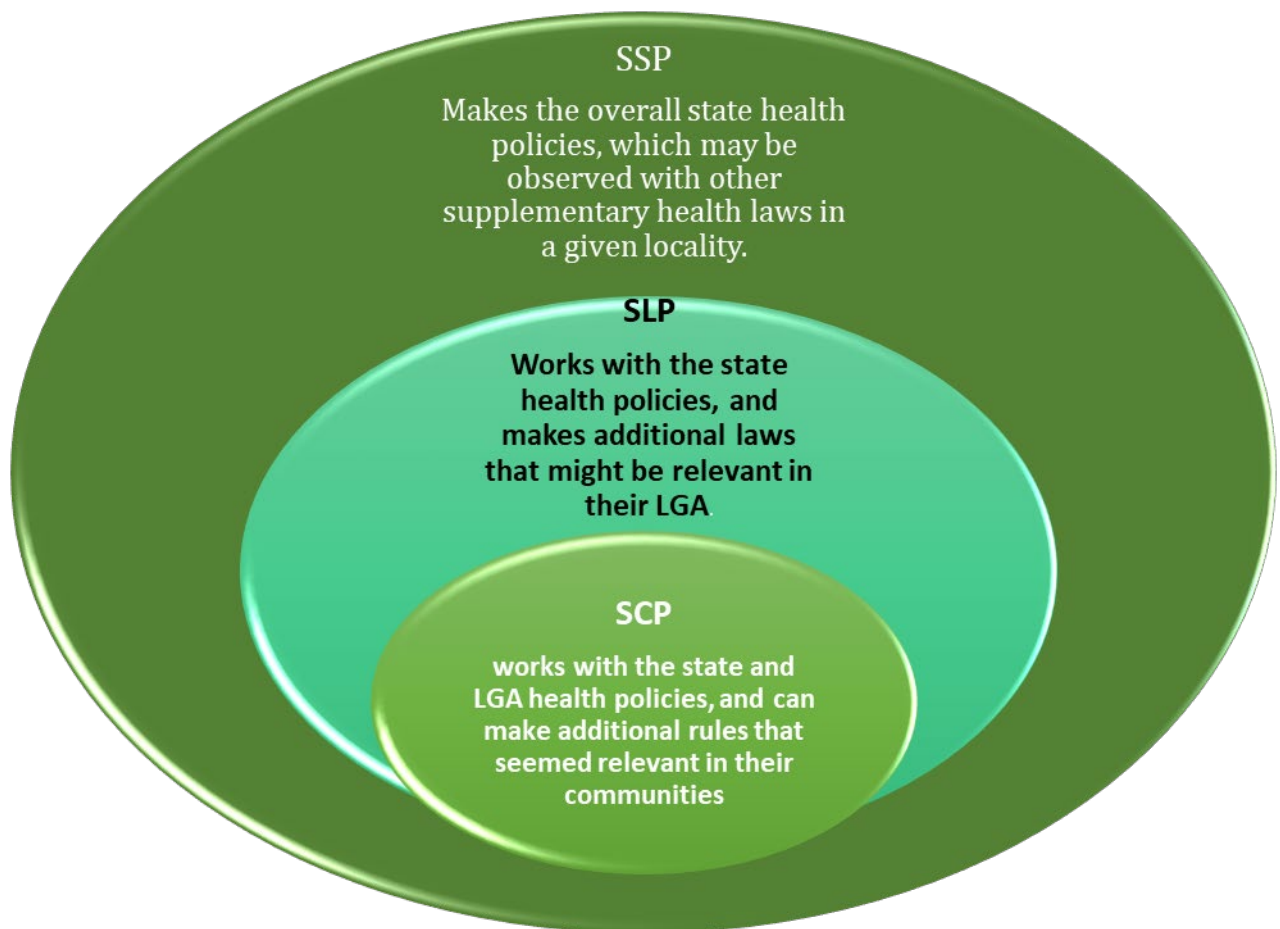
### **6.1 Policy making**

In Anambra State, health policies are made in a hierarchical order. The SSP is responsible for the overall health policies of the state. The health policies guide health practices in the entire 21 Local government areas [LGA]. The SLP is responsible for policy making in the LGA in conjunction with the persons holding different offices within the administrative enclave of the LGA authority. With respect to health policies in the LGA, the state health policies guide the entire health care practices in the state. In addition to the state health policies, the SLP can, with the relevant persons make laws and set up policy guidelines regarding health practices to address issues peculiar to their local area or those which were not covered by the state health policies. Some health policies are specifically made according to the prevalent health issues in a given environment.

The SCP is a community leader and the appointment of such leaders are rooted in the people's traditions and culture. As a result, community leaders are often believed to be more credible, more effective and respectable than political appointees; moreover, he lives and interacts directly with the subjects. The SCP can make rules and give instructions that are respected by all the citizens within that community; these rules and policies could affect the way the people

live. Whatever rules or health policies made by the SCP is observed alongside that of the state and LGA health policies.

Fig. 6.1 captures the hierarchical order of policy making in the state as already described. While the SLP and the SCP can make additional laws, the SSP makes the overall state health laws; this is represented by the biggest circle covering the small and the smallest circles.



*Figure 3.1 Hierarchical representation of policy making.*

From the three interviews with the policy makers emerged seven themes that were identified and these were analyzed below:

- **Health seeking behaviour**
- **Glaucoma awareness**
- **Financial challenges and health inequalities,**



- **Government responsibilities and the way forward**
- **Quality of services/treatment outcomes,**
- **Influence of quacks,**
- **Power and Advocacy relationship.**



*Figure 6.2 Emerging themes from the policy makers' interviews*

### **6. 3 Health seeking behaviour**

As already seen in the key informants and service providers interviews, people with different eye problems tend to present late to hospitals for treatment. The reason is that many do not know that they have eye problems until it is very late. The SSP's comment aptly captures what these people do.

*“You know, quite unlike other illnesses our people has the tendency of presenting when things are bad, like the sight most of them present also when things are so bad and irreversible” (SSP:7-8).*

*“The problem in the health sector concerning eyes is that people don’t believe that they have eye problem until they go completely blind. So, you discover that before somebody realises that he has an eye problem he is already blind, the case becomes irredeemable” (SLP:37-39).*

This agrees with the responses from the service providers that said that the people never come for eye checks until the problem is far worse. Recall the response from one of the key informants Ezenwata, who claimed that he has no eye problem, and should therefore, not to “go about looking for trouble where none exists”. Others as already seen in this analysis tend to delay before going for the right treatment.

This further emphasises the great need for awareness. If people are not aware that they have a problem, they will not seek for help. The findings from the key informants indicate that even when people discover they have eye problems, some still tend to delay because of either unavailability of services or/and inability to afford the treatment. Alternatively, some resort to traditional or unconventional treatments which in most cases could worsen their condition.

In addition to lack of awareness, it was reported by the service providers that some people believe that their eye problems are as the result of occultism and witchcraft seek spiritual treatment. This further complicates and worsens the whole situation. This may be one of the factors that contribute to late presentation as also pointed by the SSP. However, it can be argued that the people’s health-seeking behaviour might be altered if they are provided with better, affordable and accessible alternatives. This was evident from the response of one of the key informants as already seen in the key informants’ analysis:

*“What will I do now? Even at that, we don’t have enough money... (Jecinta:89).*

Jecinta understood that she was exposing herself to blindness risk factors she unequivocally maintained that there was nothing she could do under such a situation, because she did not have an alternative, a fact which policy makers at all levels must address.

#### **6.4 Glaucoma awareness**

*“... glaucoma and cataract, these are the two basic problems we have around here...I think the greatest challenge is that of enlightenment; if we have competent people that can teach authoritatively on issues concerning eye sight I think it will help to a greater extent” (SLP:16-17;44-45).*

As discussed throughout this thesis, glaucoma and cataract are the two major eye health challenges prevalent in the state. The SLP pointed that awareness of these eye diseases is lacking among the population. This may be due to the fact that enough effort has not been made towards the dissemination of relevant information to the population. As already seen, out of the 28 key participants interviewed, only seven could provide a vague description of what glaucoma is. The SSP also acknowledged that awareness of eye diseases has been a great challenge in the state. He however said that there was an on-going health awareness programme led by the Department of Primary Health Care, and that this awareness was being transmitted through radio and television programmes in the state.

*“Yes, the major problem we have in the state with respect to eye problem is the awareness. So, we are creating health awareness even in radios and televisions; we are trying to tell them the need for people that have eye problem to present early in the hospitals for assessment and proper treatment” (SSP: 6; 9-11).*

Mass media is a very useful means of disseminating awareness about eye diseases, and it is reported to be effective. Baker and Murdoch (2008) found that a mass media campaign improved level of awareness of glaucoma in a study in North London. However, access to mass media varies among the people of Anambra State; hence the impact of this awareness programme as asserted by the SSP, is yet to be felt by many in different communities as evidenced in the findings of this study. Responses from the participants involved in my study

suggest that many of them have not participated in any serious eye health enlightenment programmes especially in their areas.

*“They have not even for one day organised a workshop or seminar about eye and its problems or what may cause eye problems” (Carol:88-89).*

If Carol has heard or seen the awareness programmes either on the Radio or TV, she may not have made this comment. It is either that the programme was ran for a very short time or even during the periods most people do not have electricity or power generators to power their TVs and radios; power [electricity] is a big challenge in the state.

The SLP also claimed that there was a time the local government health department used radio and television programmes to create awareness about glaucoma and cataract in the LGA; though there was no radio or television station within Aguata LGA; except if it was done in Radio and television stations outside the LGA. Similarly, SSP confirms that health awareness programmes have been provided in the past, and specific programmes concerning eye health will soon restart.

*“Yes we have err health awareness program that is driven by the president of primary health care where we give err you know explanation of various illnesses and their causes and the preventable measures and I think it is captured in our budget and this time around, this year we have not actually taken that of sight but I think that it is one of those things that soon will start off and the public awareness and the teaching of common eye problems and what should be done” (SSP: 122-126).*

I am not able to verify the delivery of the state’s eye health awareness programmes but judging by the key participants and service providers who were interviewed in this study the state/local government’s eye health awareness campaign was not effective. Creation of awareness is important but successful campaigns usually recommend that both service users and providers must be involved in the design and delivery of such public health interventions. However, the SCP debunked the claims of both the SSP and SLP regarding eye health in the state and said that the government was not doing anything. He opined that the best way to get the people to

know about glaucoma is by pooling resources together. He suggested that the state government should join forces with individuals in different communities to form a formidable force to inform and educate the people about eye problems, especially glaucoma.

*“You know, I have told you that I am doing my best. In a situation where the government could not hook up with you because of their personal interest; it is only when the government embraces what one is doing that certain things will start happening that is for the individual there will be total awareness of what is going on” (SCP: 99-102).*

The comments by the SCP suggests that people like him are not invited to get involved by the SLPs and SSPs but they are side-lined. In small Nigerian communities, SCPs have always commanded honour, respect and authority as leaders and policy makers in their towns and communities, they can be very instrumental in promoting health programmes including eye health promotion. The issue pointed out by SCP shows that there is a gap in terms of cooperation and working together for the achievement of common goal. Any policy that incorporates the state, the LGA and the communities, might do well in terms of getting the right messages across to the people.

*“Hmmm what I normally do is when we have a whole meeting I normally tell them, but what you talked about now, I think I will do it one of these days, I will start doing more” (SCP: 121-122).*

When asked how he has been helping in the creation of awareness of health especially with regards to glaucoma the SCP said that he has taken the campaign to his fellow SCPs. He tries to educate them about the relevance of good eye care and encourages them to take the message home to their local communities. It appears that through intensified efforts by the SCPs, grass-root campaigns will be more relevant and effective in any war against blindness for the people in Anambra State most of whom live in poverty with minimal access to mass media and education.

The SSP pointed that there is also a need to let the people know that certain eye diseases are natural diseases and are preventable, and not necessarily caused by “witchcraft or by will of God.” He affirmed that there is great need for health seminars and health education. However, he claims that enlightenment about eye diseases have been an on-going programme in the state.

*“But in any case we have the jingles in the radios trying to instruct people not to put things that are delicate to their eyes and also trying to make them understand; the truth is that our people they never knew that some of these eye problems are preventable; if somebody gets blind they will just feel that that is the way God wants it to be- that kind of thing, or that it will be from Holy Ghost fire; somebody sent an attack from a witch. So, most often they wouldn’t know that this is caused by this; so usually is blamed on somebody instead of looking for a treatable cause” (SSP:126-132).*

While jingles might be a useful way of passing eye health awareness to a given population, the SSP acknowledges that this cannot be the only approach to eye health education. Eye health education should be multi-dimensional and not just be targeting the uneducated but should be targeted at the entire population. The SLP underscored the importance of this when he cited his personal experience with eye problems. He never believed that he had eye problems until when he discovered this by accident.

*“I think the greatest challenge is that of enlightenment; if we have competent people that can teach authoritatively on issues concerning eye sight I think it will help to a greater extent. I know myself I had a very big example from the time I realise that I cannot see well was when in the night I wanted to read a leaflet about a tablet that I was to take, I now discovered that it is impossible so when I called my wife to read it she read it very well. So, it then dawned on me that something is really going on” (SLP:16-17;44-49).*

Healthcare is generally plagued by financial challenges; evidence from different studies has shown that poor financing tends to be a cog in the wheel of progress. The SLP was hoping for some experts to come to their assistance without even making proper arrangements for that. Policy should not be based on personal experience and chance but should be made based on evidence and planning as well as adequate financing. Further, eye health policy should be part

of a comprehensive health strategy such as that recommended by the Ottawa Convention of 1986, and WHO guidelines of prioritising health education, health protection and disease prevention.

## **6.5 The influence of quacks**

*“Just like every other illness, there is a protocol for management of various eye problems including glaucoma, but the problem is that errm in this state because of ignorance and illiteracy some other people claim to be experts- every other person trying to put one concoction or the other to his sight” (SSP:27-30).*

The problem of glaucoma in the state is further complicated by the activities of people that are not qualified to treat or manage the disease. In Nigeria, people that venture into professions that they were not properly trained for are often referred to as “quacks”; this is an acceptable terminology within Nigerian context, and most professionals make use of this term. Patent medicine vendors are generally regarded as quacks because they treat and manage all forms of ill-health just like someone running a conventional hospital; though this is done illegally. Other people that use different substances to treat health problems that they are not properly trained for are also regarded as quacks in Nigerian context. However, the SSP pointed that there are protocols and laid down policies regarding the management and treatment of diseases in the state, the pertinent question is; what is the level of implementation of these policies and guidelines? There is evidence that people that are not professionally trained to treat and manage serious health problems have been doing so without much constraint. The quacks take advantage of persons with low level of literacy and disease awareness to exploit them. They give out different concoctions to persons that have eye problems many of which are dangerous to the eye. Nwosu (2005), Gilbert et al, (2010), Nwosu and Obidiozor (2011) and Ebeigbe (2013) in their different studies have explored the dangers of instilling into the eyes substances that were not prescribed by the experts. This has caused more harm than good. It is not just with local unrefined substances used by the quacks but invariably more harm is caused by the

prescription of the wrong medications by the patent medicine vendors. However, the SSP claims that the government is prepared to fight quacks in the profession.

*“...we are committed in giving our people health in its entirety and the only way you can do that is making sure that people receive proper treatment and we are determined to fight the quacks, is not only in the eye problem; in this environment, errm because of people wanting to make money one way or the other, they embark on practices that you know are inimical to proper health management, and we are trying to do a stratification of all health institutions where we want to have a data base of all the hospitals, how to trace them and then as soon as we finish that you know we are going to deduce all those ones that are not supposed to function” (SSP:41-48).*

The idea of having data base of all the hospitals and clinics in the state is a good start but this should be extended to the many professionals who are practising outside the conventional hospitals and clinics.

## **6.6 Financial challenges and health inequalities**

As discussed in numerous sections of the thesis, financial difficulties have always been a major cause of health inequalities. These often prevent individuals from accessing proper medical services and have also prevented the governments from providing essential medical services to the population. Both key participants and service providers interviewed agreed that Individuals tend to seek and patronise cheaper treatment options in spite of the fact that sometimes they are aware of the dangers but instead of not doing anything at all, they tend to take the risk.

While individuals take obvious risks, the government senior policy makers appear to be resigned to the fact that their finances are inadequate for the development and implementation of effective policy aimed at eliminating the high incidence of avoidable blindness. Consider the comment of the SLP:

*“...people [like him] work according to the limited envelope[budget] provided for them and so you cannot go out of that envelope even if you see somebody dying and you don't*



*have the money to send that person to hospital, there is nothing you can do. So, we are constrained by lack of funds that is the major problem” (SLP: 79-81;83).*

The SLP appears defensive and tries to justify what may be seen as inaction. He accepts the lack of help and support that people need, without proactively seeking alternative solutions other than following rigid financial rules. For the SLP to abandon his subjects to “die because of limited envelopes” is an unacceptable excuse which is contrary to ethics of leadership, and the universal declaration of health which undoubtedly Nigeria has signed. Unarguably, the government has much to do to prevent unnecessary loss of sight due glaucoma and other related diseases.

The SSP dismissed financial difficulties as a reason for failure to go for proper eye treatment in the state. He claimed that “scale of preference” was responsible for the way people act and behave towards eye issues. His opinion was that if somebody could afford to spend some money on clothes, the person can equally spend some money on seeking for good eye treatment if the person so wishes.

*“Well I think the major problem is the problem of scale of preference; if somebody says he has not gotten maybe about 2000 Naira to go to hospital then he can afford to buy the wears 10000 Naira. You begin to see what their scale of preference is but if people know what sight means and what it means to preserve one’s sight, I think you should err even if it means that you do not eat for two days to make sure that you don’t lose your sight, it is something worthwhile. In any case, just as I have mentioned before, the government is doing everything possible, but the important thing is for the people to value that this sight is important that they should not play with it” (SSP:137-144).*

From the SSP comment, it appears that he is not in tune with the trends of events and costs for eye treatment in the state; the 2000 Naira he mentioned may not even be enough to pay for consultation; yet, the patient has to pay for the tests and medication afterwards. It could be argued that the SSP holds an unacceptable moral position in judging poor people and holding them responsible for their loss of sight. According to the various WHO international charters on health (WHO, 2015) which almost all nations who are members of the United Nations sign,

governments and their official representatives and administrators, should endeavour to promote the health of their people, health being a human right. The values which underpin many of the WHO charters and directives are based on human rights and equality. The complete eradication of poverty maybe an unreachable goal, but globally there is consensus that poverty results from many factors which go beyond individual actions. For example, lack of educational opportunities prevents people from gaining employment which may lift them out of their poverty; the destruction of the environment by governments and global companies often means that communities are denied access to land which provided for their livelihoods and so on. It can therefore be argued that both morally and politically the stance taken by the SSP as the most senior policy maker in the state is not helping to solve the existing problem with eye conditions which lead to blindness.

Even if people could save for expensive eye treatments, they might become blind by the time they might have saved enough money. However, as indicated earlier, if appropriate, acceptable, and accessible health promotion is provided through a strategic plan in partnership with community leaders and respectful elders, many individuals will be spared the effects of preventable eye conditions and therefore the need to pay for expensive treatments. The data collected during this study indicate that SCP who does not receive any financial support from the government is able to influence and support his people because he lives with them, eats with them, talks with them and listens to their complaints and problems. This agrees with a popular Igbo proverb: “**Nwanyi na-esu ogiri ma ijiji anya kporo**”. This literally means that a woman that prepares a local spice [ogiri- a smelly local spice that always attracts the flies] can always identify a blind fly. On the contrary, both the SSP and SLP hardly have such close contacts with their subjects but they hold resources and power to support change. Drawing on data from all the interviews conducted in this study, it seems prudent that all those who make

policy as well as the representatives of the communities should join their efforts to find solutions that lead to effective actions.

### **6.7 Quality of services/treatment outcome**

Quality of eye care services has been reported to not have been very good in the state; especially the outcome of glaucoma treatment. Some people have questioned the reliability of some eye care professionals in the state. The poor outcome of glaucoma treatment stems probably from lack of equipment and essential experience from the eye practitioners.

*“...we have reported cases of people going to one diagnostic centre to find out they have this problem and on repeating the same test in another place and they will be told that they don't have it; this causes a lot of problem” (SLP:19-21).*

The SLP acknowledged the issue of wrong diagnosis among some of the practitioners; though most cases of wrong diagnosis could be traced to the quacks who sometimes pose as professionals. Most importantly some practitioners do not have the necessary equipment that enhance proper and authentic diagnoses. In this case, wrong diagnoses might arise due to poor or inadequate equipment. Technology has advanced that sound and sufficient instruments must be used in the diagnosis of eye conditions such as glaucoma. SSP gave a long lists of government hospitals in the state that have been adequately equipped, yet even if these hospitals were properly equipped as claimed, how many private eye clinics are adequately equipped in the state to stand the challenge of eye health in the state.

*“Well the ones [names of hospitals that treat eye problems] I can give you right now are the ones that are managed by the government but I know that there are several private hospitals that are of international repute where you have consultant ophthalmologist and optometrist that are working in town, most of them they have a base in teaching hospital at Nnamdi Azikiwe teaching hospital Nnewi. We have Guinness eye centre Onitsha; then we have errm Odimegwu Ojukwu that is Amaku university teaching hospital at Awka here and then some of the general hospitals like Ekwulobia, Enugu-ukwu and Onitsha; we have standard centres that can take care of all these things- treatment of all these eye diseases. And right now, we are trying to rehabilitate and equip these hospitals. We want to expand and make sure that at least*

*that the two hospitals of the senatorial zone will have such facilities so that you can now reach them when there is need to have access to them” (SSP:82-92).*

The claims of the SSP notwithstanding, evidence gathered by this study seems to contradict the claims that several hospitals in the state have been fully equipped for eye treatments. Furthermore, comments from SLP and some of the service providers confirm that most of the eye hospitals in the state need better equipment than what they have at the moment.

*“You find out that most of the people now travel outside this country. Some hospitals are not equipped; in fact, almost all the hospitals are not equipped” (SLP:76-77).*

*“Actually, I will not say for sure, but I know that some of the government hospitals have some basic equipment while in some they don’t have. You know we are in Africa especially here in Nigeria in parenthesis some things are politicized; it is a place one governor will come up and say he donated some equipment in one or two, three general hospitals but when you get there you will find nothing” (Dr Owell:24-28).*

It is not this study’s remit to verify all the claims made by the various informants. However, it may be safe to assume that a few of the hospitals mentioned have been properly equipped. Nevertheless, experienced practitioners and properly equipped hospitals and clinics are *sine qua non* for good glaucoma outcomes and blindness prevention in Anambra State.

## **6.8 Government responsibility and the way forward**

As discussed above, it is the responsibility of the government to provide good eye health services to the entire population. However, evidence from interviews of the three stakeholders shows that this is yet to be achieved. When SLP was asked about his plans and programmes regarding eye health and the infrastructures in his area of jurisdiction his response was:

*“Errmm... it should be a state programme [that is funding and setting up glaucoma diagnostic centres in the LGA] may be by the Commissioner for Health; if we articulate a programme then we send it to the Commissioner for Health and await the approval and sponsorship because they are the people that finance such project; the local government is not in a financial position to carry out such project” (SLP:30-33).*

A critical look at this comment shows that SLP has no definite eye health programmes in the LGA. Politicians and civil servants sometimes like to respond ambiguously to direct questions to protect themselves from the reality in areas where they have not been doing well. Hence, by

saying that they will articulate a programme, this gives an impression of an on-going process; a programme that maybe does not have any definite date.

SSP has already mentioned the efforts the Ministry of Health has made in improving eye health services in the state. Inasmuch as there might be some visible improvement in some areas, most parts of the state - according to our interviewees- are yet to feel the impact of such improvement. As already mentioned in the introductory chapter, recent health policy documents in the state did not even mention eye health as one of the main programmes that require government urgent attention. The SSP's statement that eye health awareness will soon commence in the state is a further indicator that eye health is not actually a priority of the state.

However, the SCP pointed out that the government is not doing enough to encourage and equip the professionals to enable them to support the population. Sometimes the doctors go on strike due to poor conditions of service. Evidence from the key participants and the service providers suggests that the government is not living up to its responsibility as far as eye health is concerned in the state.

*“Generally, as I told you, the government is doing nothing they are not doing much in terms of health care delivery. As I have told you, in eye care delivery services and health care they are not doing much. ...Some hospitals are not equipped; in fact, almost all the hospitals are not equipped (SCP:68;76-78).*

SCP could boldly refute the claims that the government is seriously improving health care system because unlike the SSP and SLP, he is not directly responsible to the government, therefore fears no reprisals from the government.

The SCP was not the only one that maintained that the government was not doing enough, some of the study participants and the service providers were equally not happy with the efforts of the government as far as eye health in the state is concerned. Of the eight service providers interviewed in this study, only two agreed that the government is trying; while six said that the

government is not doing enough in the provision of quality eye health care services in the state. All the key informants were of the opinion that the government is not doing enough; though, for some people, “doing enough” could mean, the provision of free eye health care services which is not possible in the state in the foreseeable future.

*“No, they are not doing as much as they should do, they are not doing; so actually eye aspect of health is lagging behind compared with others” (Dr Yugos:144-145).*

*“My rating is 1/10, I think 1/10 is even too much” (Hilda:116).*

*“I give the state government 4, I will rate them on the 4th level because now they have not done something that will help the masses especially the poor” (Gerald:154-155).*

On the positive side, one of the two doctors who supported the government’s efforts stated:

*“Ok, well the government, you know we have a new government on board but before them the government of has been doing immensely well in the health sector not just the eye, understand? We can see all round the state how he has been improving on the hospitals, health centres so and this new government is also taking the same league, so they are trying” (Dr Sam:107-111).*

The three policy makers voiced their opinions regarding the way forward in preventing blindness and improving eye health services in the state. The SLP’s stand point has always been making preparations for those that could effect the actions. Initially he spoke about articulating programmes and sending such to the Commissioner for approval and implementation; later during the interview he also mentioned his preparedness to galvanise the people to come out for lectures if any professional is available to deliver the lectures and teachings about eye and its diseases. He however did not discuss any ways of encouraging the professionals in their bid to creating this eye health awareness which has the potential to prevent avoidable blindness in the state.

*“Eh... what we promise is that... at least as the Chairman of this local government if anybody wants to maybe get up to 1000 or 6000 people you give me time I will mobilize them to come out and receive the lecture because it is my responsibility to galvanise*

*them and prepare their mind towards the thing that is going to be delivered” (SLP:68-71).*

Although the SLP indicates a view that information giving is a worthwhile activity in raising awareness, it could be argued that his implied method of doing this is naïve and lacks motivation. Furthermore, this suggestion neither constitutes a plan or a policy. On the other hand, the SSP articulated a more detailed policy and plan.

*“Yes, we are facing it from three angles: we are tackling it in terms of the infrastructure- scaling of the hospitals that can afford these services, also following it in terms of the staffing- getting the necessary ophthalmologists, optometrists and then also handling the necessary equipment and then in addition, trying to let people know that these things are useful and when they use them that they will likely preserve their sight and chances of getting them blind will be less” (SSP:148-153).*

The SLP’s plan is heavily oriented towards those who already suffer from eye conditions. Although such services are important in treating people and preventing further deterioration; since most of these conditions are preventable, it would be desirable to develop and implement a detailed and funded eye health promotion plan in partnership with the communities under his jurisdiction as stated in a previous section of this chapter. Furthermore, in accordance with the evidence gathered from key participants in this study and also drawing from the literature reviewed in this thesis, a comprehensive eye policy should address the key factors which lead to glaucoma and other eye conditions and visual impairment. Such factors are poverty, illiteracy, healthcare values, self-care and health seeking practices, the monitoring of established standards for service providers, and steps to address the high levels of quackery in the state.

## **6.9 Power relationship and advocacy**

Political power has great impact on the development of policies in Anambra State. People that occupy certain key positions such as the SSP and SLP have the responsibility of making policies at different levels of governance. Power relationships follow a hierarchical order. For

instance, the SLP is responsible for making health policies in the local government area, but he is accountable to heads of different ministries at the state level. On certain prominent health issues, he reports to the state Commissioner for Health as already stated above; other supplementary health policies could be made which could work alongside the state health policies. For the same reason, the SLP works within the limits of “provided limited envelopes”. While the SLP waits for the Commissioner for approval, SCP waits for both of them to support him and empower him to do more in his community. SCP could best be described as an advocate for better health. In spite of all odds and challenges, he still seems to be capable of making positive impact on the health of people in his community.

*“So now in Igbo-Ukwu I have in fact started Community Health Insurance Scheme. When I was the local government Chairman, I thought of National Health Insurance Scheme that would benefit the people, and had to borrow a leave from what I observed in London when I visited” (SLP:20-22).*

SCP recalled his efforts and contributions towards better health within and outside his community. Because he is a widely travelled person such that when he visited United Kingdom, he copied the National Insurance Health Scheme and transformed and introduced it as the Community Health Insurance Scheme into a local government area where he was the Chairman then. Now, this Community Health Insurance Scheme is operational in his town. He organised monthly free health care services from an office in his palace. SCP understands the problems of his people better; which prepares him to be of immense help to them. He is based in the community; hence finds it easy to work with them.

*“I am based in my community to be able to work with my people” (SCP:114).*

SCP understands his people, and his people also understand and trust him. This has made it possible for him to win their confidence to the point that many of the rich people are ready to support and sponsor medical treatments for the indigent ones. He believes that if different



leaders from different communities would copy this, it will have a positive impact on the health of the entire state.

For effective prevention of avoidable blindness in the state, the various stakeholders need to do more; especially the state and local policy makers. Standard policy guidelines regarding the treatment and management of glaucoma and other eye diseases have not been clearly spelt out and implemented in the state.

## **Chapter Seven Discussion of findings**

This chapter discusses major findings of the study in order to give more light to the purpose of this research. Bearing in mind the research aims and objectives, the discussion reveals to an extent how the research aims and objectives have been achieved through the utilised research methodology.

Research has shown that about 80% of total global blindness is avoidable, and glaucoma has been identified as one of the major causes (WHO, 2010); however, the awareness of glaucoma is found to be generally low. Several studies have emphasised the relevance of creating glaucoma awareness through eye health education (Tenkir, Solomon and Deribew, 2010; Mbadugha and Onakoya, 2014; Kim et al; 2016). Glaucoma awareness is very important as it may help in motivating changes in lifestyles and health seeking behaviours, and as a result possibly giving rise to early detection which is essential in prevention of blindness due to glaucoma. Glaucoma causes irreversible blindness and as such, early detection and proper management can possibly prevent blindness.

This study was an attempt to assess the barriers and challenges in preventing avoidable blindness and to explore and recommend possible culturally appropriate public health intervention strategies to reduce the incidence of avoidable blindness due to glaucoma.

Therefore, in order to achieve the aim and objectives of this study, the following research questions were asked at the beginning of the study:

- How can people that live in Anambra State be helped to understand and avoid the risks associated with avoidable blindness due to glaucoma?
- How can the policy makers and service providers be influenced towards positive actions?

An attempt to search for suitable answers to these questions led to the following key findings which will be discussed shortly.

- Even though some people have some level of awareness, the majority of the population remains unaware of glaucoma and other blindness risk factors.
- The population in this study have adopted wide and varied health seeking behaviours some of which may be detrimental to their sight.
- Poverty has been a major hindrance towards accessing eye care services.
- There are inadequate available eye care facilities, and even those available services are sometimes difficult to access.
- Poor treatment outcome raises suspicions between Service Users and Service Providers.
- There are several barriers and challenges to accessing and providing standard eye care services in the state.
- There are gaps in health policies which encourage the growth of unqualified people and quackery in health care practices.
- Policy makers seemed not to understand the plights of the poor population.
- There is a great need for health promotion among the population.

### **7.1 Glaucoma awareness and Perception**

Regarding glaucoma awareness, the findings suggest that there is gap in knowledge and awareness of glaucoma and its associated risk factors. Furthermore, the population lacks understanding of the inter-relationship between glaucoma and other blindness-causing conditions. Out of the 28 key participants only seven had some awareness of glaucoma; though they were neither able to define what glaucoma is nor any of its signs and symptoms, but just for the fact that these participants knew that glaucoma is “a dangerous eye disease that may cause blindness”, they were assumed to have some level of awareness of the disease. Half of the sample [14 participants] just heard glaucoma mentioned at some point; in this study, having just heard about glaucoma was not considered as being aware of the disease. Therefore about 75% of the sample has no awareness or knowledge of glaucoma. Similar low level of awareness

was found among the African-Caribbean (Cross et al., 2005) in Birmingham and Isawumi, et al. (2014) in Western Nigeria. Poorer level of glaucoma awareness was reported by Sathyanagalan et al. (2009); Tenkir, Solomon and Deribew, (2010) and Kim et al, (2016).

According to the service providers, the closest some service users could guess regarding the causes of glaucoma was that it might be hereditary; though this may not be unconnected to the fact that eye problems might be recurring issues in some families. Where this is the case, people can easily guess that problems relating to eyes runs through that particular family. A popular belief among this population is that glaucoma could be caused by witchcraft or other magical or evil machinations of one's enemies. The Policy Makers also confirmed that lack of awareness of eye diseases has been a serious challenge the state has been facing.

To be able to identify the cause of a problem can help immensely in finding a solution to that particular problem. In health issues, this is always helpful as it helps in planning an effective intervention process to control the health problem. If lack of awareness is the reason for high incidence of a particular health issue in a population, then this problem could be minimized through creation of awareness. In the case of this population, inasmuch as awareness of glaucoma and other blindness risk behaviours might not solve the whole problem of blindness in the state, lack of awareness is still an important issue to reckon with as far as avoidable blindness is concerned.

In this population, glaucoma awareness is driven by four important factors: - gender, place of residence, level of education and type of occupation. Men tend to be more aware of glaucoma than women; though the sample is small to make a general statement, yet it is consistent with previous studies in Africa and Asia (Tenkir, et al., 2010; Thamos, 2012) where more awareness was found in men than in women. In Africa and Asia, some practices such as Purdah (Independent, 2016) hinders women from mixing freely with strangers and male members of the society. This brings about reduced socialisation. Purdah is predominantly practised by

Muslims and Hindus of Southern Asia. Because of reduced socialisation, awareness of certain diseases might be low among women; however, purdah is practised in Nigeria but not practised among this population. Generally, women were known to have less access to services especially in the developing countries due to socio-cultural and economic reasons (Courtright and Lewallen, 2009).

Among this study population, men are predominantly the bread winners of the families and most times determine what to spend and when to spend depending on their income. This probably gives the less affluent ones opportunities to take care of themselves before considering their dependants. Furthermore, women are entrusted with responsibilities of bearing and rearing children. Generally, women spend more time with their children than men; this sometimes activates a special bond between the mother and the child forcing the mother into making more sacrifices for the welfare of the child. In this regard, some women prioritise the health of their children to their own personal welfare. This type of sacrifices sometimes keeps women away from seeking eye care treatments and this is one of the places where the woman could have had an opportunity of hearing about other eye problems (Courtright and Lewallen, 2009). However, a study by Sathyamangalam et al. (2009) in Indian urban town of Chennai, found more glaucoma awareness among women than in men. This dissimilarity might be explained in terms of sample population and other parameters mentioned above.

Educational level appears to have positive impact on glaucoma awareness among the study population. Data from table 4.3 suggests that glaucoma awareness is higher among people with better education, especially tertiary education. Similar results were reported by Gasch, Wang and Pasquale (2000); Dandona et al. (2001) and Krishnaiah et al. (2005) who found high glaucoma awareness among educated people than the uneducated. Education however is a powerful tool that liberates from shackles of ignorance and poverty. Most often the better education a person has the better the knowledge of other things. Educated people can acquire

knowledge through different sources. While an illiterate could rely only on oral information, an educated person can read and seek for better information from different sources. Most times health education materials can be found in print form in most environments. One of the participants reported how he learnt about glaucoma as a result of seminar he was invited to attend in Enugu.

This also brings into focus the importance of place of residence with respect to glaucoma awareness. Table 4.4 suggests that people who live in urban areas have better awareness than people living in the rural areas. However, living in urban areas tends to influence glaucoma awareness (Krishnaiah et al., 2005) because people that live in urban areas have better access to eye health facilities and other communication facilities that can provide easy information about eye diseases. Furthermore, most of the service providers are found in the urban areas. Distance of eye facilities and the service providers are among the major barriers of accessing good eye care services in the state. Though, a study by Sathyanagalan et al. (2009) in Indian urban town of Chennai reported poor awareness.

It appears from table 4.5 that people in occupations associated with higher education are more likely to be aware of glaucoma than people in jobs associated with ordinary skills. Understandably this could be expected because these people have higher education which has proven to affect the awareness of glaucoma; additionally, most of them live in the urban areas which guarantee better information and eye care facilities. This finding is consistent with some studies (Gyali and Sarkar, 2014; Mbadugha and Onokoya, 2014) which also associated glaucoma awareness with high educational status.

Low glaucoma awareness is a strong risk factor because it might encourage other risk behaviours that could cause glaucoma. In this population, several risk behaviours have also been identified which the population was either not aware of or had chosen to ignore. As noted in the literature review, some risk behaviours could also cause glaucoma or exacerbate existing

glaucoma. Prominent among these risk behaviours are the use of non-prescribed medications and medicinal products to treat eye problems, lifestyle, exposure to second-hand smoke, environmental pollution such as smoke from burning wood. Evidence from this study shows that the population has not really understood the dangers of continuous pollution from the environment. Furthermore, the issue of non-compliance with treatment is a big risk to blindness due to glaucoma.

## **7.2 Health seeking behaviour**

This population has varied ways of seeking solutions to their health problems. These include conventional medical approach, non-conventional medical practises and self-caring practises. Kalu (2005), Nwosu and Obidiozor (2011) and Ebeigbe (2013) also reported similar findings. Most of the risky practices were partly due to ignorance and also due to poverty as pointed out by most of the participants. Most importantly, the population's belief on causes of disease influences their health seeking behaviour too, some were convinced that the cause of their ill-health was spiritual manipulations of the evil enemies; as such people with this belief pursue spiritual solutions to their problems. Some people in Western Nigeria (Isawumi et al., 2014) believed that glaucoma was as a result of "a curse from God". This could be one of the reasons many patients with glaucoma present late for treatment; by the time they realise that the problem was not caused by spiritual attack, the disease may have advanced. However, there is evidence that this study population regards and respects some practises learnt from parents and relatives. The use of certain roots, herbs and other substances were either as a result of teachings from parents or suggestions from close relatives. The dangers of traditional eye medicines have been explored and discussed in the review of literature (Nyenze, Ilako and Karimurio, 2007; Ukponmwan and Momoh, 2010; Nwosu and Obidiozor, 2011; Ajite and Fadamiro, 2013). More also the inherent dangers from using non-prescribed substances for the eye have been observed by some of the participants within their communities. While belief in their efficacy

may be the driving reason for using these substances, poverty might as well be a contributory factor. Health education is therefore very important in order to improve the health seeking behaviour of this population.

Inasmuch as traditional eye medicines might be dangerous in most cases, the use of traditional medicines—herbs, roots, leaves, fruits and seeds etc. for other ailments is becoming popular even in the developed world. People now boil, blend or ferment things like lemon, grape, apple, ginger, garlic etc. and use them for certain ailments. Most of these are done commercially and sold in big supermarkets for instance apple cider vinegar. The Chinese traditional medicines are also making waves in the market too! However, more research is needed in these areas to establish better evidence in relation to the efficacy of these foods.

Poverty has been a major cause of health inequality among this population. It determines to great extent whom to consult in times of health need. Those that can pay for standard medical treatments go for that without first trying other cheaper treatment options, while those without enough money to pay for such treatments first try other cheaper options and when this fails, they may decide to consult the professionals for conventional medical assessment and treatment. Some studies (Naidoo, 2007; Tafida et al., 2015) have identified poverty as one of the main reasons why people could not access proper eye care services, which invariably makes poverty a major contributor to avoidable blindness. Some of the participants explicitly said that being aware of particular risk behaviour may not really change their stance because of poverty. A popular Igbo proverb says “onye osisi hara onu dagburu, nti chiri ya” this expression simply means that “if someone that was warned about any danger gets killed by that danger, then that person must be deaf”. However, this proverb does not hold true in every situation. One may have all the warnings but may not be able to effect any change, this does not mean that the warnings or cautions were misconstrued rather the ability to effect a change was not there. This is consistent with the behavioural change theories (Rosenstock, Strecher and Becker, 1988;



Naidoo and Wills, 2000) which posit that before a change of behaviour could be effected, there must be a capacity to do that (self-efficacy). Therefore, most often many people may not respond to warnings if they cannot change a particular situation. For instance, some of the participants when informed of the consequences of following certain risk behaviours said that there was nothing they could do in such situations due to the fact that the money to pursue a better option was not available. Poverty is therefore a major determinant of health among this population and it is a major cause of health inequality. Reducing incidence of avoidable blindness among this population, the stakeholders must as a matter of urgency address the issue of poverty and affordability of eye health services. This is very important as up to 90% of total global blindness comes from the developing world (WHO, 2010).

### **7.3 Treatment and Management of glaucoma (outcome of treatment and issue of mistrust).**

Generally, the outcome of glaucoma treatment and management is sometimes poor. The poor outcome is attributable to a number of factors which may include:

- Progressive nature of the disease
- Poor management and complications
- Stage of the disease at the time of detection or diagnosis
- Issues of non-compliance with medication or treatment regimen
- Local beliefs and mutual suspicion among the service users, service providers and policy makers.

Glaucoma has been known to be progressive in nature (Gupta, 2005; Kanski, 2007); especially when not properly managed. The gradual reduction in vision often presents to the sufferers and their relatives a scenario of poor prognosis. This must have been the reason one of the study participants [Ezenwata] concluded that glaucoma is an untreatable eye disease that even worsens when operated upon. Holding this opinion may be one of the reasons people fear the

treatment and may explain the reluctance of many to go for surgery as found by recent studies (Adekoya et al., 2013; Abdull, Gilbert and Evans, 2015). Ezenwata was of the opinion that “one should not go about looking for trouble where none exists!” this obviously shows that an enlightenment programme about this disease and other eye conditions is very important in this population. Better understanding of glaucoma and its related risk factors is very important in the struggle against avoidable blindness. Glaucoma must be managed effectively and properly for better outcome, but this has been a great challenge in Nigeria (Kyari, Nolan and Gilbert, 2016).

Sometimes blindness could ultimately result due to complications. In every health condition, there might be some isolated cases that may appear to have complications, and as such unresponsive to treatments (Adekoya et al., 2013). While some of these causes could be natural, some could arise due to professional incompetency. Poor management frequently results in major complications. Egbert (2002) reported the issue of loss of confidence on eye experts in Ghana on the grounds of incompetency. Glaucoma is a sight threatening disease that must be handled as a team to ensure sight preservation. In this population glaucoma is a prominent threat to sight because of lack of both material and human resources. Outcome of glaucoma treatment is also guided by the stage of the disease at the time of detection and treatment. Some cases of glaucoma are detected in advance stages of the condition. Any vision lost cannot be restored with treatment (Thomas, 2012; Abdull, Gilbert and Evans, 2015). This is made worse for some patients who may believe that, or were told by those providing the treatment, that their vision would be restored. The need to inform people about the irreversible nature of the sight loss from glaucoma is very important as this may sensitize some people to expedite actions towards the desire for regular eye checks and treatments. It is worthy of mentioning again that most of the participants in this study had never consulted an eye doctor in their entire

life. Glaucoma and other blindness causing conditions can only be detected through eye examinations.

Another important reason for poor treatment outcome is due to non-compliance with treatment. Most of the service providers complained bitterly about patients not complying with medications and treatment regimen. While some patients alter the prescribed dosage of their medications, others fail to return to the hospitals for follow up treatments. Poverty has been the major reason behind non-compliance in most cases. However, time constraint and lack of understanding of the disease in question could equally play a part. Furthermore, there is the issue of mutual mistrusts among the service users and the service providers. One of the participants expressed an opinion that the doctors are always interested in getting money out of the people's pockets; such that each time one visits a doctor s/he will always find something that is wrong in order -as the participants reported - to make additional charges. Many members of this population hold this opinion, and this might affect the decision and frequency of consulting the professionals. On the other hand, the service providers are suspicious of the service users; they believe that some of the service users like to cut corners by side-tracking them and going to the open markets to buy their medications rather than from them. There is a great need to develop mutual trust between the patients and the doctors as this will make for achieving better care, treatment and results.

The SLP pointed to some cases of wrong diagnosis which might raise some doubts in the minds of people, therefore preventing some from seeking treatment when they need it. For accurate glaucoma diagnosis, adequate provision must be made for equipment. Most of the practitioners lack modern equipment; some work with mere basic diagnostic equipment (Kyari, Nolan and Gilbert, 2016). Moreover, without proper equipment, it might be difficult to assess the progress of the treatment being given. On the other hand, the SSP accused the population of giving less priority to eye health which makes them spend more money on other things

instead of their eye health. The SSP failed to realise the fact that this people have other problems that take some of their income too. This fact sometimes forces the people to try to cope with eye problems pending when they have enough means to take care of that. This blame and counter blame might not do any good to the population or contribute effectively to the fight against avoidable blindness.

This study has provided evidence that the policy makers and some service providers do not understand the plights of the population. Running eye tests especially for glaucoma is very costly in Anambra State; yet policy makers and even some service providers do not regard this as a big challenge to most of the people in the state who live in poverty. However, some of the service providers are trying to find solutions which will enable people to attend for eye test and receive treatment if needed. One of them reported that he is providing credit facilities scheme. However, it is clear that state and local policy makers must provide the leadership needed for improving people's health, changing outdated and dangerous self-care practices and unauthorised treatments, by working together with communities to jointly identify solutions that suit them and their circumstances. Custom made co-produced strategies informed by WHO best practice, will need to be funded but if successful, they will in time prevent poor vision and /or blindness thus individuals will continue to work and have the modest means to pay for the education of their children, for the maintenance of good health as well as the ability to consult qualified doctors and pay for authorised good quality medication or surgery if that becomes necessary. This study has provided evidence that community leadership can effectively bridge the gap until such strategy is fully implemented. As reported in a previous section the SCP was able to mobilise the richer members of the community to support the treatment of the poor and less privileged indigenes. This goes a long way in making life a bit easy for his people. He has also started a community health insurance scheme which encourages members of the community to make a regular contribution which will enable them to have some of medical

costs paid when the need arose. Most of the study participants claimed that the government has not been doing enough to help them with their eye problems; conversely, SCP was praised by his people for being their saviour and helper in most difficult times.

#### **7.4 Inadequate eye care facilities**

The issue of inadequate eye care facilities in the state has been a problem for major concern. Most of the eye care facilities are located in the urban areas with only few poorly equipped ones in the rural areas. Sometimes people find it difficult to travel far for eye treatments; this is one of the barriers in accessing eye services in the state. Moreover, most of the doctors are domiciled in the urban areas as observed by the SSP. Furthermore, the government owned eye facilities are only few and most of the eye clinics and hospitals are privately owned. Therefore, cost for services from these privately-owned eye facilities are always high.

In spite of the fact that eye care facilities are inadequate in the state, yet accessing the available ones are sometimes very difficult. This has been found to be a common problem with eye care services all over the world, especially in the developing world (Jadoon, et al., 2007; Ajibode, et al., 2012; Hayden, 2012).

In this study both the key participants and the service providers recognised that eye services are inadequate particularly in the rural areas, and most people cannot afford them. We can safely assume that these two factors are linked. First, despite the strong moral obligation as well as the obligations that international conventions, signed up by most countries in the world, require governments to promote and protect their population's health, Nigeria does not provide a free at the point of access health service system. The poverty of the population prohibits them from using such services which justifies the lack of further investment in services. The population's inability to access the available services consequently leads to more and more people becoming visually impaired. Being unable to see or having minimal vision stops people from working which results in increased levels of poverty and fewer resources for eye health

care. This is a vicious circle which needs to be broken. A state-wide strategy should be developed in collaboration with communities and their representatives as well as the professional practitioners who run private clinics in order to address this most unsatisfactory situation. Starting with small steps and realistic goals, and maintaining the momentum led by capable leaders who share the community's values, positive results can be achieved and the vicious circle that currently seems to exist, can be broken.

### **7.5 Fear of outcome and ability to cope**

Other challenges identified in this population include fear of outcome, fear of surgery and the ability to cope with the eye condition. Many people are afraid of eye surgeries (Rabiu, 2001). Brian et al. (2012) in Fiji, and Ajibode et al. (2012) in Nigeria both found similar concerns with their study populations. The ability to cope with eye condition is one of the most common factors that could contribute to late presentation of eye diseases to the hospitals for treatment. As discussed elsewhere in this thesis the poor living conditions experienced by the people in the Anambra state, particularly those who live in the rural areas, means that individuals continue to adhere to traditional self-care practices, which may or may not be harmful to health. Further, it is possible that people have low expectations regarding governmental assistance which may improve their health; they may be unaware of their rights, how the government operates and what obligations those who govern have towards the governed. These are some of the factors - notwithstanding poverty - which may influence their attitude towards enduring their eye conditions until it is too late.

An explanation regarding the fear of outcomes and surgery, may be derived from bad experiences of others within the community. It is common in small communities to exchange information with neighbours, family and friends. Stories of people who lost their sight spread by word of mouth and are embellished as they travel from one person to the next. The tendency is to blame someone for the distress that had befallen on one of their community. It is easier to

offer compassion to a person who was harmed by another rather than by oneself. If the person with the advanced eye problem consulted a doctor then the finger is pointed at the doctor who failed to help the person get rid of his/her eye problem or lost their eye sight. Such examples whip up fear and suspicion in the community. It is clear that the evidence from this study points towards the need for more education in order to address this negative consequence, dispel the myths and encourage people to be proactive both for themselves and the whole community.

### **7.7 Gaps in health policy**

Gaps and selective implementation of health policies are major factors that encourage the growth of un-professional practices and quackery in the health care sector in Anambra State. This encourages other risk behaviours that could cause glaucoma, and ultimately blindness. The fact that all forms of medication could be bought freely from the open market by anybody is a serious threat to the health of any population. The sale of prescription medicines, controlled drugs and injections not only endangers the health of the entire population but also encourages quackery and un-professional practices. For medications sold freely in open markets, their preservation is not guaranteed; hence many might deteriorate before the actual use due to improper storage. Most of the medications that are dispensed to the unsuspecting population are sometimes contraindicated in some health conditions; while some are direct causes of some eye conditions. For instance, steroids (Jones and Rhee, 2006; Kersey and Broadway, 2006) can be a direct cause of glaucoma; while antihistamines are contraindicated in persons with glaucoma; if a person with glaucoma must use it, then it must be under strict supervision. Patent medicine vendors are not aware of this, and most often these are some of the medicines patent medicine vendors give out on daily basis to their customers (Beyeler, Liu and Sieverding, 2015).

The lapses in the implementation of policy explain why there are so many patent medicine vendors that set up practices similar to one-room clinics/hospitals. There is evidence that the patent medicine vendors are given free hand by not regularly monitoring their activities and ensuring that they are operating within the limits of their legal authority and experiences. As reported by the participants of this study different people sell all sorts of medicinal products in unregulated manners. Different types of concoctions are being packaged and sold to the people, without anybody asking any questions at all. This was discussed with the health SSP during the interview.

Most of the health care professionals [Service Providers] complained bitterly against the use of, and proliferation of patent medicine vendors in the state. The Service Users also confirmed how they regularly use this service and how useful and helpful the service has been to them. The helpful nature of patent medicine vendors to rural communities is not in doubt due to scarcity of proper health institutions, but the dangers they pose is also quite considerable due to the way they practise as reported by different studies (Oshiname and Brieger, 1992; Brieger, et al., 2004; Oyeyemi, Ogunnowo and Odukoya, 2015).

In relation to glaucoma, it is clear that the government has no clearly defined policies on how and who should handle glaucoma in the state. As a sight threatening disease that can easily cause irreversible blindness, there should be standard procedures regarding how to diagnose, treat and manage glaucoma in the state. In the UK, the NICE clinical guidelines spell out how to treat and manage glaucoma in the UK. The truth about health issues is not just about the fact that one is qualified to treat or manage a particular health condition, but the ability and readiness to refer the patient for a second opinion when the condition fails to respond accordingly. From the response of some of the Service Providers, some appear to be applying trial and error method in the treatment and management of glaucoma. The main motivation and



target should be managing the eye condition in a manner that will guarantee preservation of the remaining vision, instead of resulting to blindness.

### **7.8 How can this population be helped?**

Evidence from this study demonstrates that to reduce the incidence of avoidable blindness due to glaucoma in Anambra State, the population must be helped to understand and avoid the risks associated with blindness; furthermore, the policy makers and service providers must step up efforts and their support for the entire population. Recording any appreciable reduction in blindness in the state amounts to achieving the desired objectives of this study. Thus; the study was strategically designed to involve active participation of the three stakeholders in eye health.

As part of this strategy, participatory action approach was employed; while semi-structured interview was used in collecting data from the various participants, with interpretative phenomenological analysis [IPA] as the analytical framework. Participatory action approach enabled me to work in partnership with the research participants in order to achieve the desired change in how they respond to eye health issues in their communities (Bergold and Thomas, 2012). Baum and colleagues (2006) also noted that participatory action research is based on reflection of the collected data from which a set of action is initiated that aims to improve health and reduce health inequities through active participation of the target population. The use of semi-structured interview gave the participants wider latitude to express their opinions in contrast to structured questionnaires that limits the participants' responses to the provided options. Moreover, the IPA analytical framework made it possible for the voices and concerns of the various participants to be heard, which is very important. All these point to active participation of the various stakeholders.

Arnstein (1969) in her study of "ladder of citizen participation" discussed the relevance of involving different stakeholders in issues that concern them. This creates an atmosphere of mutual respect, effective planning and decision making that might be acceptable to the wider

population. This is what some of the health promotion activities miss; instead of involving and working with the various stakeholders, some tend to prescribe what needs to be done. For some people this is seen as an imposition, which may result to lack of cooperation, and hence failure of the project.

In this study, three major stakeholders were actively involved as well as some important community leaders and many more professional colleagues that were always available to assist in whichever way that they were needed to help. The planning and execution of this study agrees with the proposed Ottawa Charter of “HESIAD framework”.

As part of this study, health education seminars were prepared and delivered to the target population at two different locations in the state. This was comprehensively packaged highlighting various glaucoma and blindness risk factors and risk behaviours that must be avoided in order to prevent blindness. It was an opportunity to inform the target population in some details the risks associated with certain lifestyles and self-caring practices that may be dangerous to their sight. Further counselling and advice were also given during the individual interviews; in all, several people believed that having been informed by the seminars and teachings, that they will now work as educators/informers to others in their communities. The health education, free eye screening and advice, and free eyeglasses provided to some of the participants were highly appreciated by the target audience as evidenced by the feedback in the programme evaluation sheet by some of the participants [appendix E].

As part of the campaign for service improvement, the study was presented as a research-in-progress at the 2014 annual conference of Nigerian Optometrists Association, which is an association of Nigerian eye doctors [primary eye care practitioners]. The aim was to familiarise the practitioners with the findings and challenge them to improve on their relationship with their patients. The presentation was a further opportunity to persuade the practitioners all over the country to improve on eye services to the entire nation; especially in areas of eye health

education and community eye screening services. In response to this, most of the practitioners interviewed agreed to devise different ways of assisting the target population.

In advocating for better eye health services and facilities in the state, the policy makers were confronted with the major findings of this study; this further emphasised the usefulness of participatory action approach used in this study. They were presented with the concerns of the general population and were meant to understand that the government was not doing enough in eye health according to the rating of the population. The government was however urged to step up actions geared towards providing better eye services and facilities in the state. At the state level, there was evidence that there was an on-going process of improving eye health in the state through improving the facilities in the hospitals and by employing more doctors. This is a positive development and should be sustained. However, the SSP mentioned that most of the eye care facilities are located in the urban centres, and most of the doctors live in the cities too. However, the citing of hospitals and other eye facilities should be done in such a way as to benefit the entire population especially the rural dwellers where these services are needed most. It was not clear if the SSP is doing anything to encourage the doctors that live in the cities and urban areas to relocate to the rural areas where they will be more helpful to the people. The doctors may not consider relocating to the rural areas without enough incentives.

Furthermore, making the services available is not just good enough, but the services must be affordable to all that need them; right to sight is a fundamental human right, and every government must try to ensure this. Inasmuch as the financial allocation to health care in the state is not enough to go round, better management of meagre resources ensures equitable distribution and fair sharing. The Service Providers in government employment must be encouraged and supported to provide the much-needed services to the population.

At the community level, SCP having identified poverty as the main challenge to accessing standard eye care services, has devised a unique way of assisting the people through personal

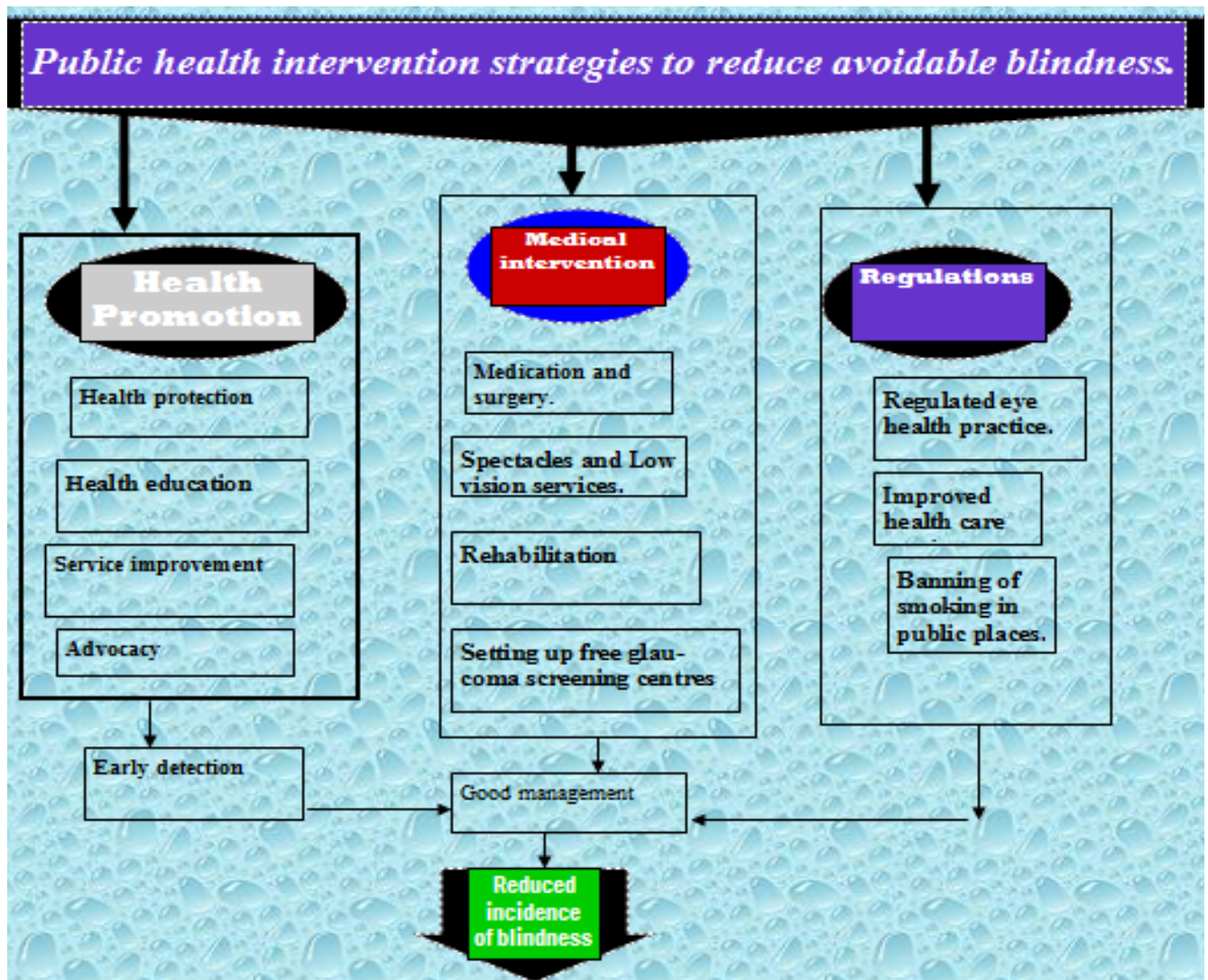
funds and by pleading with the rich citizens in his community to sponsor and pay for the poor people that need eye care services. This is a quality of SCP that makes him stand out as a charismatic leader. If all leaders at different levels of leadership in the state would imitate this SCP, the chances of preventing blindness among this population could have been higher.

SCP readiness to assist his people highlights the Igbo's "five-fingers are not equal" philosophy. Among the Igbos, there is this belief that the five human fingers are not equal; some are longer, while some are thicker and shorter. This simply refers to the fact that some people are better-off financially than others. These people can be approached to assist in situations where one needs help especially with sight. This is what SCP does in addition to using his personal funds. When this approach is combined with Igbo philosophy of "onye aghana nwanne ya", it might help immensely in the fight against avoidable blindness.

People should be encouraged to look for assistance with their sight problems in desperate situations rather than sitting down and waiting for a day when blindness would engulf them. Everybody has a crucial part to play in the fight against blindness, and not until each person plays their role, the fight against avoidable blindness might be difficult to win.

### **7.9 The anticipated outcome**

The overall effort put into this study is anticipated to yield better results, thereby contributing to reduction in the incidence of avoidable blindness in the state. Figure 7.1 is a schematic representation of the anticipated outcome.



*Figure 7.1 The anticipated outcome.*

Following the HESIAD framework and the socio-cultural and environmental theory of health promotion, this study has been able to package and deliver teachings for creation of awareness of eye diseases and has equally prompted both the Service Providers and Policy Makers for positive actions. Thus, if all stakeholders play their parts, especially in provision of better services and effective policies and regulations, there will be drastic reduction in the incidence of avoidable blindness in the state.

### **7.10 Limitations of the study and future research**

The use of single research method of semi-structured interviews could be seen as a limitation in this study; however, every research method has its strengths and weakness notwithstanding whether it was a single method or mixed methods (Johnson and Onwuegbuzie, 2004). Understandably, a mixed or multi-method approach can in several ways provide richer information depending on the ability and experience of the researcher; however, addition of focus group interviews could have added value to the research process. Inasmuch as face-to-face interview was the only method used in the collection of data for this study, the quality of data was strengthened by choosing and interviewing three different sets of stakeholders. Furthermore, data from all stakeholders were triangulated to ensure validity (Carter et al., 2014). The findings were also triangulated with findings in the literature review and found to be consistent with the previous studies.

Purposive sampling method was used in identifying and recruiting the participants; I am aware that I might have exhibited some elements of bias in deciding the participants and their number, but this is sometimes the case in some forms of qualitative studies; determining the sample size and how to select them is sometimes a problem. However, the purpose of research sometimes helps in this regard. Most importantly, a purposive sample must be able to answer the research questions (Bryman, 2008; Creswell, 2009). Thus, effort was made to ensure that the three important stakeholders in relation to eye health in the state were duly represented in the sample so as to provide different but important perspectives to eye health issues among this population. In terms of size, exploratory sample was utilised in the study; an exploratory sample is used as a way of discovering new ideas and generating new insights (Descombe, 2010).

Being a cultural insider could affect a research project both negatively and positively. As an insider, there might be certain opinions, popular expressions and cues I might ignore as common or irrelevant, but which would have meant so much for an outsider, and vice versa. I

am aware that being an insider might give in to some biases especially the problem of guessing the answers before the action. Moreover, I am aware that my interests, my experiences and values will naturally play a part in the research process as noted by Bryman (2012). However, in line with the suggestion of Hammersley and Atkinson (1995), I maintained a marginal position of simultaneous insider/outsider; trying not to be over familiar with the population in order to make a real meaning from the information they provided. Doing a research as an insider also has its advantages (Ganga and Scot, 2006), while others may find it difficult to understand certain actions and nuances, an insider will find it a lot easier. There are so many things about the customs and traditions that I will not need to ask too many questions to understand and interpret; this should be considered an advantage also. Moreover, the fact that I have so much knowledge about the target population has imbued me with the ability to understand and tap from their cultural beliefs which forms part of the innovative nature of this study. I was aware of the Igbo philosophy of “onye aghana nwanne ya” simply because I belong to the tribe.

However, I recommend further research with an outsider to compare the similarities and dissimilarities of both studies; also using mixed methods may give different results and might be worth trying.

## **Chapter Eight Contribution, Conclusion and Recommendations**

### **8.1 Contribution to knowledge**

This study was concerned with the promotion of eye health in a specific area in Nigeria- (Anambra State). Having practised as an Optometrist within and outside this state, I have discovered certain harmful traditional practices that people employ in treating eye problems, such as: using liquid extracts from onion bulbs, plant extracts, locally brewed gin (kai kai), kerosene, breast milk, urine etc. Some of these practices may have originated from local beliefs and tradition (Nwosu, 2005; Ebeigbe, 2013). They may or may not have worked to some extent in the past, but in the twenty-first century, most of these practices are considered dangerous by medical science.

Thus, this study will serve as a continued means of creating awareness about these dangerous practices, hence a campaign geared towards reducing the number of people that use such harmful practices. It is believed that reduction on the rate of exposure to these dangerous practices could equally reduce the incidence of blindness in the state, all over the country and beyond. Moreover, other forms of public health intervention campaign could be developed using this study as a template; especially in Africa, Asia and other third world countries.

This is in agreement with health promotion principles which seek to boost health through disease prevention, health education and health protection. Inasmuch as health promotion may not be regarded as something new, the way and method of delivery is of great importance.

Nigeria is a country where the level of poverty is very high, with about 70.2% living in poverty (Dineen et al, 2008). People find it difficult to feed properly, so becoming visually impaired or completely blind would be very devastating. It incurs costs both to the individual, the family and the state at large. In that sense, any programme that could promote and prevent blindness would be making useful contributions to the society.



By exploring the level of glaucoma awareness, how people perceive the disease, the health seeking behaviour of the population and also by evaluating policies in place for the detection and management of glaucoma, this study would serve as a template for planning future campaign and prevention strategy in Anambra State, Nigeria, and also other developing world.

The study will raise the profile for the need of better control of glaucoma in Nigeria and other developing countries. Exploring the health seeking behaviour of the population has revealed who people consult when they have problems, the type of information given to them from such sources, and the outcome of the treatments. It also revealed why people consult “quacks” and use unconventional therapies. These have been noted and documented and will be submitted to the government as recommendations. It is hoped that this information could be helpful to the government in identifying gaps in health policies, thus prompting them into setting up and implementing right policies for the detection, care and treatment of glaucoma in the state and other parts of the country. This study will also benefit other parts of the world especially UK where many Nigerians live; what was learnt from the study could be applied to Nigerians living in the UK in order to improve on their eye health.

In Anambra State, it will influence good practice and better treatment outcomes. I had discussions with some service providers, conducted interviews with some of them and also presented a paper at the 2014 National conference of Nigerian Optometric Association; it is anticipated that these will sensitise and prompt these service providers to positive actions towards better practice.

It will also serve as a useful means of empowering the population by enabling them to have control over their eye health problems through health promotion. Knowledge is power especially when the learnt information is put into action. Health education was delivered to the population in the form of eye health seminars. This is anticipated to help in the understanding and avoiding blindness/glaucoma risk factors; which could eventually result to blindness

reduction in this population. The evaluation sheets I collected following the seminars tell how useful the seminars have been to this population. Moreover, the study participants have accepted to be local campaigners and canvassers for better eye health services and practices. They promised that they will carry further the duty of advising others against harmful eye care practices within their communities. This is hoped to have a snowballing effect and would further help in achieving the objectives of this study.

*“As much as I can, I will let people know what and what to do and those things they shouldn’t do so as to protect their eyes. Like people rubbing their eyes hard when they have irritation, telling people to eat balanced and good diet that will help them prevent blindness. I will also advise them to seek and go to good and standard places where they could get standard attention to their eye problems” (Fatima: 129-133).*

Most importantly, the study will be making a contribution to the theoretical understandings people have about how culturally competent health promotion can be achieved with glaucoma as a case study using participatory action approach. As a cultural insider, I understand uniquely the cultures and traditions of the research population. As a result of this, I have identified some aspects of their culture that could be explored to help in the fight against avoidable blindness in this state. This cultural aspect is the Igbos philosophy of **“onye aghana nwanne ya”** this literally means that nobody should leave his brother behind. It is actually a metaphor for people to assist and help one another. (It means that people should help each other so that they will be able to live and most importantly get out of any unpleasant situation). This is the main strategy to apply in cases where people still dare blindness by engaging in certain risk behaviours due to poverty or financial difficulties. This was hinted at by Anthony and Zenda and was further confirmed by SCP:

*“Yes because in my family they help each other” (Anthony:110)*

*“I will tell the people that anywhere they hear about eye treatment that they should try to go. I’m trying to sponsor people that is those that will be willing to go in order to meet the doctor*

*but are having problem with transport, I will try to help out with my car so as to take them there”(Zenda114-117) .*

*“We also organise doctors for surgical treatments should the eye care require operation, that is surgery. We have volunteers; I organise volunteers who pay for such poor people” (SCP:28-30).*

Utilising this principle, people should approach their relatives and friends to ask for assistance each time they have serious eye problems. I have used this strategy to mobilize my family members into helping several relatives to take care of serious eye problems. Presently some of the participants are still being sponsored through their course of treatment by me. There are other individuals within and around different communities that will be willing to assist people if they are approached. People should make efforts to ask for help when they need one. Furthermore, the Igbos also believe in the philosophy of “the five fingers” not being equal! Based on this, “the haves” are often motivated to help “the have nots”

The theory that underpins this study- the socio-cultural and environmental theory of health promotion explains further how culturally competent health promotion could be very effective in this instance. The socio-cultural and environmental theory of health promotion takes into consideration other wider social determinants of health like socio-cultural, economic and environmental conditions that affect the people’s health. For instance, the traditional beliefs, values and norms, the state of the environment, level of poverty and affluence, state of health care system and social support. In this case, it is not all about “blaming the people for what they do” rather about “why they do what they do and what can be done to assist them.” Utilising this platform, “the haves in the communities are mobilized to assist “the have nots”.

However, the cultural theories use heuristic techniques in trying to find solutions to problems within the confines of a cultural environment. In this study, the Igbos concept of “five fingers not being equal” and “onye aghana nwanne ya” philosophy come into play. People are often motivated when culturally appropriate approach is employed within their setting. This practice

was evident in the ministry of St Paul in the Bible [Acts 17:18-23]; when he was preaching the gospel of Christ in Athens, he did not start by condemning Athenians due to too many idols they were worshipping, rather, he commended the people of Athens for being very religious and clever by thinking out and providing an altar for an “unknown god” whom they may have not known that exists. Being very religious, the Athenians provided this altar in order to avoid the anger of the “unknown god” who may feel neglected. Paul used that platform to tell them that he brought them message about that “unknown god!” This approach kindled their interest and equally gave Paul better opportunity to deliver his message.

## **8.2 Conclusion**

Possible causes of blindness are many but mostly preventable. In this population, the major factors that influence blindness are lack of awareness of blindness risk factors and behavioural risks which provides fertile grounds for eye diseases to thrive. Behavioural risks are often indulged upon due to poverty and financial challenges; people tend to indulge in some kind of behaviours or lifestyles that obviously might be injurious to their sight. For instance, it was observed that due to poverty, greater proportion of the population relies on patent medicine vendors and other self-caring practices for their health issues rather than consulting doctors which can cost them more. Poverty therefore has been a major determinant of health in this population.

Moreover, the ability to cope with certain eye conditions sometimes encourages some people to prioritise other concerns over eye health. This indicates lack of awareness of the great loss associated with total blindness. Being a victim of blindness is much agonising especially when the cause is preventable. Blindness can reduce the most strong and powerful person to a helpless and dependent person, especially in the developing world where blind people are seen as burden. Since up to 80% of global blindness is preventable, yet people go blind every now

and then due to poverty, neglect or ignorance of the basic ways and principles that could have prevented this vision loss.

Data from the study suggest that there is need for health education; this will increase the population's level of awareness of how behavioural risks, lifestyles and other factors could cause blindness. Increased awareness of such causes could lead to better understanding of the need for regular eye examination which is instrumental in early glaucoma detection and detection of other blindness causing conditions.

While most studies in different places focussed on providing simple information regarding glaucoma and other causes of blindness, this particular study was structured in such a way that it worked in partnership with various stakeholders in eye business to achieve the desired objectives of this research. Public Health is defined as the science and art of promoting health and well-being, preventing ill-health and prolonging life through the organised efforts of the society (Faculty of Public Health, [FPH], 2010). Therefore, any effective public health strategy must emphasise collective responsibility towards promoting well-being and preventing diseases, taking into consideration other socio-economic and wider social determinants of health. This was the approach used in this study.

The semi-structured interviews conducted provided useful information about the level of awareness of risks of blindness, and the free eye screening and health education seminars delivered to the population provided more enlightenment to them on various blindness risk factors. The interviews and chats with both the service providers and the policy makers was an attempt to present the challenges the population is facing and to advocate for improved and better eye care services in the state. In the light of this argument, it can be concluded that this study has been able to address the barriers and challenges which hampered the people in Anambra State, Nigeria from accessing knowledge and eye health services in order to prevent

avoidable blindness due to glaucoma. Thus; the aim and the objectives, of the research and the limitations of this study were all fairly addressed.

The theoretical framework used for this study was the socio-cultural and environmental model of health promotion. This provided a good tool and platform for qualitative research in conjunction with IPA which allows the voices of the various participants to be heard, thereby giving the reasons for their actions. Furthermore, this theoretical framework took on board other wider social determinants of health within a given community. Thus, the responsibility for good eye health does not lie on one single group but collectively on all the stakeholders of eye business. Inasmuch as poverty, inadequate funding to health care might be plausible reasons for failure in the eye health sector, judicious management of the allocated resources can drastically turn things around. Most importantly, the traditional brotherly concern of the Igbo people is an important strategy to be popularised as this will be very helpful in the face of abject poverty and dire need of eye care.

### **Recommendations**

The following recommendations [strategies] if adopted could help in addressing the findings from this study. The relevant authorities should accept and apply some of these recommendations in order to improve eye care services in the state.

#### **8.3 Periodic health education seminars**

A forum for the continuous provision of health education to this population will be of great value as evidence from the study has shown. The state should be mapped into different zones with trained health professionals provided from time to time to speak to them about different health issues. Specifically, for eye problems, selected people in various communities should be trained to deliver eye health education among their various communities. This grass-roots approach can serve a very useful purpose; it can also save costs as little financial motivation can sustain the programme.

#### **8.4 Glaucoma screening centres**

There is a need to have standard glaucoma screening centres at strategic locations in the state where accurate diagnosis for glaucoma is provided. Various hospitals and eye care centres that need accurate and complete diagnosis can refer their clients here for confirmation of their initial diagnosis. The screening centres must have all the modern diagnostic equipment that will guarantee accurate diagnosis. This will reduce the problem of wrong diagnosis sometimes experienced in the treatment of glaucoma. Availability of standard diagnostic centres can make it possible for many practitioners to treat glaucoma with better confidence as this will make it possible for them to compare the effectiveness of their treatment with continuous reliable result from the diagnostic centres.

#### **8.5 Encouraging private eye care practitioners and equipping the government-owned hospitals.**

The government alone cannot sufficiently provide all the eye care needs of the population, therefore encouraging private eye care practitioners will go a long way in augmenting for the short fall. As noted in the analysis, most of the private eye care providers do not have the necessary equipment that could aid them in their diagnosis; thus, assisting them with the purchase of these modern equipment will be immensely helpful.

Right and modern diagnostic equipment is at the heart of improved eye care practice. Without the right equipment to aid diagnosis, most of the procedures tend to be trial and error. While considering supporting the private practitioners, the government at the same time must make effort to equip the government-owned hospitals so that they will be able to provide the expected services. It is evident from the interviews that few government-owned hospitals available in the state are not adequately equipped.

### **8.6 Providing subsidy for eye medications, especially for glaucoma cases**

As poverty has been identified as a major cause of health inequality among this population, anything that can alleviate the financial stress will be considered a positive development. Thus, providing subsidy for eye treatment and medication will be another effective way of encouraging better eye care in the state. If the government can subsidize eye care treatment, especially as it concerns glaucoma treatment, it will go a long way in reducing the rate of blindness due to glaucoma. Glaucoma medications are often very costly; this sometimes causes the problem of non-compliance with medication as some patients may not be able to get new supplies as soon as they used up what they had. Non-compliance with glaucoma medications can result to further deterioration of sight, and ultimately blindness.

### **8.7 Adopting and utilising culturally appropriate health promotion programmes**

Health promotion is needed in this population to be able to create eye health awareness and also change their health seeking behaviours; however, an effective health promotion programme must be culturally appropriate for it to work and influence the people's attitudes. Many health promotion projects have failed because they did not consider the cultural inclination of the target population. For instance, the reluctance to welcome the polio vaccination programme in Northern Nigeria could be linked to the cultural and religious affiliations and beliefs.

### **8.8 Thorough review and implementation of government health policies in the state**

A review of the state health policies is recommended. This should be followed by implementation of these policies. The gaps in the policy that give room to malpractices and growth of quackery in the state health care services must be addressed. There is a need for proper monitoring of the various practitioners in the state; preferably through their professional bodies. Most importantly, the government must ensure that the various health policies and laws are adequately implemented.



### **8.9 Increase in budget allocation to health, especially eye health.**

There is a need to increase the resources allocated to eye care services. Most government do not treat eye health as area of priority in health care; hence the starvation of funds in matters of eye care. It is very clear that the resources allocated to eye care services in the state is grossly insufficient, and this affects seriously the level of services provided to the people that need eye care services. Better funding to eye care services would guarantee provision of modern and better diagnostic equipment, and subsidized costs for treatments and medications.

### **8.10 Involving the traditional rulers**

Part of the strategy for getting the campaign against avoidable blindness down to the grass-root is by getting the kings and traditional rulers involved. The Igbos has respect and regards for their kings and rulers and will listen to them when they speak. The kings must be encouraged and empowered to do this. In Igbo land, kings have the capacity to encourage and motivate their subjects. A case-in-point is the effort of SCP that has turned around the programme of health in his community to the advantage of his people. Within a community setting, people could be trained to be providing health education especially with respect to eye problems.

### **8.11 Involving the traditional medicine practitioners**

There is need to involve the traditional medicine practitioners in different towns and villages in this campaign. They should be given proper awareness regarding different eye diseases; thus, training them to be able to recognise these eye diseases and make immediate referrals. Most times, traditional medicine practitioners are the people some patients contact first when they have any health issue, so getting them involved would be a great advantage. In return for each referral they should be given some incentives. This would encourage them to make more referrals to eye health professionals. The traditional medicine practitioner would equally use same opportunity to educate and advise the people that these eye problems are not caused by

magical means but normal pathological issues. This approach if properly managed would go a long way in preventing unnecessary loss of sight in the communities.

### **8.12 Monitoring the activities of the patent medicine vendors**

In as much as the patent medicine vendors render useful services to the people in the communities, their activities must be properly regulated and carefully monitored. They are expected to provide a simple and temporary measure, and then make immediate referrals. They should also be given periodic seminars to educate them on the scope of their practice, and the extent of damages they may cause to people's health while handling cases that are beyond their basic knowledge.

### **8.13 Fighting fake medication**

The issue of fake medication is a serious problem that destroys useful effort made to fight blindness. In most cases the right diagnosis is made, and right medications prescribed, but sometimes what is dispensed might not be the actual medication prescribed but something in similar package, yet fake. When this happens, the person involved might be thinking that the right treatment has been going on, only to find out at last that the medication he/she has been taking was nothing but fake medicine that has made no impact on the disease being treated. Aggressive effort must be made to rid the state of such unscrupulous and destructive practices.

### **8.14 Addressing the various barriers and challenges**

Apart from financial challenges, other major barriers like the location of eye care facilities and availability of competent professionals have been issues of concern. It will be helpful if more of the eye care facilities are built in the rural areas, and doctors also encouraged to live in these areas to attend to the people in need. This will reduce the cost of transport and dangers of accidents associated with the poor road network in some areas of the state. The presence of eye care professionals in the rural areas would help immensely in promoting eye health among the

rural dwellers. Other challenges stopping the people from accessing eye care services must be addressed on their individual merits.

If these recommendations are implemented, the chances are that there would be an improvement in the health seeking behaviour of the people in Anambra state, thus resulting to reduction in avoidable blindness.

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## **Reflecting on my PhD journey**

The journey for my PhD was unconsciously started in 2009 when I started studying Public health at the masters' level, writing and researching on the topic: Glaucoma is a major cause of blindness in the UK, how can it be prevented? Findings from this study prompted me to develop a desire to do more study about how to help people with glaucoma especially in a developing country such as Nigeria.

The PhD journey has really been a very challenging, revealing, inspiring and a very educative one. It has imbued me with different level of wisdom. At the start of the journey I was a bit “myopic” in the sense that my mind was fixated on what I wanted to achieve and the way I determined to do this. As I made progress on this journey, my findings and discoveries of better options and approaches significantly affected my initial position. As a result, I was able to develop a broader and better mind set; I was able to operate more freely and alternate from a professional point of view and as a researcher, an insider and an observer. This really helped me in making good and valued judgments and to see and interpret findings as objectively as possible.

I left UK to Nigeria to collect data for my study, and this data collection lasted from July 2014 to August 2014.

I visited the Anambra State Health Commissioner and briefed him about my study; then made an application and obtained ethical clearance for my study from the ministry. I also met with the Aguata local government area Chairman and intimated him about the study and discussed the possibility of organising a free eye screening and health seminar at the LGA headquarters. With the approval of my proposal a date was chosen. The King of Igbo-ukwu town was also briefed about my study and my plan to run a free eye clinic and to deliver eye health seminar to the people. The King of Igbo-ukwu was so happy with the proposal and promised to mobilise the people about the programme.

The eye health seminar was delivered in the two selected places using visual images through a projector. Questions were taken after the teaching and eye testing followed afterwards. Programme evaluation sheets were given to some of the attendants who were randomly selected. Participants were encouraged to pass on what they learnt to others as this is very important in curbing and preventing blindness.

Dissemination: part of this study was presented as a research-in-progress at the annual Nigerian Optometric Association Conference 2014 held in Asaba, Delta State, Nigeria.

### **Personal stance and positionality**

In all research, especially in qualitative research where the generated data is analysed and interpreted according to the researcher's knowledge and ability, it is very important to understand something about the position, perspective, beliefs and values of the researcher (Robert Wood Johnson Foundation [RJWF] 2008).

Originally, my position as an Evangelist and deliverance minister in my church influenced my choice of Optometry as a course of interest. This was aimed at equipping me to be able to help people with eye problems both as part of service to humanity and further fulfilment of my pastoral ministry. "You shall open their eyes and turn them from darkness to light" (Acts 26:16-18).

Being slightly claustrophobic, I hate to find people trapped in any unpleasant remediable situations. Thus, from my professional leanings and further trainings combined with cumulative life experiences, I have considered blindness as a form of "open imprisonment" which cuts one off from the midst of other people. To fight this "open incarceration" among my people, I was stirred to pick this fight against avoidable blindness. This reason influenced the choice of emancipatory/collaborative methodological approach used in this study. I completely agree with World Health Organisation's declaration of sight as one of the

fundamental human rights. My passion for eye health has encouraged me to reject proposals to research on different areas from several professors that I have come in contact with during the search for research supervisors.

While I was practising in Nigeria, I did all I could to help some people from my Eye Clinic in Nigeria, but the help was like a drop of water in a mighty ocean. Since I could not provide enough for all that needed help, I had to go for other means of helping them, thus this desire. I developed the passion to campaign and fight blindness because I have had several opportunities to chat and counsel partially blind and blind people. This has revealed the degree of life frustration, helplessness and feeling of complete disillusionment. Moreover, I have several relatives that have had serious eye problems. Some of them were helped because their cases were diagnosed on time and appropriate action taken accordingly. Some actually became blind because of late intervention. So, armed with these life experiences, I considered it worthwhile to extend the same principles that saved some of my relatives from becoming blind to my locale of study. I believe that the study will be making useful contributions; because a journey of a million miles begins with a single step; this is my first step.

In this study, I positioned myself as a researcher-practitioner and an “insider” in the sense that I was surrounded by people with the particular case I was researching. Secondly, I came from the same state where my research is being carried out. I am aware that situations like this might give in to some biases especially the problem of guessing the answers before the action. Moreover, I am aware that my interests, my experiences and values will naturally play a part in the research process as noted by (Bryman, 2012). Doing a research as an insider however has its advantages and disadvantages (Ganga and Scot, 2006). While others may find it difficult to understand certain actions and nuances, an insider will find it a lot easier. There are so many things about the customs and traditions that I will not need to ask too many questions to understand and interpret; this should be considered an advantage also.

## **Basic trainings and education**

According to Malterud (2001 pp.483-484) the researcher's background and position will affect what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate, and the framing and communication of conclusions. Most importantly, the researcher's background determines to an extent the credibility and acceptability of the concluded study.

As already mentioned, I trained as a Doctor of Optometry [OD] at Abia State University, Nigeria between 1998-2004. After that, I did a one-year internship with one of the major eye hospitals in Nigeria- NOSCO Hospital. I was retained by the hospital up till 2006 when I set up my own eye clinic. I left for London Metropolitan University, UK where I did a masters, programme in Public Health in 2009-2010. I did a postgraduate study [PGDip] in Social Science Research Methods in 2012-2013 at Middlesex University, London in preparation for this research degree. The PGDip adequately equipped me with deeper knowledge of different research methodologies and analytical software like Nvivo and SPSS, and further deepened my knowledge of use of excel.

## **Conferences attended**

During my PhD journey, three important conferences were attended. The first one was the Middlesex University Summer Conference in 2014, where I presented my study as a research in progress. Also, between July and August 2014, I also attended the National Conference of Nigerian Optometrists Association. At this Conference, the facts and findings so far gathered from this study were presented. I also presented a paper at Middlesex Summer Conference of 2016. Again, during the course of this study, several seminars on eye and general health and well-being have been presented to different organisations at different settings.

## **Publications**

Three journal articles have been published from this study:

1. ***Barriers to accessing good eye care services in Nigeria: A focus on Anambra State.***

Link to article: <https://www.ajol.info/index.php/jnoa/article/view/166282>

2. ***Investigating the level of glaucoma awareness and perception of its risk factors in Anambra State, Nigeria.*** Journal of Public health.

[https://www.publichealthjrn.com/article/S0033-3506\(18\)30122-7/fulltext](https://www.publichealthjrn.com/article/S0033-3506(18)30122-7/fulltext)

3. ***Relevance of culturally appropriate approaches in health promotion: a look at Igbo philosophies in dealing with eye care challenges in Nigeria.***

<https://www.ajol.info/index.php/jnoa/article/view/173701>

4. ***Prevalent blindness risk factors in Anambra State, Nigeria: a cause for concern.*** [is yet to be sent out to a Journal for consideration for publication].

## Appendices

### Appendix A Middlesex university ethical approval



Ref: HEESCMH1410

To: Raphael Okoye  
School of Health & Education

30<sup>th</sup> May 2014

Dear Raphael

**Approval: Ethics Application Number MH1410**

Thank you for submitting your revised application. I can confirm that your revisions have been accepted and your application has been approved with the following recommendation:

1. Amend PIS to include supervisor telephone number and work address and amend the title of the sub committee to 'Health and Education'

Good luck with your research.

Yours sincerely

A handwritten signature in black ink that reads "Gordon".

Dr Gordon Weller  
Chair: Health and Education Ethics Sub-committee

## Appendix B Ministry of Health Ethics approval

**ANAMBRA STATE OF NIGERIA**  
**MINISTRY OF HEALTH**



**JEROME UDOJI SECRETARIAT  
COMPLEX  
P. M. B. 6002  
AWKA.**

**Your Ref:.....**

**Our Ref:.....**

.....16<sup>th</sup> July 2014.....

Dr. Okoye Raphael  
School of Health and Education  
Middlesex University, London

**RE: APPLICATION FOR ETHICAL APPROVAL**

Reference your application for ethical approval to conduct a research bordering on human subjects titled; "Public health intervention strategies to reduce the incidence of avoidable blindness due to glaucoma in Anambra State". The Ethical Committee of this Ministry met and reviewed your request.

The committee hereby grants you approval to conduct this research, while ensuring the safety and absolute confidentiality of your human subjects.

Regards.

  
Dr. C. J. Okoye  
Chairman  
State Ministry of Health Ethical Committee

*All replies to be addressed to the Hon. Commissioner.*



## **Appendix C Participant information sheet [PIS].**

Study title: Public health intervention strategies to reduce the incidence of avoidable blindness in Anambra State of Nigeria: A case study of glaucoma.

You are being invited to take part in a research study. But before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others or with me if you wish. You are free to ask questions if anything is not clear to you. Remember, you have a choice of accepting or refusing to take part.

Thanks for your time.

What is the purpose of the study?

The purpose of this study is to identify and apply various public health strategies to help the people living in Anambra State to understand and avoid the various risk factors associated with glaucoma, and as a result, reducing the incidence of blindness due to this disease.

Do I have to take part?

It is completely voluntary. You can decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. You are not under any obligation to participate to the end of the study, however, you must decide if you will be capable of participating in the study.

What do I have to do?

You will be interviewed once, and this interview may last between 45-60 minutes. I may have to get back to you if need be for clarifications or confirmation of the contents of your interview. I will also want to let you know that the interview will be tape-recorded with your permission. Please, also be aware that for quality assurance purposes and equity in this project, your data may be selected for audit. This means that a designated auditor may choose to look at your signed consent forms.

Why have I been chosen?

You were chosen because you are capable of supplying information that would help in generating the data needed for this study. Based on the generated data, this study will be able to make recommendations that will assist both the service providers and policy makers in planning the best way to reduce the incidence of avoidable blindness in the State.

What are the possible benefits of taking part?

By taking part in this study, you will be helping in generating information that will be very helpful in curbing the incidence of blindness in the State. This information will be packaged and disseminated to key people in eye care policy and service provision which could help in improved eye care services and uptake of eye care programmes. Also by taking part in this research you will have better understanding of strategies to avoid and reduce incidence of avoidable blindness in Anambra State.

What are the possible disadvantages and risks of taking part?

There is absolutely no risk in taking part in the study in terms of physical harm; but, this study will take a little bit of your time. You will only be interviewed to get the required information from you. As for the eye test, it is for your personal benefit and the tests are free and also not invasive. The eye test will be provided by an experienced eye doctor and will be done exactly the same way eye test is done in eye clinics. Referrals should be made to other services if needed.

Will my taking part in this study be kept confidential?

All information that is collected about you during the course of the research will be kept strictly confidential. Any information about you which is used will have your name and address removed so that you cannot be recognised from it.

All data collected for this study will be stored, analysed and reported in compliance with the Data Protection legislation of Nigeria and the UK.

What will happen to the results of the research study?

The result of this study will be published as a doctoral thesis, and may also be published in international journals. However, none of your identity will be included in the publication. This is a study that will take about three years to complete, if however you are interested in having a copy of the published work, feel free to contact me with the details given on the footnote and I will send a summary copy of the study to you.

Who has reviewed the study?

This research proposal was reviewed by Health and Education Ethics sub-Committee of School of Health and Education, Middlesex University, London.

For further assistance contact:

Prof Irena Papadopoulos [R.Papadopoulos@mdx.ac.uk] RM TG33

Tel. 02084116626.

Dr Linda Bell [l.bell@mdx.ac.uk] RM TG 34

Raphael Okoye [R.okoye@mdx.ac.uk]

at School of Health and Education,

Middlesex University,

The Burroughs London NW4 4BT. London.

Thank you so much for your time.



**Appendix D Written informed consent**

Participant Identification Number:

Title of Project: **Public health intervention strategies to reduce the incidence of avoidable blindness due to glaucoma in Anambra State of Nigeria.**

Name of Researcher: **Raphael Sunday Okoye (R.okoye@mdx.ac.uk)**

**Please initial box**

- 1. I confirm that I have read and understand the information sheet dated .....for the above study and have had the opportunity to ask questions.
- 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
- 4. I understand that my interview may be taped and subsequently transcribed
- 5. I agree to take part in the above study.
- 6. I understand that the data I provide may be used for analysis and subsequent publication, and I provide my consent.
- 7. I agree that this form that bears my name and signature may be seen by a designated auditor.

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

## Appendix E Evaluation of the eye health education programme.

### Evaluation of the eye health education programme.

Please use the following grades to indicate your opinion of how helpful this programme has been.

1= very poor      2= poor      3= Good      4= Very Good      5= Excellent

Grades					
How helpful was this programme?				4	
How good was the content?			3		
How well was the seminar delivered?			3		
What have you learnt from this programme? Please use additional space for comments below if you need more space.					
What specifically do you like about the programme?	The awareness				
What did you not like about this programme?	<del>I</del> It was a bit dull				
Could you please rate this programme.				4	
How was the timing and duration?		2			
How did the speaker answer the people's questions?				4	
How well do you think that this programme could go in spreading information about blindness prevention?					5
How can you rate the location and attendance?			3		

Additional comments:

Yes, the programme was generally good but with lots of time that was wasted during the process due to lack of manpower. The programme will help in helping the poor Nigerians and I thank the Doctor for his unconditional services to the people. Let this good work continue. God bless you, Sir.

### Evaluation of the eye health education programme.

Please use the following grades to indicate your opinion of how helpful this programme has been.

1= very poor      2= poor      3= Good      4= Very Good      5= Excellent

Grades				4	
How helpful was this programme?				4	
How good was the content?					5
How well was the seminar delivered?			3		
What have you learnt from this programme? Please use additional space for comments below if you need more space.	people will always check their eye every month also stop eating any how				
What specifically do you like about the programme?					
What did you not like about this programme?	The attendance is poor				
Could you please rate this programme.					5
How was the timing and duration?			3		
How did the speaker answer the people's questions?					5
How well do you think that this programme could go in spreading information about blindness prevention?					5
How can you rate the location and attendance?				4	

Additional comments:

Information is needed a list through T.V, Radio and other announcement through churches practical visitation. This will help people to come out for treatment. ( eye problem is too much at these our environment because of the type of diets we are eating



## Appendix F- Interview transcript

### Interview with Participant Ezenwata

#### Health seeking behaviour

RS: When you are sick, what do you normally do? I mean who do you normally consult when you are sick? How do you find treatment?

Ezenwata: When am sick, like many other people here do. First we go to the patent medicine stores and when that one fails then you go to any closest hospital or health care centre or clinic around you and if that also fails to give you the relief you need then is either you suggest to the doctor or the doctor will suggest to you to go for a laboratory test on it.

RS: What you are trying to say is that when you are sick your first port of call is to visit a patent medicine vendor?

Ezenwata: Yes.

RS: So, when you go to the patent medicine vendor, does he prescribe for you or do you know the type of medication that you have to buy when you get there?

Ezenwata: For some I know the medications and for some, I do not and so, I explain the symptoms of the problem am having and he will now mix some tablets for me.

RS: When last did you visit your doctor?

Ezenwata: I....can't remember because the one I could remember is the one or two times that I went to hospital but that was because I had an accident. Ordinarily, I hardly go to the hospital for....

RS: So, your main source of treatment is patent medicine vendors, right?

Ezenwata: Yes or house.

RS: Ok. When last did you visit your eye doctor?

Ezenwata: I have no need to visit an eye doctor because I have a very normal eye.

RS: Ok you don't have any reason to visit an eye doctor because you don't have eye problems?

Ezenwata: I don't have any need to do that; I don't need a physician in that area.

RS: Ok. Did your doctor explain the test that he was carrying on you the last time you visited?

Ezenwata: He did not carry out any test because this was the case of an accident. I was knocked down by a vehicle and I went straight to the hospital and narrated the story to them and they started treatment.

RS: What type of problem will you have before you consult an eye doctor?




Ezenwata: If am having problem with my sight. Already, am having problem with reading now but that one I know is because of age and I went to the market and picked some lenses that are helping me in reading now.

RS: Which means that it has been long since you visited you doctor, right?

Appendix G Programme flyer

**IT IS FREE**  
**AND IT IS ALL ABOUT YOUR EYES**

Do you know that upto 80% of global blindness today are preventable?  
Do you know that your eyes is your wealth?  
When last did you go for an eye test?  
Are you having any kind of eye problem or do you have someone who has?



Do you know that millions of people go blind everyday globally because of lack of knowledge/attention to their eyes health

**DR. OKOYE S. R.** (MIDDLESEX UNIVERSITY LONDON, UK, UK.)  
IN CONJUNCTION WITH  
**HON. CHUKWUMA UMEORJI**  
(CHAIRMAN, AGUATA L. G. A., ANAMBRA STATE)

**PRESENT TO YOU**  
**FREE EYE TEST AND HEALTH SEMINAR ON BLINDNESS PREVENTION**

PROGRAM

MONDAY, 28 JULY, 2014 @ AKUKWA DEV. HALL, OPP. UNION BANK IGBO UKWU  
WEDNESDAY, 30 JULY, 2014 @ AGUATA SECRETARIATE EKWULOBIA  
TIME: 9AM-4PM



## Appendix H Igbo interview transcript

Interview with **Johnson** on 27<sup>th</sup> July, 2014.

*[one page of the translated Igbo interview transcript].*

### **Present were the interviewee [Johnson] and the Researcher [RS]**

RS: Kedu ka isi achota ogwugwo ma oburu na-ahu yaba gi ma obu yaba ndi be gi?

Johnson: Onwere udi ahu oga bu, mkpoje ha ulo ogwu ma njide ego, me jigghi ego, mkpoje ha chemist. Kama amaghi m ihe obula gbasara ogwu, nke obula ha nyere m nnara ma kwerekwa na obu nke ezigbo ya.

RS: Iga na nke ndi chemist ndi a, ha na aju gi ma onwere udi ogwu na-enye ghi nsogbu ma inua ya?

Johnson: Obu nani otu ubosi ka mmadu juru na onwere ogwu na agbakasi m ahu kama kemgbe m bidoro gobe ogwu onwebeghi onye jugoro m udi ajuju ahu.

RS: Kedu mgbe ighara hu onye dibia oyibo ikpe-azu?

Johnson: Aah, oteokwa ezigbo aka.

RS: Orugo afo iri na ise?

Johnson: Mba oo.. orubeghi out ahu. Ka anyi kpozie ya afo asato.

RS: Kedu mgbe ikpeazu igara hu onye dibia oyibo na-ahu maka anya?

Johnson: Nani mgbe m gara hu onye dibia oyibo na-ahu maka anya bu oge m nwere nsogbu anya, ihe dika ahu iri gara aga. Eri oge ahu, onwebeghi etu ozo m siri ga hu ya ozo. Ma na ezi okwu, oge ufodu anya na-enyem nsogbu ma na onweghi ihe m na-eme ya n'ih na ejighim ego.

RS: I nutugo maka oya anya ana akpo glaucoma?

Johnson: Anugom asusu di otua, ma na amaghi ihe oputara.

RS: Kedu ihe ichere nwere ike ibutere mmadu ikpu isi; dika ihe ana-eri n'onu ma obu etu esi ebi ndu?

Johnson: Amaghi m, apughi m ikowa.

RS: Ina-anu siga, ka ina akpo anwuru?

Johnson: Anaghim anu siga, ana-kwaghim akpo anwuru.

RS: Ona amasi ghi ma mmadu noro na akuku ghi were na ese siga?

Johnson: Onaghi amasi m, mana etu aa obu na munwa bu onye okwo ugbo ala, anam ejisi ike dibe ya ma onye obula m bu n'ugbo ala m bido nuba siga. Anaghim acho inye ya nsogbu.

Interview with **Johnson on 27<sup>th</sup> July, 2014.**

*[one page of the original English interview transcript].*

**Present were the interviewee [Johnson] and the Researcher [RS]**

RS: How do you normally find treatment for yourself or your children when they are sick?

Johnson: There is a type of sickness it be and I will just take them to hospital if I have the money but there is no money, I will just take them to a chemist. The truth is that am not familiar with any medications so any one they give me I will just take believing that they have given the right medication.

RS: Do they ask you if you are allergic to any medication before they give it to you?

Johnson: Is just one day that one person asked me if there is any medication that scratches me but for years since I have been buying medications nobody has ever asked me that question, just one person and none other.

RS: When last did you visit your doctor?

Johnson: Is been very long o, I won't lie to you.

RS: Is it up to 15years now?

Johnson: No oo.... is not like that nah, let's just call it 8yrs.

RS: When last did you visit an eye doctor or haven't you tested your eye before?

Johnson: I visited an eye doctor once when was having an eye problem and that should be up to 10yrs now; though at times my eyes do disturb but I don't take any medication for it because of lack of money.

RS: Have you heard about an eye disease called glaucoma?

Johnson: I heard about it before but I don't know the meaning.

RS: What do you think that could cause one blindness either through what one eats or through the way the person lives his or her life?

Johnson: I don't know.

RS: Do you smoke cigarette or take snuff?

Johnson: I don't smoke, I don't take snuff.

RS: Do you mind when people smoke around you?

Johnson: I don't like that but since am a driver, if any of my passengers smoke I just endure it because I won't like to disturb the person.

## **Appendix I: interview prompt guide**

### **Interview prompt guide for the key informants.**

#### **Health seeking behaviour**

- When you are sick, what do you normally do? I mean who do you normally consult and how do you find treatment? [follow up questions]
- When last did you visit your doctor? [follow up quest]
- When last did you visit your eye doctor? What was your reason for the visit?
- When last did you had your eye tested [full eye test]?
- Did your doctor explain the tests to you while it was being done?
- What type of eye problem will you have before you could consult an eye doctor? Why?
- When you last visited your eye doctor, could you please tell me how you complied with the medication given to you? Or the instructions given?
- Do you consult patent medicine vendors or buy medication without prescription?

#### **Level of awareness of glaucoma.**

- Have you heard about an eye disease called glaucoma? If yes, how did you hear about that?
- What is your understanding of this disease, and what do think could be the cause/s?
- Further follow up from the given responses.

#### **Behavioural risk factors**

- Could you please tell me what you know that could cause blindness, either when people do such things or when people are exposed to them?
- Do you smoke or take snuff? If yes, why? If no, why don't you?
- Do you take any other form of tobacco [for instance chew tobacco leaves or brush your mouth with snuff]?
- Do you have any idea the effect of tobacco consumption [smoking, snuff taking and any other means of consuming tobacco products] on eye health? If yes, please tell me about it.
- Do you mind when people around you smoke? Why?
- Have you heard about second hand and third hand smoke?
- Do you have any idea what problem second- and third hand smoke could cause to your eyes?

- Do you take alcohol?
- Do you take strong black coffee or caffeinated energy drinks like red bull and other brands?
- Can you please tell me how the type of environment in which one lives could contribute to eye problem? [UV rays, pollutants, etc].
- Could you please explain to me how lifestyle could affect the health of your eyes?
- Do you cook with solid fuels like coals and firewood?
- Do you know that pollutions from the resulting smoke can cause blindness?
- Can you please tell me about some traditional self-caring practices that you have used/or saw others use in the past in treating eye problems?

**Level of awareness of non-behavioural risk factors.**

- Has your eye pressure [IOP] ever been measured by an eye doctor? Were you explained the implications of this measurement?
- Do you have any family member that has or had glaucoma in the past?
- Do you have problem seeing things that are far away from you? Myopia?
- Do you know that being from a black ethnic background increase the chances of developing glaucoma early than in the white race?
- Do you have any idea of the relationship between sex and the chances of developing glaucoma?
- Is there any relationship between age and the chances of developing glaucoma?

**Others**

- Could you please tell me what influences your choice of who to consult, and what to do when you have an eye problem?
- Has money ever stopped you from going for the right treatment before?
- How easy do you find it to access and use eye health care facilities when you need them? Are there any barriers? If yes, what are they?
- Could you please tell me any aspect of eye health care services that you feel could be improved upon?
- How would you rate the state government's effort in preventing blindness in the state; using the scale of 1 to 10; where 1 is the lowest and 10 is the highest?
- What do you think that will work best for the people of your community as far as eye care is concerned?

- How do you intend to contribute towards blindness prevention in your community in particular and Nigeria in general?

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## Interview prompt guide for the service providers

### Health seeking behaviour

- How would you describe the health seeking behaviour of people in Anambra State, especially with regards to eye health?
- Can you please tell me about other choices/options of treatment this population explore? [follow up quests.].
- Do you explain to your patients' different tests you carry on them as those tests are being done?
- Are your patients compliant with your directives, if no, why? How do you monitor this?
- How do you deal with the issue of patient non-compliance with medications?
- How do you normally explain the importance of regular eye check to your patients each time they visit?

### Behavioural risk factors

- As an eye care service provider, what are the prevalent behavioural risk factors detected in the population in Anambra State in the course of your practice?
- Could you please tell me how you can explain to your patients the association of tobacco consumption [smoking and snuff-taking] with glaucoma?
- Is there any association between peoples' lifestyles and glaucoma in Anambra State? For instance, sedentary life, coffee and kola nut consumption?

### Level of awareness of glaucoma.

- Do you treat and/or manage glaucoma? If yes, could you please tell me about it in relation to the population you treat? [follow up: types, names, symptoms, signs].
- Could you please briefly tell me what could cause glaucoma in a person.
- Can you please tell me how your patients perceive this eye condition called glaucoma, what is their understanding of the disease?

### Level of awareness of non-behavioural risk factors.

- What are the non-behavioural risk factors prevalent among the population in the state?
- Could you please explain further how these factors contribute to glaucoma?

**Glaucoma treatment and management.**

- How do you treat glaucoma in your clinic/hospital?
- What types of equipment are needed for proper management of this eye condition?
- Can you please tell me which of these equipment you have in your clinic and what types of tests you run before and while treating glaucoma?
- What problems and challenges do you have with glaucoma treatment and management?
- How do you handle difficult or unresponsive cases; what do you do?
- How do you manage the problem of patient non-compliance with medication?
- How does fake medication contribute to impact of glaucoma on the patients in the state, and how can this be addressed?
- How would you describe the concept of good practice in glaucoma treatment and management?
- What innovation would you like to introduce in your practice in order to reduce the incidence of blindness due to glaucoma?

**Gaps in policy.**

- Are there standard guide lines or policy guiding the treatment and management of glaucoma in Anambra State?
- How supportive is the government with the problem of eye care services; is the government doing enough? If not, why not; if yes, how?
- Are you satisfied with the standard of glaucoma care in the State, if yes, how? If no, why?
- What do you think needs to improve and how could this be improved?
- What exactly do you think that will work best in your area?
- In what unique way do you intend to contribute towards the fight against blindness in your practice?

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**Interview prompt guide for the policy makers.**

- ❖ Do you know that about 80% of World blindness is preventable?

- ❖ Is there any plan within your area of authority to reduce the incidence of avoidable blindness in the State?
- ❖ Have you heard about an eye condition known as glaucoma and the impact it could have on the quality of life of a person? [follow up quests].
- ❖ In terms of preventive efforts, how would you rate the effort towards preventing glaucoma compared with efforts in preventing other diseases like HIV/AIDs in the State?
- ❖ What policies are in place to guide the treatment and management of glaucoma in the state?
- ❖ Bearing in mind that the disease causes irreversible blindness, what strategies are on ground to monitor strict adherence to the policy guidelines? If any?
- ❖ Are you aware of what it takes to treat and manage this condition effectively? For instance:
  - ❖ what tests that need to be done,
  - ❖ Types of equipment needed for effective diagnosis,
  - ❖ How often these tests need to be done,
  - ❖ The costs of the tests and the costs of the medications?
- ❖ Could you please tell me how many standard treatment centres that are available for people in the State?
- ❖ There is this problem of fake glaucoma medication, what are the authorities doing about that?
- ❖ Could you tell me how you propose to reduce the incidence of avoidable blindness due to glaucoma in the State?
- ❖ How can you specifically assist people with glaucoma or people at the risk of this disease?
- ❖ In line with recent call from WHO for more investment in eye care, does the State has any plan of investing more in eye health?