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Challenges of Access to Ocular Healthcare Services in Owerri West LGA, Imo State, Nigeria

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Abstract

Visual impairment and blindness due to ocular diseases are significant public health problems in developing countries including Nigeria. Evidence suggests that lack of access to eye care services is a major barrier to attaining universal use of eye care services. This study was carried out was to identify the challenges of access to ocular healthcare in Owerri West LGA, Imo state, Nigeria *via* availability, accessibility, affordability and acceptability. A total of 188 subjects which comprised of 94 males and 94 females were used for this study. This study was carried out in 4 communities within Owerri West, namely; Umuchima, Eziobodo, Ihiagwa and Obinze with the aid of a questionnaire comprising of the demographic data, ocular health history and other specific related questions assessing availability, accessibility, affordability and acceptability of eye care services for qualitative and quantitative analysis. Statistical results showed the mean values for each section to be 4.75 ± 2.22 for availability, -0.02 ± 0.11 for accessibility, 2.88 ± 2.28 for affordability, 3.34 ± 2.15 for acceptability. SPSS statistical analysis version 23 output using paired sample T-test at level of significance also revealed P (0.001)<0.05 for availability, P (0.704) >0.05 for accessibility, P (0.027)<0.05 for affordability and P (0.003)<0.05 for acceptability. Therefore eye care services are easily available, easily affordable and easily accepted in Owerri West but they are not easily accessible. The barriers identified that was responsible for the lack of access were limited numbers of eye care facilities, bad roads, delay in receiving treatment, lack of insurance services and poor awareness. In conclusion, by limiting access to eye care services, the prevalence of visual impairment and blindness is increased.

Keywords: Visual impairment; Blindness; Affordability; Demographic data; Accessibility

Introduction

Globally, though there is a reduction in overall prevalence of blindness and Visual Impairment (VI), the absolute number of those with blindness and visual impairment is still on rise. Since major causes such as cataract and Uncorrected Refractive Error (URE), chronic non-communicable diseases like glaucoma and diabetic retinopathy amongst others are still on the rise. Apart from this, issues related to accessibility and affordability still persist in major parts of developing countries. There are also concerns related to quality and equity in service delivery. In order to achieve goals of universal eye health coverage, strengthening primary eye care and integrating it with primary healthcare, secondary care, as well as tertiary care and the use of appropriate technology at each level of care are proposed. Visual impairment is a term mostly used to categorize people suffering from low vision and blindness. Most people with low vision problems reside in the rural communities. In most cases, they do not have access to adequate eye care facilities compared to these in urban areas either due to lack of availability, access and awareness as well as illiteracy [1]. It is a big public health problem that causes hindrances in all areas of life, especially to the quality of life of those affected. In Nigeria, the incidence of visual impairment is nearly 5%. It is estimated that 4.25 million adults aged 40 years are visually impaired with an additional 40,000 adults suffering from severe vision loss, therefore the negative impact of visual impairment and blindness cannot be overemphasized. Eye care service delivery models are organized programmes that are designed to provide or improve eye care services, ranging from non-specialized primary healthcare to tertiary ophthalmic care.

Delivery models are used to ensure services can reach all people or to establish bespoke services to overcome existing barriers to access. In Australia, researchers attribute the worse eye health among Indigenous people to their reduced access to eye care particularly spectacles and cataract surgery compared with the non-Indigenous population [2]. Several studies have described service delivery models to improve access to eye services for Indigenous people, but no synthesis of these different models has yet been carried out. In 2015, the United Nations Permanent Forum on Indigenous Issues (UNPFII) reiterated the need for models of care that ensures that healthcare services are culturally, linguistically and geographically appropriate for Indigenous people, its report also outlined the need for participation by Indigenous people in the design and implementation of health policies and programme so that all people are able to exercise their right to receive good healthcare and achieve equitable health outcomes. Over two thirds of Africans have no access to eye care services. Nigeria has a high magnitude of blindness and visual impairment and in addition, there is inequity in accessing eye care. To increase access, the World Health Organization (WHO) recommends integrating eye care into primary health care and the WHO Africa region recently developed a package for primary eye care [3]. However, limited data, guided policy making, feasibility and implementation still pose a challenge to its integration.

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Background of study

Healthcare system: According to the World Health Organization. Health can be defined as a state of complete physical, mental and social wellbeing of an individual and not merely the absence of diseases or infirmity. Healthcare system is an organized plan, method or program of health services through which health care financed by the government, private institutions or both are made easily available and accessible to the people. Good health is a major resource for social and economic development as well as an important dimension of quality in the delivery of healthcare services worldwide [4].

Health promotion focuses on achieving equity and adequate resource and manpower distribution in the health system in order to enable people to remain or return to health in order to carry out their various tasks and responsibilities that contribute to the overall quota and growth of the country. In spite of the huge development in the health care within the past 10 years, much is still needed to be done in the healthcare system [5]. In Nigeria, current statistics shows that health institutions rendering health care are 33,303 general hospitals, 20,278 primary health centers and posts and 59 teaching hospital and federal medical centers. Healthcare in Nigeria is an underserved area despite its strategic, political and economic importance in Africa. This is because health facilities (health centers, personnel and medical facilities) are still not close to being enough to cater for the health of the ever growing population. The effects of poor healthcare are felt more in the rural areas where there are only little or no healthcare facilities to begin with.

For health programmes in the rural area in Nigeria to be very effective and self-sustainable, there is need to actively train, mobilize and cooperate with people living in the rural areas. This means that people living in those areas will have to contribute, cooperate and benefit from the planning and implementation of any health programme within that community. However, these health programmes are easily hindered by poor funding, lack of participation, lack of personnel, lack of self-sustainance and lack of cooperatives and other financial institutions set up to assist people in the rural area [6].

Quality healthcare can be defined as a process of consistently satisfying patients with effective and efficient healthcare service which includes 4 major characteristics, namely; availability, accessibility, affordability and acceptability as well as other characteristics like appropriateness, competency, timeliness, confidentiality, reliability, continuity, equity, amenities and facilities amongst others. All of these limitations if not addressed appropriately can affect the use of medical services, the efficacy of treatments and the overall outcome negatively [7]. In most cases, the decision of people to seek care is dependent of socioeconomic and cultural factors that influence their needs and wants. Only when the care needed is available, accessible and affordable can it be accepted and maximally utilized and benefitted from by the community.

There are 4 categories of Healthcare systems created to ensure that Healthcare contributes its own significant quota to the economy, development, industrialization and quality of life of citizens in a country. They are globally operated though dependent on social, economic, cultural and environmental factors. The categories of Healthcare systems worldwide often described as the tiers of health care include; primary, secondary, tertiary and quaternary healthcare system. They all work together in their respective settings to provide medical services such as evaluation, diagnosis, treatment or referral to the next level of healthcare based on the needs and severity of the case involved [8].

Primary healthcare: This is the first level of health care found at the community level. It utilizes the entire scope of healthcare and is people centered rather than disease centered. It uses an approach that includes health promotion, disease prevention, rehabilitation and assistive care. Its primary objectives is to continuously attend to the needs of people, address factors that influence health with policies and actions and enabling people to be able to take charge and control of their own health.

Secondary healthcare: This is the next level of health care after primary healthcare usually available at the state level. It is run by specialists in the healthcare sector which is why only specialized treatment and support, usually for more severe and complex cases is provided. Depending on the policies of the national health system of a country, patients may be required to see a primary healthcare provider first before seeing the secondary healthcare provider on referral.

Tertiary healthcare: This is the next level of health care after secondary care created for a more specialized care compared to that of secondary care. It is usually only available in a region or national level making it more difficult to access compared to the primary and secondary health care. People requiring this type of healthcare are usually referred from the primary and secondary healthcare level.

Quaternary healthcare: This is simply an extension of tertiary healthcare. It deals with more advanced, specialized and experimental care compared to tertiary health care. This type of health care is only offered in a few national and international centers. Unlike tertiary healthcare that is difficult to access due to distance, quaternary healthcare is different to access due to personal restrictions and unlike primary healthcare that is people centered rather than disease centered, quaternary healthcare is disease centered rather than people centered.

Eye care services

Eye care includes promotive, preventive, curative or rehabilitative services; delivery location includes institution based, community based or both. There are three categories of eye care personnel: Full time eye care workers, integrated eye care workers and community based eye care workers (medical and non-medical). To eliminate avoidable blindness, the vision 2020 initiative targets four ophthalmic population supported by three to five mid-level personnel including ophthalmic nurses and ophthalmic nurses and ophthalmic clinical officers at an estimate of at least one worker to a typical district population of 100,000 [9].

Ophthalmic nurses and allied ophthalmic personnel (ophthalmic clinical officers, ophthalmic assistants, etc.) whose job titles, roles and responsibilities vary between different countries are critical for eye care as the mid-level workforce in the eye care team since they usually make up for shortage in eye care specialists. The latter and other allied eye health cadres are to provide a bulk of eye care in most rural and remote areas and refer appropriately. This is in a bid to provide eye care services to everyone and reduce the burden of avoidable blindness and its associated consequences.

One of the strategies of “vision 2020 right to sight” initiative is the integration of Primary Eye Care (PEC) into the Primary Healthcare (PHC) system. However major challenges hindering the progress and achievement of the implementation of this strategy are shortage in the number health workers trained in and specifically for eye care and

then over stepping one's competence in treating or management eye conditions and drug prescriptions due to lack of satisfaction in the scope of eye care, or for an extra fee [10].

Access to eye care services in the healthcare system

Blindness and visual impairment constitute a public health problem in Sub-Saharan African countries. In response to this, in 1999, the World Health Organization in collaboration with the international agency for the prevention of blindness came together, discussed and then launched the "VISION 2020-the right to sight" initiative for the elimination of avoidable blindness by the year 2020. They adopted a new strategy resolution in 2020 during the 73rd world health assembly on the effective use of the Integrated People centered Eye Care (IPEC) to help combat preventable blindness and visual impairment. This was resolved after the analysis and recommendations from its world report on vision in 2019 [11].

Accessing eye and health care services has been a major problem in most part of the world and when this access is denied quality of life reduces and there will be an increase in diseases which may not be prevented, diagnosed, treated or managed. Therefore, an assessment of the barriers to the use of eye care services is important for planning strategies to prevent blindness, since millions of people today are going blind because they cannot access eye care services. Workforce 2030 is a newly adopted initiative for the healthcare systems worldwide. In 2016, it was launched by the World Health Organization as a new global strategy for human resources for health. The need for an increase in eye health workforce was noted before full adoption and member states were urged to plan and ensure that the goal for an increased eye care service delivery worldwide was realized. There is a new and growing recognition that delivering comprehensive, effective and quality eye care services strengthens the health system in any country [12]. An increase in the prevalence of eye problems, systemic problems with ocular manifestation and refractive errors such as glaucoma, cataract, diabetes and myopia combined with a growing and ageing population worldwide has warranted an urgent and greater need for eye care in order to assist in combating these issues and as such, eye care in the healthcare system has become more recognized and advocated for Graham.

Statement of problem

After life, God's greatest gift to man is sight. The need for good and optimal vision for everyday activities is essential and therefore cannot be overemphasized. This can only be monitored and preserved by constant and routine eye checkups. The challenges of access to eye care can affect or impair good vision and if not properly addressed will in turn affect the vision and daily activities of millions of people with serious eye conditions and complications may set in. Hence it is important to identify these challenges, prioritize them if need be and address all of them individually through increased and improved quality eye care services. By doing this, eye health and general health will be improved, good and optimal vision will be maximized, avoidable blindness will be prevented and then, the aims and objectives of the healthcare sector will be further implemented [13].

Objectives of study

General objective: To identify the challenges of access to ocular healthcare services in Owerri West LGA, Imo state, Nigeria.

Specific objectives

- To determine the challenges involved in providing eye care services in Owerri West LGA, Imo state, Nigeria.
- To determine the challenges involved in accessing eye care services in Owerri West LGA, Imo state Nigeria.
- To determine the challenges involved in affording eye care services in Owerri West LGA, Imo state, Nigeria.
- To determine the challenges involved in accepting eye care services in Owerri West LGA, Imo state, Nigeria.

Research question

- Are eye-care services available in Owerri West LGA, Imo State, Nigeria?
- Are eye-care services accessible in Owerri West LGA, Imo State, Nigeria?
- Are eye-care services affordable in Owerri West LGA, Imo State, Nigeria?
- Are eye-care services accepted in Owerri West LGA, Imo State, Nigeria?

Research hypothesis

- Eye-care services are not easily available in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are easily available in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are not easily accessible in Owerri West LGA, Imo State LGA, Nigeria.
- Eye-care services are easily accessible in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are not easily affordable in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are easily affordable in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are not easily accepted in Owerri West LGA, Imo State, Nigeria.
- Eye-care services are easily accepted in Owerri West LGA, Imo State, Nigeria.

Significance of study

Many studies have been carried out on the challenges of access of eye care services in Nigeria as well as other parts of the world. However, we have not been able to find studies carried out on it in Owerri West, Imo state Nigeria. Therefore:

- This research will help to identify the challenges in the provision and access of eye care services in Imo state, using Owerri West as a case study.
- It will help in bridging the gap for effective and quality eye care service delivery in Imo state, thereby improving the eye health of the general public and reducing the rate of preventable and treatable blindness in Imo state.
- This study will also help other states in Nigeria to research, identify and adjust certain factors that can affect or reduce quality eye care service delivery to people in their respective states.
- This research alongside other discovered challenges of access to eye care findings will serve as a means of improving on universal eye care legislation as well as formulating and implementing better eye care policies and eye care programs so as to reduce the identified challenges.

Scope of study

This study involved the distribution of structured questionnaires and oral interview to obtain quantitative and qualitative information on the challenges of access to ocular healthcare in Owerri West, Imo state, Nigeria experienced by those within the age range of 18 years to 70 years.

Literature review

According to a study carried out by Achigbu, et al., in Imo state South East Nigeria on the challenges of patients with respect to glaucoma. A total of 1973 subjects were used and a retrospective review from self-selected patients was generated during the free eye screenings they organized in each of the 3 senatorial zones in the state. It was reported that approximately 80% of blindness is avoidable [14]. They attributed the causes of blindness there to poverty and ignorance, poor uptake of orthodox eye health services and an increase in the consultations of traditional healers in developing countries and attributed major factors influencing those causes to age, level of education, cost and accessibility to these traditional healers. Due to the absence of eye care services, free eye screening/treatment were used as tools for educating and offering eye care to those in the rural areas.

Okoye, et al., carried out a study on the barriers of accessing good eye care services in Nigeria, with a focus on Anambra state. He proposed that for the war against increased global blindness to be won, then there must be increased commitment among the key stakeholders (the target population, the eye doctors and the policy makers). However, this has not been achieved due to the fact eye health policies and programmes have not been fully accepted and focused on and implemented compared to other areas of health both in Nigeria and in many other countries as well [15]. Due to the fact that eye health has been a neglected area of health in both developing and developed countries, it is difficult to make to make eye care services available, accessible and affordable to the public as priority demands.

Since cataract is the leading cause of visual impairment and the rate of prevalence was increasing globally, Rolnick, et al., conducted a study on cataract in Imo state Nigeria with an aim of identifying why its prevalence in Nigeria was also increasing. A total of 61 patients above the age of 40 were used in case control study during a medical outreach program to determine the prevalence and probable cause of prevalence. Out of 54 complete records, 52% had cataract while 48% had no cataract [16]. No significant difference in comorbidities such as ocular allergy, refractive error, hypertension or arthritis was discovered between people with cataract and those without cataract. However the no-cataract group had a higher educational level and financial stability even though both groups obtained medications without a prescription, had equivalent sunlight exposure, used multivitamins and wore sunglasses and/or hats. They concluded that poor knowledge and use of cataract risk reducers which were boosted by social economic status was responsible for the increase in the incidence and rate of prevalence of cataract. Cataract devastates the personal and socioeconomic well-being of people worldwide. For those with access to modern medicine, cataract can be treated with a short, outpatient surgery. However in developing regions of the world, surgery to remove cataract is available to relatively few (Appendix Tables 1-3).

Related studies on availability of eye care services

Palmer, et al., conducted a study on mapping human resources for eye health in Nigeria amongst 20 other Sub-Saharan countries. They reported that a third of people with eye problems seeking care had already sought treatment from alternative sources and attributed it to the fact that since majority of ophthalmologists are concentrated in urban areas, a greater number of Nigerians in the rural areas may have to travel long distances to access eye care. In the absence of accessible orthodox eye care services, patients will access other source e.g. patent medicine vendors, traditional healers and couchers, which may exacerbate the visual loss through harmful practices or delay in appropriate treatment [17].

Fotouhi et al., conducted a population based, cross sectional study on eye care utilization patterns in Tehran with 6487 subjects. All subjects underwent a complete eye examination and were given an interview regarding their demographic and socioeconomic status variables, past medical and eye history and their previous and last eye care visits. After a 70.3% response rate, since a majority (43.2%) had not seen an eye care provider in the last five years, they were of the opinion that the key factors in achieving the goals of vision 2020 in every country was availability and utilization of eye care services, which must be done with community programme and participation, irrespective of the manpower and infrastructural developments already set aside for it in these countries.

Knowledge of the existence of eye care services is another factor which causes late presentation. Arinze, et al., on the determinants of eye care utilization in rural South Eastern Nigeria discovered in their study that 38.1% of the 549 respondents in a community based survey did not know that there was a health facility that offered eye care services in the locality and so did not use it [18]. This agrees with the results of the study on the uptake of eye care services in university of Calabar teaching hospital by Ekpenyong and Ikpeme in Calabar, cross river state in the South-South zone where it was discovered that people in that community were not aware of eye care services in the health facility in their locality and thus did not make use of it, instead they resorted to consulting the traditional healers for their eye care problems.

A survey study on material resources for eye care delivery in urban South-Eastern Nigeria was carried out by Eze, et al., in Enugu north local government area of Enugu state on all available healthcare facilities with pre-tested, observer administrated questionnaire and interview was done in 14 public primary and secondary level healthcare facilities within 3 health districts, namely; Coal Camp, Asata/Ogui and new haven. After the survey, it was discovered that materials for eye care service delivery like drugs were limited in the primary level healthcare facilities, with more being more readily available in the secondary level healthcare facilities there. Without the readily availability of these necessary materials, it was more difficult to make eye care service adequately available to the people there closest to the primary healthcare services that provide the first line eye services to the people [19].

This was supported in a subsequent cross sectional study on assessment of resources for primary eye care delivery in a rural area carried out in Nkanu West local government area, Enugu state by Eze, et al. 119 primary eyecare workers participated in the questionnaire study comprising of 98 females (96.1%) and 4 males (3.9%). During the study, an inventory of equipment for primary eyecare delivery in 18 centers showed that none of the centers had adequate basic

equipment. It was later concluded that an inadequate material resources and uneven distribution of health facilities there posed a challenge to the availability of eyecare service delivery to the people there.

Related studies on the accessibility to eye care services

Aghaji et al., conducted a study on the strengths, challenges and opportunities of implementing primary eye care in Nigeria. They reported that approximately 4.25 million adults are blind or visually impaired with over 80% of the blindness from avoidable causes and that "cataract" was the most common cause of blindness which is readily treatable by surgery and that "refractive error" was the most common cause of visual impairment which is readily treatable by spectacles. However, the Nigerian national blindness survey showed that half of all eyes that had cataract surgery had been couched (a traditional procedure for clearing the visual axis as a treatment of cataract) with poor visual outcomes and that <5% of those with refractive errors had spectacles. This was attributed to the lack of accessible eye care service together with a lack of awareness of where to seek eye care services from. This causes patients to remain visually impaired or to seek unorthodox treatment for eye conditions.

Balarabe, et al., conducted a cross sectional study on causes of blindness and barriers to rehabilitation services involving 202 blind beggars who consented to it in Sokoto North local government area, Sokoto state and after confirmation of the state of blindness from eye examinations. Questions were asked and the individual responses were recorded in the questionnaire under the appropriate section. They reported that out of those 202 blind beggars, the barriers, the beggars had not had quality eye care services was due to lack of accessibility as well as the fact that in majority, their parents and relatives (50.3%) refused to take them to eye centers to access eye care services, while in minority, in some cases, the eye care services was not available (25.2%).

Ashaye, et al., discovered in a study on the perception of blindness and blinding eye conditions in rural communities in the Southwest region of Nigeria that the distance of eye care facilities located in the cities to the rural areas together with its potential discomfort acts as a barrier preventing people in those rural areas from accessing eye care services in those areas. This was supported by Abdull, whose study on the challenges of patients with glaucoma revealed that the distance between the nearest eye care facility and the bad nature of the road makes people resort to traditional healers who they feel are closer to them and easily reachable [20].

Related studies on the affordability of eye care services

Du-Toit conducted a study on an overview of primary eyecare in Sub-Saharan Africa and stated the importance of incorporating Primary Eye Care (PEC) into the Primary Healthcare (PHC) program to boost and enhance the relevance of eye care programmes and services. He went further to describe primary eye care as an integrate, participation and inclusive approach to the eye health component of public healthcare which will consist of promotive, preventive, curative and rehabilitative eye care services and that if fully incorporated, it will not only make eye care services more available and accessible, but it will also make it more affordable especially to those who cannot normally afford it.

Thapa, et al., conducted a study on the diagnosis and management of glaucoma in developing countries, since it was a leading cause of irreversible blindness worldwide with its diagnosis and management being especially difficult. After reviewing a cross sectional study on the socioeconomics of long term glaucoma therapy from India carried out by Nayak, et al., which showed that the average cost of glaucoma drugs alone ranged from 13% to 123% of the monthly income of the lower income group patients and that carried out in rivers state, Nigeria by Adio and Onua on the economic burden of glaucoma showing that the average cost of glaucoma drugs was 40 USD monthly with indirect cost of tests, transportation and escorts causing an extra addition of 105.4 USD monthly, they concluded that glaucoma treatment in most developing countries are unaffordable and that providing cheap health insurance to those of lower income pay may help reduce this issue. They recommended that teleophthalmology/teleoptometry be adopted in developing countries since it will eventually and potentially help to reduce the cost of healthcare for patients as well as compensate for lack or shortage of eye care professional workforce and that glaucoma clinics must provide enough time for a good doctor patient interaction, with patients been counseled properly by treating doctors in order to improve patient compliance with the treatment plans and procedures.

Related studies on the acceptability of eye care services

Nirmalan, et al., conducted a study on the utilization of eye care services in rural south India on adults aged 40 years and older in rural south India. Selection of subjects was done through random sampling from three districts and information regarding previous eye care services was collected from this population through a questionnaire. He reported that two third of the older age group in the rural communities had not utilized any eye care service despite a large burden of ocular disease there, not because it was not available, accessible or affordable, but because due to lack of literacy since majority of the literature people in the rural population had a lower need for eye care services there, due to improved health status.

Olusanya conducted a population based cross sectional survey on the reasons for non-utilization of eye care services among adults in a rural West African population where questionnaires were distributed to a total of 643 participants. This questionnaire was to obtain information on their demographic characteristics, personal medical history, previous use of eye care services and reasons for not utilizing eye care services. It was carried out among adults aged 40 years and above in a rural population in West Africa. He reported that reasons given by majority of the subjects (188 subjects) not utilizing eye care services was due to a perception they had that the problem they should be seeking help for was not important (44.22%) while the 139 subjects attributed it to financial constraint (32.7%) and the rest of the subjects attributed the reasons to factors ranging from long distances before accessing eye care and strikes by hospital workers.

Onwubiko, et al., conducted a population based cross sectional descriptive survey on reasons for eye care services among adults in a rural West African population involving 501 subjects in Abagana, Njikoka local government area, Anambra state in South-East Nigeria with the aid of a researcher administered questionnaire. This questionnaire contained questions on demographics and social demographics as well as on preferred initial eye care pathway when confronted with an eye disorder with their various reasons for the their choices of pathway. After the end of survey due to the fact that 175 people (35%) preferred to consult patent medicine dealer, 125 people (25%) preferred self-medication and 165 people (33%) preferred to consult an ophthalmologist instead with main reasons for not

consulting the ophthalmologist ranging from ignorance according to 190 people (56.5%), cost according to 199 people (59.2%) and restricted spatial access according to 228 people (67.9%). There was a conclusion that ignorance, affordability and accessibility of eye care services were the main reasons why people do want to utilize eye care services and that community based eye health education, enhanced affordability and even distribution of eye care services could reduce these barriers or better still, consider an integration of other alternative care pathways into orthodox care.

Ezegwuli, et al., conducted a descriptive cross sectional study on patient's satisfaction with eye care services in a Nigerian teaching hospital involving 307 consenting patients at the eye clinic in Ituku-Ozalla Enugu to ascertain the patients' perception of the services provided there. Majority of the patients were satisfied with the services provided because of overall cleanliness (93.8%). However, the toilet facilities and cost of services posed a big challenge to them, probably not wanting to access eye care services there. Due to this challenge, although 285 of them (92.8%) will recommend the hospital to others, only 140 of them (45.6%) will strongly recommend it to others, the remaining 145 of them (47.2%) will do so doubtfully.

Abdul on the challenges of patients with glaucoma discovered that relatives and neighbors of some of the patients had critical view of the eye centers after their perceived wrong treatment by the health workers. Some of these patients perceived the health workers as rude, time wasters and inconsiderate of their conditions unlike the traditional healers and quacks that offer treatment at the patients' homes and at the patient's own convenient time (Appendix Figures 1 and 2).

Materials and Methods

Area of study

This study was carried out in four communities in Owerri West local government area of Imo state namely Obinze, Ihiagwa, Eziobodo and Umuchima. Imo state is among the five states in the South-Eastern part of Nigeria. The headquarters of Owerri West is located in the town of Umuguma. Owerri West local government area has an area of 295 km^2 and a population of 99,265 at the 2006 census, latitude 5.485 N and longitude 7.035 E (Figure 1).

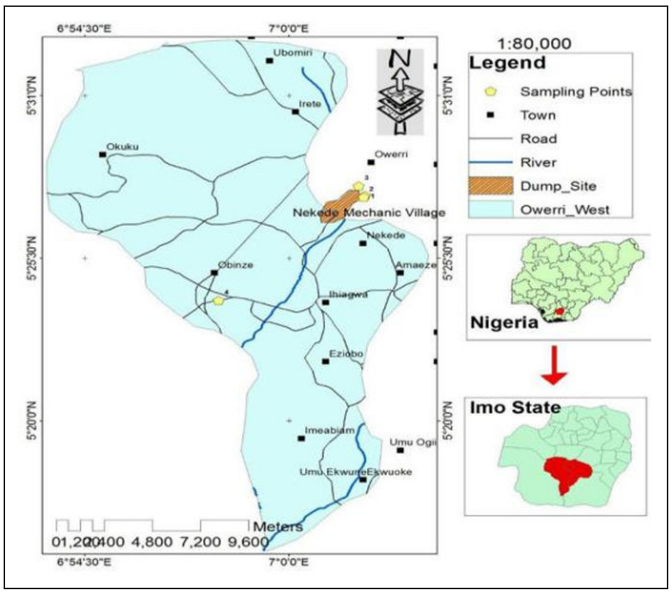

Figure 1: Map of Owerri West in Imo state, Nigeria.

Research design

This research was a descriptive study which involved assessing the challenges of access to ocular healthcare in Owerri West, Imo state through the distribution of questionnaires.

Population of study

The subjects that were involved in this study were those within the age of 18 and 70 who were available and accessible within Obinze, Ihiagwa, Eziobodo and Umuchima in Owerri West LGA during the period of this research.

Inclusion criteria: All available subjects within the age of 18 and 70 who reside in Obinze, Ihiagwa, Eziobodo and Umuchima in Owerri West LGA.

Exclusion criteria:

- Subjects who reside outside Obinze, Ihiagwa, Eziobodo and Umuchima.
- Subjects within the age of 18 and 70 who resides within Obinze, Ihiagwa, Eziobodo and Umuchima who:
  - Will not give informed consent.
  - Have one or more mental problems.
  - Have communication difficulties (hearing, speech, reading and writing).
  - Are not medically independent.

Sample size determination

Minimum sample size is calculated using Fisher's formula for a population greater than 10,000.

Using the formula: $N=Z^2Pq/D^2$

N=Sample size of population.

Z=Standard normal deviate usually set at 1.96, corresponding to the 95% confidence level.

Z^2=3.8416.

P=Proportion of the total population 48.04%=0.4804.

q=1-p, q=1-0.4804=0.5196

D=Degree of accuracy desired=0.05.

According to O'Neill, the percentage of people living in rural areas in Nigeria in 2020 is 48.04%.

This is the proportion of the total population since rural areas are predominantly affected by the challenges in the area of study.

$N=1.96^2 \times 0.480^4 \times (1-0.4804)/(0.05)^2$
$=3.8416 \times 0.4804 \times 0.5196/0.0025$
$=0.95892421/0.0025$
N=383.57=approx. 383.
The minimum sample size calculated for this study was 383.

Attrition factor: Considering that it is a descriptive study and not everyone will return the questionnaire, 10% attrition factor of the minimum sample size was added to the minimum sample size to get the total number of questionnaires to be distributed.

A.F= 10

=3830/100

=38.3

Therefore new minimum sample size is 383+38.3=421.3= Approx. 421.

However, due to the strike and some difficulties encountered such as subjects that volunteered for this study not being able to return the questionnaire only 188 subjects returned the questionnaires and were used for this study.

Sampling technique

Simple random sampling technique was used in this work. Simple random sampling technique is a technique in which each individual is chosen entirely by chance. Each member of the population had an equal chance or probability of being selected.

Instruments for data collection

A well-structured questionnaire comprising of 6 sections (section A to F) was designed and used for data collection, in order to address the study's specific objectives.

- **Section A:** This contained information of the demographic data of each subject.
- **Section B:** This contained information on the ocular history of each subject.
- **Section C:** This contained information assessing the availability of eye care services in the area of study.
- **Section D:** This contained information assessing the accessibility of eye care services in the area of study.
- **Section E:** This contained information assessing the affordability eye care services in the area of study.
- **Section F:** This contained information on the perception and acceptance of eye care services by the subjects living in the area of study.

Procedures for data collection

- The study area was visited, subjects were interacted with and the objective of the study was explained to them.
- The subjects were carefully assessed by observation and interaction to ensure that they did not fall under the exclusion criteria.
- The subjects were encouraged to cooperate and give their honest and unbiased answers since the results of the study will be of benefit to them.
- Informed consent was sought for and obtained before the questionnaires were given to the subjects.
- The questionnaires given to the subjects were filled by them without interference except when the subjects asked for clarity on the information to be provided before the data was collected.
- Open ended questions were asked to supply more information on the challenges of access to ocular healthcare not listed in the quantitative questionnaire while also allowing them to express their views without limitation.
- Additional information provided was noted as it helped to further validate the honesty of the answers of the subjects expressed the quantitative questionnaire.

Procedures for data analysis

The data collected were analyzed using the Statistical Package for Scientific Study (SPSS) software version 23 and the hypothesis was tested using paired sample T-test at 0.05 level of significance and 95% confidence interval.

Results

Presentation of data

A total number of 198 subjects participated in this research that is within the ages of 18 years-70 years. The data presented in this research are gotten from questionnaires filled by the subjects.

From Table 1 the total number of subjects is 94. The age group of 46-55 had the highest percentage of subjects 34 (36.2%), followed by the age group of 18-29 (28.7%), 30-45 (25.5%) and 56-70 (9.6%).

Age group (years)	N	%
18-29	54	28.70
30-45	48	25.50
46-55	68	36.20
56-70	18	9.60
Total	188	100.00

Note: N: Number of subjects; %: Percentage of the number of subjects.

Table 1: Age distribution of all subjects.

From Table 2, 15 males (15.96%) and 12 females (12.76%) fell within the age group of 18-29, 9 males (9.57%) and 15 females 15.96%) fell within the age group of 30-45, 19 males (20.21%) and 15 females (15.96%) fell within the age group of 46-55 and 4 males (4.26%) and 5 females (5.23%) fell within the age group of 56-70.

Age group (years)	Male		Female	
	N	%	N	%
18-29	30	15.96	24	12.76
30-45	18	9.57	30	15.96
46-55	38	20.21	30	15.96
56-70	8	4.26	10	5.32
Total	94	50.00	94	50.00
Note: N: Number of subjects for each gender within an age group, %: Percentage of subjects for each gender within the age group.				

Table 2: Age and gender distribution of subjects.

From Table 3 many of the subjects (81.91%) knew of eye clinics within Owerri West where they could go to in order to get their eyes checked, mostly from referral (56.38%). They prefer to visit other eye clinics outside Owerri West (82.98%). Only a minority suffer the issue of delay (27.66%), which could cause them to go back home without being attended to (26.6%) with an exception in emergency cases (61.7%), even though there is usually enough workforce (68.09%) and case handling (87.23%).

Questions	Yes	%	No	%
Are you aware of any eye care facility in Owerri West	154	81.91	34	18.09
Do you go for eye examinations and treatment within Owerri West	38	2.02	156	82.98
Do the doctors there attend to your needs as desired	164	87.23	24	12.77
Do you have to wait a long time there before you are attended to	136	72.34	52	27.66
Do they give you immediate attention in cases of ocular emergencies	116	61.70	72	38.30
Are there enough doctors and staff to render eye care services there	128	68.09	60	31.91
Are there times, you go home without being attended to	50	26.60	138	73.40
Have you ever been referred to an eye clinic/center in Owerri West by someone	106	56.38	82	43.62
Note: N: Number of subjects for each gender within an age group; %: Percentage of subjects for each gender within the age group.				

Table 3: Availability of eye care services.

From Table 4 many of them had awareness of the presence of eye clinics within Owerri West from their family (27.27%), friends (51.95%) and the media (20.78%).

Source	N	%
Friends	80	51.95
Media	32	20.78
Family	42	27.27
Doctor	-	-
Total	154	100

Note: N: Number of subjects for each gender within an age group; %: Percentage of subjects for each gender within the age group.

Table 4: Awareness on eye care services.

From Table 5 the subjects knew of very few eye clinics around them that they can visit for an eye checkup. With the majority (64.94%) only knowing about the clinic that they go to for their eye checkups.

Number	N	%
None	-	-
One	50	64.94
Two	27	35.06
Three	-	-
Many	-	-
Total	77	100

Note: N: Number of subjects for each gender within an age group; %: Percentage of subjects for each gender within the age group.

Table 5: Estimate of eye care facilities.

From Table 6 many subjects preferred the service quality (57.69%) they received in some of the clinics that were not situated within Owerri West.

Reason	N	%
Quality	90	57.69
Availability	34	21.80
Access	20	12.82
Cost	12	7.69
Total	156	100

Note: N: Number of subjects for each gender within an age group, %: Percentage of subjects for each gender within the age group.

Table 6: Eye care services outside Owerri West.

From Table 7 most subjects preferred going to clinics situated within Owerri municipal for their routine eye checkups.

Location	N	%
Owerri North	34	21.8
Owerri municipal	90	57.69
None	32	20.51
Total	156	100

Note: N: Number of subjects for each gender within an age group; %: Percentage of subjects for each gender within the age group.

Table 7: Preferred destination for eye care services.

From Table 8 many subjects attributed the cause of delay to no eye care service delivery within Owerri West to the inavailability (56%) of standby doctors and staffs.

Reason	n	%
Lack of instruments	6	12.00
Lack of doctors and staffs	28	56.00
Time factor	16	32.00
Total	50	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 8: Deficit in eye care services delivery in Owerri West.

From Table 9 many subjects (41.5%) knew about the presence of eye clinics around them from their friends.

Source	N	%
Family	28	26.42
Friend	44	41.50
Doctor	28	26.42
Others	6	5.66
Total	106	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 9: Referral for eye care services in Owerri West.

From Table 10 most of them (73.58%) were referred to the eye clinics around them because of its proximity.

Reason	N	%
Proximity	78	73.58
Quality of service	28	26.42
Total	106	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 10: Reason for referral.

From Tables 3-10, it can be deduced that eye care services are easily available in Owerri West.

From Table 11 majority of the subjects (82.98%) complained that eye care services were not easily obtainable within Owerri West, due to bad roads (79.79%) and high costs of transportation (57.45%). This is a major problem that prevents them from accessing eye care services (63.83%). Therefore only a closer proximity (89.36%) may be able to reduce this challenge.

Questions	Yes	%	No	%
Are eye care services easily obtainable in Owerri West?	32	17.02	156	82.98

Are the roads leading to the eye-care facility trekkable or motorable?	38	20.21	150	79.79
Are you able to transport yourself easily from your home to the eye center at your convenience?	80	42.55	108	57.45
Can you easily seek eye care services in that eye care facility despite the distance barrier?	68	36.17	120	63.83
Will you prefer and more readily seek eye care services there if it was closer to where you stay?	168	89.36	20	10.64
Note: N: Number of subjects; %: Percentage of the number of subjects.				

Table 11: Accessibility of eye care services.

From Table 12 many subjects (48.94%) stated that there was an eye clinic/facility close to where they stay, while others (34.04%) stated that the closest eye clinic to them was still far from where they stay.

Distance	**N**	**%**
Very close	12	6.38
Close	92	48.94
Far	64	34.04
Very far	20	10.64
Total	188	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 12: Proximity of eye care facilities.

From Table 13 majority of the subjects (47.87%) stated that cost of transportation between where they stay and the eye clinic close by that they can go to is costly, while others (45.74%) stated that it was not too costly.

Cost	**N**	**%**
No cost	8	4.26
Not costly	86	45.74
Costly	90	47.87
Very costly	4	2.13
Total	188	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 13: Transport expenses to access eye care services.

From Tables 12-13, it can be deduced that eye care services are not easily accessible in Owerri West.

From Table 14 majority of the subjects (77.66%) stated that eye care services were easily affordable. Although they usually pay for goods received and services rendered (54.26%) with the help of health insurances (89.36%) and would prefer and readily utilize these services with more affordable rates (92.55%), it still would not be enough to make them source for an eye clinic that is cheaper elsewhere (70.21%).

Questions	Yes	%	No	%
Are the fees for frames, lenses and general eye treatment affordable in the eye clinic?	148	78.72	40	21.28
Are you mandated to pay for optical goods and eye care services first before you are attended to?	102	54.26	86	45.74
Can you easily access eye care services in that eye facility despite the cost?	146	77.66	42	22.34
Will the costs involved cause you to preferably seek eye care services elsewhere?	56	29.79	132	70.21
Will cost reduction in eye care services make it easier for you to access it when it is needed?	174	92.55	14	7.45
Do you have any form of health insurance that can cover the cost for eye care services?	20	10.64	178	89.36
Note: N: Number of subjects; %: Percentage of the number of subjects.				

Table 14: Affordability of eye care services.

From Table 15 majority of the subjects (89.36%) stated that the eye care services were just slightly affordable.

Cost	N	%
Very affordable	10	5.32
Slightly affordable	168	89.36
Not affordable	10	5.32
Total	188	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 15: Cost price of eye care services.

From Table 16 only few subjects (30.3%) go to over the counter places to get drugs to resolve their eye issues. Most of them preferably go to other eye clinics (69.7%).

Location	N	%
Other eye clinics	92	69.70
Over the counter	40	30.30
Patent healers	-	-
Traditional healers	-	-
Total	132	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 16: Alternative destination for eye care services.

From Table 17 majority of those under health insurances were using NHIS (60%), while others were used other health insurance (40%) schemes like Axa Mansard.

Health insurance providers	N	%
NHIS	12	60.00
EPO	-	-
HMO	-	-
POS	-	-
Others	8	40.00
Total	20	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 17: Health insurance coverage for eye care services.

From Tables 15-17 it can be deduced that eye care services are easily affordable in Owerri West.

From Table 18 majority of the subjects (71.28%) are aware of the importance of a yearly eye checkup, although they are usually satisfied (74.47%) after a comprehensive eye checkup, they would still rather wait for an eye issue to occur (56.38%) before they visit the eye clinic. However they do not patronize over the counter or to traditional healers anymore (91.49%) and would still preferably recommend an eye clinic around (64.89) to anyone they come across in need of eye care services.

Questions	Yes	%	No	%
Do you feel that it is important to get your eyes checked at least once a year?	134	71.28	54	28.72
Do you go to get your eyes checked only when you have a problem with your eyes?	106	56.38	82	43.62
Do you prefer going to over the counter or traditional eye care healers for your eye care needs?	16	8.51	172	91.49
Are you satisfied with the quality of eye care service you received during your eye care visits?	140	74.47	48	25.53
Are there problems you encountered while being attended to in the eye clinic there?	54	28.72	134	71.28
Would you recommend the eye clinic you visited to a friend or family member?	122	64.89	66	35.11
Note: N: Number of subjects; %: Percentage of the number of subjects.				

Table 18: Perception and acceptance of eye care services.

From Table 19 majority of the subjects (45.74%) visit an eye clinic for an eye checkup occasionally.

Frequency	N	%
Occasionally	86	45.74
Frequently	40	21.28
Rarely	46	24.47
Never	16	8.51
Total	188	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 19: Frequency of eye care visits.

From Table 20 a minority of the subjects (62.5%) that still go over the counter or meet traditional healers attributed their reasons to the cost implications.

Reason	N	%
Location	12	37.50
Cost	20	62.50
Diagnosis	-	-
Accuracy	-	-
Total	32	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 20: Eye care services over the counter.

From Table 21 majority of the subjects usually do not feel bothered (84.04%) about people who wear glasses or have an eye issue.

Mindset	N	%
Concerned	16	8.51
Not concerned	158	84.04
Unconcerned	14	7.45
Total	188	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 21: People viewpoint on eye and visual problems.

From Table 22 majority of the subjects were usually very satisfied (68.57%), after visiting the eye clinic and receiving treatment.

Satisfaction	N	%
Just satisfied	40	28.57
Very satisfied	96	68.57
Extremely satisfied	4	2.86
Total	140	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 22: Evaluation of eye care service delivery.

From Table 23 a minority of the subjects that were not satisfied with the service quality of the clinic that they visited around them attributed the reason to delay (66.67%).

Reason	N	%
Poor attention	32	66.67
High costs	16	33.33
Others	-	-

Total	48	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 23: Reason for lack of satisfaction.

From Table 24 a minority of the subjects that would not recommend the eye clinic around them to someone else attributed the reason to service quality (51.52%).

Reason	**N**	**%**
Quality	34	51.52
Cost	20	30.30
Others	12	18.18
Total	66	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 24: Criticism of eye care services within Owerri West.

From Table 25 all the other subjects that had others reason for a non-recommendation of the eye clinics they know of attributed the cause of this to delay (100%).

If others, please specify	**n**	**%**
Poor attention	6	100
Total	6	100
Note: N: Number of subjects; %: Percentage of the number of subjects.		

Table 25: Complaints on eye care service delivery in Owerri West.

From Tables 19-25 it can be deduced that eye care services is easily accepted and utilized in Owerri West.

Testing of hypothesis

Testing of first hypothesis HO_1: Eye care services are not easily available in Owerri West LGA, Imo state, Nigeria.

From SPSS version 23 data output, data analysis using the paired sample T-test at 0.05 level of significance and 95% confidence interval revealed a P value of 0.001. Since P (0.001) <0.05, the null hypothesis rejected and the alternate accepted (Table 26).

Variables	**P-value**
Availability-non-availability	0.001

Table 26: SPSS data analysis result showing P value for testing of first hypothesis.

HA_1: Eye care services are easily available in Owerri West LGA, Imo state, Nigeria.

Testing of second hypothesis HO_2: Eye care services are not easily accessible in Owerri West LGA, Imo state, Nigeria

From SPSS version 23 data output, data analysis using the paired sample T-test at 0.05 level of significance and 95% confidence interval revealed a P value of 0.704. Since P (0.704) >0.05, the null hypothesis is accepted (Table 27).

Variables	**P-value**
Accessibility-non-accessibility	0.704

Table 27: SPSS data analysis result showing P value for testing of second hypothesis.

Testing of third hypothesis HO_3: Eye care services are not easily affordable in Owerri West LGA, Imo state, Nigeria.

From SPSS version 23 data output, data analysis using the paired sample T-test at 0.05 level of significance and 95% confidence interval revealed a P value of 0.027. Since P (0.027) <0.05, the null hypothesis rejected and the alternate is accepted (Table 28).

Variables	P-value
Affordability-non-affordability	0.027

Table 28: SPSS data analysis result showing P value for testing of third hypothesis.

HA_3: Eye care services are easily affordable in Owerri West LGA, Imo state, Nigeria.

Testing of fourth hypothesis HO_4: Eye care services are not easily acceptable in Owerri West LGA, Imo state, Nigeria.

From SPSS version 23 data output, data analysis using the paired sample T-test at 0.05 level of significance and 95% confidence interval revealed a P value of 0.003. Since P (0.003) <0.05, the null hypothesis rejected and the alternate accepted (Table 29).

Variables	P-value
Acceptability-non-acceptability	0.003

Table 29: SPSS data analysis result showing P value for testing of fourth hypothesis.

HA_4: Eye care services are easily acceptable in Owerri West LGA, Imo state, Nigeria.

Discussion

Access to healthcare has been traditionally viewed as the ability to see a physician or to be hospitalized if necessary in the presence of a health state that may benefit from care in prevention, treatment, amelioration or palliation. Globally, the three major reasons for the high prevalence of visual impairment are non-availability, non-accessibility and non-affordability of the eye care services, due to their negative influence on the use of eye care services. Over two third of Africans have no access to eye care services with Nigeria having the greatest magnitude. This is due to the fact that most eye facilities are situated in the urban areas or are secondary and tertiary facilities thereby reducing the access to the rural population. In order to increase this access, the World Health Organization (WHO) has recommended the full integration of eye care into primary healthcare as proposed in its global action plan and its report on vision.

Andersen's model of healthcare utilization classifies factors influencing the utilization of these services into three categories: Predisposing factors, enabling factors and need factors. All these categories works together to impact the probability that a person would utilize healthcare services. Predisposing factors are present before an illness and refer to an individual's tendency to utilize healthcare services irrespective of whether the services are required. Enabling factors are related to circumstances that affect an individual's ability to utilize healthcare services. Need factors is either the presence of ill-health or the perception of need, e.g. in the case of a disability. Both eye care and healthcare services are influenced by all these factors Thus, in the presence of predisposing and enabling factors, the need for the eye care and healthcare services is required for utilization to actually take place.

From the analysis of the results in this research, it was discovered that although eye care services were easily available; P (0.001) <0.05, eye care services were easily affordable; P (0.027) <0.05 and eye care services were easily accepted and used; P (0.003) <0.05. However, it was not easily accessible; P (0.704) >0.05. This is due to barriers such as limited numbers of eye care facilities, bad roads and lack of health insurances amongst others.

Previous researches carried out by Ashaye, et al, Abdull, Balarabe et al and Aghaji, et al. on the barriers to access and use of eye care services agree with this study while others studies carried out by Ekpenyong and Ikpeme, Adio and Onua, Arinze et al, Nayak et al, Thapa et al and Okoye, et al., still on the barriers to access and use of eye care services contradicts this study, stating that eye care services were not easily available and affordable but they were easily accessible. There is therefore, a need for eye care services to be available, accessible and affordable in order to maximize use of these services and minimize the prevalence of visual impairment and blindness.

Contribution to knowledge: This study has added to the existing knowledge on the barriers of access and use of eye care services, as well as provided a wider assessment and easier evaluation of the current challenges of access to eye care services in Owerri West for relevant eye care stakeholders to work with.

Conclusion

According to the results from this research, access to eye care services has been lower than expected due to certain barriers, even though it is easily available, easily affordable and easily accepted. Reasons for this deficit were attributed to barriers such as limited numbers of eye care facilities, bad roads and lack of health insurances amongst others. The groups most vulnerable to poor access to eye care services are low-income people, illiterates and farmers. Majority of whom are concentrated in the rural areas. Therefore, it is important for all categories of eye care personnel's to be available and effective engaged since limiting access to eye care services will to increase the prevalence of visual impairment and blindness.

Maximal utilization of eye care services, full integration of Primary Eye Care (PEC) into the Primary Healthcare (PHC) system and increased public enlightenment on the need for a comprehensive eye care examination, at least once a year, especially when one is above 40 years are essential in order to promote access to and use of eye care services worldwide.

Recommendations

- Awareness programs, outreaches and health talks should be done on a quaternary basis in order to enlighten people on the need to safeguard their vision.

- Comprehensive eye check-ups, at least once in a year, should be encouraged and recommended by eye care professionals, especially to those above the age of 40.
- More eye facilities should be situated in the rural areas in order to improve access to and use of eye care services.
- The need for health insurances should be promoted by eye care professionals in order to make eye care services more accessible and affordable.

Ethical Consent

Ethical approval was obtained from the ethical committee of the school of health technology, through the department of optometry, FUTO.

References

1. Achigbu EO, Ezeanosike E (2017) Visual impairment and blindness in 5 communities in Imo state, South East Nigeria. Ann Med Health Sci Res 7: 106-110.
2. Adio AO, Onua AA (2012) Economic burden of glaucoma in rivers state, Nigeria. Clin Ophthalmol 6: 2023-2031.
3. Aghaji A, Gilbert C (2022) Policies for primary eye health care in Nigeria: A case study. CEH 34: 82-83.
4. Aghaji A, Burchett HE, Oguego N, Hameed S, Gilbert C (2021) Primary health care facility readiness to implement primary eye care in Nigeria: Equipment, infrastructure, service delivery and health management information systems. BMC Health Serv Res 21: 1360.
5. Aghaji AE, Gilbert C, Ihebuzor N, Faal HB (2018) Strengths, challenges and opportunities of implementing primary eye care in Nigeria. BMJ Glob Health 3: e000846.
6. Arinze OC, Eze BI, Ude NN, Onwubiko SN, Ezisi CN (2015) Determinants of eye care utilization in rural South-Eastern Nigeria. J Community Health 40: 881-890.
7. Ashaye A, Ajuwon AJ, Adeoti C (2006) Perception of blindness and blinding eye conditions in rural communities. J Natl Med Assoc 98: 887.
8. Balarabe AH, Hassan R, Fatai OO (2014) Eye health seeking habits and barriers to accessing curative services among blind beggars in an urban community in Northern Nigeria. Ann Afr Med 13: 184-188.
9. Burn H, Hamm L, Black J, Burnett A, Harwood M, et al. (2021) Eye care delivery models to improve access to eye care for Indigenous peoples in high income countries: A scoping review. BMJ Glob Health 6: e004484.
10. Cote CL, Singh S, Yip AM, Murray J, MacLeod JB, et al. (2015) Increased distance from the tertiary cardiac center is associated with worse 30 day outcomes after cardiac operations. Ann Thorac Surg 100: 2213-2218.
11. Eze CC, Eze BI, Chuka-Okosa CM, Okoloagu N (2020) Assessment of resources for primary eye care delivery in a rural area, South East Nigeria. Niger J Ophthalmol 28: 49-56.
12. Foreman J, Keel S, van Wijngaarden P, Bourne RA, et al. (2018) Prevalence and causes of visual loss among the indigenous peoples of the world: A systematic review. JAMA Ophthalmol 136: 567-580.
13. Fotouhi A, Hashemi H, Mohammad K (2006) Eye care utilization patterns in Tehran population: A population based cross sectional study. BMC Ophthalmol 6: 4.
14. Graham R (2017) Facing the crisis in human resources for eye health in Sub-Saharan Africa. Community Eye Health 30: 85-87.
15. Jacobs B, Bigdeli M, Annear PL, Van Damme W (2012) Addressing access barriers to health services: An analytical framework for selecting appropriate interventions in low income Asian countries. Health policy plan 27: 288-300.
16. Jackson KL, Glasgow RE, Hill BR, Mone MC, Sklow B, et al. (2013) Does travel distance influence length of stay in elective colorectal surgery? Dis Colon Rectum 56: 367-373.
17. Kelaher M, Ferdinand A, Taylor H (2012) Access to eye health services among indigenous Australians: An area level analysis. BMC Ophthalmol 12: 1-8.
18. Lee PP, Hoskins HD, Smith RE, Hutchinson BT, Wong BA (2007) Access to eye care: Response of the American academy of ophthalmology and its members to societal needs now and in the future. Arch Ophthalmol 125: 403-405.
19. Mosadeghrad AM (2014) Factors influencing healthcare service quality. Int J Health Policy Manag 3: 77.
20. Napper G, Fricke T, Anjou MD, Jackson AJ (2014) Breaking down barriers to eye care for Indigenous people: A new scheme for delivery of eye care in Victoria. Clin Exp Optom 98: 430-434.