



## RESEARCH ARTICLE

### AN ASSESSMENT OF THE LEVEL OF ACCESS TO EYE HEALTH CARE SERVICES: A CASE STUDY OF ONESIGHT – GAMBIA

<sup>1</sup>Lang Sanyang, <sup>1</sup>Momodou Mustapha Fanneh, <sup>1</sup>Christopher Belford, <sup>1</sup>Yusupha Dibba, <sup>1</sup>Lamin B. Ceesay, <sup>2</sup>Bumi Camara

<sup>1</sup>School of Business and Public Administration, Department of Economics and Management Sciences, University of the Gambia, Kanifing, The Gambia

<sup>2</sup>African Development Bank, Accra, Ghana

#### ARTICLE INFO

##### Article History:

Received 15<sup>th</sup> March, 2022

Received in revised form

24<sup>th</sup> April, 2022

Accepted 27<sup>th</sup> May, 2022

Published online 30<sup>th</sup> June, 2022

##### Keywords:

Eye Health Care Service, Eye Health Care Products, One Sight, Access, Glasses, The Gambia.

#### ABSTRACT

The objective of this paper is to assess the with respect to access to eye care services in The Gambia. More specifically in this paper, the scorecard assesses the level at which people have access to eye care services. The research employed both quantitative and qualitative methods. The findings disclosed that in the Gambia, majority of eye care service centers are in the urban areas which leaves the rural dwellers with no choice but to travel long distances to access eye care services facilities. According to the findings of the FGDs, greater majority of the population expressed concern about the inadequacy of health services, which adversely affected access. This is further frustrated by the poor road conditions in the country outside of the Greater Banjul Area, especially in the North Bank Regions of River Gambia and the high cost of transportation to access services. Poor road conditions, inadequate eye care facilities and personnel made access very difficult with its associated requirements in the rural areas. This has prompted many rural communities' recourse to alternative sources of care including traditional healers and patent medicine sellers. The study revealed that over 80% of the respondents reported that the nearest eye care services are accessed through hospitals and clinics. This is a demonstration that access to eye care services are generally at hospitals and clinics but not specialized eye care centers. Majority of households (80%) have access to formal eye care services as opposed to only 19.8 not having access to formal eye care services. The findings of both the quantitative and FGD revealed that cost is considered another bottleneck to access to eye care service in the country especially to rural communities. Based on the findings, practical implications and an agenda for future research are suggested. For instance, the study recommends: improving the road networks, constructing more vision centers not only in urban and peri-urban center but also in rural communities. Additionally, facilities and specialist in eye care related services can be provided at health facilities across the country to provide the muchneeded eye care services to rural communities.

#### INTRODUCTION

The Gambia has only 1 ophthalmologist and 3 optometrists. Statistics has shown that, 1 in every 3 Gambians needs refraction error correction however access to facilities that can perform refraction related services are limited. Due to the level of poverty, the cost of a pair of glasses, cost of transportation, poor infrastructure, limited eye care facilities among others are hindering access. Although The Gambia has a long history of providing eye care services most specifically for cataract and trachoma, however, it provides limited services for refractive error. Health Care Services are among critical aspects of development of any country. However, the Gambia is among 25 least countries with limited access to health care. James Burton, 2017. As the adage goes, "a healthy nation is a wealthy nation". It is against this backdrop that the Government of The Gambia in collaboration with development partners and NGOs over the years has been striving to provide

quality health services to its populace. Several attempts have been made from the first republic to date, to improve the delivery of health services to better the health of the population as a way of reducing the unacceptable prevailing morbidity and mortality rates due to both communicable and non-communicable diseases among other factors. These efforts are evident through various initiatives undertaken such as the establishment of "Health Management Information System", the introduction of "Cost Recovery Program" started in 1988, which established the "Drug Revolving Fund" and the introduction of user fees as a form of health financing. Also "Bamako Initiative", introduced in 1993 as further development on the Cost Recovery Program and the recent research conducted in 2010 to introduce a National Health Insurance Scheme currently under review, Global Fund for Malaria Tuberculosis and HIV/AIDS, OneSight Programme among others.

These are further complemented by building more health facilities (Tertiary, Major and Minor) health centers across the country with the establishment of a medical school at the University of The Gambia in 1999 to improve and provide quality health education and services at all levels. Albeit the aforementioned interventions, the health sector remains under huge pressure due to many factors, including; the high population growth rate, inadequate financial commitment, shortage of well-trained healthcare professionals, poor logistics and the absence of a strong health research base to generate data for management, high attrition rate among trained medical personnel, inadequate health facilities and lack of efficient and effective referral system. These factors among others have severely affected efforts to reduce morbidity and mortality rates as a result health care delivery throughout the country has not met the expectation of Gambians. The need to have a clear direction to quality care requires a supportive organizational and strong research base to inform management and policy framework with a strong flexible and knowledgeable leadership, able and willing to take informed risks (NHIS-Civil Service Research, 2010).

Consequently, OneSight in line with its vision and mission and being fully aware of the challenges faced by The Gambia in fulfilling this fundamental health issue launched its Gambia Initiative. In partnership with Sightsavers UK and the government of The Gambia, OneSight established its first Sustainable Vision Care Project in The Gambia. This part of the Scorecard study assesses the impact of the OneSight's intervention on access to health care services in The Gambia. OneSight and its partner institutions have in the last four years, made significant investments and efforts to create awareness, enable access and affordable eye care services to Gambians. This paper intends to assess the level of access of OneSight's eye service products in The Gambia. The objective of this paper is to assess the perception of Gambians on the level of access to eye health care services in the country. The first part of the paper provides introduction and background to the study, the second part provides brief theoretical review of access to eyecare services, the third section is the research methodology adopted by this study, the fourth section is the finding and conclusion of the study.

## Literature Review

***Eye Care Services and Challenges Confronting Access to Eye Care Services:*** Access to eye care services affects its utilization by the public. Access to such services is affected by people not seeking eye care services, lack of eye care services and infrastructure, cost, lack of trained personnel, ignorance, poverty, gender, distance to the nearest eye care service providers, mode of transportation to and from the eye care service centers, the time taken to and from the eye care service centers and the cost involved in travelling to and from the nearest eye care service centers (Brien A Holden (2007). Access to eye care services was measured by the distance to the nearest vision centers, mode of transportation to and from the eye care service centers, time taken to and from the eye care service centers and the cost involved in travelling to and from the nearest vision centers to communities. The findings revealed that, all these gives cost as the overriding factor to have access to affordable vision care. Investment in Education and Health of the population are important in increasing the productivity of a nation. Problems related to the eye can have a severe impact on the productivity of individuals, households,

community, and the overall GDP of a nation. One eye health related problem is refractive errors. "Refractive error is present when the eye cannot focus images clearly, resulting in blurred vision. The most common types of refractive errors are (1) myopia (nearsightedness/shortsighted), (2) hyperopia (farsightedness), (3) astigmatism (irregularly curved cornea), and (4) presbyopia (inability to focus on near objects that occurs with aging). Refractive errors are not preventable but can be treated easily with corrective eyeglasses or contact lenses and, in some cases, corrective surgery" (The National Eye Institute, 2012). Refractive errors and cataracts are the leading causes of avoidable blindness and visual impairment. Uncorrected refractive errors and cataract are most found in rural, often remote, underdeveloped areas in most developing countries, in particular The Gambia as recorded by the findings of this scorecard survey (Thylefors, 1987).

In 1999, WHO and the International Agency for the Prevention of Blindness (IAPB) launched a global initiative called Vision 2020 to eliminate the main causes of avoidable blindness by year 2020 and give all people in the world "the right to sight". The World Health Organization estimates that 333 million people are blind or visually impaired Resnikoff, et al., (2004) and that 153 million, or nearly half of the global burden of blindness and vision impairment, is due to uncorrected refractive error. The WHO measurement of refractive error encompasses myopia (nearsightedness), hyperopia (farsightedness), and astigmatism. The World Health Organization recently included refractive error in its calculations for the global burden of blindness and impairment, bringing vision problems from 9<sup>th</sup> place globally to the 3<sup>rd</sup> place as one of the leading causes of disease and disability worldwide. Refractive error makes up the largest percentage of overall vision problems, is the easiest of all vision impairments to treat, and is one of the most cost-efficient of eye care interventions. The cost of the elimination of blindness and impaired vision due to uncorrected refractive error has been estimated at US\$5 per person in need of eyeglasses, including the development of the necessary infrastructure, training of necessary personnel, and supply of glasses. The cost of providing eye care to the 300 million people who are blind or visually impaired because of uncorrected refractive error by the year 2020 would be \$1.5 billion dollars, a mere \$115 million a year for the next 13 years (Brien, 2007).

In providing access to eye care services different models are employed. The Charitable model provides free eyeglasses. Luxottica's Gift of Sight provides free eye exams and eyeglasses to thousands of individuals during two weeks mission in developing countries. Social Entrepreneurship model links social entrepreneurship with the provision of health services. The Scojo Foundation utilizes a market-based approach to train women to become 'vision entrepreneurs' and sell eye care products within their own communities. Scojo sells glasses to vision entrepreneurs for around \$2, and vision entrepreneurs in turn sell the glasses to customers for \$3-5 depending on location. Access to eye care services affects its utilization by the public. Access to such services is affected by people not seeking eye care services, lack of eye care services and infrastructure, cost, lack of trained personnel, ignorance, poverty, gender, the distance to the nearest eye service provider, mode of transportation to and from the eye care service center, the time taken to and from the eye care service center and the cost involved in travelling to and from the nearest eye care service center.

A recent study found that over two thirds of adults over age 40 in a rural Indian population with low vision secondary to cataracts, glaucoma, and refractive error had never sought eye care, while another showed that 90 percent of the people seeking eye care in poverty-stricken areas in Sri Lanka had similarly had no previous eye care (Chandrashekar TS, Bhat HV, Pai RV, Nair SK. Coverage, 2007). Access to eye services varies by gender. Foutouhi et al (2006) reported that women in Iran were more likely to seek eye care services than men. Also, Palagyi et al (2008) reported that women in Timor-Leste with either low vision or blindness were more likely to seek treatment than men. Schaumberg et al (2000), also reported that women tended to have eye examinations more frequently than men. Women were more careful about their eye health than men thereby suggesting a gender influence on utilization of eye care services (Ja, E, and Go, O., 2014). In many rural areas of the world, poverty is a major issue, hence residents are not able to afford the cost of eye care services and therefore conditions which could have been treated at an early stage are not attended to and may result in low vision and blindness (Nedgwa et al (2005). Nedgwa et al (2005) reported that lack of money was one of the main barriers to eye care use in Kenya. Ignorance and cost of treatment are barriers to uptake of vision services in Nigeria (Ja, E, and Go, O., 2014). Distance as a barrier could also be reduced by setting up outreach programs in rural areas and providing transport from villages direct to the hospital and back (Ja & Go, 2014). Availability and proximity were accounted for as hidden charges which stand also as a barrier to eye care (Khan, 2004). In the Gambia, majority of eye care services are in the urban areas. Rural dwellers tend to travel far to access the eye care services. Poor road conditions, lack of eye care facilities and personnel made access very low in the rural areas. This has resulted in many rural communities still relying on alternative sources of care including traditional healers and patent medicine sellers, who serve as frontline health workers (Fafowora, 1996).

Lack of trained personnel and infrastructure has been identified as barrier to refractive error corrections in Southern India (Dandona R, et al., 2000). Non-availability of low cost, good quality low vision services and lack of experts or training to support services have hindered provision of low vision care services in the developing countries (Khan, 2004). In a study of student's utilization of eye health care services at Rwanda University, Ekemiri & Amiebenomo (2016) concluded that lack of awareness or knowledge was not the only factor causing the barrier to utilization of eye health care facilities but other factors such as accessibility, affordability, and availability. Brise & Leeuw (2015) posited that access to eye health care is dependent on awareness of eye care health services. As pointed out by them, one has to be aware of the service to access it. According to them, three significances of awareness: (1) service awareness (2) eye-care insurance awareness and (3) awareness about the importance of eye care, is related to if and how a patient accesses care. Frazier & Kleinstein (2009) found that the level of education have a direct influence to access to vision, eye and health care because it may affect the ability to obtain, understand and use information, and influence perceptions about health in general. Omotoye Olusola J. et al., (2016), in a study on Awareness and Accessibility of Existing Tertiary Eye Care Facility by Rural Dwellers of Aramoko Community, in Ghana found that many participants (85.7%) 50 years and older had access to the existing eye care facility. As opposed to the study, Ntim- Amponsah CT, et al., (2005), found that more than 80% of those aware of the existing eye

care facility had no access to the facilities ( $p=0.001$ ). This could be associated to financial constraints or level of poverty. Melese M, Alemayehu W, Friedlander E, Courtright P in their study on Indirect cost associated with accessing eye care services as a barrier to service use in Ethiopia, posit that albeit the low level of access to eye health care services in general in his study, more males (78.6%) have better access to eye care facilities than female. This according to him could be associated to many reasons such as: better financial ability of men and deep involvement of women in domestic work. Du Toit et al., (2006) studied awareness, use, and barriers to the use of eye services in Fiji's Central Province using a cross-sectional survey study design with random clusters of households and concluded that the old, rural, and female, under-utilized conventional eye care services. Also, to improve eye health, planning and implementation of eye care services must overcome underutilization by addressing local barriers to uptake through community participation in education and affirmative action.

**Brief Research context:** The poverty studies conducted in the Gambia, confirms that the further you move away from Greater Banjul Area (GBA) the severity of poverty increases. This is because the social and economic infrastructures and services are more concentrated in GBA at the expense of other regions portraying centralization of development. The sampling procedure used for this scorecard survey further recognizes the trend of rural-urban drift and gives greater weight to the allocation of sampling unit to GBA, where more than 60 per cent of Gambian population resides. This situation has not changed much since Independence. The North Bank Regions of the River Gambia are more less privilege and therefore hard hit by poverty. When the issue of access was discussed in the Focus Group Discussions across the regions, the findings show variances (regional and within regions) with greater differences between urban, towns and growth centers against rural communities in the hinterland within the regions depending on the nearness to the service centers. Also, the availability of good road network, cost of transportation services and its regular availability and cost of services generally constrained accessibility. Of the 28 FGDs conducted across the country, participants lamented the inadequacy of eye care services which they considered as one of the most important parts of human body. They mentioned that there are only few reliable centers for eye care and other health services to serve a population of 1.8 million in The Gambia is obviously inadequate. The major health facilities currently available in country are Francis Small Teaching Hospital Banjul, Kanifing Hospital, Sulayman Junkung Hospital Bwiam, Jammeh Foundation for Peace Hospital, APRC Farafenni Hospital, Brikama and Bansang) for government and private facilities are Sight Savers, Sheik Sahed, MRC at Basse, Fajara, Farafenni and Keneba in addition to WEC Mission in Sibanor, Foni Jarrol and Masembh. Most of these are in the GBA. This leaves the country much room to be desired in the health service delivery.

## METHODOLOGY

**Survey design:** The sample size for this scorecard survey on awareness of refractive errors was set at  $n = 3000+10\%$  over-Quota (3300 target respondents) – person in the family who can make all/some of the healthcare-related financial decisions for the household was deemed sufficient because it would provide enough cases for subgroup analysis.

For this study, the unit of measurement is the household of which individual respondents were drawn from across the whole country within the selected districts and settlements in each of the sampled districts. The sample size of 3300 households is selected across the country in 30 districts using multistage stratified cluster (area) random sampling and PPS (Probability Proportional to Size) approach (Benet et al., 1991). The urban population constitute 60% of the total sample size and the rural population accounts for the remaining 40%. of the total sample size of 3300 that comprises 1320. The selection of the region is the first stage, the second stage focuses on the districts, and settlements within the districts in the regions was the third stage. In each of the selected districts, the settlements were further stratified into smaller clusters according to the population size of the settlements to allow for their representation in the sample using PPS. The final stage targeted individual respondents or any member of the family who can make all/some healthcare-related financial decisions for the household for interviews in each of the selected sample settlements across the districts within the regions. Hence, the households were the final unit of sampling for this scorecard study.

**Focus Group Discussion (FGD):** Analysis of the qualitative dimension (FGDs) of this scorecard survey was conducted to complement and triangulate with the quantitative information to have a better understanding of the prevalence of refractive errors and their associated causes as well as solutions sought and other eye-related diseases in the country. Focus Group Discussions always disclose the hidden information that cannot be acquired through the quantitative approach, such as the social dimension of the problems, how it affects the research subjects, the extent to which they are affected, and the coping strategies used until lasting solutions are found to the problems. One FGD was conducted per district within each of the sampled villages in the districts to have 30 FGDs for the whole country. This was considered enough given the homogeneity of the characteristics in the districts with regards to the variables under consideration for discussions. The study ended up conducting FGD in 28 districts due to unseen circumstances.

## Findings and Discussion

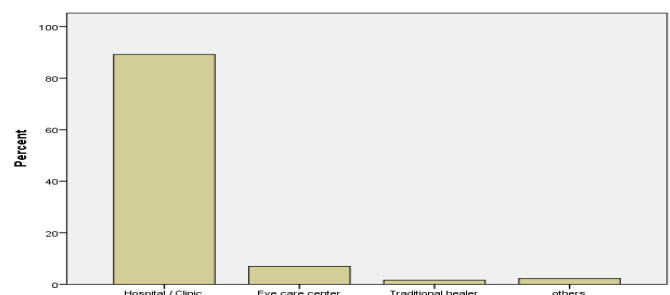
**Descriptive Statistics:** This community scorecard survey applied quantitative and qualitative methods to analyze the level of awareness of eye health care facilities in Gambians. The average age of respondents was 40 of this, 50.2% females, and 49.8% males. About 54% were heads of households and 48% were primary decision-makers interviewed at the household level. With respect to the educational status of households, 58% of respondents had at least some form of education, with more than 70% attaining the secondary level of education. The survey covered all the regions in the country with the distribution of respondents by the regional background in the seven Local Government Administrative Areas (LGA) of The Gambia. The number of respondents in Banjul accounted for 6.5%, while Kanifing LGA constitutes 31.9%, West Coast Region 31.1%, North Bank Region 10.6%, Lower River Region 2.3%, Central River Region 6.9% and Upper River Region 10.5% respectively. Incomes of respondents vary across regions. The majority of our respondents in Banjul, Kanifing Municipality, West Coast Region, North Bank Region and Upper River Region have a monthly income of over GMD2,500 (approximately US\$59). The Lower River Region is the region with a lesser proportion of people who fall within

this income bracket. Some of our respondents have no monthly income which also represents a good portion of our respondents.

### **RQ1: Access to Eye Care Services Through Hospitals and Clinics.**

In assessing the issue of accessibility, the study evaluated the proximity of eye care services centers in terms of distance, time, and the cost of round-trip to the nearest eye care services including waiting time at these centers. The findings disclosed that in the Gambia, majority of eye care service centers are in the urban areas. This leaves the rural dwellers with no choice but to travel far and near to access the eye care services. According to the findings of the FGDs, greater majority of the population expressed concern about the inadequacy of health services, which adversely affected access. This is further frustrated by the poor road conditions in the country outside of the Greater Banjul Area, especially in the North Bank Regions of River Gambia and the high cost of transportation to access services. Across all the FGDs conducted, participants generally lamented the constraints they endure regarding access, not only health but other development opportunities. Poor road conditions, inadequate eye care facilities and personnel made access very difficult with its associated requirements in the rural areas. This has prompted many rural communities' recourse to alternative sources of care including traditional healers and patent medicine sellers, who serve as frontline health workers, (Fafowora, 1996). Hence patients buy eye drops without adequate and proper medical advice ending up compounding their eye diseases.

Figure 1 below, indicated that more than 80% of the respondents reported that the nearest eye care services are accessed through hospitals and clinics. This is a demonstration that access to eye care services are generally at hospitals and clinics but not specialized eye care centers. Only 6.9% said they have access through eye care centers, while 1.6% accessed traditional healers. Notwithstanding, 2.2% of the respondents said they do not know which facility is nearest to them. This finding demonstrates that, there are few specialized vision centers in the Gambia. Thus, most people access eye related services at hospitals or local medical dispensaries and private practitioners. In most of the rural areas, specialized eye care service providers are largely inadequate. In fact, our findings from the FGDs revealed same: *"Going to Farafenni the only community with eye clinic, is a problem for us here because of the means of transportation challenges related to the distance. We don't have a nearest facility and Farafenni is the only place for us, the doctors are good, the treatment is excellent, and the results are great, but farther and costlier"*, noted by a respondent in Pallen Wollof.



**Figure 1: Respondent's Nearest Eye Care Service Provider**

## RQ 2: Household Access to Formal Eye Care Service

The findings of this study as shown in Table 1 below, revealed that majority of households (80%) have access to formal eye care services, only 19.8% indicated they do not have access to formal eye care services. This is indicative of Gambians making use of conventional health facilities to remedy eye related issue except where untenable, they resort to traditional medicine. Despite this finding, eye services in the Gambia leaves much room to be desired, hence the need for improvement. Contrary to the findings of the current study, a study conducted in rural Indian population with low vision secondary to cataracts, glaucoma, and refractive error found that over two thirds of adults over age 40 had never sought eye care. Similarly, 90 percent of the people seeking eye care in poverty-stricken areas in Sri Lanka had no previous eye care (Chandrashekar et al., 2007).

**Table 1. Household Access to Formal Eye Care Service**

Access to Formal Eye Care Service	Count	Percent of Total
Yes	2822	80.2%
No	695	19.8%
Total	3517	100%

On the question of the location of the nearest eye care facility with respect to the proximity in the same village with the households, it was fascinating to note that 44.7% said it is within their village. On the contrary, more than 50% said the nearest eye care facility is outside of their locality. This corroborated that despite many of the respondent utilizing convention eye care services, access to eye care is a concern to respondents as confirmed by the study. Consistent with these results, the FGDs revealed that very few eye care facilities across the country and where they exist, they are found in urban/peri-urban settlements rendering rural settlements disadvantaged.

**Table 2. Respondents' Nearest Health Facility**

Health Facility in Same Village	Count	Percent
Yes	1564	44.7%
No	1935	55.3%
Total	3499	100%

On the issue of access in terms of mode of transportation to the nearest health centers, majority of respondents used car as means of access. The time it takes to reach the nearest health centers for eye care services varies between rural and urban and within the same locality. The time it takes to reach health facilities is considerably high. The average time it takes to reach an eye care center is about an hour. While it takes just about 30 minutes in urban areas, it takes more than an hour for rural residents. This finding corroborates findings of a qualitative study of adults over age 60 from socially deprived communities in Wales between 2010-2011, which establish that cost was the most common cost in accessing sight test, particularly in relation to purchasing glasses, even though the eye examination itself is funded by the National Health Service (Bidder & Jones A., 2015). Similarly, Nedgwa et al., (2005), found that lack of money was one of the main barriers to eye care use in Kenya. Finally, in terms of costs as a measure of access to eye care facilities, the study revealed that on average, when one travels by car, it costs about 40GMD, a little less than a dollar. In terms of purchasing power, this is approximately the per capita consumption of an average person

in the sample. This might appear small but for an average Gambian this is expensive taking into consideration the level of poverty in the Gambia. In fact, this finding is the sentiment across all the FGDs conducted in the North Bank regions. participants generally expressed concern about high cost of transportation, poor road conditions and cost of glasses inhibiting access to eye care services especially refraction. For instance, respondents noted *Some major eye treatments are done in Basse for free, one only need to bear the cost of transport, ticket, medicine and sometimes glasses if needed. It may cost one more than D2000 if all these things are on board*" from Diabugu. Furthermore, a respondent argued that *"Going to Soma fares cost D100, ticket D25 and cost of medicine is D75, proceeding to Farafenni means more money and with food, the cost increases. It may take 60 minutes or more to get there"*. Similarly, in the regions the same concern regarding transport cost floated around for those far away from service centers. Generally, transportation is considered an added cost to access social and economic services across the FGDs conducted in the country especially those in Sankandi, North Bank Regions". These concerns correlate to high prevalence of poverty, and over centralization hence the limited number of the facilities requiring patient's frequent travel to far places where services are available.

**RQ3. Access to Eye Health Care - By Region:** According to the findings of the FGDs, greater majority of the population expressed concern about the inadequacy of health services, which adversely affected the health seeking behaviors of the people. This is further frustrated by the poor road conditions in the country outside of the Greater Banjul Area, especially in the North Bank Regions of River Gambia and the high cost of transportation to access services. Across all the FGDs conducted, participants generally lamented the constraints they endure regarding access, not only health but other development opportunities. Across all the FGDs conducted in the North Bank regions, participants generally expressed concern about high cost of transportation, poor road conditions and cost of glasses inhibiting access to eye care services especially refraction. These concerns correlate to high prevalence of poverty, and over centralization hence the limited number of the facilities requiring patient's frequent travel to far places where services are available. For instance, the respondent noted: *"The first cost to the hospital is D25 for then ticket, with medicine will depend on the type of infection one may have and will surely determine the price. It is not easy for us even though we have a hospital in our town. We have limited eye care specialists in the hospital"*. It could be deduced however, that It is discovered that North Bank Region of the River Gambia compared to the South Bank is the poorest in terms of socioeconomic development with limited social and economic infrastructure which is attested by the existence of only one major hospital in Farafenni far away for most people to access. In the South Bank Regions, participants in Fuladu West invariably recur the same opinions with respect to access except road conditions. Here is one of the participants said, *"Going to Bansang for treatment including consultation fee and other charges may cost one more than D300. We use foot if there are no other means of transportation and the distance to Bansang is 6 km. it can take roughly 180 minutes on foot and 20 minutes with car, with cart 60 minutes"* Keser Kunda. In Janjanbureh, the expressed concern was "the cost of trekking to Bansang includes fares at D50, ticket D25 and medicine between D50 to D100 depending on the type of eye infection.

Sometimes you are lucky to get the medicine from them but most of the time people buy medicine from the local pharmacies. Going to Bansang takes 30-45 minutes using private, commercial, or motor bike". For the Lower River Region, respondents expressed that, they receive eye care treatment in Soma than other places in the region.

**RQ4. Access to Eye Care – by Gender:** The test of association between gender and access to a formal eye care center showed no statistically significant relationship between the two variables at 0.05 levels (2-tailed). The Pearson chi square was 2.024 and p value of 0.155. Also, a test of association between region and access showed a statistically significant relationship between the two variables with a Pearson chi square was 134.506 and p value of 0.000.

### Conclusion and implications

Access to health services in the Gambia, is generally constrained by inadequate health facilities and qualified professional staff. Our findings showed that these challenges are further exacerbated by cost of services itself, which includes both direct and indirect cost, waiting time and poor road networks across the country, particularly the North Bank Regions of The Gambia. Therefore, utilization of services is grossly affected by the majority of those whom the services are designed for. The serious lack of infrastructure that supports life in this country, and worst in the hinterland are major challenges of people access to health care services in Gambia. It is also a proven fact that access to information is largely through the radio and through the traditional political structures from the above to the Alkalo and then to the people for local consumption. It shows how underprivileged the other parts of the country is when it comes to access to modern information dissemination portals concerning eye health care.

Our findings reveal that most people access eye care services at hospitals, local medical dispensaries, and private practitioners, which are mainly found in urban areas. This leaves the rural areas constrained in accessing health services. Considering the regional differences in terms of availability of the services, North Bank Region of this country stood out to be the most affected due to an uneven distribution of health facilities that are mostly located in urban areas. This leaves the rural dwellers having to travel far to access the eye care services. This is further exacerbated by poor road conditions, inadequate eye care facilities and trained personnel with its associated requirements in the rural areas. As indicated in the findings, more than 80% of the respondents reported that the nearest eye care services are found in hospitals and clinics. This implies that access to health eye care services are found in urban and peri-urban settlements. Hence, the need for having more facilities that can provide eye related care services in rural settlements. In conclusion, the FGDs and survey revealed some interesting fact. Accordingly, the level of access of the respondents to eye care services and facilities from both the quantitative and the FGDs are low. This is generally associated to many factors including the distance to the nearest vision centers as a measure of access to eye care services, the mode of transportation to and from the eye care service centers, time taken to and from the eye care service centers and the cost involved in travelling to and from the nearest vision centers to communities. The findings revealed that, all these gives cost as challenges affecting access to affordable eye care services.

Thus, future research could explore the economic cost of limited access to eye health care services across regions of the country. Moreover, for practice, public health authorities must further increase public health education and sensitization, [particularly on eye-health care across remote regions of the country. These mechanisms would promote mass education of communities in the country.

**Funding:** This is part of the research assignment funded by OneSight – The Gambia Office.

**Conflict of Interest:** The authors expressed no conflict of interests.

### Acknowledgment

The authors express their profound gratitude to OneSight for giving them the opportunity to undertake this research. Special thanks and appreciation go to the staff of OneSight (e.g., Mr. Aaron Galvin, Mr. Mustapha A. Njie, Mr. Vincent Mendy, Ms. Nyima Touray, Ms. Mariama O. Touray and Mr. Musa Darboe ("Alkalos" -Village Heads) for providing the most valuable information needed during the study.

### REFERENCES

- The National Eye Institute. (2010), Facts about Refractive Error. Available at: <http://www.nei.nih.gov/health/errors/errors.asp>. Accessed March 11, 2012.
- Dandona R, Dandona L, Srinivas M, Giridhar P, Vilas K, Prasad MN, et al., (2001) Blindness in the Indian state of Andhra Pradesh. *Invest Ophthalmol Vis Sci.*; 42:908–16. [PubMed]
- Thylefors B. A (1987), simplified methodology for the assessment of blindness and its main causes. *World Health Stat Q.*; 40:129–41. [PubMed]
- Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, Mariotti SP. Global data on visual impairment in the year 2002. *Bull World Health Organ* 2004; 82: 844–851. Medline, ISI
- Brien A Holden (2007), Blindness and poverty: a tragic combination *Clinical and Experimental Optometry* 90 (6), 401–403.
- Du Toit, R., Ramke, J., Naduvilath, T., & Brian, G. (2006). Awareness and use of eye care services in Fiji. *Ophthalmic epidemiology*, 13(5), 309-320.
- Frazier M. & Kleinstein R. N. (2009). Access and Barriers to Vision, Eye and Health Care. *Optometric Care Within The Public Health Community*, 7.
- Muhammad, N., Adamu, M. D., Isah, B. A., & Muhammad, N., (2012), Awareness and utilization of the eye care services in Sokoto state: a household survey.
- Shrestha, G. S., Sigdel, R., Shrestha, J. B., Sharma, A. K., Shrestha, R., Mishra, S. K., & Joshi, S. N. (2018). Awareness of Eye Health and Diseases among the Population of the Hilly Region of Nepal. *Journal of ophthalmic & vision research*, 13(4), 461–469. [https://doi.org/10.4103/jovr.jovr\\_41\\_17](https://doi.org/10.4103/jovr.jovr_41_17).
- Ntim- Amponsah CT, Amoaku WMK, Ofosu-Amaah S. (2005), Services in a Ghanaian District. *Ghana Med J.*; 39(1): 19-23.
- Omotoye Olusola J., Ajayi Iyiade A., Salami Tajudeen K., (2016), Awareness and Accessibility of Existing Tertiary Eye Care Facility by Rural Dwellers of Aramoko

Community. *International Journal of Health Sciences & Research* (www.ijhsr.org) 50 Vol.6; Issue: 10.  
Melese M, Alemayehu W, Friedlander E, Courtright P., (2004), Indirect cost associated with accessing eye care services as a barrier to service use in Ethiopia. *Tropical Med. Int. Health.*; 9 (3):426-431.

Bidder S, Jones A. Preventing sight loss in older people. A qualitative study exploring barriers to the uptake of regular sight tests of older people living in socially deprived communities in South Wales. *Public Health.*;129(2):110-116.

\*\*\*\*\*