



*Original Research Article*

## **Profile of Ocular morbidities observed at medical outreaches in Ogun State, Southwest Nigeria**

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**Abstract**

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Several barriers to accessing hospital care have been shown to cause high patronages at free medical outreaches. The main aim of this study was to determine the causes of ocular morbidities seen at medical outreaches as a tool to advocate for structured community Primary eye care services in the State and Country. It was a retrospective cross sectional study, using data obtained from community medical outreaches in Ogun State between October 2016 and September 2019. Data from 6135 participants were analyzed with an age range of 21 years to 98 years and 69.1% females. The most prevalent Ocular morbidities were Errors of Refraction (50.9%) followed by Cataract, Ocular allergies and Glaucoma accounting for 16.7%, 16.5% and 8.6% respectively. 75.3% of participants had visual acuity of at least 6/18 while severe visual impairment was caused mainly by dense cataract, End stage Glaucoma, Retinitis pigmentosa, macular hole and Proliferative Diabetic retinopathy. Refractive errors and cataracts were the most prevalent ocular morbidities in the study communities with significant visual impairment amongst participants. There is a need for early detection and treatment of ocular diseases via provision of a structured Primary eye care services in each community.

**Keywords:** Community, Medical, Nigeria, Ocular morbidity, Outreaches.

### **INTRODUCTION**

Developing countries like Nigeria have reported that most Ocular diseases diagnosed in eye care centers are of preventable and treatable origin (WHO 2019) but several barriers to early medical intervention such as cost of treatment, fear of surgery, accessibility to the hospitals and ignorance ( Prince et al., 2017; Ajibode et al., 2012) usually lead to late presentations.

These patients would rather patronize traditional eye care providers, other forms of non-orthodox medical care and even wait for an opportunity to patronize sponsored medical outreaches than visit registered orthodox eye care providers (Omoti, 2005). This eventually leads to complicated and untreatable ocular diseases with worsened visual prognosis ( Omoto, 2005).

Previous studies in Nigeria have shown Cataract to be

the most prevalent ocular morbidity (ranging from 25.4% to 26.2%) seen during medical outreaches( Jagun et al., 2014; Isawunmi et al., 2013; Emmem and Emmanuel, 2017) while another by Chukwuka et al. (2020) showed refractive errors to be most prevalent accounting for over 77% of ocular morbidities. Other reported common ocular conditions presenting at the medical outreaches in Nigeria are Conjunctivitis (mainly Allergic), Glaucoma and Pterygium (Isawunmi et al., 2013; Emmem and Emmanuel, 2017; Achigbu and Ezeanosike, 2017; Chukwuka et al., 2020). Similarly, other developing Countries like Ethiopia, Kenya, Rwanda also documented Conjunctivitis, Cataract, Presbyopia as being the most prevalent ocular disease seen at eye medical outreaches. (Mehari, 2013; Kimani., 2013; Ekemiri et al, 2019).

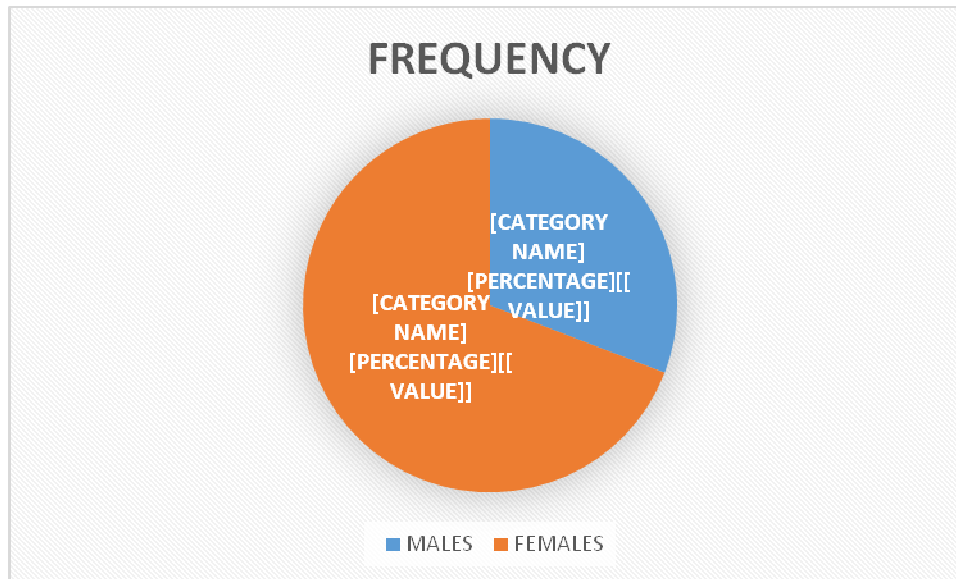


Figure 1. Distribution of participants by gender.

The lack of structured or functional Primary eye care services and the degree of poverty in Nigeria are major contributors to the problems faced by patients in accessing timely and affordable eye care (Prince et al., 2017) thus, most clients maximize the opportunity of Free/ sponsored medical outreach to access available eye care which are not always sufficient for the ocular complains that require follow up (Emmem and Emmanuel, 2017).

The main aim of this study is to observe the pattern of ocular morbidities seen at sponsored medical outreaches as a tool to advocate for structured community Primary eye care services in the State and Country.

## METHODOLOGY

A retrospective cross sectional study using data obtained from different eye medical outreaches carried out in 3 Local Government Areas (LGA) out of 20 in Ogun State between October 2016 and September 2019. In these 3 LGA, twelve communities were randomly selected after initial enquiry visits to over 24 communities to determine availability of venues for the outreach and support of the community leaders but the outreaches were eventually carried out in only eleven of the selected communities [Iperu, Ilishan, Ikenne, Sagamu, Odogbolu, Aiyeye, Ogere, Ipara-remo, Ilara, Mowe and Ijebu-Ode].

The Research team consisted of 4 Ophthalmologist, 1 Optometrist, 2 nurses and 2 Ophthalmic Assistants.

Approval was obtained from the Heads of the participating Communities and written consent obtained from each participants. The study was carried out in accordance to the Tenets of Helsinki's declaration. All

consenting participants had the following examinations: visual acuity, Anterior and Posterior segment examinations with the use of a flash light, examination loupe, Ophthalmoscope and dilated fundoscopy as required. Patients requiring further management were referred to the nearest Teaching Hospital. Data collection and analysis were carried out using SPSS version 21. Descriptive statistics were employed to present simple frequencies of dependent variables and their distributions and P value <0.05 was taken as significant. Only data from the Right eye was reported for the purpose of this study as

there was no significant difference between data obtained in each eye.

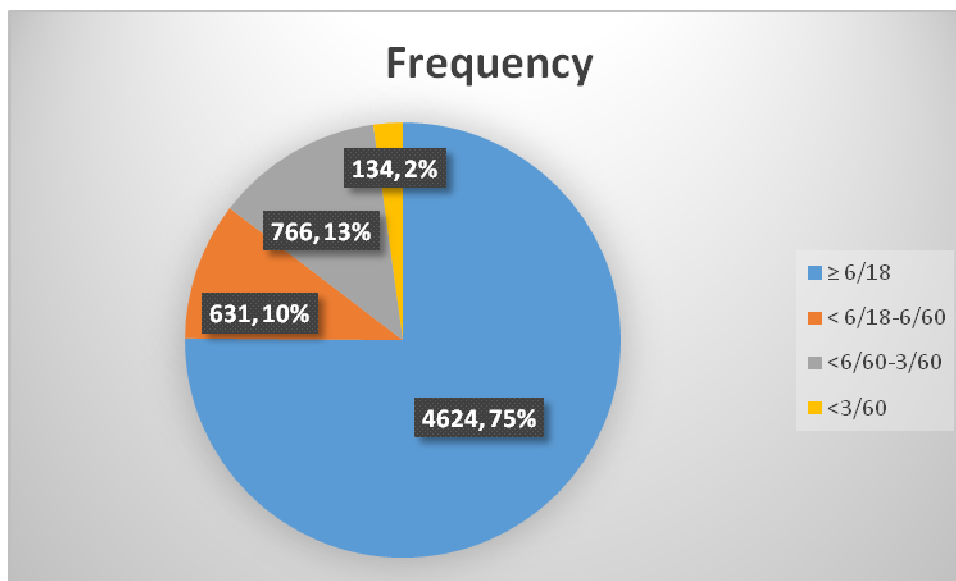
## RESULTS

Data from 6411 participants were retrieved but only 6135 were analyzed due to incomplete documentation. Age range of participants were between 21 years to 98 years with an average of  $56.1 \pm 22.3$  years.

Males were 1893 (30.9%) while females were 4242 (69.1%) with a male to female ratio of 1:2.3 (Figure 1). 71.4% (4380) were Christians, 27.2% (1667) were Muslims and 1.4% (88) were classified as other Religions.

75.3% of participants had normal vision to mild visual impairment while 12.3% had severe VI and 2.2% were blind (Figure 2). Participants with vision ranging from severe VI to blindness had mainly dense cataract, end stage Glaucoma, Retinitis pigmentosa, macular hole and Proliferative Diabetic retinopathy.

Errors of Refraction including Presbyopia was the



**Figure 2.** Visual acuity of participants.

**Table 1.** Causes of ocular morbidity amongst participants.

Diagnosis	Frequency	Percent (%)
Refractive errors/Presbyopia	3124	50.9
Cataract	1024	16.7
Ocular allergies	1013	16.5
Glaucoma/Glaucoma suspects	526	8.6
Pterygium	271	4.4
Retinal diseases	87	1.4
Dry eye	44	0.7
Others	46	0.8
Total	6135	100

most prevalent Ocular morbidity (50.9%) followed by Cataract, Ocular allergies and Glaucoma accounting for 16.7%, 16.5% and 8.6% respectively (Table 1).

## DISCUSSION

Over the years, medical eye outreaches have been carried out in Nigeria as a means of reaching out to the under privileged in the communities due to the level of poverty and barriers to accessing medical care (Ajibode et al., 2012). These outreaches are usually sponsored by Institutions or Non-governmental organizations and it is essentially free to the participants.

In this study, females were more prevalent than males as also documented in previous Nigerian Studies (Isawunmi et al., 2013; Emmem and Emmanuel, 2017; Achigbu and Ezeanosike, 2017; Chukwuka et al., 2020). A possible explanation may be that the outreaches occurred when most men would have gone to work

(Mehari, 2013).

Even though 75% of participants had normal vision to mild visual impairment, everyone that presented at the outreaches had an ocular complain which were mainly due to uncorrected refractive errors in 50.9% of the participants. This is also in keeping with documentations by Chukwuka et al. (2020) where 77.9% of outreach participants also presented with refractive errors. Presbyopia being a decrease in the amplitude of accommodation, was recorded with refractive errors for the purpose of comparison with previous studies ((Isawunmi et al., 2013; Emmem and Emmanuel, 2017; Achigbu and Ezeanosike, 2017; Chukwuka et al., 2020; Mehari, 2013). Kimani et al. (2013) actually documented uncorrected presbyopia as being the most prevalent ocular condition in their study community in Kenya even though only 10% of the Presbyopes complained of presbyopic symptoms ( Kimani et al., 2013).

Cataract was the second most prevalent ocular morbidity in this study, and this was similar to previous

findings both in Nigeria and globally (WHO, 2019; Emmem and Emmanuel, 2017; Achigbu and Ezeanosike, 2017).

14.5% of the participants had vision ranging between severe VI to blindness which was mainly due to dense cataract, end stage Glaucoma, and Proliferative Diabetic retinopathy. Easy access to eye care services by means of instituting care at the Primary health care level would allow for early management and better visual prognosis of cases.

8.6% of the participants were documented as Glaucoma and Glaucoma suspects because diagnosis of Glaucoma was based mainly on history and direct ophthalmoscopy findings. There is a possibility that the prevalence of Glaucoma could have been higher than documented if an Indirect Ophthalmoscopy, central visual field, optical coherence tomography and tonometry had been carried out. However, the prevalence found here is similar to previous Nigerian finding of 6.6%, 10.6% (Isawunmi et al., 2013; Chukwuka et al., 2020) and findings in Ethiopia 9.7% (Mehari, 2013). This is of utmost importance as Glaucoma is the commonest cause of irreversible blindness and early detection and management is the key to preventing Glaucoma blindness (WHO, 2019).

Over 90% of the documented ocular morbidities in this study were due to treatable conditions. This should not have caused the degree of VI documented if these cases were detected and treated early (Nigeria Country Strategic plan, 2019) as over 75% of VI and blindness in Nigeria are avoidable with early detection (Nigeria Country Strategic plan, 2019).

## CONCLUSION

Refractive errors and cataracts were the most prevalent ocular morbidities encountered with significant visual impairment amongst participants. There is a need for early detection and treatment of ocular diseases via provision of a structured Primary eye care services in each community.

## LIMITATIONS

Limited examinations during the Outreaches could have limited the range of diagnoses. Secondly, incomplete

documentation was a limitation to the number of data analyzed.

**Conflict of interest:** None.

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