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Original Article

Is there any change in spectrum of eye disorders over the past 3 years at a screening health facility in South-South Nigeria?

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Abstract

Background: The spectrum of ocular morbidities seen at a screening programme may be a reflection of diseases in that community. This knowledge would assist in appropriate public eye health planning for that community.

Aim: To determine the present spectrum of eye diseases at the Centre for Disease Control (CDC) at the University of Benin Teaching Hospital, Benin City, and to determine if there is any change in the pattern of ocular morbidity seen at the CDC over the past 3 years.

Methods: This was a prevalent study conducted at the CDC of the University of Benin Teaching Hospital, Benin City. The records of participants seen at the CDC from August 2010 to October 2014 were retrieved. Data on sociodemographic characteristics and ocular findings were collected and analysed using IBM Statistical Package for Social Sciences version 20. Descriptive analyses were used, and Chi-square test was used to test the association amongst variables.

Results: Of the 4653 participants, the analysed sample comprised 4622 (99.3%) participants with complete data. They comprised 1030 males and 3569 females with a mean age of 49 ± 13 standard deviation years (range 9–95 years). Most of the participants (59.9%) were between 40 and 60 years of age. The most common ocular morbidities were refractive error (44.8%), glaucoma (19.4%), cataract (8.1%) and allergic conjunctivitis (4.5%).

Conclusions: There has been no change in the pattern of eye disorders over the past 3 years at the CDC of the University of Benin Teaching Hospital. Refractive error, glaucoma, cataract and allergic conjunctivitis were the leading aetiologies of ocular morbidity amongst screening participants seen at the CDC. There is a need to raise awareness of these eye diseases, increase ocular screening uptake and provide eye care resources to control these prevalent eye disorders.

Keywords: Benin City, ocular morbidity, screening

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Received: 12.07.2016, **Accepted:** 27.03.2017

Access this article online	
Quick Response Code:	Website: www.phmj.org
	DOI: 10.4103/phmj.phmj_8_17

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How to cite this article: Osaguona VB, Osho FO, Olowolayemo MU, Uhumwangho OM, Osahon AI, Igbinosa LO. Is there any change in spectrum of eye disorders over the past 3 years at a screening health facility in South-South Nigeria?. Port Harcourt Med J 2017;11:6-9.

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INTRODUCTION

Ocular screening programmes help to identify ocular morbidities at an early stage of the disease. These diseases may cause visual impairment and blindness which interfere with the individual's quality of life, economic productivity and may result in untimely death.[1,2] The spectrum of ocular morbidities seen at a screening programme may be a reflection of diseases in a community. This may help in planning appropriate public eye health programmes for that community.

A preliminary report of the pattern of eye diseases seen at the Centre for Disease Control (CDC) has previously been published,[3] and it showed that the common ocular morbidities were refractive errors, cataract, glaucoma and allergic conjunctivitis.[3] The spectrum of ocular morbidities may change with time in a community. The aim of this study was to determine the present spectrum of eye diseases at the CDC and to determine if there is any change in the pattern of ocular morbidity seen at the CDC over the past 3 years.

METHODS

This was a prevalence study conducted at the CDC of the University of Benin Teaching Hospital, Benin City. University of Benin Teaching Hospital is a tertiary institution which provides ophthalmic and other specialist medical services to Edo and its neighbouring states such as Delta, Kogi and Ondo States. Screening is done for ocular diseases as well as for other diseases of public health importance such as cancer of the cervix, breast and prostate, diabetes mellitus, hypertension, human immunodeficiency virus, hepatitis B and A and dyslipidaemia. Ethical clearance for the study was obtained from the Ethics and Research Committee of the hospital. The records of all consecutive clients seen at the ocular screening unit of the hospital, from August 2010 to October 2014 were reviewed. Data on the participants' biodata, visual acuity, anterior segment findings, fundoscopy and diagnosis were retrieved.

In this study, we defined glaucoma as the presence of a pale pathologically cupped disc with a vertical cup to disc ratio of 0.6 or more. Refractive error referred to an improvement in visual acuity with the use of a pinhole in participants with visual acuity <6/6. For this study, presbyopia was grouped under refractive error. Cataract referred to the presence of a lens opacity causing a reduction in visual acuity.

The data collected was analysed using the IBM Statistical Package for Social Sciences (SPSS) Version 20 software (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY, USA). Descriptive analyses such as frequencies, means and standard deviations (SDs) were utilised and Chi-square test was used to test the association amongst categorical variables. $P \leq 0.05$ was considered statistically significant.

RESULTS

Of the 4653 participants screened, the analysed sample comprised 4622 (99.3%) participants who had complete data. They comprised 1030 males and 3569 females who were aged 49 ± 13 SD years (range 9–95 years). Most of the participants i.e., 2737 (59.9%) were between 40 and 60 years of age. Table 1 shows the sociodemographic details of the participants. The overall prevalence of screen-detected eye disease amongst the participants was 84%. The most common ocular morbidities were refractive error (44.8%), glaucoma (19.4%), cataract (8.1%) and allergic conjunctivitis (4.5%) as presented in Table 2.

Refractive error was more common amongst females ($P < 0.0001$) and age group of 40–60 years ($P < 0.0001$). Glaucoma was significantly associated

Table 1: Sociodemographic characteristics of participants (*n*=4622)

Variable	Frequency (%)
Sex	
Male	1030 (22.4)
Female	3569 (77.6)
Age (years)	
<40	1022 (22.4)
40-60	2737 (59.9)
>60	812 (17.8)
Occupation	
Professional and managerial	1363 (29.8)
Non-manual skilled	1920 (42.0)
Manual skilled	337 (7.4)
Unskilled	32 (0.7)
Student	244 (5.3)
Unemployed/homemaker	330 (7.2)
Retired/pensioner	346 (7.6)

Table 2: Prevalence of various eye conditions amongst the participants (*n*=4622)

Eye condition	Frequency (%)
Normal	742 (16.4)
Cataract	365 (8.1)
Glaucoma	878 (19.4)
Maculopathy	132 (2.9)
Allergic conjunctivitis	203 (4.5)
Optic atrophy	20 (0.4)
Pingueculum/pterygium	74 (1.6)
Retinopathy	26 (0.6)
Refractive error	2029 (44.8)
Papilloedema	2 (0.0)
Disc oedema	2 (0.0)
Others	60 (1.3)

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with males ($P < 0.0001$) and those below 40 years of age ($P < 0.0001$). Cataract was more amongst males ($P = 0.008$) and those above 60 years of age ($P < 0.001$). Cases of allergic conjunctivitis were more common amongst females ($P = 0.006$) and those below 40 years ($P < 0.0001$).

DISCUSSION

Majority of the clients in this study were females. This is similar to that reported in the preliminary study of the spectrum of ocular morbidity seen at the CDC.[3] As was noted in the preliminary study,[3] this finding may be due to the large participation of faith-based female organisations in the Screening as part of their empowerment programmes. Isawumi *et al.*[4] also reported a female preponderance in a rural community eye screening in Osun State, Nigeria. They postulated that the females either had a better health-seeking behaviour or the men went to the farm while the females stayed back at home. This female predominance was not the case in other studies on ocular morbidity in Benin City,[5-8] and in many studies, in Nigeria[9-13] (community- and hospital-based studies) that showed a male predominance or equal ratio of males to females.

Eighty-four percent of the participants in this study had ocular morbidity. In the preliminary study,[3] 71.2% had ocular morbidity. Thus, more than 70% of the participants had ocular disease in the two studies. Refractive error, glaucoma, cataract and allergic conjunctivitis were the leading causes of common ocular morbidities with refractive error accounting for more than 50% of the ocular morbidities in either study. In other hospital-based and eye outreach studies done in Benin City,[5-8] refractive error, glaucoma, cataract and allergic conjunctivitis were also amongst the common causes of ocular morbidity reported. Although refractive error is amenable to optical correction such as with spectacles or contact lenses and cataract can be surgically treated, these diseases are still the leading causes of ocular morbidity amongst participants screened at the CDC. It could be that there is an inherently high prevalence of these eye disorders in the feeder communities of the hospital, or there may be a lack of awareness of these eye disorders or both. Awareness of eye disease has been reported to be poor in Nigeria[14-19] just like in other developing countries.[20-26]

In the preliminary report[3] of the spectrum of ocular morbidity seen at the CDC, the association between the eye disorders and age and gender characteristics of the participants were not reported. We observed a male preponderance in the participants with cataract in this study. This is similar to the finding observed by Osahon *et al.*[5] in an outreach done in Edo and Delta states. We also found cataract to be associated with participants above 60 years in our study. Reports from studies in developed countries[27] showed the female gender and increasing age to be associated with cataract. Allergic conjunctivitis was found to be associated with the female gender and age below 40 years in our study. Similarly, Malu[28] reported that allergic conjunctivitis was more in females and the younger age groups in a study in Jos, Nigeria. Osahon *et al.*[5] found no difference in gender in those with allergic conjunctivitis. Associations with refractive error in our study were female gender and age group 40–60 years. There was no difference in gender in the study by Osahon *et al.*[5] while more females had refractive error in the study done in Uyo by Abraham and Megbelayin.[29] In the literature, the association between gender and glaucoma is variable.[30] In our study, more males had glaucoma. Glaucoma is known to be associated with increasing age;[30] this was also the finding in previous studies on glaucoma in Benin City and its environs.[31,32] In our study, glaucoma was more associated with those younger than 40 years than with the older age group. This finding may be an evolving trend in the epidemiology of glaucoma. The authors suggest more epidemiological studies on glaucoma in our environment.

From the preliminary study[3] and ours, refractive error, cataract and glaucoma are the major ocular morbidities seen with refractive error being the most common in each of the studies. These diseases are common causes of visual impairment and blindness in Nigeria and globally.[3,33,34] They are also preventable and treatable causes of visual impairment and blindness.

This study has limitations in the sense that it is a hospital-based study, which may not give an accurate representation of the prevalent eye disorders in the feeder communities. More so, it is a retrospective study, which precludes a uniform protocol.

CONCLUSIONS AND RECOMMENDATIONS

There has been no change in the pattern of eye disorders over the past 3 years at the CDC of the University of Benin Teaching Hospital. Refractive error, glaucoma, cataract and allergic conjunctivitis were the leading aetiologies of ocular morbidity amongst screening participants seen at the CDC.

We recommend that the community service of the Department of Ophthalmology of the hospital increases and strengthens its public eye health education programme to raise awareness of these eye diseases and raise the need for regular eye screening examination regardless

of the absence of eye complaints. The State and Federal Government should provide eye care resources to control these prevalent eye disorders.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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