

Screening for eye diseases in a University community in Southwest Nigeria

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Abstract

Background – University, a subset of the general population, will expectedly have common ocular problems as prevalent in the population. Knowing these problems as done through screening and health education during WSD activities in 2017 thus raise awareness for their prevention. This study was aimed at determining the types of eye defects in a university community.

Methodology – A descriptive cross-sectional survey utilizing purposive serial selection to examine inhabitants of a university community. Socio-demographic information and detailed ocular examinations were carried out. Data analysis using SPSS Version 20 and cross tabulations with statistical significance derived using paired sample t-test at p values < 0.05 were done.

Results – With n=140, 79(56.4 %) were males. Mean age was 26.7 ± 11.5 years. Majority were staffs (77.1%) with 62.1% having tertiary education. Normal vision was reported in (92.9%), while 5.7% had visual impairment with 1.4% unocular blindness. Common ocular findings were allergic conjunctivitis (12.9%), glaucoma suspects (10.0%), Pterygium (3.6%), glaucoma/corneal opacity (2.1% respectively), and optic atrophy (1.4%).

Conclusion – Disorders seen were mostly avoidable. Incorporating eye health services into University Healthcare will control their occurrence allowing optimal job performance.

Key Words: - Eye diseases, screening, University, Nigeria.

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Dépistage des maladies oculaires dans une communauté Universitaire du sud-ouest du Nigéria

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Résumé

Contexte général de l'étude : L'université, un sous-ensemble de la population générale aura des problèmes oculaires communs comme répandus dans la population. Connaître ces problèmes à travers le dépistage et l'éducation à la santé lors des activités JSE en 2017 sensibilise ainsi à leur prévention. Déterminer les types de malformations oculaires dans une communauté universitaire.

Méthode de l'étude : Une enquête transversale descriptive utilisant une sélection en série raisonnée pour examiner les habitants d'une communauté universitaire. Des informations sociodémographiques et des examens oculaires détaillés ont été réalisés. Une analyse des données à l'aide de la version 20 de SPSS et des tableaux croisés avec une signification statistique dérivée à l'aide d'un test t pour échantillons appariés à des valeurs $p < 0,05$ ont été effectuées.

Résultat de l'étude : – Avec $n=140$, 79 (56,4 %) étaient des hommes. L'âge moyen était de $26,7 \pm 11,5$ ans. La majorité était des membres du personnel (77,1 %) dont 62,1 % avaient fait des études supérieures. Une vision normale a été rapportée chez (92,9 %), tandis que 5,7 % avaient une déficience visuelle avec 1,4 % de cécité uniloculaire. Les signes oculaires courants étaient la conjonctivite allergique (12,9 %), les suspects de glaucome (10,0 %), le ptérygion (3,6 %), le glaucome/opacité cornéenne (2,1 % respectivement) et l'atrophie optique (1,4 %).

Conclusion : L'ennui de santé observé était pour la plupart évitables. L'intégration des services de santé oculaire dans les soins de santé universitaires contrôlera leur occurrence, permettant une performance professionnelle optimale.

Mots-clés : Maladies oculaires, dépistage, Université, Nigéria

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INTRODUCTION

Eye diseases in a University community present special challenges as a University community is unique in that it represents the intelligentsia of the society. One therefore expects the inhabitants to be well informed and diligent health wise – able to seek for healthcare promptly (1). Problems of accessibility to healthcare that are prevalent in most developing societies are not expected in a University community as they are expected to be able to take care of their health through various health insurance schemes put in place by the management of these institutions. Common illnesses are therefore expected to be treated promptly so as not to affect the productivity of inhabitants of this community. Non-communicable diseases such as Hypertension and Diabetes that have to do with high socioeconomic background are also expected to be prevalent. This scenario is expected to impact on the ocular health of the inhabitants as this can generally not be isolated from the general health and wellbeing of the populace.

Oladigbolu et al (2) in their study of pattern of eye diseases in a university health service clinic in northern Nigeria discovered that the common eye diseases seen were infective conjunctivitis (40.3%), allergic conjunctivitis (32.7%), refractive error (17.3%), glaucoma (1.9%) and cataract (1.8%). They therefore concluded that eye diseases were found to be common within the community of Ahmadu Bello University which is made up of students predominantly (2). This implies that common preventable and treatable ocular disorders are still common among Nigerian students within a University community. Early detection through periodic eye screening and prompt treatment will significantly reduce visual impairment and needless blindness from these causes.

Good knowledge level of eye conditions and disorders was significantly associated with higher educational attainment and occupation (3) and even in the developed countries where eye health education has no impact as against other factors like cost and poverty level as shown by [Owsley C et al \(3\)](#). Another study in Malawi, among members of the academic staff that were investigated for the knowledge, perception, practices and prevention of computer vision syndrome, showed that a lot of them exhibited low knowledge levels about the relationship with visual ergonomics despite being looked up to by the society as the most knowledgeable (4). Studies carried out among young adults with a

mean age of 20.56 ± 1.51 years in a university community in Ghana showed that there was a very high prevalence 39.2% of ocular morbidity among the first year students with 40.69% of them never having had a previous eye examination done before(5).

As part of our community service to the university, the World Sight Day (WSD) activities were therefore conducted in order to raise awareness and detect common eye disorders in the university community in order to contribute to attaining universal eye health for all as well as increasing their productivity at work.

MATERIALS AND METHODS

Background /Study setting

Osun State is one of the 36 states of Nigeria with a population of over 4 million located in the south west. The people who are mostly farmers (70%) live in the rural areas (6) and it is serviced by two University Teaching Hospitals which offer specialized health and eye services. The screening took place in Osun State University, Oke Baale in Osogbo Local Government Area.

Pre- Screening Activities

The Ophthalmology Unit of the Department of Surgery hosted the World Sight Day (WSD) activities of the Ophthalmological Society of Nigeria (OSN) Osun state branch in the year 2017. The University management gave permission to host the activities using the university auditorium. The members of staff were also duly informed.

Questionnaires were developed by the researchers, prepared and pretested among patients in the hospital and data obtained compared with patients' case files for validation. Necessary amendments were then made as required.

Ethical clearance: Ethical clearance was obtained from the University Health Research and Ethics Committee (HREC) certificate number UNIOSUNHREC 2021/021. Informed consent was also obtained from participants to conform to Helsinki declaration.

Study design

This was a descriptive cross-sectional survey utilizing purposive serial selection sampling technique to enroll participants (majorly all categories of staff of the university) to be screened in order to find out the common eye disorders among members of Osun State

University community.

Screening/Survey activities

A multi-campus University with 6 campuses with 2 located in each senatorial zone of the state (one in each administrative district of each senatorial zone) was used. The list of staff was obtained from personnel records. The campus with the highest staff population out of the six campuses was selected i.e. purposive selection. This turned out to be the main campus with administrative headquarters in Osogbo. The university community was informed of the upcoming WSD activities through social media and banner placed at the main gate. On the appointed day, health talks and lecture were given on common eye disorders among adults. The topics mainly discussed were cataract, glaucoma, refractive errors and trauma followed by question and answer session.

During the screening, consenting participants made up of staff, students and outsiders were purposively and consecutively selected. At the registration desk, the interviewer-administered questionnaire was given to each participant. The socio demographic data were obtained and filled in by ophthalmic clinic assistant. Visual acuity unaided and aided with and without pin hole and glasses were conducted by the Ophthalmic Nurses using Snellen's charts from a distance of 6 meters in a well illuminated area in the university hall.

The Ophthalmic Residents examined the anterior segments and also took the Intra Ocular Pressure (IOP) measurements using hand held Perkins Tonometer. Any participant who complained of difficulty in reading small prints or suspected refractive error was referred to the Optometrist for refraction. The reports were entered into section B of the questionnaire. The posterior segment examinations were carried out by some Senior Registrars and Consultants who made the final assessment in Section C of the form. Recommendations were also advised and referral given to patients where necessary and were recorded into section D of the questionnaire. Those who needed treatment were given drug prescriptions. Some patients that needed counseling were sent for counseling at counseling points manned by Consultants. These were especially for Glaucoma and Glaucoma suspects, use of spectacles, surgery related cases and other grey areas.

Data Management

Data was entered into and analyzed using

SPSS Version 20 to generate frequencies and cross tabulations while statistical significant values were derived using paired sample t-test, and p values < 0.05.

RESULTS

Total population studied was 140 out of staff strength of 260 on the selected campus with the results showing the age range of 10-70 years with a mean age of 26.7 +- 11.5. However, people in the age range of 31-50 years accounted for the greatest percentage (70.7%) of the total population studied. This is the economically active age group. Males constituted 79(56.4%) and the females 61(43.6%) in a ratio 1.3 to 1 with no statistical significance using students t –test (p=0.910). Majority of the study population were staff who accounted for 77.1%. Students accounted for 14.3% while others (8.6%) were non-staff. About sixty-two percent (62.1%) had higher educational qualifications and above while about 8.6% of the study population had no educational qualification. See distribution in Table 1.

A very large number (92.9%) had normal visual acuity while the distribution for visually impaired and unocular blindness is shown in Table 2.

Thirty percent (30.0%) of the study population had no abnormalities detected while 20.7% and 14.3% had refractive errors and presbyopia respectively and presented with their corrective spectacles (already obtained somewhere else) 9. The other 35% presented with various eye diseases like allergic conjunctivitis (12.9%), glaucoma suspect (10%), pterygium (3.6%) and others. See Table 3.

As majority had no abnormalities detected, they were mostly reassured (37.9%) while 24.3% had spectacles prescribed for their refractive errors and presbyopia. There was a staff with corneal foreign body (0.7%) which was removed while 17.1% had drugs prescribed for their various ailments like allergic conjunctivitis and nodular Episcleritis. Those with serious and other ailments such as glaucoma and glaucoma suspect, corneal opacity, optic atrophy and pterygium were referred to the nearby teaching hospital. As this was an institutional based study done outside hospital setting, other recommendations to ensure closure and follow up were given to the participants as shown in Table 4.

DISCUSSION

The prevalence of common organic eye disorders such as allergic conjunctivitis, glaucoma suspect, pterygium and others (excluding refractive errors and Presbyopia which are optical problems) in this community is 35%. This pattern is in agreement with the trends in the general population of 5.7% blindness and visual impairment as seen in the Nigerian National blindness survey as most the disorders discovered are not blinding eye diseases (7).

The university is known to be a place with enlightened people (1). As this is a University based community, the accessibility to healthcare facilities cannot be said to be a problem as the community is served by the University Health Centre with access to specialist healthcare providers including ophthalmological services at the College of Health Sciences. This has gone a long way in bridging the gap in accessibility as expounded by Sanni in his postulations (8).

In contrast, Chinanwa et al in their own study carried out in a semi-urban community in Rivers State, Nigeria as against a University Community, found out that glaucoma (13.95%), refractive error (13.02%) and presbyopia (12.56%) were the three most common ocular conditions causing blindness and visual impairment among the residents (9). This is not unexpected as the study population can be regarded as 'special' in that this is an academic community and does not represent the population spread as we have it in the general population in terms of age ranges, educational background and occupation.

Concerning eye disorders allergic conjunctivitis was the commonest with 12.9%, followed by glaucoma suspects (10.0%) and pterygium (3.6%). The glaucoma suspects had signs of Suspicious Disc bordering on Glaucoma and will require further evaluation. This was however a sharp contrast to findings from the pattern of ocular morbidity seen in a semi-urban community in Rivers where glaucoma (13.95%), refractive error (13.02%) and presbyopia (12.56%) were the most common findings (9) and glaucoma was recurring in both studies. This makes it very important since glaucoma is the commonest cause of irreversible blindness worldwide. It must be noted however that in this study, 35% presented with already corrected refractive errors (20.7% for Ametropia and 14.3% for Presbyopia) and they were with their spectacle correction making a total of 70% with ocular disorders. This is in agreement with

Geraldine et al (10) in Zimbabwe where 71% of the participants reported having a history of eye disease. This pattern also follows Oladigbolu et al findings where 21% of the eye conditions are preventable causes of blindness (refractive error, glaucoma and cataract) even though it is in a clinic based study within a University community as against the population based in this study (2).

On the other hand, in the general community, cataract and glaucoma which are treatable causes of blindness and visual impairment were the leading eye disorders in some previously conducted studies in hospital and rural community (11, 12) while literature has shown a lot of ignorant and poor attitude towards eye care and uptake of eye care services in developing countries, as concluded by Akaraiwe (13) et al in their study.

In another study carried out among population that has parallel characteristics to the study population in terms of enlightenment and educational level (retirees of public service in Port Harcourt, Nigeria), it was shown that most of their problems were avoidable blindness (17.2%) and visual impairment. The commonest causes of blindness were cataract (54.9%), glaucoma (17.7%), uncorrected refractive error (18.6%), and diabetic retinopathy (8.8%) in descending order (14).

The spectacle met need of the study population of 35% is way above what Foutohi et al (15) reported in Tehran population. In their study, the need for spectacles in the studied population, standardised for age and sex, was 14.1% and this need was met with appropriate spectacles in 9.3% of the total sample, while it was unmet in 4.8%. This increased percentage is justified as the University community is an enlightened one as supported by Thiagalingam et al (1) in The Blue Mountains Eye Study (BME). In the BME study, it was found that increasing age and measures of socioeconomic disadvantage and isolation were found to be good predictors of under corrected refractive error and these factors are totally eliminated in an enlightened society like a university community as well as BME study population due to high level of education and their development.

CONCLUSION

Most of the eye disorders seen can easily be treated to avoid ocular morbidity. The University management is hereby advised to incorporate eye health care for their staff in their welfare package through frequent eye screenings

and health education which would assist in reducing unnecessary ocular morbidities. Continuous health education in all health intervention programmes cannot be overemphasized.

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Conflicts of interest: None

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Table 1: Socio-demographic data of the study population

	Frequency	Percentages
Age ranges		
10 – 20	9	6.4
21 – 30	17	12.1
31 – 40	52	37.1
41 – 50	47	33.6
51– 60	14	10
61 –70	1	0.8
Total	140	100
Sex		
Male	79	56.4
Female	61	43.6
Total	140	100
Occupation		
Students	20	14.3
Staffs	108	77.1
Outsiders	12	8.6
Total	140	100
Educational status		
Primary	10	7.1
Secondary	20	14.3
Higher/Tertiary Education	63	45.0
Postgraduate	35	25.0
None	12	8.6
Total	140	100

Table 2: Frequency distribution of Visual Acuity among study participants

Visual Acuity	Frequency	Percentage
Normal(6/6 – 6/18)	130	92.9
Visually Impaired(<6/18 – 6/60)	8	5.7
Blind(<6/60)	2(Uniocular)	1.4
Total	140	100

Table 3: Frequency distribution of ocular findings/diagnosis among study participants

Diagnosis	Frequency	Percentage
Normal Eyes	42	30.0
Refractive Error	29	20.7
Presbyopia	20	14.3
Glaucoma Suspect	14	10.0
Allergic conjunctivitis	18	12.9
Pterygium	5	3.6
Corneal opacity	3	2.1
Glaucoma	3	2.1
Optic atrophy	2	1.4
Early Cataract	1	0.7
Pingueculum	1	0.7
Corneal foreign body	1	0.7
Nodular Episcleritis	1	0.7
Total	140	100

Table 4: Recommendations given to the study participants

Recommendations	Frequency	Percentage
Drugs prescription	24	17.1
Spectacles	34	24.3
FB removal	1	0.7
Referral to Teaching Hospital	28	20.0
Reassurance/No treatment required	53	37.9
Total	140	100