Original Research Article

Pattern of eye diseases among participants of free eye screening program in Uyo, Akwa Ibom State, Nigeria

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ABSTRACT

Background: Vision screening can help discover some problems hitherto unknown to the patient but it is also a fact that many other disease conditions may also be missed during screening depending on the qualification and skill of those carrying out the test and the available instruments for screening. Eye diseases differ from country to country and even within the same country from community to community and knowledge of the disease pattern in a given environment is critical for planning of appropraite intervention programs.

Methods: Free eye health intervention program was carried out and patients were inially screened by optometrists and ophthalmic nurses for cataract, presbyopia and other minor ophthalmic problems. Patients that had other problems including complicated cataract were referred for further consultation with the ophthalmologists in the field..

Results: Of the 547 who were further screened by the ophthalmologists in the field 243 (44.4%) were males and 304 (55.6%) were females with male to female ratio of 1: 1.25. The age range was 1-87 years. The mean(SD) age was 51.27years, median 53years, and mode was 60 years. Cataract and its related problem was the commonest condition139(25.4%), followed by glaucoma 78(14.3%). Age related macular degeneration(AMD) was the commonest posterior segment finding 27(4.9%) while corneal opacity 11(2.0%) was the commonest anterior segment finding and 19(3.5%) were bilaterally blind.

Conclusions: The eye health indices of the people as shown by the disease prevalence and the number of those bilaterally blind are still very poor.

Keywords: Commonest, Screening, Vision

INTRODUCTION

In the developing and ophthalmologically underserved countries, free eye screening programs and eye camps are still very helpful in the mopping up of cataract and other causes of preventable blindness.[1] Vision screening can help discover some problems hitherto unknown to the patient but it is also a fact that many other disease conditions may also be missed during screening depending on the qualification and skill of those carrying out the test and the available instruments for screening. Eye diseases causing preventable blindness are often a result of a combination of factors such as socio-economic, believes and traditions, climatic conditions, availability of adequate health-care services. Eye diseases differ from country to country and even within the same country from community to community. This was shown in the last Nigeria National Blindness and Visual Impairment Survey(NNBVIS).[2] Whereas cataract was the commonest cause of blindness in all the ecological zones, trachoma was most commonly seen in the Sudan Savanna region while onchocerciasis was only seen in the forest savannah and rain forest regions of Nigeria. Knowledge of the pattern of diseases in our locality is important because some eye diseases will cause morbidity while

some others can lead to blindness and in planning for eye care this has to be taken into consideration. Eye diseases like Vitamin A deficiency, trachoma, onchocerciasis are preventable while some others like refractive errors, cataract are treatable.[3] But lack of appropriate/ timely interventions has resulted in poor visual outcome thus undermining the success of Vision 2020-The Right to Sight.

In a clinic study in Benin City Mid-western Nigeria Ukponmwan found refractive error, conjuuctivitis and cataract to be the commonest presentation in an eye clinic in that order.[4] Uncorrected refractive error is the commonest cause of visual impairtment.[5]

According to the Nigerian national blindness survey(NNBVIS) of 2007, the prevalence of blindness in Nigeria is 4.2% and 3.4% in the South- south of Nigeria where this survey was done.[2]

Aim

The aim of this study is to determine the pattern of diseases presenting at a free eye screening program.

METHODS

The study was carried out in January 2016 during a state wide free eye care program sponsored by the state government in collaboration with a telecommunication company. Over 15,000 registered for the program but only 9,000 could be screened. Of the 9,000 screened, surgery (cataract, pterygium) was carried out in over 1,000 patients. When a patient arrives the venue of the screening, he/she would be registered, then moved to the visual acuity stand. Initial screening was done by optometrists and ophthalmic nurses. Mature cataract and pterygium without any other obvious problem was worked up for surgery. Refraction for presbyopic correction was carried out by optometrists and glasses given. Patients that had other problems including complicated cataract were referred for further consultation with the ophthalmologists in the field.

Diagnoses were made by 2 ophthalmologists and 4 ophthalmic resident doctors. Visual acuity was with Snellens and illiterate E charts. Anterior and posterior segment examinations were carried out with pen torches and direct ophthalmoscopes respectively. Diagnoses were mainly based on clinical findings as confirmatory tests were hampered by non-availability of diagnostic equipment at the screening venue. Classification of diseases was done according to WHO-International Statistical Classification of diseases.[6] Glaucoma suspect was diagnosed if discs show characteristic glaucomatous optic changes such as asymmetrical cupping, disobedience of ISNT rule, exposed lamina cribrosa and bayonetting sign. Advanced glaucoma was made when Cup-to-Disc ratio was 0.9 or greater with visual acuity that did not improve with pin-hole in the absence of other

incriminating causes of visual impairment such as cataract. Blindness was classified as Absolute, painful or painless. Absolute glaucoma was a No Light Perception (NPL) in a fully cupped disc. Painful or painless blindness is an NPL vision from other blinding eye conditions such as trauma.

Data collected was coded and fed into SPSS (Statistical Package for Social Sciences) version 20.0. Inferential statistics were carried out with Chi-squared at 99% Confidence Interval.

RESULTS

Nine thousand participants were screened in the first stage, of this 547 were further screened for definitive diagnosis by the ophthalmologists in the field based on the resources available. Of these participants, 243 (44.4%) were males and 304 (55.6%) were females with male to female ratio of 1: 1.25. The youngest was 1 year old and the oldest was 87 years old. The mean age was 51.27±16.18 standard deviation, median age was 53 years and mode was 60 years. Sex was cross-tabulated with the diagnoses in a comparative analysis where P value was 96.069, chi-square of 0.00 (.000-0.008, 99% Confidence interval). Age was also cross-tabulated with diagnoses, p value was 7351. 40, chi-square was 0.000 (0.000-0.008, 99% Confidence Interval).

DISCUSSION

Knowledge of disease pattern is important in the planning of public health programs in any given community. Uyo, the capital city of the state where the program was held is accessible from all parts of the state.

Of the 547 patients that came for further screening, 234 (44.4%) were males, 304 (55.6%) were females in the ratio of 1:1.25. More women came out for this screening program probably because it was free. This pattern was also seen by Monsudi et al in North Western Nigeria.[7] A study reported equal accessibility and another reported male prepodorance.[4,8]

Cataract and cataract- related problems like aphakia accounted for 139 (25.4%) (Figure1). This was the most prevalent condition. Earlier studies in the different parts of the country had shown that cataract still remains the commonest cause of blindness in Nigeria and the world.[7,9-11] The Nigeria national blindness survey conducted in individuals 40 years and above in 2007 also established cataract as the prime cause of blindness.[2] In a study in rural Ethiopia Mehari reported that cataract was the commonest presenting eye problem.[3]

Contrary to our finding and other findings in similar settings in Africa and Asia, Ukponmwan in Benin, Mid-Western Nigeria, and Sarita et al in Western Nepal, errors of refraction were the commonest presenting complaints.[4,12] These were closely followed by

conjunctivitis. The cost of surgical intervention that prevents indigent populace from seeking medical intervention may account for the marginal disparity. Treatments for conjunctivitis and refractive errors are cheaper and more affordable than surgeries for cataract. The tendency is that a free surgical expedition attracts a pool of cataract backlog which might have been the situation in this study. Therefore, the ocular conditions that present at any point a time to an eye care facility would depend on the setting, cost, target population and perhaps the comparative advantage and expertise available.
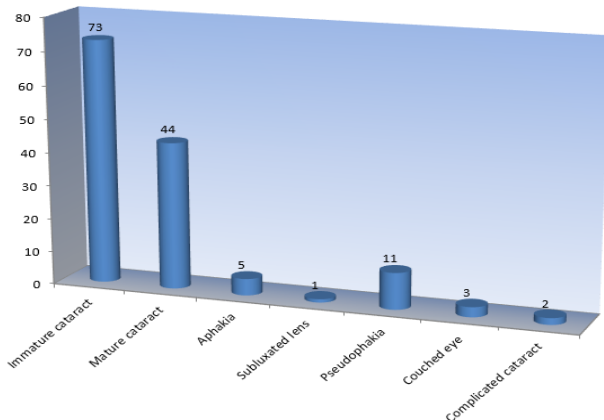

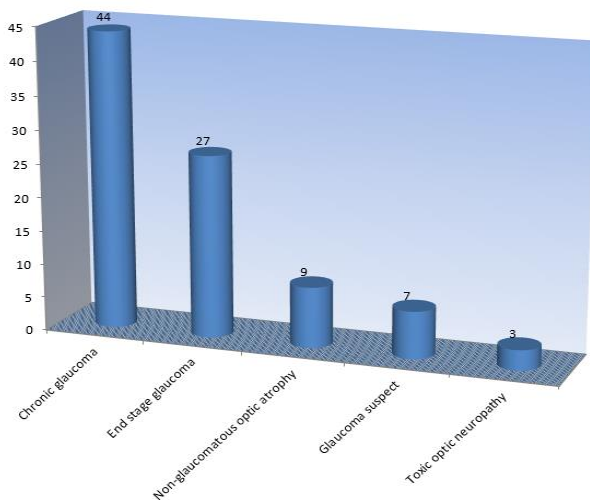**Figure 1: Lens related diagnoses.**

Figure 2: Isolated optic nerve head pathologies.

Three patients (2.2%)of those with cataract had done couching. This shows that public health education on the evils of couching and the alternative solution available must be stepped up. Cataract was also seen to co-exist with many other problems in the same patient. Cataract with glaucoma (19%), cataract with corneal opacity (3%), cataract with phthisis bulbi (7%) (Figure 5).
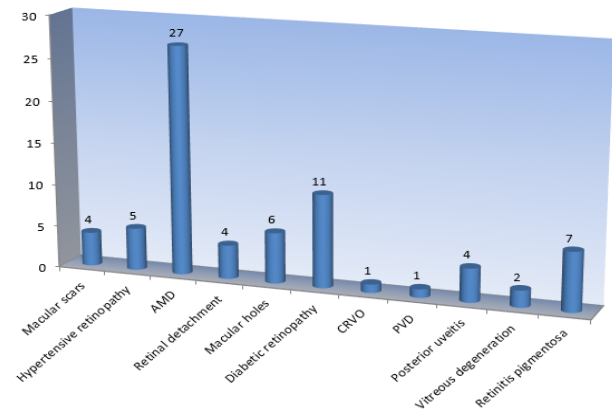

Figure 3: Posterior segment diagnoses.

Glaucoma was the second most commonly occurring disease 78 (14.3%) (Figure 2). This is corroborated by earlier findings in the National survey and other reseachers.[2,9,10] Glaucoma is said to be the second most common cause of blindness/ visual impairment in Nigeria and worldwide.[2,13,14]. It is the leading cause of irreversible blindness in West Africa and it has been estimated that 20% of people older than age 40 in West Africa may be at risk from the disease.[15] Of the 19 who were bilaterally blind, glaucoma was responsible for 4 (21.1%) of the blindness (Figure 4). This is higher than the finding of the national survey (16.7%).[2] Three percent of all the glaucoma cases had absolute glaucoma. This shows poor awareness and knowledge of the disease in this community. Therefore more health education is needed. Mahmoud in Ilorin, Nigeria found glaucoma to be the second most common presentation but the commonest cause of blindness.[9]
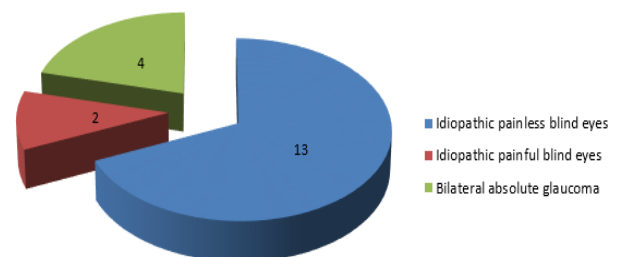

Figure 4: Categories of blind eyes.

The commonest posterior segment diagnosis was age related macular degeneration (AMD) 27 (37.5%) (Figure 3) followed by diabetic retinopathy 11 (2.0%). This is consistent with the age mean 51. 27 years since AMD is a known cause of visual impairment and blindness among this age group. AMD was also the commonest posterior segment finding in Benin(4.4%). It was responsible for 0.07% of blindness and 0.06% of severe visual impairment according to the NNBVIS.[2]
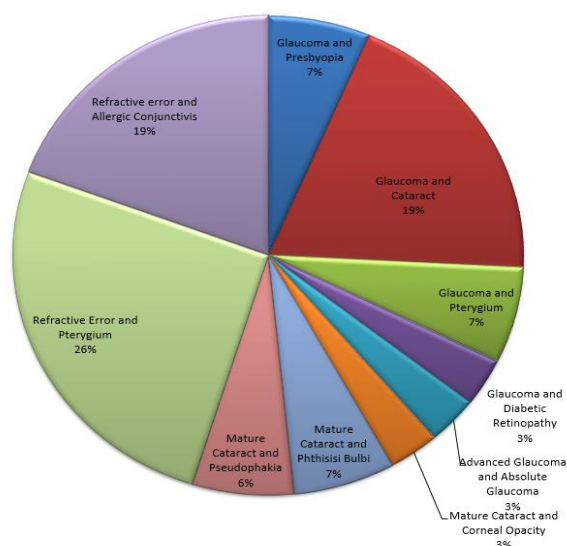
Figure 5: Multiple diagnoses in different eyes of same patients.

The most common condition of the ocular surface and adnexae (Table 1) was cornea scars 11 (28.9%), followed by dry eye syndrome 9 (234.7) and allergic conjunctivitis 6 (15.8%). The high prevalence of corneal opacity in any community gives an indication of the general health, hygiene and nutrition of that community.[16] Common causes include use of harmful traditional eye medications, measles, Vitamin A deficiency and ophhthalmia neonatorum.[17] It is said to be the third leading cause of blindness in Africa after cataract and glaucoma.[18] In the NNBVIS.[2] 7.9% of the corneal scarring was not due to trachoma or onchocerciasis but to other causes. In this study there was no obvious case of trachoma or onchocerciasis.

Table 1: Ocular adnexae, ocular surface and orbit diagnosis.

Diagnoses	Frequency	Percentage
Anterior staphyloma	2	5.3
Allergic conjunctivitis	6	15.8
Conjunctival squamous cell carcinoma	1	2.6
Corneal foreign body	1	2.6
Corneal scars	11	28.9
Dry eye syndrome	9	23.7
External hordeolum	1	2.6
Nasolacrimal duct obstruction	1	2.6
Orbital tumor	1	2.6
Phthisis bulbi	4	10.5
Stevens Johnson syndrome	1	2.6

Nineteen (3.5%) of all those screened were bilaterally blind. This is consistent with the finding of the NNBVIS 10 years earlier.[2] It goes to show that not much has

happened in terms of improvement in the eye health statistics in the state in the last ten years

CONCLUSION

The year 2020 is only 4 years away, the eye health awareness and eye health indices of the state is still very poor. Relevant authorities must do more to improve the health indices of the state.

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