Pattern of Eye Diseases in a University Health Service Clinic in Northern Nigeria

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ABSTRACT

BACKGROUND: Eye diseases constitute one of the common health problems presenting to the general practice clinic and could have significant socioeconomic consequences.

OBJECTIVES: To determine the pattern of eye diseases presenting to the eye clinic of Ahmadu Bello University Sick Bay, Samaru, Zaria.

METHODS: A prospective study of both new and old consecutive patients presenting to the eye clinic of Ahmadu Bello University Sick Bay between March 2009 and May 2010 was conducted. A screening format designed by the authors was used to extract information on biodata, presenting complaint, visual acuity, anterior and posterior segment examination, investigations and diagnosis. The data was analysed using Analyse-it V2.22(2010) statistical soft ware.

RESULTS: There were 1448 patients comprising 856 males and 592 females who were aged 24.3 years ±11.7SD with an age range of 0 to 60years. The majority(63.5%) were students. The common eye diseases seen were infective conjunctivitis (40.3%), allergic conjunctivitis, (32.7%), refractive errors (17.3%), glaucoma (1.9%) and cataract (1.8%).

CONCLUSION: Eye diseases were found to be common within the community of Ahmadu Bello University which is made up of students predominantly. This implies that avoidable (preventable and treatable) ocular disorders are still common among Nigerian students. Early detection (through periodic eye screening) and prompt treatment will significantly reduce visual impairment and needless blindness from these avoidable causes.

KEY WORDS: eye disease, pattern, university community, Nigeria

INTRODUCTION

The university community is an academic environment with a high percentage of the inhabitants engaged in reading and writing. The importance of good eye health cannot be over emphasized in such setting. Most patients with eye diseases first present to the general practitioner who may have limited knowledge of ophthalmic practice. Some disease conditions are treated correctly, while others are either misdiagnosed or wrongly treated with unwanted complications. Less than 50% of such patients get timely referral to an eye specialist.[1]

Eye diseases constitute one of the commonest problems presenting to the general practice clinic (10-21%) and could have significant socioeconomic consequences[2,3]. A study of the pattern of eye diseases in an environment where students are predominant is critical because while some eye conditions are just causes of ocular morbidity, others invariably lead to blindness. Again, while some conditions such as refractive errors and cataract are treatable others like measles and vitamin A deficiency are largely preventable.[4]

In addition, the population under study is mainly a young population. Therefore Disability Adjusted Life Years (DALYS) [4]becomes relevant. It is a measure of the time lived with a disability and the economic loss incurred during the years. The younger the individual the more the economic loss because of the number of blind years.

The study is also designed to benefit students with eye diseases who were not fortunate to be screened earlier (primary and secondary level of education). Other age-groups within the university community are also likely to benefit from the exercise. Students with poor vision from treatable eye diseases will no longer be considered by their teachers to be poor students.[5]

In Nigeria, hospital based and school surveys on the pattern of eye diseases carried out in parts of the country have indicated that refractive errors, conjunctivitis, corneal scarring and injuries were some of the most common eye conditions affecting Nigerian students.[6,7] Even though refractive errors appear to be the commonest eye disorder in Nigeria, very few children wear glasses.[8] This is because of the commonly held (but mistaken) view that wearing eyeglasses causes children's vision to deteriorate faster.[9] Many studies on eye diseases in children within the United Kingdom, Canada, and the United States of America have shown that the common ocular disorders in these countries were congenital or hereditary.[10]

A clear knowledge of the pattern of eye diseases will form a frame work which stake holders will utilize to effectively prevent (health education etc.) or treat blinding diseases .This will reduce needless blindness and visual impairment in students, and ultimately, it will help students to attain their full potential in life with corresponding economic benefit to Nigeria.

MATERIALS AND METHOD

A prospective study of 1448 patients was conducted at the Ahmadu Bello University Sick Bay, Samaru, between

March 2009 and May 2010. Ethical approval was obtained from the university authority and informed consent from each patient. The Sick Bay provides health care for students, academic and non-academic staff of the university and their relations. Consecutive new and old patients who visited the eye clinic were first seen by one of the two ophthalmic nurses who completed part of a screening format (section on bio-data and visual acuity) designed by the authors to extract information on biodata, presenting complaints, visual acuity for distance and near, anterior and posterior segment examinations, diagnosis and treatment offered. Visual acuity (VA) was tested for both distance and near using the Snellen's chart and Jaegers chart respectively. Patients with VA less than 6/6 in one or both eyes had their VA tested with the use of pinhole.

The anterior and posterior segments of the eyes were examined by one of the two consultant ophthalmologists who visited the clinic twice a week. Retinoscopy was done manually by the ophthalmologists who also completed the other portions of the screening format. Patients with treatable eye diseases were treated and those that require further evaluations and management were referred to the nearby Ahmadu Bello University Teaching Hospital, Shika-Zaria. The data was analyzed using *Analyze-it V2.22* (2010), statistical soft ware.

RESULTS
A total of 1448 patients were seen in the clinic during the study period. There were more males 856 (59.1%) than females 592 (40.9%), with M: F=1.4:1.0. Their age range was 1-60 years with a mean age of 24.3 years (SD ±11.7). Figure 1 shows age and sex distribution of the patients with a preponderance of the age groups 21-30 years 607 (41.9%) and 11-20 years 326 (22.5%). Majority were students 920 (63.5%), out of which undergraduates constitute 857 (93.1%). The staff seen were 160 (11.1%) with 124 (77.5%) non-academic and 36 (22.5%) academic staff. The staff relations and dependants constituted 368 (25.4%) of the study population (Table 1). Infective conjunctivitis was the most common

Table 1: Spectrum of Occupation

Occupations	Frequency	Percent
Student	920	63.5
Undergraduate	857	93.1
Post-graduate	21	2.3
Primary and Secondary	42	4.6
Staff	160	11.1
Academic	36	22.5
Non-academic	124	77.5
Staff relations/ Dependants	368	25.4
Total	**1448**	**100.0**

disorders seen 583 (40.3%), followed by allergic conjunctivitis 474 (32.7%), refractive errors 251 (17.3%), glaucoma 27 (1.9%) and cataract 26 (1.8%). Pterygium was seen in 20 (1.4%) adults; chalazion, stye and episcleritis/scleritis in 12 (0.8%) persons each. Blepharitis was seen in 9 (0.6%) individuals. Only 5 (0.4%) children had ocular trauma with 4 boys (80%) and 1 girl (20%), all being closed globe injuries (Table 2). The incidence of allergic conjunctivitis was higher in the age group 0-13 years, 261 (55%). No gender difference was observed. Infective conjunctivitis was commoner in children 332 (57%).

Out of the 1448 patients seen within the study period, 251 (17.3%) had uncorrected refractive error. Refractive error is defined as an error of 0.5 diopter or more in either eye, while presbyopia is difficulty seeing near in those aged 35 years or older and correctable with convex lenses of 1.0 diopter or more. One hundred and thirty eight (55.0%) of them were males and 113 (45.0%) were females. Simple myopia was the commonest error found 70 (28.0%), followed by simple hyperopia 43 (17.0%). Others include compound myopic astigmatism 30 (12.0%), simple hyperopic astigmatism 10 (4.0%), compound hyperopic astigmatism 4 (1.6%) and simple myopic astigmatism2 (0.8%). Presbyopia was found in 92 patients (36.6%) and students were 42 (46%).
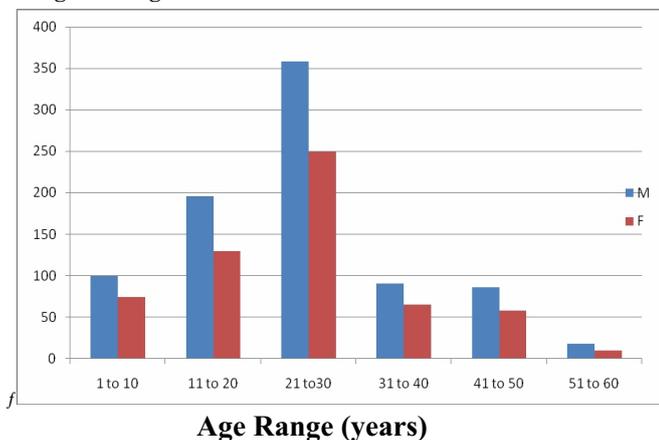
Figure 1: Age and Sex Distribution

Age Range (years)

Table 2: Ocular Abnormalities

Types of Abnormality	Frequency	Percent
Infective conjunctivitis	583	40.3
Allergic conjunctivitis	474	32.7
Refractive error	251	17.3
Glaucoma(POAG)	27	1.9
Cataract	26	1.8
Pterygium	20	1.4
Chalazion	12	0.8
Stye	12	0.8
Episcleritis/scleritis	12	0.8
Blepharitis	9	0.6
Retinopathy	9	0.6
Trauma	5	0.4
Granuloma	4	0.3
Chemical conjunctivitis	4	0.3
TOTAL	**1448**	**100**

DISCUSSION

The pattern of eye diseases in this study is similar to what was obtained in studies carried out in tertiary and general hospitals in Nigeria. [2, 3, 11] More male than female patient had eye diseases, a trend also noticed in other studies. [6, 12,13,14] This could be due to the higher population of males in the study area. Bacterial and allergic conjunctivitis were the commonest diseases found, 40.3% and 32.7% respectively. Hospital based and school surveys in the south-western and eastern parts of Nigeria have indicated that bacterial conjunctivitis (21.9-32.9%) and allergic conjunctivitis (11.3-30.4%) were some of the most common eye conditions affecting Nigerians. [2, 11,14] The dusty and windy weather in the northern part of the country is probably responsible for the relatively higher percentages obtained in this study.

Allergic conjunctivitis was found in this study to be commoner in patients less than 13years of age (staff relations/dependants). A study carried out in post primary school students in Northern Nigeria also reported a reduction in allergic conjunctivitis in students above the age of 10years. [14] This could have a significant negative impact on school absenteeism and scholastic achievement of these students. A study on the impact of eye diseases among school children in Cairo, Egypt reported 37.7% significant school absenteeism 3-4days/month. [15]

Refractive error was found in 17.3% of the sample population. Majority of them 233 (92.8%) were uncorrected with students constituting 196 (78.1%). Myopia was the commonest refractive error found (simple type of no more than -3.25D/S). Hospital based studies on refractive errors carried out in different geographical locations in Nigeria showed that myopia is the commonest type of spherical error. [16-21] Bagaiya and Pam [22] found uncorrected refractive errors (12.7%) to be a common cause of visual impairment in Kaduna. Similar to the findings in Kaduna, uncorrected refractive errors are found to be a common cause of visual impairment in the university community of Zaria. [23] Myopia was found to be responsible for much of the uncorrected refractive errors in the world. The prevalence of uncorrected presbyopia was 36.6%. This is comparable to 31.8% reported for south-western Nigeria. [24]

The effect of uncorrected refractive error and presbyopia on academic activities and routine office work in a university community cannot be over emphasized. Performance on a specific task can suffer significantly- as much as 20% - from minor vision problems. [13] Rate of missed lectures, tests and office absenteeism can be reduced by providing affordable and quality spectacles for them, if it cannot be provided free of charge.

The prevalence of glaucoma in our study (1.9%) is similar to that of other studies (1.3%-1.9%) [6, 11, 12] in Nigeria. It is however, lower than what is obtained in the general population (2.7%-10%). [26-28] This is probably because majority of the patients in this study were students, less than 40years of age. The commonest form of glaucoma in Nigerians is primary open angle (POAG) type found in individuals =40 years of age. [29]

Also, only 1.8% had cataract. Studies in South-Western and Eastern Nigeria recorded prevalence of 0.2%-1.3%. [2, 11,15]

Diseases of ocular adnexia were low with 1.4% Pterygium, chalazion and stye 0.8% each and 0.6% blepharitis. No squint or corneal opacity seen. Other studies reported 0.2%-0.7%. [6, 12] Ocular trauma was seen in only 5(0.4%) patients (staff relations/dependants) within the age of 3-7years. The male sex has been identified as a risk factor for ocular injuries, [25] this is reflected in this study with 4(80%) boys affected. Works done by many authors, show that school children and students of post primary institutions were particularly vulnerable to trauma with subsequent visual impairment or blindness especially while at play. [6,25]

CONCLUSION /RECOMMENDATION

This study has shown that the predominant eye diseases affecting students, staff and relations in Ahmadu Bello university community are infective and allergic conjunctivitis and uncorrected refractive errors with student forming the bulk of the population. This implies that avoidable (preventable and treatable) ocular disorders are still common among Nigerian students.
Health education, early detection (through periodic eye screening) and prompt treatment will significantly reduce visual impairment and needless blindness from these avoidable causes.

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