

# Patterns of presentations at a free eye clinic in an urban state hospital

MB Hassan, SA Olowookere<sup>1</sup>, NA Adeleke, CA Akinleye<sup>2</sup>, EG Adepoju<sup>3</sup>

College of Health Sciences, Osun State University Osogbo, <sup>1</sup>Department of Medicine, State Hospital, <sup>2</sup>Department of Community Medicine, LAUTECH Teaching Hospital, <sup>3</sup>Department of Preventive Medicine, State Hospital, Osogbo, Osun State, Nigeria

## Abstract

**Background:** Provision of affordable eye care is one of the cardinal programs of the Osun State Government of Nigeria.

**Objective:** The objective of this study was to assess the pattern of eye diseases presenting in a secondary health care facility based at Osogbo the State Capital.

**Materials and Methods:** We reviewed the hospital records of all patients that were cared for at the eye clinic of the State Hospital, Osogbo, Osun State, Nigeria from January 2009 to December 2010.

**Results:** A total of 1018 patients were attended to at the eye clinic during the period of review. Mean age of these patients was  $49.4 \pm 23.2$  years. There were 408 (40.1%) males and 610 (59.9%) females with a female-male ratio of 1.5 : 1. Most of them were traders (28.1%) and married (32.1%). Vernal conjunctivitis (21.1%), cataract (14%), glaucoma (11.1%), and refractive errors (20.7%) were the main eye diagnoses.

**Conclusion:** Preventable causes of blindness were quite common among the patients. There is a need for community education to reduce the prevalence of these diseases in the general population.

**Key words:** Eye clinic, free, pattern, urban

**Date of Acceptance:** 04-Aug-2012

## Introduction

There is wide variation of presentation of eye diseases worldwide.<sup>[1,2]</sup> Factors affecting the type of eye diseases include age, sex, residence, socioeconomic, occupation, geographical, racial, dietary, customs, tradition, and the major environmental factors prevalent in that region.<sup>[1,2,25]</sup> Various studies on eye diseases had shown that some eye diseases are common in certain age, sex, and professions or occupations.<sup>[2,3,25]</sup> Some eye diseases are gender related just because only that gender performs such role or occupation that predisposes to the eye diseases. These studies found that certain eye morbidity was found to be common among welders, Nigerian factory workers, and peasant farmers.<sup>[4-6]</sup> The environment could affect the prevalence of eye diseases in certain populations with infectious eye conditions quite common in tropical regions and rare in temperate regions of the world.<sup>[1]</sup>

The World Health Organization (WHO) and the International Agency for the Prevention of Blindness have developed a global initiative for the elimination of avoidable blindness by the year 2020; "Vision 2020: the right to sight".<sup>[7]</sup> "Vision 2020" includes three major components as target activities: specific disease control, human resource development, and infrastructure and appropriate technology development. The key factors in achieving the goals of "Vision 2020" are eye care services and their utilization. Underutilization of available eye care services and associated factors has been studied in several communities.<sup>[8-10]</sup>

Since the Eye clinic of State Hospital Osogbo was established in 2006 no study had looked at the pattern of eye diseases

### Address for correspondence:

Dr. MB Hassan, College of Health Sciences, Osun State University Osogbo, Osun State, Nigeria.  
E-mail: hassanmb2002@yahoo.co.uk

### Access this article online

<b>Quick Response Code:</b> 	Website: www.njcponline.com
	DOI: ***
	PMID: *****

in the hospital. This is essential for proper health planning and health policy and financing to know the eye diseases to prevent and treat. Prevention through education should be a management strategy so that inpatient bed utilization could be redistributed to take care of unavoidable eye diseases.<sup>[11]</sup>

Utilization of healthcare facilities varies from place to place. A number of factors have been found to be responsible for utilization/patronage of eye care services among which are accessibility, affordability, and acceptability.<sup>[12]</sup> In terms of accessibility, the location of the facility itself is very paramount in determining the types of persons, volume, and sociocultural background of the clientele, so the presence of similar facilities in the geographic area is also in question.<sup>[12]</sup>

The study determines the pattern of patronage of an eye unit located in an urban center. The State Hospital Asubiaro Eye Clinic is considered for a case study.

The purpose is to help in planning the location of such facilities in the future as well as the type of equipments and facilities to be put in place based on the expected clientele.

## Materials and Methods

The State Hospital, Asubiaro in Osogbo, is one of the secondary healthcare facilities established by the Osun State Government. The hospital runs a free eye care program for all citizens in the State that require eye care. There are three other eye departments located within Teaching Hospitals in the State and a host of other private eye institutions that operate fee-for-services rendered. Therefore, all patients requiring free eye care services throughout the State actually patronize Asubiaro irrespective of the area of domicile.

The Eye clinic of State Hospital, Asubiaro was established in 2006. It has a consultant ophthalmologist, a medical officer, an optometrist, three ophthalmic nurses, and a host of other ancillary staff rendering eye care services essentially at the secondary level of eye care.

It usually refers complicated cases to nearby teaching hospitals – LAUTECH Teaching Hospital, Osogbo; Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife and Wesley Guild Hospital, Ilesa.

We retrospectively reviewed the hospital records of all patients who presented at the eye clinic of the State Hospital, Asubiaro in Osogbo Nigeria from January 2009 to December 2010. The data included socio-demographic characteristics, medical, and eye history including previous eye disease, eye trauma, diabetes, hypertension, and also their eye care visits. Blood pressure, diagnosis at presentation, and outcome of hospital care. Other information retrieved included results of eye examinations performed including visual acuity tests,

refraction (objective, subjective, and cycloplegic), intraocular pressure measurement, slit lamp examination, and fundoscopy.

Eye examination was carried out only by the Principal Investigator - thus eliminating interobserver error and this included a measurement of visual acuity in the eyes, anterior segment examination with torchlight, and posterior segment examination with direct ophthalmoscope. Refraction was done using a Keeler streak retinoscope followed by subjective refraction to determine the presence of underlying refractive error (defined as presenting vision less than 6/9 and improved with the aid of a pin hole) and presbyopia (difficulty seeing near in those aged 40 years or more and correctable with convex lenses of 1 diopter or more). However only eyes with visual acuity <6/18 were considered to be visually impaired in line with World Health Organization/International Statistical Classification of Diseases and related Health problems, 10<sup>th</sup> revision (ICD-10).<sup>[13,14]</sup>

The extracted data were analyzed using SPSS 15 software. Summary statistics using mean or median and standard deviation or range for continuous variables, frequencies/percentages for categorical variables were generated.

## Results

A total of 1018 patients were seen at the eye clinic during the period under review. The mean age of these patients was  $49.4 \pm 23.2$  years. There were 408 (40.1%) males and 610 (59.9%) females. Majority of the patients were traders (28.1%) and married (32.1%) [Table 1]. Over 44% had 6/24-6/36 as their visual acuity at presentation [Table 2].

Vernal conjunctivitis (21.1%), cataract (14%), glaucoma (11.1%), and refractive errors (20.7%) were the main eye diagnoses [Table 3]. The causes of refractive errors include hypermetropia (9.8%), myopia (5.5%), and presbyopia (5.4%).

Seven hundred and two patients (70%) had some form of treatment prior to presentation while 240 (23.6%) did not have any pretreatment. Thirty-one percent had self-treatment while 21.4% had been treated in a private hospital before presentation [Table 4].

## Discussion

This study showed that children had fewer ocular problem compared to adults. This finding had been corroborated by other studies. Ajayeoba and Scott<sup>[2]</sup> in a study on risk factors associated with eye diseases in Ibadan reported 36% of their study population (482) as children. This could result from the fact that children do not refer themselves to hospital. They depend on their parents and caregiver. Also they may not complain early enough for their guardian or parent to bring them for care at the hospital, so late

**Table 1: Sociodemographic characteristics of patients presenting at the eye clinic of State Hospital, Asubiaro, Osogbo**

Characteristics	Frequency (n = 1018)	%
Age group (years)		
Less than 18	258	25.3
19-29	122	12
30-39	53	5.2
40-49	101	9.9
50-59	192	18.9
60-69	182	17.9
70 and above	110	10.8
Sex		
Male	408	40.1
Female	610	59.9
Education		
None	190	18.7
Primary	249	24.5
Secondary	336	33
Tertiary	243	23.8
Marital status		
Single	321	31.5
Married	326	32.1
Divorced	89	8.7
Widow	282	27.7
Occupation		
Trading	288	28.1
Civil servant	210	20.6
Artisan	220	21.4
Unemployed	300	29.9

**Table 2: Visual acuity at presentation of patients at an urban eye clinic**

Visual acuity	Frequency	%
6/4-6/18	392	38.5
6/24-6/36	456	44.8
≤6/60	136	13.4
Undetermined	34	3.3

presentation could be the real reason for the disparity in age distribution. The majority of children cannot adequately express themselves, and until the signs are sufficiently gross to be noticed, children may not present in hospital. This may be the reason why some defects are not usually detected until adulthood.<sup>[2]</sup> This further implied that eye diseases in children could be as a result of under diagnosis.<sup>[2]</sup>

More females than males were treated at the eye clinic in the period under review. This could be because the hospital services were free. In our society, more males are gainfully employed while many women are full-time housewives who depend on their husbands for financial support.<sup>[2]</sup> This contrast with findings in other studies that reported a preponderance of male.<sup>[2,5]</sup> However Fotouhi<sup>[12]</sup> in a study on eye care utilization in Tehran population in 2006 reported that

**Table 3: Diagnosis at presentation of patients presenting at the Eye Unit of State Hospital, Asubiaro, Osogbo**

Diagnosis	Frequency (n = 1018)	%
Vernal conjunctivitis	215	21.1
Refractive error	211	20.7
Cataract	143	14
Glaucoma	113	11.1
Pterygium	40	3.9
Traumatic hyphema	37	3.6
Blind eye	37	3.6
Orbital cellulitis	34	3.3
Orbital hematoma	21	2.1
Chalazion	19	1.9
Traumatic iritis	19	1.9
Bacteria conjunctivitis	19	1.9
Endophthalmitis	18	1.8
Macular degeneration	18	1.8
Cornea opacity	18	1.8
Cornea laceration	14	1.4
Ophthalmoplegia	14	1.4
Episcleritis	14	1.4
Foreign body	14	1.4

**Table 4: Previous treatment of patients presenting at the Eye Unit of State Hospital, Asubiaro, Osogbo**

Previous treatment	Frequency	%
None	240	23.6
Traditional	102	10
Self treatment	316	31
Private hospital	218	21.4
By chemicals	66	6.5
Unknown	76	7.5

more women sought eye care than men while Clendenin<sup>[15]</sup> in 1997 reported that no significant difference between genders was found in term of eye services utilization.<sup>[15]</sup>

This study showed that education had a positive influence on the health-seeking behavior among the study population as majority of the patients had at least secondary education. This finding is in agreement with other studies which found that there is greater likelihood of seeking eye care with higher levels of education.<sup>[8,10,12,16,17]</sup> This relationship is attributable to their greater knowledge, and therefore, more reasonable health-seeking behavior. It can also be explained by the fact that educated people are members of the higher socioeconomic class, and may thus have more access to eye care services and find them more affordable.<sup>[12]</sup>

A significant number of the study population were unemployed and could only have accessed the hospital facility because

they were free. Injuries to the eye had been linked to certain occupations such as metallic intraocular foreign bodies in welders and vegetable injuries in farmers.<sup>[6]</sup> There is the need to educate people in such occupations such as farmers and welders of the need to wear protective goggles at work.<sup>[2]</sup>

This study showed that a large number of the patients had some pretreatment before presenting at the eye clinic. This fact showed that these pretreatment were not effective which was responsible for their presentation in the eye clinic. This could also be responsible for late presentation of these patients at the eye clinic. Some of these treatments instilled to the eye before presentation are known to worsen the eye condition and cause blindness. For example chemicals such as battery water (sulfuric acid) resulting in burns, corneal ulcer, etc.

Vernal conjunctivitis which is an allergic form of conjunctivitis was very common among the study population especially among the children. Ajayeoba *et al.*<sup>[18]</sup> in a study among children had similar report. This disease usually results from allergic materials such as dust. Also chemical conjunctivitis could result from inappropriate instillation of eye drugs from self-medication. This is due to the fact that prescribed drugs are freely dispensed over the counter and the failure of government to control drug distribution. Also traditional eye remedy which had been found to be dangerous is usually on display in open market.<sup>[2]</sup> Several publications had documented the role of traditional healers and their medications in most African communities and had observed that harmful traditional eye medication could lead to blindness.<sup>[19,20]</sup>

Cataract and glaucoma were quite common among the patients. A study among children in Saudi Arabia in 2005 reported cataract as a common cause of bilateral blindness.<sup>[21]</sup>

Most of the patients had refractive error with hypermetropia much more common. This predominance of hypermetropia among the patients with refractive error compares with findings by Nworah and Ezepue<sup>[22]</sup> who also documented predominance of hypermetropia among patients of a Nigerian Eye clinic. The prevalence of hypermetropia among the patients with a mean age of 56.5 years is also in keeping with increasing trend toward hypermetropia with increasing age among the patients studied by Olurin,<sup>[23]</sup> and Nwosu.<sup>[24]</sup>

## Conclusion

In conclusion vernal conjunctivitis and refractive errors were quite common among these patients. It is necessary to organize community education and ensure early treatment to reduce the prevalence of these diseases in the general population. There is need for these patients to be financially empowered through vocational education in economically viable ventures.

## References

1. Topalovo AV. Incidence of Eye Diseases in different parts of the World. *Ophthalmol* 1984;6:374-7.
2. Ajayeoba AI, Scott SCO. Risk factors associated with eye disease in Ibadan, Nigeria. *Afr J Biomed Res* 2002;5:1-3.
3. Canavan YM, O'Flaherty MJ, Archer DB. A Ten -year Survey of Eye-Injuries in Northern Ireland. *Br J Ophthal* 1980;64:618-25.
4. Alakija W. Eye morbidity among welders in Benin City, Nigeria. *Public Health* 1988;102:381-4.
5. Abiose A, Otache MA. Ophthalmic needs of Nigerian factory workers. *J Trop Med & Hyg* 1981;84:161-3.
6. Olurin O. Eye injuries in Nigeria. *Am J Ophthal* 1971;72:159-66.
7. Prevention of Blindness Program. Global Initiative for the Elimination of Avoidable Blindness: Vision 2020—The Right To Sight. Geneva: WHO, Fact Sheet 213, 2000.
8. Nirmalan PK, Katz J, Robin AL, Krishnadas R, Ramakrishnan R, Thulasiraj RD, Tielsch J. Utilization of eye care services in rural south India: The Aravind Comprehensive Eye Survey. *Br J Ophthalmol* 2004;88:1237-41.
9. Keeffe JE, Wei LM, McCarty CA, Taylor HR. Utilization of eye care services by urban and rural Australians. *Br J Ophthalmol* 2002;86:24-7.
10. Dandona R, Dandona L, Naduvilath TJ, McCarty CA, Rao GN. Utilization of eye care services in an urban population in southern India: The Andhra Pradesh eye disease study. *Br J Ophthalmol* 2000;84:22-7.
11. Ashaye AO. Eye injuries in children and adolescents. A report of 205 cases. *J Natl Med Assoc* 2009;101:51-6.
12. Fotouhi A, Hashemi H, Mohammad K. Eye care utilization patterns in Tehran population: A population based cross-sectional study. *BMC Ophthalmology* 2006;6:4.
13. Thylefors B, Negrel AD, Pararajasegaram R, Dadzie KY. Global data on blindness. *Bull WHO* 1995;73:115-21.
14. Bekibele CO, Fawole OI, Bamgboye AE, Adekunle LV, Ajayi R, Baiyeroju AM. Prevalence of refractive error and attitude to spectacle use among drivers of public institutions in Ibadan, Nigeria. *Ann Afr Med* 2007;6:26-30.
15. Clendenin C, CoVey M, Marsh M, West S. Eye care utilization patterns in a rural county in Ireland: Implications for service delivery. *Br J Ophthalmol* 1997;81:972-5.
16. Orr P, Barron Y, Schein OD, Rubin GS, West SK. Eye Care Utilization by Older Americans: The SEE Project. *Ophthalmology* 1999;106:904-9.
17. Wang JJ, Mitchell P, Smith W. Use of eye care services by older Australians: The Blue Mountains Eye Study. *Br J Ophthalmol* 1999;27:294-300.
18. Ajaiyeoba AI, Isawumi MA, Adeoye AO, Oluleye TS. Prevalence and causes of eye diseases amongst students in South-Western Nigeria. *Ann of Afr Med* 2006;5:19-203.
19. Ayanru JO. Blindness in the Mid Western State of Nigeria. *Trop Geog Med* 1974;266:325-32.
20. Omolase CO, Mahmoud AO. Perceptions of Nigeria Ophthalmologist about Traditional Eye Care practice in Nigeria. *Afr J Med Sci* (2008)37:255-259..
21. Tabbara KF, El-Sheikh HF, Shawaf SS. Pattern of childhood blindness at a referral clinic in Saudi Arabia. *Ann Saudi Med* 2005;25:18-21.
22. Nworah PB, Ezepue UF. Prevalence of errors of refraction in a Nigerian eye clinic. *Orient J Med (Nigeria)* 1992;4:57-60.
23. Olurin O. Refractive errors in Nigeria: A hospital clinic study. *Ann Ophthalmol* 1973;5:971-76.
24. Sebastian NN Nwosu. Ametropia in Onitsha, Nigeria. *Nigerian J Ophthalmol* 1997;5:21- 4.
25. Thiagalingam S, Cumining RG, Mitchell P. Factors associated with under corrected refractive errors in an older population: The blue maintain eye study. *Br J Ophthalmol* 2002;86:1041-5.

How to cite this article: ???

Source of Support: Nil, Conflict of Interest: None declared.