

The Prevalence of Various Eye Diseases Among Patients of Different Nationalities attending the Ophthalmology Clinic at a Tertiary Care United Nations Hospital: A 5 Year Retrospective Analysis

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ABSTRACT

Introduction: Eye diseases incidence and prevalence varies with the social and environmental factors. Present research aimed to study the prevalence of various common eye diseases at a Tertiary Care United Nations hospital.

Material and methods: It is a retrospective study of all new patients attending the eye OPD of a tertiary care UN hospital during three years period Sept 2007 to Aug 2012. All patients underwent a thorough routine eye examination involving vision testing by Snellen's chart, Refraction, Tonometry, Slit lamp examination of Anterior Segment, Fundus examination and Color Vision. Cases were also subjected to automated perimetry, laboratory and radiological investigations if considered essential.

Results: A total of 217 (401) new patients attended the eye clinic. Patients attending the eye clinic were of varied nationality which included patients from India, Pakistan, South Africa, Uruguay, Congo, England, Iraq, Italy, Bangladesh, Netherlands, Nepal, USA etc. The three most common causes of eye disorders were refractive error followed by allergic conjunctivitis and Presbyopia. However, cases of Onchocerciasis were also seen especially in those belonging to Congo. Mostly the patients were in the age group of 30-40yrs (35.4%) and 40-50 yrs (41.01%) being active military soldiers. Presbyopia was more common in age group 40-50yrs of age (73.3%). Majority of patients were mainly extra ocular cases (95.4%).

Conclusion: The pattern of prevalence of various ocular diseases is similar to other parts of world in this age group and with a similar occupational profile. This study will go a long way in ensuring optimum provisioning of eye health care personnel's and equipment for efficient eye care services.

Keywords: Eye Diseases; Multiple Nationalities; Refractive Errors; Optimizing Health Care Services

INTRODUCTION

The incidence of various eye diseases in a community or area varies with the social and environmental factors. However, the incidence of ocular diseases change when people from across the globe are assembled at some place for some specific purpose like protection of a country, or, as in our case, as part of United Nations peace keepers in Democratic Republic of Congo (DRC). Health care facilities have to be customized according to the prevalence of diseases in that area. For example it is futile to cater for treatment of Onchocerciasis in European or Asian continent. It is recognized that many eye conditions are amenable to being treated within the community if effective eye care services were available. This

approach is supported by the World Health Organization and the International Agency for the Prevention of Blindness.¹⁻³ Considering the complicated epidemiology of visual impairment and the wide variety of factors involved, region specific intervention strategies are required for every community. Therefore, providing appropriate data is one of the first steps in these communities. A number of studies regarding prevalence of skin, malaria, hepatitis and cholera like diseases in the United nations troops have been carried out earlier but there is lack of studies on ocular diseases.⁴⁻⁷ Various studies estimating the burden of visual impairment and blindness have been conducted in various parts of the globe in the past. However, there has been a lack of appropriate community-based data on the prevalence of ocular morbidities in United Nations peace keeping troops at Democratic Republic of Congo (DRC). Thus, keeping in view of the importance of the problem of ocular morbidities and the lack of precise information on prevalence of various ocular diseases in United Nations troops in the Democratic Republic of Congo (DRC), this study was planned to study pattern of prevalence of various eye diseases in troops so as to plan and cater for efficient eye health services. This in turn will help in provisioning of effective eye care services to soldiers to keep them fighting fit

Present research aimed to study the prevalence of various eye diseases in an OPD at a tertiary care hospital of United Nations.

MATERIAL AND METHODS

This retrospective study was carried out among all new

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patients attending the eye OPD. The patients underwent a thorough routine eye examination which included Distant Visual acuity using Snellen's Chart both unaided (UCVA) and Best corrected visual acuity (BCVA) including Near Vision, Tonometry, Slit Lamp Examination of Anterior Segment which included Cornea, Anterior Chamber, Iris, Lens, Fundus Evaluation using 90 D and 20 D and Color Vision testing on Ishihara isochromatic test plates. Cases were also subjected to automated perimetry, laboratory and radiological investigations if considered essential and treated along the standard line of treatment.

RESULTS

A total of 217 (401) new patients attended the clinic during 5 years period from 2007 to 2012 at Level III, United Nations Hospital at Goma in the Democratic Republic of Congo (DRC). The most common causes for ocular consultation

S. No.	Diagnosis	No. of cases	Percentage (n=217) (n=401)
1	Refractive error	61 113	28.11
2	Presbyopia	55 102	25.34
3	Allergic conjunctivitis	51 95	23.50
4	Acute conjunctivitis	04 8	01.8
5	Closed Globe Injury	02 3	0.9
6	BRVO	01 2	0.4
7	Chalazion	02 3	0.9
8	Chemical injury	01 2	0.4
9	Color vision defect	01 2	0.4
10	Fundus examination	04 7	01.8
11	Conjunctival tear	01 2	0.4
12	Corneal ulcer	01 2	0.4
13	Contact lens	01 2	0.4
14	Episcleritis	02 3	0.9
15	Scleritis	01 2	0.4
16	Routine eye check up	11 20	05.04
17	Glaucoma	02 3	0.9
18	Herpes zoster ophthalmicus	01 2	0.4
19	Floaters	02 3	0.9
20	Insect bite eye	02 3	0.9
21	Periorbital cellulitis	01 2	0.4
22	Subconjunctival hemorrhage	03 5	01.3
23	Vernal keratoconjunctivitis	02 3	0.9
24	Foreign body eye	05 9	2.3

Table-1: Incidence of various eye diseases

S. No.	Diagnosis	No. of cases	Percentage (n=120) (n= 209)
1	Compound myopic astigmatism	22 38	18.33
2	Myopia	15 27	12.5
3	Myopia with presbyopia	04 7	3.33
4	Presbyopia	57 99	47.5
5	Refractive error (Hypermetropia)	22 38	18.33

Table-2: Refractive error cases

Age group	No. of cases	Percentage (n=217) (n= 401)
20-30	41 76	18.89
30-40	77 142	35.48
40-50	89 165	41.01
>50	10 18	4.6

Table-3: Age related distribution

S. No.	Countries	No. of cases	Percentage (n=217) (n= 401)
1	India	135 250	62.21
2	South Africa	17 31	7.83
3	Bangladesh	8 15	3.68
4	Others (cases <5 per country)	57 105	26.26

Table-4: Countries related distribution

S. No.	Diagnosis	No. of cases	Percentage (n=217)
1	Extraocular	207 383	95.4
2	Intraocular	10 18	4.6

Table-5: Intraocular Vs extra ocular complaints

were Refractive Error (29%), Allergic Conjunctivitis (24.88%), Bacterial Conjunctivitis (1.8%) and Presbyopia (26.26%) (Table1).

The three most common causes of eye disorders were refractive error followed by allergic conjunctivitis and presbyopia (Table 2).

The patients mostly were in the age group of 30-40yrs (35.4%) and 40-50 yrs (41.01%) (Table 3). Presbyopia is more common in age group 40-50yrs (73.3%). Patients attending the clinic were of varied nationality (Table 4). The cases most frequently seen were from India (62.21%), South Africa (7.83%) and Bangladesh (3.68%). Most of them were mainly extra ocular cases (95.4%) (Table 5).

DISCUSSION

Many different ophthalmic diseases can be discovered through efficient screening. Developing countries or countries with low to medium income usually lack the luxury of effective screening programs. Racial and cultural factors also affect prevalence of diseases among different populations.⁸ Most of the published studies on prevalence of eye diseases in a geographical area have a single ethnicity subjects being studied upon. In present study, we highlighted ocular disease prevalence in people of different racial and ethnicity conglomerated in a single geographical area, as part of United Nations peace keeping mission.

A study in Gujarat⁹ in a rural hospital in Oct 2015 on policemen also revealed that many suffer from ocular complaints like allergy and meibomitis. But they do not get adequate time to report to an eye clinic to get expert advice. Incidence of the eye diseases were refractive error (42%), cataract (23.8%), pterygium (6.34%), dry eye (3.17%), MGD (3.17%), allergic conjunctivitis (1.58%) color blindness (4.76%), retinopathy due to systemic diseases like DM, HTN (12.69%), chalazion

(1.58%) which was comparable to our study. Allergic conjunctivitis is an inclusive term that encompasses seasonal allergic conjunctivitis (SAC), perennial allergic conjunctivitis (PAC), vernal keratoconjunctivitis (VKC), and atopic keratoconjunctivitis (AKC).¹⁰ Color vision deficiency is an X-Linked, non treatable, non progressive condition, universally screened and early detection is practiced in many countries.^{11,12} Its incidence in India in males is 3.69% and in females is 1.044%.¹³ which was higher than our study.

Another study in Uttarakhand¹⁴ in Feb 2017, reported refractive error (20.97%) was the commonest ocular morbidity in their study followed by cataract (20.02%), follow ups of cataract surgeries and allergic conjunctivitis. Omotoye et al¹⁵ reported that leading diagnoses were cataract (26.0%), refractive error (18.5%), allergic conjunctivitis (12.4%) and glaucoma (10.9%). Haq et al¹⁶ reported prevalence of cataract to be 21.7% and refractive errors at 25.0%. Presbyopia accounted for 10.88% cases. Incidences of diseases were equal in both males and females indicating females had equal health awareness. Singh et al in study carried out in rural setting reported refractive error as high as 40.8%.¹⁷ Olukorede et al reported allergic conjunctivitis as most common cause in hospital based study.¹⁸ These all studies depicted that leading causes of eye disorders were similar in all studies.

A cross sectional study at the Eye OPD at GMCH, Udaipur¹⁹, Rajasthan also revealed similar results. It was conducted on 600 patients and 56.17% were males, 60.83% were urban dwellers. Prevalence of various diseases reported was allergic conjunctivitis (43.33%), acute conjunctivitis (14%), blepharitis (12.33%), keratitis (4%) and dacryocystitis (0.67%).

Another large study conducted in Makah Eye Hospital, Sudan²⁰ in 2015 on 64,529 patients revealed that majority of the cases attending the eye clinic were adults more than 20 yrs age (76.32%) and males constituted 47.21%. Most common eye disorder was refractive error (33%), followed by cataract (26.66%), and allergic conjunctivitis (23.77%). Age distribution was 20-35 yrs (15.94%), 36-50 yrs (26.44%), 51-65 yrs (17.91%) and more than 65 yrs (16.55%). Of the various cases with refractive error, the distribution was presbyopia (34.22%), myopia (22.82%), hypermetropia (22.81%), aphakia (1.39%), convergence insufficiency (10.95%), strabismus (3.15%), and paralytic strabismus (6.5%). The observations made in this study were similar to our study with same pattern of eye diseases encountered.

Another study conducted in Nepal²¹ on 915 cases gave comparable incidence pattern of age distribution of patients: 20-30 yrs (4.3% males, 13.5% females), 30-40 yrs (3.9% males, 9.3% females), 40-50 yrs (2.6% males, 7.5% females), 50-60 yrs (2.7% males, 3.9% females). The pattern of eye diseases was refractive error (26.8%), squint (0.9%), conjunctivitis (20.6%), lid abnormality (3.9%), and cataract (11.8%).

Murad et al²² in their study in sub-urban population revealed an incidence of eye diseases 52% in females, 48% in males. Various ocular disease included conjunctivitis (21.4%),

cataract (9.2%), refractive error (15.2%), dacryocystitis (6.51%) and blepharitis (3.2%).

Incidence of cataract was negligible in our study as compared with other studies since we had active military soldiers as study population which were mostly in pre-senile age group but presbyopia was a common complaint.

Our study has inherent limitation of lesser Number of subjects but this was due to the study population being limited to United Nations peace keeping soldiers. But on other hand it gave us an opportunity to study prevalence of ocular morbidity in subjects of different ethnicity in specific terrain and environment to enable us to plan for better eye care services for our troops.

Information on the epidemiology of eye diseases in a particular area helps in planning and management of eye care facility, thereby decreasing the burden of blindness. In this study, the prevalence of major eye diseases encountered were comparable to the various other studies from different parts of globe. But it should also be borne in mind that the cause of blindness varies in different communities and regions due to influence of environmental factors and also according to the customs and lifestyle of the local population. Environment, group living, occupational activities and work-related stress act as initiating and/or aggravating factors in the development and/or spread of some conditions. The knowledge of disease profile empowers doctors to enforce preventive measures and prepare for treatment modalities.

CONCLUSION

The incidence of various eye diseases in a community or area varies with the social and environmental factors. This study gave us the insight into prevailing pattern of eye problem in a given population of different ethnicity and will contribute in planning the infrastructure, as well as the staffing of eye care personnel to provide efficient eye care facility in United Nations troops serving in that area.

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