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OCULAR DISEASES AMONG PATIENTS REPORTING IN UNITED NATIONS LEVEL III HOSPITAL - DARFUR, SUDAN

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ABSTRACT

Objective: To determine the frequency and pattern of ocular diseases among patients reporting at the United Nations Level 3 field hospital at Darfur, Sudan.

Study Design: Cross-sectional study.

Place and Duration of Study: Ophthalmology department of the United Nations Level III Hospital located at Darfur, Sudan, from Sep 2013 to Aug 2014.

Methodology: Clinical records of the patients reporting to the Ophthalmology department were reviewed retrospectively. Entries made in outpatient department record register were screened. Demographic data including age, gender and ethnicity of the patients were noted. Diagnosis of all these patients was also marked down. The whole data was analysed by SPSS-17 in order to determine frequency of different types of ocular disorders.

Results: A total of 504 patients (278 males and 226 females) reported to the eye outpatient department. Majority of the patients were from Nigeria (46.4%) and Sudan (33.9%). Refractive error in its various forms was the most frequently encountered eye disease i.e. 31.9%. Other commonly seen ocular diseases were blepharitis (13.7%), allergic conjunctivitis (13.3%), dry eyes (12.1%), pterygium (10.3%) and ocular trauma (3.7%).

Conclusion: Refractive errors and Blepharitis are the most prevalent ophthalmic disorders among troops deployed in United Nations African Mission in Darfur, Sudan. Presbyopia was found to be the most common refractive error in this study population.

Keywords: Allergic conjunctivitis, Blepharitis, Refractive errors.

INTRODUCTION

Eye disorders affect functioning of an army by causing temporary or permanent disability. Studies conducted among military staff have reported a high prevalence of ocular disorders, ranging from 34.6 to 74.8%[1,2]. These eye diseases are dominated by refractive errors, kerato-conjunctivitis and ocular injuries[3]. The state of South Darfur is situated in the southwest of Sudan and in general is known for its hot and dry climate[4]. United Nations military and paramilitary peacekeeping forces were deployed in thestate of South Darfuragainst the backdrop of civil war which erupted in Darfur in 2003 causing tens of thousands killings of innocent people[5]. Pakistan Field level 3 hospital, situated at Nyala, the capital of South Darfur, is the only tertiary health care centre in this United Nations African mission which is providing ophthalmology services to these deployed forces. Ocular problems occur in these troops, most probably because of geographical and environmental factors and inadequate eye protective measures being observed. The objective of this study was to describe the frequency and pattern of ocular diseases among patients reporting at this United Nations Level 3 field hospital. A study of pattern of ocular diseases is very important because while some eye conditions cause ocular morbidity others invariably lead to blindness. The information from this study will be of assistance in future planning for provision of good eye health care facilities to the patients reporting at this hospital and other UN hospitals.

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METHODOLOGY

This cross-sectional study was conducted in the Ophthalmology OPD of the UNAMID level III Hospital at Darfur, Sudan, after approval from the ethics committee of the hospital. This study included data of patients reporting in this very hospital from September 2013 to August 2014. Data was collected by non-consecutive convenient sampling technique. In eye OPD of this Level lll hospital, record of all the patients with eye diseases is maintained in a clinical record register. In this register, demographic detail, diagnosis and prescribed treatment of each patient is endorsed. In this study we retrospectively reviewed clinical records of patients by screening this clinical record register of Eye OPD. As could be imagined for a multinational deployment, patients were from different countries. Demo-graphic data including age, gender, ethnicity

and details of the disease were noted. The whole data was entered in SPSS-17 and then analysed. Descriptive statistics (frequency and percentage distribution) were used to describe the results. Frequency of different types of refractive errors in males and females was also determined.

RESULTS

A total of 504 patients reported to the eye OPD during the study period. Out of them, male patients were 278 (55.2%) and female patients were 226 (44.8%). It was found that number of patients varies in different parts of the year and varies from 16 in November 2013 to 92 in April 2014. Number of patients also varied as per their nationality as shown in the figure. Maximum

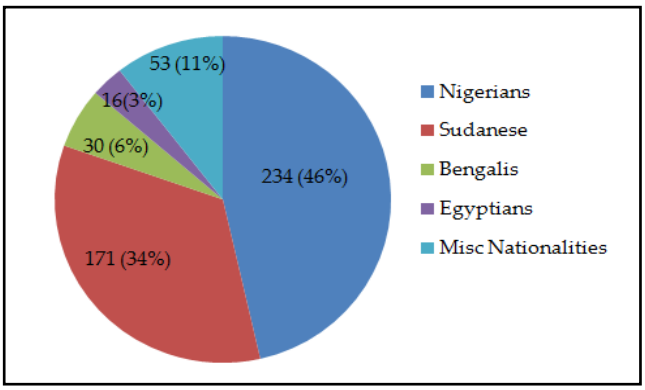

Figure: Nationality wise distribution of number of patients.

number of patients were from Nigeria i.e. 234 (46%) followed by Sudan i.e. 171 (34%). Patients from Bangladesh and Egypt constitute 30 (6%) and 16 (3%) of total study population. Whereas 53 (11%) patient were from different countries like Burkina Faso, China, Ethiopia, Gambia, Ghana, Jordan, Kenya, Namibia, Nepal, Pakistan, Rwanda, Senegal, United Republic of Tanzania, Yemen and Djibouti and these patients were grouped under the heading of "Miscellaneous".

The ocular diseases that presented to the eye department are outlined in the table-I. Refractive error in its various forms was the most frequently encountered eye disease (n=161). Amongst different types of refractive errors, myopia was found in 51 (31.7%), hypermetropia in 25 (15.5%) and presbyopia in 85 (52.8%) patients. These refractive errors were more prevalent in Nigerian patients 71 (44.1%) followed by Sudanese 48 (29.8%). Gender wise distribution of these refractive errors was also assessed and shown in the table-II. Refractive errors were more prevalent in males i.e. 102 out of 161 patients. After refractive errors, commonly seen diseases were blepharitis (13.7%), allergic conjunctivitis (13.3%), dry eyes (12.1%), pterygium (10.3%) and ocular trauma (3.7%). All cases of ocular injuries occurred during work or sports and were non-battle injuries. Miscellaneous diseases, constituting 18.7% of the total presentations, included eyelid disorders like chalazion and stye, watery eyes, cataract, glaucoma, corneal and retinal diseases.

Table-I: Frequency of ocular disorders presenting in eye department.

Type of Ocular Disorder	n (%)
Refractive errors	161 (31.9)
Pterygium	52 (10.3)
Blepharitis	69 (13.7)
Allergic conjunctivitis	67 (13.3)
Dry eyes	61 (12.1)
Miscellaneous	94 (18.7)

Table-II: Gender wise distribution of different types of refractive errors.

		Type of Refractive Error		
		Myopia	Hyper-metropia	Pres-byopia
Gender of patient	Male	35	11	56
	Female	16	14	29

DISCUSSION

United Nations Peacekeeping helps countries torn by conflict and creates conditions for a long lasting peace[6]. Peacekeeping has unique strengths including the ability to deploy and sustain troops and police from around the globe and integrating them with civilian peacekeepers. United Nation troops from different countries are deployed in a huge number in their respective mission areas. Ocular health in these military and paramilitary populations has important implications for their optimal job performance[7]. Previous ocular health surveys conducted in various military populations have reported a huge range in the prevalence of ophthalmic disorders of various kinds[8]. Existing literature on this subject is dominated by reports on refractive errors. However, other ocular disorders like colour vision defects, squint, glaucoma/ocular hypertension and ocular trauma have all been reported[8,9]. In this study, we explored the clinical record of the patients who reported in the eye OPD of this level 3 hospital over a year. The demographic data which shows a majority of males is unsurprising and reflects the preponderance of males in the population at risk. Majority of the patients were from Nigeria because during the study period Nigeria deployed three armed forces battalions throughout Darfur. Out of all ocular diseases, approximately one third were refractive errors, with presbyopia accounting for just over half of those

cases, followed by myopia and hypermetropia with frequencies of 31.7% and 15.5% respectively. These results are similar to the study of Olukorede *et al*. which was conducted in an Air Force Hospital in Nigeria[9]. Africans are also reported to have a younger age of onset as well as more severe presbyopia[10]. Conversely studies on military populations in Russia and in Singapore reported that myopia was the most common refractive error, accounting for 79% and 66% of cases, respectively[7]. Limitation of both of these studies was that these included only young males.The literature reveals similar studies conducted in military population in different places[8-12], and it is noteworthy that uncorrected refractive errors constitute an important ocular health problem across the globe due to its impact on quality of life and performance of a person at work. Two studies conducted on Poland army suggested that visual impairment and refractive errors were the most common ocular problems accounting for 13.2% of the examined population[11]. In another study, the frequently encountered ocular diseases seen in military personnel were uveitis, retinal detachment, infectious keratitis and choroidal neovascularization[13], which contrast with our observations. Environmental and racial factors may account for these differences[14-18].

Blepharitis and allergic conjunctivitis were noted in 13.7% and 13.3% of our study population which contrast with the result of Olukorede *et al*, who reported prevalence of these disorders upto 42% in the Nigerian Air Force[9]. Pterygium, a degenerative conjunctival disease, was also one of the leading causes of ocular morbidity with a prevalence of 10.3% in our study. In 12.1% of the patients, dryness of ocular surface was observed. Both these disorders are particularly prevalent in tropical and subtropical areas of the world with chronic ultraviolet light exposure attributed as a major cause[14]. Our experience on the pattern of ocular diseases among the military, paramilitary and civilian staff of UNAMID compares favourably with a study conducted in an army hospital in Nepal where conjunctival disorders and refractive errors were the most common ocular disorders among regular army personnel[15]. Only a small number of patients presented with glaucoma (3.4%) or cataract.

Strength of this study is that we categorized this study population based on their ethnicity and described frequencies of different ocular disorders.

RECOMMENDATIONS

Considering the high prevalence of refractive errors, this level lll hospital should acquirean optometrist as well as an optical laboratory to address the spectacle needs of patients. A thorough medical examination of all the troops should be performed prior to their deployment so that only medically fit soldiers arrive in the mission area which will increase overall performance of their respective units. Troops should be instructed to wearprotective glasses during maintenance work of weapons and motor vehicles. They should also wear Polaroid sunglasses while patrolling during a sunny day in order to avoid the harmful effects of ultraviolet radiation on ocular surface.

CONCLUSION

The leading causes of ocular morbidity in this study population were refractive error, allergic conjunctivitis and blepharitis.These ocular disorders were found mostly in Nigerian and Sudanese population. Hot dry weather of Darfur was a major contributory factor in causing ocular surface disorders.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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