

“Pattern of ocular morbidities among pilgrims attending religious mega festive event-‘Kumbh Mela 2019’ at Prayagraj, India”

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ABSTRACT

Background: Globally, ocular morbidities are one of the most underdiagnosed, underreported, and undertreated public health concern. Among estimated 39 billion blind in world, India shares major proportions, with majority of them living in rural population. In India, religious festivals like Kumbh Mela that involve mass gatherings are mainly attended by middle and elderly population who are usually susceptible to various ocular diseases. Therefore, we analyzed the data of our eye camp to document pattern and magnitude of ocular morbidities among pilgrims attending a mega religious festive event. **Methods:** In a cross-sectional, descriptive study, we included all those patients who participated in a mega eye camp “Netrakumbh” from January to March 2019 at Kumbh Mela, Prayagraj, India and were attended by voluntary ophthalmologist from All India Institute of Medical Sciences, Rishikesh. Presenting chief complaints and detailed history were collected from all participants. All patients underwent comprehensive eye examination including visual acuity, slit lamp biomicroscopic examination, tonometry, etc., Data were compiled and analyzed utilizing SPSS 22.0. **Results:** A total of 47142 eyes of 23571 persons of all age groups (range 5 years to 70 years) with approximate equal gender distribution attending the mega eye camp were examined. The most common ocular morbidity noticed after ocular examination was refractive error with underlying cause majorly as presbyopia, followed by cataract, after cataract, convergence insufficiency, lids, and adnexal disease, etc. **Conclusions:** This study highlights the changing pattern of common ocular morbidities presently among middle and elderly populations in developing countries like India.

Keywords: Netrakumbh, ocular morbidities, visual impairment

Introduction

Among developing nations especially Asian countries, ocular morbidities are one of the most underdiagnosed and untreated

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public health problems. Globally, the number of peoples who are visually impaired is estimated to be 285 million, out of which 39 million are blind and 246 million are with low vision.^[1] Out of the 39 million blind in the world, India shares almost one third (12 million) of blind persons with majority of them are living in rural population.^[2] As per national program for control of blindness the national health policy set to achieve the target prevalence of 0.3%

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by the year 2020.^[3] India is a land of festivals which involves mass gatherings. These religious mass gatherings are majorly attended by middle and elderly aged persons. Middle and elderly age groups are more susceptible to various ocular diseases namely presbyopia, refractive errors, cataract, age related macular degeneration, etc., which mostly persist underdiagnosed and untreated. There is major scarcity of population-based cross-sectional survey estimates throughout the world for pattern of ocular morbidities among pilgrims attending a mega religious festive event. Thus, this study was aimed to find out the current pattern and magnitude of ocular morbidities among 120 million Hindu devotees attending a mega festive event from all over the country and to provide timely diagnosis and management.

Subjects and Methods

A mega eye camp with a name “Netrakumbh” was organized catering screening, diagnostic, and therapeutic services from January to March 2019 (49 days duration) during “Kumbh Mela 2019” at Prayagraj. This Kumbh Mela is hosted after every 12 years and is the biggest religious congregation or mass gathering of people all over world. Information regarding the mega eye camp was circulated in the fair, city, and across the country by pamphlets, social media, newspapers, local and national media platforms. Local city transport services including buses and autos were engaged for transport of patients from railway stations, roadways bus stop, and other major sites to the camp site. Approximately, 400 voluntary ophthalmologists and 1000 optometrists from various institutions were invited for conducting the ophthalmological examinations. Each participating institution allotted separate ophthalmic units consisting all necessary equipment’s for comprehensive eye examination namely torch light, slit lamp, noncontact tonometer, refraction units, direct ophthalmoscope, indirect ophthalmoscope, medicines for dilated fundus examination, etc., At a time, at least 20 such units were made functional. Central registration area including waiting area with proper sitting arrangement of approximately 1000 patients was made. Patients were distributed randomly in equal numbers to various units with help of volunteers. Proper signages, staff dress codes, audio and visual aids were utilized for the ease of patients. A team of doctors from department of ophthalmology, All India Institute of Medical Sciences Rishikesh participated in screening and treatment of patients. Only those patients, who were attended by AIIMS, Rishikesh team were included in this study. Verbal and informed consent was taken from all patients. Chief presenting ocular complaints, history of present illness, significant past ocular and systemic history such as diabetes, hypertension along with familial history were enquired. All participants underwent external ocular examination along with detailed slit lamp examination of anterior and posterior segments. They were also examined for visual acuity, refraction, and intraocular pressure. Intraocular pressure was measured using noncontact tonometer. Central fundus in an undilated pupil was examined using direct ophthalmoscope. All those requiring refractive correction were prescribed and dispensed glasses. Fundus examination after dilating pupils was done using indirect ophthalmoscope wherever needed. Those patients requiring medical management were prescribed medications free of cost.

Those requiring detailed workup, specialty services, or surgeries were screened and referred to tertiary eye hospitals with tie-ups with proper referral slips. Help desks for the proper counseling of patients were made and utilized.

Results

A total of 47142 eyes of 23571 persons attending the mega eye camp were examined. Patients of all ages with approximate range of 5 years to 70 years with majority of persons in middle-elderly age groups visited. Approximately, equal number of males and female’s patients participated in the event.

The distribution of various ocular morbidities detected during the screening camp is given in detail in Table 1.

The most common ocular morbidity noticed after ocular examination was refractive error including presbyopia, followed by cataract and after-cataract, convergence insufficiency, lids, and adnexal disease, etc.

Patients with refractive errors including presbyopia were prescribed and dispensed spectacles free of cost. All types of spectacles including simple presbyopic, bifocals, compound glasses with rigid frames were available. Nearly, all commonly prescribed power range (-0.75DS to -12DS; -0.5DC to -4.0DC; +0.75DS to +12DS; +0.5DC to +4DC) were made available. Simple presbyopic spectacles were dispensed with waiting period of few hours, whereas other type of glasses on the next day.

For those conditions which require medical management alone, appropriate medicines were provided free of cost. All range of commonly prescribed systemic and topical medications including antibiotics, antiallergic, anti-inflammatory, antiglaucoma, immunosuppressive, etc., were made available.

Patients with cataract were given choice for cataract surgery at any of the participating institution as per their accessibility and affordability. Proper counselor was allotted for the same.

Table 1: Distribution of ocular morbidities among participants

Ocular morbidities	Frequency	Percentage
Refractive error including presbyopia	13746	58.30
Cataract and after cataract	5029	21.33
Convergence insufficiency	2075	8.80
Lids and adnexal diseases	660	2.80
Allergic and bacterial conjunctivitis	591	2.50
Pterygium	170	0.72
Severe dry eye	416	1.76
Corneal blindness	220	0.93
Squint	364	1.54
Glaucoma	96	0.40
Retinal diseases	204	0.86
Total	23571	100

Some notably participating institutions were All India Institute of Medical Sciences, Rishikesh; Sadguru Netra Chikitsalaya, Chitrakoot; King George Medical College, Lucknow; M.D Eye Hospital, Prayagraj; Shankar Netralaya, Chennai; Institute of Medical Sciences, Varanasi; Madhav Netralaya, Nagpur, etc.

Patients who require superspeciality services like glaucoma services, cornea services, retina services, oculoplasty services, and after-cataract services were screened and segregated. Proper referral forms consisting of patient name, reason for referral, nearby superspecialty referral center of choice with tie-ups were made available to the patients who required speciality services.

Patients who required minor interventions like epilation, foreign body removal, concretion removal, incision and drainage, syringing, etc., were treated at the camp site.

Discussion

Study participants were majorly the elderly pilgrims attending this huge religious gathering. A very interesting and surprising finding of this study was a very high number of cases of refractive error including presbyopia as the most common ocular morbidity, followed by cataract and after cataract. This is in concordance with common correctable causes of visual impairment noticed in developing countries like India and worldwide presently.^[4,5] Our study which was conducted over large number of participants has shown such an increased number of cases of refractive error including presbyopia in middle and elderly age groups. This highlights the changing pattern of ocular morbidities among middle and elderly from past era of cataract to the present era.^[6] Other possible reason for this high prevalence may be the provision of free spectacles during the study event.

This kind of study involving huge number of participants would help authorities in planning and making effective strategies to cater such a huge burden of ocular morbidities at mass gatherings. It also provides some data for better planning and improved implementation of national programs for control of ocular morbidities. Also, it hints toward epidemiological transition and changing pattern of ocular morbidities among middle and elderly in developing nations like India. Family physicians are usually the primary care providers among masses and this study may prove helpful in developing their better understanding about profile of burden of ocular morbidities in the country. This paper also documents visible epidemiological transitions which would help primary care physicians in targeted utilization of resources and better adoption of community-based preventive measures to reduce and avoid risks of ocular diseases and morbidities. It highlights the need to re-define the priorities for ocular care

services and also supports government of India's strategy to include services for ocular problems in expanded services plan at health and wellness centers under Ayushman Bharat scheme.

The major strength of this study is inclusion of large number of participants over such a short span of time. This study adds to the current evidence for changing pattern of ocular morbidities mainly among middle and elderly population. However, limitation of this study is under-reporting of prevalence of retinal diseases, glaucoma etc as such mega screening camp doesn't involve more sophisticated, expensive diagnostic modalities for the same.

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Conflicts of interest

There are no conflicts of interest.

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