

Original Research Article

A clinical profile of ocular morbidities at a rural health and training centre in Goa

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ABSTRACT

Background: Many studies have been conducted in the past to study the profile of ocular morbidities in rural areas in different States in India; however such a study was lacking in Goa.

Methods: A case series titled, "A clinical profile of ocular morbidities at a Rural Health and Training Centre in Goa", was conducted between January to March 2018, after Institutional ethical committee approval. The study population included 200 patients residing in households registered under the Rural Health and Training Centre (RHTC) located at Mandur, who attended the Ophthalmology speciality outreach clinic. After informed consent, patients were interviewed based on a pre-tested proforma. Socio-demographic details and history was obtained and a detailed ophthalmic examination was done.

Results: 47.5% were between 41-60 years of age, 49.5% used coal, wood or cow dung as fuel; 26.5% were illiterate or had completed primary schooling. 63% had no visual impairment, visual impairment grade 1 and 2 was present in 10% and 19.5% respectively. 7.5% were grouped as blind. 55% had refractive errors, 9.5% had corneal opacities, 33% cataract, 4.5% glaucoma, 7% optic atrophy, 7% retinal and macular involvement.

Conclusions: 55% of the participants had refractive errors, 9.5% had corneal opacities, 33% had cataract; 33% of whom were illiterates and 30% were those using coal, wood or cow dung as fuel, suggesting lower socio economic background. The high percentage of patients with corneal opacities and cataract was probably due to lower socio economic status, illiteracy and lack of awareness about ocular problems.

Keywords: Ocular morbidities, Rural, Goa

INTRODUCTION

Recent statistics show that there are 324 million visually impaired individuals in the world, with maximum burden of visual impairment being clustered in developing countries such as India.¹

India itself has 8 million blind, and 54 million visually impaired individuals, accounting for a quarter of the global burden.¹ This number has been increasing constantly because of population growth.

This burden is more so in the rural areas, as a result of socio demographic conditions such as poverty, illiteracy, lack of knowledge and awareness of the ocular condition and lack of health care facilities.

Blindness besides affecting the individual alone is a significant public health issue.

One of the most important causes of preventable blindness in India is uncorrected refractive errors, accounting for 19.7% of the individuals.²

The second most common is cataract. There are more than 6 million cataract surgeries performed every year; despite that, cataract happens to be a major cause of ocular morbidity in India.^{3,4}

This is followed by glaucoma (5.9%), corneal opacities and posterior segment pathologies.^{3,5}

There have been many studies done in the past to study the profile of ocular morbidities in rural areas in many States in India; however such a study was lacking in Goa. Hence the current study was undertaken to study the pattern of ocular morbidities in a rural area of Goa.

The objectives of the study were as follows-

1. To study clinical profile of ocular morbidities in a rural population.
2. To identify the socio cultural and demographic factors associated with the ocular morbidities.

METHODS

A case series titled, "A clinical profile of ocular morbidities at a Rural Health and Training Centre in Goa", was conducted between January 2018 to March 2018. Approval from the institutional ethical committee was duly obtained.

The study population included all patients irrespective of their age group, and residing in the households that are registered under the Rural Health and Training Centre (RHTC), who attended Ophthalmology speciality outreach clinic at the RHTC located at Mandur.

The clinic is held regularly, once weekly every Monday and the speciality services of Ophthalmology are provided by one senior resident and one junior resident deputed from the Department of Ophthalmology Goa Medical College.

Informed consent was taken, and patients interviewed based on a pre tested pre designed proforma, where socio-demographic details were entered.

History was obtained regarding any ocular complaints, and a detailed ophthalmic examination was done which included a detailed torch light examination, assessment of visual acuity using Snellen's distance vision chart and Times New Roman near vision chart, tonometry using Schiottz tonometer, and fundus examination using direct ophthalmoscope.

26 patients were called to Ophthalmology clinic at Goa Medical College and Hospital for further evaluation, which included slit lamp examination, indirect Ophthalmoscopy and B-scan.

Data entry was done using Microsoft Excel 2010 version and statistical analysis included percentages and proportions.

RESULTS

A total of 200 consecutive patients were studied. Socio demographic data studied included, age distribution, sex distribution, type of fuel used, and level of education; and has been depicted in Table 1-3.

Table 1: Age distribution of the study participants.

Age group (years)	Number of patients	Percentage (%)
1-20	12	6
21-40	36	18
41-60	95	47.5
61-80	56	28
More than 80	1	0.5
total	200	100

Table 2: Visual impairment among study participants.

Categories of visual impairment	Vision	Number of patients	Percentage (%)
No visual impairment	>6/18	126	63
Visual impairment			
Category 1	6/18-6/60	20	10
Category 2	6/60-3/60	39	19.5
Blindness			
Category 3	3/60-1/60	10	5
Category 4	1/60-PL	5	2.5
Total		200	100

Table 3: Distribution of ocular morbidities among the study participants.

Ocular morbidities	Number of patients	Percentage (%)
Corneal opacities	19	9.5
Cataract	66	33
Aphakia	4	2
Refractive errors		
Myopia	40	20
Hypermetropia	60	30
Astigmatism	30	15
Presbyopia	158	79
Glaucoma	15	7.5
Optic atrophy	14	7
Retinal and macular conditions	14	7

Age distribution: majority of the participants (47.5%) belonged to the age group between 41-60 years, while the least (0.5%) were those aged more than 80 years.

Sex distribution: 55% of the participants were females, while 45% were males.

Fuel usage: majority (49.5%) of the participants used coal, wood or cow dung as fuel, 31.5% used L.P.G, where as 19% used both.

Level of education: majority of the participants (26.5%) were either illiterate or had completed primary school education. only a minority of 0.5% had completed post-graduation or were professionals.

Visual acuity: the participants studied were grouped into; no visual impairment (63%), visual impairment 1(10%), 2 (19.5%) or blindness 3 (5%), 4 (2.5%) based on WHO classification of low vision.¹

Out of the 200 patients that were studied, 110 patients (55%) had refractive errors. In some cases more than one type of refractive error was noted.

Majority of the participants (30%) had hypermetropia, followed by myopia (20%) and astigmatism (15%). Individuals aged more than 40 years often had presbyopia (79%).

Corneal opacity: 19 patients (9.5%) had corneal opacities; out of which 7.5% had unilateral involvement and 2% had bilateral involvement.

The commonest causes were trauma, infectious keratitis, corneal degenerations and dystrophies.

Cataract: 33% patients had cataract; out of which 25% had bilateral cataract, and 8% had unilateral cataract.

The highest rates of cataract were among elderly individuals, those from lower social classes, using coal wood and dung as fuel, illiterates.

Younger individuals who presented with cataracts were those following trauma, or other complicated cataracts following uveitis, or keratitis.

Glaucoma: 9 patients (4.5%) that were studied were found to have glaucoma. 8 patients were aged more than 40 years. one patient aged 24 years was found to have angle recession glaucoma following blunt ocular trauma.

Optic atrophy: 7% patients had optic atrophy due to causes other than glaucoma, and included those with traumatic, nutritional, or hereditary optic neuropathy, or those following optic neuritis.

Retinal and macular diseases: 7% patients presented with retinal and macular diseases such as, retinal detachment,

diabetic retinopathy, age related or hereditary macular degeneration.

DISCUSSION

Myopia was noted in 20% of the participants. This was similar to a study conducted by Raju et al in rural areas in Tamil Nadu (26.99%), and by Dandona et al in Andhra Pradesh (31%), but higher than that found by Haq, Khan et al in a study conducted in rural population of Aligarh (11.5%).⁶⁻⁸

Hypermetropia was found in 30% of the study participants. This was higher than that found in many such similar studies such as Raju et al in a study in Tamil Nadu (18.70%), Dandona et al in a study done in Andhra Pradesh (17.9%), and Haq, Khan et al in a similar study done in Aligarh (9.8%).⁶⁻⁸

Hypermetropia was found to increase with age, up to 60 years, similar to a study by Raju et al.⁶

The difference in the percentage of patients with hypermetropia as compared to the other studies could probably be because of higher number of study participants less than 60 years.

15% participants presented with astigmatism, and were comparable to 12.94% as reported by Dandona et al in Andhra Pradesh.⁷

Corneal opacities were noted in 9.5% of the participants; which is higher than 2.99% as found by Singh et al in elderly population in Central India, and Haq, Khan et al in Aligarh (4.2%).^{8,9}

33% of the participants were found to have cataract; which is comparable to 27.7% in a study by Soundarssanane et al in Pondicherry, and 40.4% in Central India in a study by Singh et al.^{9,10}

33% of the patients who had cataract were illiterates and 30% were those using coal, wood or cow dung as fuel, suggesting lower socio economic background. Similar results were found by Haq, Khan et al, where 32.8% were illiterates and 24.9% belonged to low socio economic background.⁸

The high percentage of patients with corneal opacities and cataract is probably due to lower socio economic status, illiteracy and lack of awareness about ocular problems.

The lower socio economic status is evident from the 49.5% participants using coal, wood or cow dung as fuel, and 26.5% illiterate participants.

4.5% of the patients presented with glaucoma; and this was similar to that found in many similar studies

conducted in rural areas in India; Awasthi et al (4.2%), Jain and Modi (4.8%), Singh, Murthy et al (3.1%).^{9,11,12}

CONCLUSION

Refractive errors were noted in 55% of the participants; while 9.5% had corneal opacities, 33% had cataract; 33% of whom were illiterates and 30% were those using coal, wood or cow dung as fuel, suggesting lower socio economic background and poverty. The high percentage of patients with corneal opacities and cataract was probably due to lower socio economic status, illiteracy, lack of awareness about ocular problems, and lack of access to health care facilities.

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