

## Spectrum of medical and surgical patients in ophthalmology department of a Government medical college in Bankura district of West Bengal – A retrospective review

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### Abstract

**Purpose:** the aim of the study was to determine the pattern of ocular morbidity and to assess various types of surgeries performed for various ophthalmic condition in a comprehensive eye set up in rural population of southern part of west Bengal.

**Materials and Methods:** A retrospective study involving all the cases presenting to eye department of BSMCH, Bankura from 1<sup>st</sup> July 2018 to 30<sup>th</sup> June 2019. Patients were evaluated and treated by medical management or surgery as indicated.

**Results:** A total of 108628 patients were evaluated and treated. Refractive error is the most common condition followed by cataract (15.68%) however only 5.31% patients were operated because of low turn over due to lack of awareness about ocular health. Conjunctivitis is the 3<sup>rd</sup> most common manifestation managed conservatively. In retina clinic diabetic retinopathy and vein occlusion are the leading causes of ocular morbidity.

**Conclusion:** The pattern of eye diseases observed rural population of southern part of west Bengal is similar to other studies conducted in other parts of developing world which helps in better understanding, planning, management and prevention of blindness and ocular morbidity.

**Keywords:** Ocular morbidity, Blindness, Low vision.

### Introduction

Sense of sight is supreme among all the sense provided by god to human beings. World wide approximately about 285 million of people are visually impaired, 90% of whom live in developing countries like India. 80% of blindness and 85% of moderate or severe visual impairment is avoidable by prevention, treatment or cure.<sup>1</sup> As per WHO, in India by the year 2020 around 1.37% population, i.e around 18 million people will have blindness or low vision.<sup>2</sup>

Over the last few years, the health standard of people of rural areas of India has improved but visual health has been lagging and often neglected by both people themselves and by the government. Undiagnosed ocular morbidity hampers the quality of life and economic productivity significantly. Although vision 2020 programme has reduced avoidable blindness nationally but its effect are not felt in rural areas due to lack of infrastructure and lack of public awareness. Moreover the pattern of ocular morbidity is changing rapidly in last few decades. Very few studies have been done to evaluate the prevalence and distribution of ocular morbidities in rural population in West Bengal. Moreover functioning of a tertiary hospital may be reviewed from the retrospective evaluation of both OPD, IPD and number of different surgeries or procedures performed so that a proper data may be obtained about actual causes of ocular condition and thus proper planning may be done for reducing the burden in coming years.

### Aims and Objectives

1. To determine the pattern of ocular morbidity in rural population of southern part of West Bengal.
2. To evaluate the treatment and intervention received by the population.

3. To assess various types of surgeries performed for various ophthalmic condition in this comprehensive eye set up.

### Description of ophthalmology department

Bankura is one of the most underdeveloped area in West Bengal. A government medical college in this area serves around 100 square KM area including people from near by districts and states. The department of ophthalmology in this medical college has 1 professor, 2 associate professors, 2 assistant professors and 2 senior residents, posted by government of West Bengal. All the faculty members are trained in cataract surgery, 1 faculty member is pediatric ophthalmologist, 1 is trained in medical retina, 1 is trained in oculoplastic, 1 is trained for glaucoma.

Instrumentation list – in the department we have 2 slit lamps, 1 non contact tonometer, 1 autorefractometer, 2 a scan machines, 1 manual keratometer, 1 YAG LASER along with slit lamp, 1 oct machine, 2 operating microscopes, 1 OCT machine, 1 green LASER machine, 1 indirect ophthalmoscope, 3 autoclave machines and 2 direct ophthalmoscopes, 1 - 4 mirror gonioscope, 1 - 90 D lens, 1 - 78 D lens, 1 humphrey visual field analyser are available.

The opd working hours are from 9 am to 2 pm on working days. In the indoor there are 30 beds (15 each for males and females).

### Daily routine

The day starts with a morning round by the faculty members and then the patients are evaluated post operatively, preoperative patients are evaluated by the operating surgeon for the final time and patients admitted for conservative management are assessed.

All the faculty members go to the seminar room for discussion on a given topic for the day after presentation by any one of them, on Tuesday Thursday and Saturday of every week.

On Monday school health programme is organized in which 1 faculty member along with optometrists goes to different schools of the districts.

On Wednesday handicap and disability board functions in which 1 faculty member is appointed to evaluate and categories the patients with ocular morbidities. A record of causes of ocular morbidity like corneal opacity, retinitis pigmentosa, optic atrophy, amblyopia, microphthalmous etc is maintained.

On Friday performance review meeting is held.

All the faculties are posted in 2 units. Unit 1 have admission day on Monday Wednesday and Friday and unit 2 have admission day on Tuesday Thursday and Saturday. The patients which are being admitted on a given day are planned for operation on the next day and are evaluated postoperatively after 24 hours.

### Opd clinics

Paediatrics and neurophthalmology clinic is held on Monday, medical retina and ROP clinic on Wednesday, Oculoplasty clinic on Friday. Everyday comprehensive ophthalmology evaluation is done.

Operation theatre for planned and routine surgery is from 9.00 am onwards on working days and emergency operation are done through out the day everyday.

Surgeries performed in planned / routine OT

1. Small incision cataract surgery,
2. phacoemulsification,
3. Intraocular lens exchange and iol implantation for iol opacification
4. Secondary iol implantation with anterior vitrectomy for aphakia correction
5. Phacoemulsification with anterior vitrectomy for congenital cataract,
6. Trabeculectomy,
7. Pterygium excision with conjunctival autografting,

**Table 1:** Sex distribution

Sex	New	Follow up	Total
Male	44185(40.67%)	12096(11.14%)	56281(51.81%)
Female	41262(37.98%)	11085(10.21%)	52347(48.19%)

**Table 2:** Age distribution

Age in years	Number of males	Number of females	Total and percentage
Below 5 years	9154	7241	163959(15.09%)
5-20 years	7438	9788	17226(15.86%)
21-35 years	6177	6521	12698(11.69%)
36-50 years	12651	10214	22865(21.05%)
51-65 years	13009	11433	24442(22.50%)
Above 65 years	7852	7150	15002(13.81%)
Total and percentage	56281(51.81%)	52347(48.19%)	108628(100%)

Distribution of patients as per different category  
49577(45.64%) patients suffered from refractive errors

8. Incision and curettege of chalazion,
9. Dacryocystectomy,
10. Dacryocystorhinostomy,
11. Ectropion and entropion correction
12. Resection and recession of recti for squint surgery.
13. Intravitreal injections of anti VEGF
14. Intravitreal injections of antibiotics and steroids
15. Enucleation and evisceration
16. Ptosis correction
17. Lid mass with lid reconstruction

### Materials and Methods

This is a retrospective analytical study conducted from 1<sup>st</sup> July 2018 to 30<sup>th</sup> June 2019 in department of ophthalmology, BSMCH, Bankura. All the patients attended the ophthalmology OPD were included in this study irrespective of age. Patients were first attended by optometrists and visual assessment by age appropriate method was done. The patient was next attended by ophthalmologist and tested for ocular movements and pupil examination was done with torch light, anterior segment was examined by slit lamp. Intraocular pressure was evaluated by non-contact tonometer or applanation tonometer. Dilated fundus examination was done using 90 D and 20 D lenses.

After assessment, the patients were prescribed glasses, medications or surgery / intervention as required. Patients needing further investigations like OCT, USG B SCAN, VEP, Visual Field Analysis were advised. A proper OPD, IPD, and OT documentation is done and the data in this study is collected from the above mentioned documents with required permission from the college authority.

### Observation and Results

Total number of patients attended in the opd over a period of 12 months are 108628 out of which 56281(51.81%) are males and 52347(48.19%) are females. 23181(21.34%) patients attended the opd for follow up out of which 12096 are males and 11085 are females.

**Table 3:** Distribution of refractive errors

Refractive error	Male	Female	Total
Myopia	7321(14.77%)	5149(10.38%)	12470(25.15%)
Hypermetropia	4506(9.08%)	3500(7.05%)	8006(16.13%)
Astigmatism	5997(12.1%)	5231(10.55%)	11228(22.65%)
Presbyopia	9691(19.55%)	8182(16.50%)	17873(36.05%)

24844(22.87%) patients were having some general ophthalmology diseases

**Table 4:** Distribution of general ocular conditions

Disease	Male	Female	Total
Conjunctivitis	7477(30.1%)	6543(26.33%)	14020(56.43%)
Keratitis	753(3.03%)	567(2.28%)	1320(5.31%)
Corneal ulcer	598(2.40%)	411(1.65%)	1009(4.05%)
Uveitis	477(1.91%)	691(2.78%)	1168(4.69%)
Hordeolum	113(0.45%)	197(0.79%)	310(1.24%)
Blepharitis	216(0.87%)	311(1.25%)	527(2.12%)
Other disorders	3190(12.84%)	3300(13.28%)	6490(26.12%)

17037 (15.68%) patients were screened with cataract

4554(4.19%) patients were diagnosed with retinal disorders

**Table 5:** Distribution of retinal disorders

Retinal disorders	Male	Female	Total
Diabetic retinopathy	503(11.05%)	417(9.16%)	920(20.21%)
Retinal vein occlusion	198(4.35%)	179(3.93%)	377(8.28%)
Macular edema	190(4.17%)	151(3.31%)	341(7.48%)
Retinal detachment	234(5.14%)	173(3.8%)	407(8.94%)
Armd and maculopathies	575(12.62%)	311(6.83%)	886(19.45%)
Others	1016(22.31%)	607(13.32%)	1623(35.63%)

6831(6.29%) patients were diagnosed as cases of glaucoma

1519(1.40%) patients were treated for paediatric and neuro ophthalmology disorders

2489(2.29%) patients were having oculoplasty related disorders

1005(0.92%) patients were referred from other departments

772 (0.71%) patients were screened for ROP

#### Distribution of admitted/operated patients

5769 (5.31%) patients were admitted for cataract surgery.

585(0.54%) patients were admitted for oculoplasty.

534(0.49%) patients were admitted for accidental cases or emergency.

211(0.19%) cases were admitted for general ophthalmology evaluation and management.

96(0.09%) patients were admitted for paediatric and neuro ophthalmology intervention.

77(0.07%) patients were admitted for glaucoma.

#### Discussion

This study shows a marginal male preponderance. This is in correlation to other studies as females in rural areas are often neglected and less educated about ocular health.<sup>3</sup> More adults (>35 years) had eye diseases than children and younger patients. This trend was observed in other studies conducted by Lakho et al<sup>4</sup> and Ajaiyeoba A.I et al.<sup>5</sup> This trend is noted probably due to inability of children to express and lack of eye health awareness among parents.<sup>6</sup> Thus it results in late presentation to ophthalmologists. This study area has dry dusty and hot climate thus allergic

conjunctivitis, pterygium, dry eyes are more common. This is in correlation with studies conducted in other similar environment.<sup>7-9</sup>

Uncorrected refractive errors and presbyopia are one of the most common cause of ocular morbidity and had impact on quality of life and leads to poor educational and socioeconomic outcomes.<sup>10,11</sup> In our study presbyopia is most common ocular condition followed closely by myopia and hypermetropia. This is in correlation with studies conducted by Balarabe et al.<sup>11</sup>

In this study cataract was the second most common (15.68%) cause of ocular morbidity. cataract was most common among people >55 years of age. This is in correlation with studies conducted by Puri D S et al,<sup>12</sup> Sehgal RK et al,<sup>13</sup> Kanodia P,<sup>14</sup> Haq I et al<sup>15</sup> but only 5.31% patients were operated for cataract. This may be due to some patients might have undergone cataract surgery at other places, or may be some patients neglected the condition and may not have turned up for cataract surgery. This data shows less orientation and awareness among people about ocular health.

Among retinal diseases, diabetic retinopathy and maculopathies were the leading causes of ocular morbidity

in retina clinic which were managed either conservatively or by injecting anti VEGF or laser retinopexy procedures. This is in correlation with Onakpoya O H et al<sup>16</sup> and Reddy S et al.<sup>17</sup> The cases which needed vitreo retina surgery (Retinal Detachment, Vitreous Hemorrhage, Macular Hole) were referred to regional institute of Kolkata for further management.

Among oculoplasty cases most of the cases operated were for chronic dacryocystitis either by dacryocystectomy or dacryocystorhinostomy depending on indications. Ectropion and entropion cases came as second most common.

In glaucoma clinic most of the patients were managed by medications. The patients not responding to medications were treated either by laser iridotomy or trabeculoplasty.

In paediatric and neuro ophthalmology clinic most of the patients were of ocular movement and alignment disorders. Cases of squints were treated with resection and recession of recti muscles after thorough evaluation to rule out chances of post operative diplopia. Congenital cataract were operated under general anaesthesia by phacoemulsification.

### Conclusion

The pattern of diseases observed in this study are similar to studies from other part of the developing world this study helps in understanding the epidemiology of various ocular diseases and thus helping in proper planning and management of a hospital so that proper programmes can be put in place to minimise the burden of ocular morbidity.

### Source of funding

None.

### Conflict of interest

None.

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