Pattern of eye diseases in a tertiary hospital in a suburban area: A retrospective study
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Abstract
This is a retrospective study carried out in ophthalmology department of International Medical College & Hospital, Gushlia, Tongi, Gazipur for the period of one year from 1st July 2005 to 30th June 2006. Among one thousand seven hundred fifty (n=1750) human subject those who were attended to eye out patient department. This study was carried out to assess the epidemiology of ophthalmology patient served by International Medical College & Hospital (tertiary hospital) in a suburban industrial area. In this retrospective study, total sample size was 1750. Among them male were 52% and female were 48%. The conjunctivitis were 21.94%, cataract 9.2%, refractory error 15.2%, headache 11.09%, dacryocystitis 6.51% and blepharitis 3.2%.

Introduction
Ophthalmology is one of the important specialty in Medicare services. Ophthalmology unfortunately lags behind in this field of quality of life assessment even though our discipline and the organ with which we deal have a major impact on quality of life. This includes a sense of well-being and other considerations, including whether people feel a burden to their families, have trouble getting up in the morning or performing daily duties. It is a common problem in both rural & urban areas. Also equally spread over developed and under developed countries.

In the urban areas most of the patients can get medicare services in ophthalmology from attending the government hospital and private clinic. As the people in the city or commercial places are rich, educated and affluent. Frequency of disease manifestation varies from place to place. So they can take the service either from government hospital or private clinic by their spending money.

In the suburban industrial area resident are mostly workers and they are very poorly paid in our country. Most of the people are poor, landless, day labourer and they cannot afford to pay medicare expenses available in the private sector. These poor people usually attend government and non-government charitable hospital and clinic where ophthalmologic medicare services are very insufficient and inadequate both in respect of equipment and manpower.

This is a retrospective study and the data taken from a newly established private tertiary hospital situated in a suburban industrial area.

This study is conducted to find out the need of equipments and manpower in this newly established tertiary medicare hospital.

Material and methods
One thousand seven hundred fifty (n=1750) cases were attended in both OPD & indoor of ophthalmology department of this tertiary hospital from 1st July 2005 to 30th June 2006. Among one thousand seven hundred fifty human subject those who were attended to eye out patient department.
hospital. All the cases were in OPD & in eye department in International Medical College Hospital from 1st July 2005 to 30th June 2006. Patient attending eye OPD get registration, they are examined by the Medical Officer or Assistant Register by taking history, clinical examination. An anterior segment examination with a torch light and loup were carried out and the posterior segment was examined with a direct ophthalmoscope, initially without pupil dilatation. Suspected cases like amblyopia, uveitis, cataract and squint etc were examined with pupil dilatation.

Von Graefe once said Amblyopia is a condition in which observer sees nothing in the eye and the patient very little the importance of amblyopia lies in the number of life years of blindness and the very little comparative cost requirement to detect, evaluate and manage it.

Following investigations like sac patency test, measurement of intraocular pressure by Schietz Tonometer, visual acuity test, biochemistry, serology, culture, biopsy, direct ophthalmoscopy, as per need of clinical diagnosis. Final opinions were given by the Associate Professor of ophthalmology working in the department. As per need cases were followed up on weekly basis up to 4 weeks. Few cases were admitted as per need of the condition of the patient.

Also a few cases were referred to other specialized ophthalmologic unit for better management, due to lack of specialized manpower and equipment in this hospital. The cases who failed to attend the follow up as per schedule were excluded from this study. Most of the cases were diagnosed by taking good history and physical examination.

Most of patients were very poor and could not afford to pay for any investigation. To establish the diagnosis and treatment some of cases were investigated without hospital fees. Surveillance and evaluation of the progress of the work at all levels were strictly followed and taken into consideration with utmost importance. Numerical data were obtained from records of the OPD and indoor register.

Several large epidemiological studies have determined that low socio economic status is related to increased disease morbidity and mortality. So economic status were obtained by asking direct question to the patient & the patient guardian in case of children.

Questions were as follows-
- a. Sources of income.
- b. Monthly income & expenses.
- c. Number of depended member of the family.
- d. Number of members were incoming in the family.
- e. Status of the dwelling like kacha, packa, and in slum areas or affluent areas.

Taking above history patient are economically divided in three groups, poor, middle class and affluent.

**Aim of study**
1. To find out the annual attendance of ophthalmology department of this suburban industrial area.
2. To find out the diseases pattern of attendants in the ophthalmology unit of this tertiary hospital.
3. With the result, recommendations can be made to the hospital authority for improvement of this unit in respect of manpower and equipments.
4. With this study it can be found out how much helpful of a tertiary hospital in a suburban industrial areas. The study intends to evaluate the optimal outcomes for the patients in terms of visual function and quality of life.

**Results**
1. Total number of patients: 1750 (n=1750).
2. OPD and indoor: OPD =1606 (91.77%), Indoor = 144 (8.23%).
3. Male and female: Male = 911 (52%) and Female = 848 (48%).
4. Age distribution: Table-II.
5. Economical status: Poor-1178 (67%), middle class - 449 (25.5%), Affluent-132 (7.5%).
6. Following data as per diseases pattern: Table-I.
7. Following tests were done almost in each or every patient-
   a. Snellen's chart test.
   b. Slit lamp examination.
   c. External examination of the eye by well illuminating torch.
   d. IOP measure by Schiotz Tonometer.
   e. Ophthalmoscopic examination.
   f. Retinoscopic examination.
8. Operative microscope, indirect ophthalmoscope were on processing of procurement.
10. One Medical Officer & one Assistant Registrar, one Registrar and one Associate Professor were involved.
11. From this study it is evident that at least one part time if not full time posterior segment surgeon is essential.

Causes of blindness in India (NPCB-WHO survey 1986-1989) Glaucoma-1.70%⁸. Age related cataract, the world's leading cause of blindness⁹. Glaucoma is an optic neuropathy with characteristic appearances of the optic disc and specific pattern of visual field defects that is associated frequently but not invariably with raised IOP¹⁰. It accounts for 10% of all blindness in the world. In Bangladesh glaucoma is a major cause of blindness. According to the report Glaucoma Prevalence Survey 1993, conducted by Bangladesh Eye Care Society, the incidence of glaucoma was 2.8% in the population above 35 years of age. Glaucoma is the 3rd common cause of blindness after cataract and corneal disease in Bangladesh¹¹.

### Table I: Individual diseases pattern (n=1750)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Diagnosis</th>
<th>No of patient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conjunctivitis</td>
<td>384</td>
<td>21.94</td>
</tr>
<tr>
<td>2</td>
<td>Cataract</td>
<td>161</td>
<td>9.20</td>
</tr>
<tr>
<td>3</td>
<td>Refractive error</td>
<td>266</td>
<td>15.20</td>
</tr>
<tr>
<td>4</td>
<td>Headache</td>
<td>194</td>
<td>11.09</td>
</tr>
<tr>
<td>5</td>
<td>Dacryocystitis</td>
<td>114</td>
<td>6.51</td>
</tr>
<tr>
<td>6</td>
<td>Pterygium</td>
<td>66</td>
<td>3.77</td>
</tr>
<tr>
<td>7</td>
<td>Epohora</td>
<td>58</td>
<td>3.31</td>
</tr>
<tr>
<td>8</td>
<td>Chalazion</td>
<td>55</td>
<td>3.14</td>
</tr>
<tr>
<td>9</td>
<td>Presbyopia</td>
<td>66</td>
<td>3.77</td>
</tr>
<tr>
<td>10</td>
<td>Traumatic injury*</td>
<td>52</td>
<td>2.97</td>
</tr>
<tr>
<td>11</td>
<td>Foreign body</td>
<td>43</td>
<td>2.46</td>
</tr>
<tr>
<td>12</td>
<td>Blepharitis</td>
<td>56</td>
<td>3.20</td>
</tr>
<tr>
<td>13</td>
<td>Corneal ulcer</td>
<td>21</td>
<td>1.20</td>
</tr>
<tr>
<td>14</td>
<td>Stye</td>
<td>22</td>
<td>1.26</td>
</tr>
<tr>
<td>15</td>
<td>Viral keratitis</td>
<td>21</td>
<td>1.20</td>
</tr>
<tr>
<td>16</td>
<td>Sub Conjunctival Hemorrhage</td>
<td>17</td>
<td>0.97</td>
</tr>
<tr>
<td>17</td>
<td>Epscleritis</td>
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<tr>
<td>18</td>
<td>Pinguecula</td>
<td>10</td>
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<tr>
<td>19</td>
<td>Pseudophakia</td>
<td>14</td>
<td>0.80</td>
</tr>
<tr>
<td>20</td>
<td>Cellulitis</td>
<td>5</td>
<td>0.29</td>
</tr>
<tr>
<td>21</td>
<td>Nightblindness**</td>
<td>21</td>
<td>1.20</td>
</tr>
<tr>
<td>22</td>
<td>Glaucoma</td>
<td>34</td>
<td>1.94</td>
</tr>
<tr>
<td>23</td>
<td>Uveitis</td>
<td>15</td>
<td>0.86</td>
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<tr>
<td>24</td>
<td>Squint</td>
<td>12</td>
<td>0.69</td>
</tr>
<tr>
<td>25</td>
<td>Lacrimal Abscess</td>
<td>9</td>
<td>0.51</td>
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<tr>
<td>26</td>
<td>Diabetic Retinopathy</td>
<td>13</td>
<td>0.75</td>
</tr>
<tr>
<td>27</td>
<td>Retinal Detachment</td>
<td>6</td>
<td>0.34</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1750</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

* Traumatic injury includes- Lime burn, acid burn etc.
** Nightblindness includes - Xerophthalmia, Retinitis pigmentosa etc.

### Discussion

This is semi urban industrial area just outskirts of the capital city. It is evident from the analytical study that most of the patients are poor, age, sex, economic pattern are shown in the result sheet. As this area is semi urban industrial area, there is scope of further growth of industry with improvement of economy and wealth pattern may be changed. Diseases pattern study could not be found in literature search out so this study could not be compared. But there are some common infectious diseases of eye, such as blepharitis, stye, chalazion (meibomian cyst), herpes zoster ophthalmicus, chronic dacryocystitis, simple acute conjunctivitis, purulent keratitis (ulceration of cornea), anterior uveitis, purulent conjunctivitis, ophthalmia neonatorum¹². Herpes simplex virus keratitis (HSV) is one of the main causes of...
infectious corneal opacification and infection-related visual loss and is a leading indication for penetrating keratoplasty. The prevalence of HSVK in the United States is about 50,000 cases, which also includes 28,000 cases of reactivation; and an annual estimated incidence of 20,000 newly diagnosed cases per year. HSV is DNA virus with two serotypes, HSV-1 and HSV-2 that belongs to the Herpes Virus family. HSV-1 is the more prevalent of the two and is primarily transmitted by a symptomatic shedding of virus through saliva. Local host factors are responsible for the frequency of recurrence of HSV-1 and HSV-2 in the facial and genital area. With this study it has been already recommended to the management authority for equipments and increase in manpower especially for ophthalmology department. After this study management has already procured operative microscope.

Conclusion
On this study pattern of eye diseases in this suburban area, among them conjunctivitis, cataract, refractory error, headache, blepharitis and glaucoma were predominant. The patient diagnosed like diabetic retinopathy, retinal detachment, lime burn are referred to centers for proper treatment with right instrument and expertise.

This type of study is helpful to have idea about the epidemiology of any type of diseases in area served by the hospital. This helps in planning & management of a hospital.

Early detection of diseases such as cataract & glaucoma in this population will reduce the burden of blindness in Bangladesh.

The area is already an industrial area with growth of garments industry and there is further scope of growth of this & other industry in this area, which may open further awareness for expansion & growth of the ophthalmological department.

Acknowledgement
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Reference
3. Sheikh SP. et al. To assess the prevalence and pattern of eye diseases in children aged 5-15 years Department of ophthalmology, Jinnah Postgraduate Medical Centre, Karachi, Pakistan. PMID: 12917161.