



Original Article

Profile of Ocular Surgery in A Tertiary Eye Hospital in Southern Region of Bangladesh

Islam MA¹, Siddique MAB², Iqbal SS³, Azad MAK⁴, Siraj MS⁵, Ahmmmed S⁶

Abstract

Background: Vision is a very important sense for human life which is directly related with education, performance of work and quality of life. A large number of ocular lesions are preventable but due to ignorance and carelessness, they may cause impairment of vision or even blindness. Management of most of avoidable blindness is surgery. Ocular surgery is an art where sterility is an essential part. **Objective:** To study the profile of ocular surgery in Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute (SFMEHTI), Gopalganj; a tertiary level eye hospital in southern region of Bangladesh. **Methods:** Prospective observational study was conducted from 1st January 2019 to 31st December 2019 at Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute (SFMEHTI), Gopalganj. A total of 12,236 patients irrespective of age and sex were admitted in our hospital for surgery; out of these 12,052 (98.5%) were gone through routine surgical procedure and rest 184 (1.5%) was for emergency surgery. For routine surgery all the patients were evaluated including their relevant investigations with trained ophthalmologist and allowed as fit for surgery. All the routine surgery was done by well-trained ophthalmologist, whereas most of emergency surgeries were done by young ophthalmologist. Patients in age of 0 to 100+ years were included in the study. Data on age at presentation, sex and diagnosis and surgery done were collected from operation theatre (OT) and analyzed. Patients were grouped into three age groups (0-25 years, 26-50 years and 50+ years) and grouped in terms of surgery was done. **Results:** Among 12,236 patients operated, the most common group was 50+ years 10,341 (84.5%). Female patients were little more 6,342 (51.83%) than male. Cataract surgery was done in 9,740 (79.6%) patients. The most common procedure was phacoemulsification (PE) with posterior chamber intraocular lens (PCIOL) 5,047 (41.25%) followed by small incision cataract surgery (SICS) with posterior chamber intraocular lens (PCIOL) implantation, operated in 4,693 (38.35%) eyes, dacryo-cysto-rhinostomy (DCR) & dacrocystectomy (DCT) 1,673 (13.67%) eyes, pterygium excision with or without auto graft in 595 (4.86%) eyes and curettage of chalazion in 44 (0.35%) patients as routine surgery. Removal of deeply impacted corneal foreign body was done in 16 (0.13%) patients as emergency basis. Rest 168 (1.37%) cases were gone through injury repair (cornea, lid, sclera and conjunctiva), abscess drain (lacrimonasal and lid), anterior chamber wash for (cortical matter and blood), intra ocular lens (IOL) reposition, wound reconstruction and reposition or excision of iris also as emergency basis. **Conclusion:** About 10,000 cataract surgery (PE & SICS) was done in 2019, which is 80% of total surgery done in this hospital. Phacoemulsification (PE) was the leading surgery (41.25%) followed by small incision cataract surgery (SICS) for cataract.

Key words: Blindness, Cataract, Phacoemulsification

Received: March 12, 2020; **Accepted:** November 11, 2020

Introduction

On January 1, 2016, leaders of the United Nations member countries implemented the sustainable development goal (SDG) agenda up to 2030. The third most important goals of this agenda were to ensure healthy lives and promote well-being for all at all ages¹. Recent data of the World Health Organization (WHO) show 285 million visually impaired people of all ages globally, which represent 80% of the total health burden (WHO, 2017). A joint program of the WHO and the

International Agency for the Prevention of Blindness (IAPB) launched VISION 2020: The Right to Sight in 1999 to eliminate avoidable blindness by the year 2020². Therefore, there is a need for possible implementation of eye health care promotion strategies. Knowing the degree of eye health and the factors that contribute to ill eye health could serve to complement such strategies. Studies measuring knowledge of eye care and diseases have been conducted in different countries and became

¹ Dr. Md. Ariful Islam, Asst. Prof. (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj.

² Dr. Md. Abu Bakar Siddique, Asst. Prof. (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj.

³ Dr. Syed Shahin Iqbal, Senior Consultant (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj.

⁴ Dr. Md. Abul Kalam Azad, Asst. Prof. (Ophthalmology), Sheikh Hasina Medical College, Tangail.

⁵ Dr. Md. Shahjahan Siraj, Medical Officer (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj.

⁶ Prof. Dr. Saifuddin Ahmmmed, Professor (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj.

Address of Correspondence: Dr. Mohammad Ariful Islam, Assistant Professor (Ophthalmology), Sheikh Fazilatunnesa Mujib Eye Hospital & Training Institute, Gopalganj, Bangladesh. Mobile: +8801717855790, Email: drarifuleye@gmail.com

the foundation on which eye health promotion was planned³⁻⁵. Globally, cataract is considered one of the leading causes of blindness and visual impairment especially in developing countries^{6,7}.

Bangladesh is a developing country situated in south-east Asia where 50%-80% of total blindness results from cataracts⁸. The first national blindness survey of this country was conducted in 2003, which found that about 6,50,000 people aged over 30 were blind due to cataract⁹. It also reported that nearly 1,30,000 additional cataract-related blinding cases occur in every year¹⁰. This survey concluded that there is a need to establish a robust and sustainable national eye care service in order to reduce this large backlog of cataract blindness. The current study was aiming to assess the magnitude and variation of eye surgeries at a tertiary level government eye hospital in southern region of Bangladesh.

Materials & Methods

A prospective observational study was done in Sheikh Fazilatunnessa Mujib Eye Hospital & Training Institute (SFMEHTI), Gopalganj, Bangladesh; from January 2019 to December 2019. Annually this hospital performs more than 12,000 surgeries; about 80% was cataract surgery. Medical and surgical records of all patients irrespective of age and sex, who admitted in our hospital for surgery from January to December, 2019 were reviewed.

After registration all patients were sent for check vision. Visual acuity (VA) was checked by trained nurses. After checking VA, patients were sent to ophthalmologists for management. Anterior segment examination was done with torch and slit lamp; posterior segment examination was performed after dilating the pupil using direct and indirect ophthalmoscope. The patients needed to check blood pressure (BP), intraocular pressure (IOP) and sac patency test (SPT) were also done by trained nurses. The patients needed surgical intervention was sent for relevant investigations and evaluated before admission in indoor.

After admission written informed consent was taken from all patients; if patient's age is less than 18 years, from parents or relatives. Preoperative preparations like marking of eye, tying of hand base (R/L) for reconfirm of side, dilatation of pupil if needed, medications used are done in ward. Except most of emergency surgery, all surgery was done on next day of admission by trained ophthalmologist whereas most of emergency surgeries were done by young ophthalmologist. The age at presentation, sex and clinical diagnosis and surgery done were determined from OT records. Patients in age of 0-100+ years were included in the study. Patients were grouped by age into three age groups (1-25 years,

26-50 years and 50+ years). The data were recorded and analyzed using SPSS statistics program.

Results

A total of 12,236 patients were operated; out of these 12,052 (98.5%) were as routine surgery and rest 184 (1.5%) were as emergency. The most common group was 50+ years 10,341 (84.5%). Female patients were more 6,342 (51.83%) than male. Cataract surgery was done in 9,740 (79.6%) patients. Patients with cataract, more than 90% (8,846) were 50+ years age group; less than 10% (894) were up to 50 years age group. Age related cataract (ARC) was the most common group consisting about 98% (9545 of 9740) of cataract patients. Rest 2% (195 of 9740) cataract surgery was done for complicated cataract, traumatic cataract, phacolytic and phacomorphic glaucoma and few pediatric cataracts. Only 22 patients were operated for congenital and developmental cataract in 1st (0-25 years) age group. For most of ARC and all of pediatric cataract, the choice of surgery was phacoemulsification (PE) with posterior chamber intraocular lens (PCIOL) implantation; that was the most common procedure done in 5,047 (41.25%) eyes. ARC with very hard nucleus, complicated cataract, traumatic cataract, phacolytic and phacomorphic glaucoma, one-eyed patients were selected for small incision cataract surgery (SICS) with posterior chamber intraocular lens (PCIOL) implantation, operated in 4,693 (38.35%) eyes. Chronic dacryocystitis (CDC) was the 2nd leading cause of admission for surgery and 1673 (13.67%) patients were operated. Patients with CDC in old age, hyper mature cataract, fibrosed lacrimal sac and recurrent lacrimal abscess drain was selected for dacryocystectomy (DCT) and done in 52% (873 of 1673) cases. CDC in young age without any nasal pathology was selected for dacryocysto-rhinostomy (DCR) with or without silicon tube intubation, done in 48% (800 of 1673) cases. Female patients were most common 68.4% (1144 of 1673) for DCT and DCR surgery. Pterygium was the 3rd leading cause of admission; where pterygium excision with or without auto grafting was done in 595 (4.86%) eyes. Patients with recurrent, progressive and advance pterygium and pterygium in young age was selected for pterygium excision with conjunctival auto graft transplantation (CAT) done in 77% (462 of 595) eyes. Regressive pterygium and early pterygium in old age was selected for pterygium excision without CAT done in 33% (133 of 595) eyes. Pterygium surgery with or without CAT was done in 66.22% (394 of 595) male patients. For chalazion of eyelids incision and curettage of chalazion was done in 44 (0.35%) patients also as routine surgery. All the patients with chalazion were less than 50 years age group; most of them 61.36% (27 of 44) were 0-25 years age group. Patients admitted with deeply impacted corneal foreign body were 16 (0.13%);

removed as emergency basis. Most of them were male 81.25% (13 of 16). Rest 168 (1.37%) cases were also gone through emergency basis; where injury repair (cornea, lid, sclera and conjunctiva) was the predominant type 39.9% (67 of 168) cases. Post-operative cataract surgery complication management was done in 35% (59 of 168) eyes; anterior chamber wash for (cortical matter and blood), intra ocular lens (IOL) reposition, wound reconstruction and reposition or excision of iris. Abscess drain (lacrimal & lid) was done in only 25% (42 of 168) cases. Table-I shows cataract surgery (SICS & PE) was the highest 9740/12236 (79.6%) in number.

Table-I: Distribution of the patients in relation to surgery

Name of Surgery	No. of Patients	Percentage (%)
PE with PCIOL	5,047	41.25
SICS with PCIOL	4,693	38.35
DCT	873	7.13
DCR	800	6.54
Pterygium excision with CAT	462	3.77
Pterygium excision without CAT	133	1.09
Emergency repair	67	0.55
Post-operative complication management	59	0.48
Incision & curettage of Chalazion	44	0.36
Abscess drainage (Lacrimal & Lid)	42	0.34
Deep corneal FB removal	16	0.13
Total	12,236	100

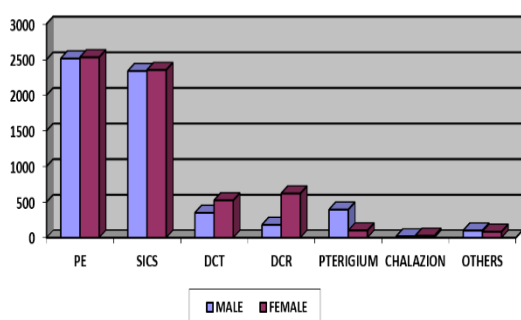


Figure-1: Bar diagram shows in cataract surgery male-female patients were nearly equal, in DCR & DCT females were more 68% but in pterygium surgery male patients were more 66%.

Discussion

In our study out of 12,236 patients, 51.83% were female and 48.17% were male. These findings were quite similar to study done by Khanna RC et al. in LV Prasad Eye Institute, Andhra Pradesh, India on comparative outcomes of manual small incision

cataract surgery (MSICS) and phacoemulsification (PE) performed by ophthalmology trainees during one quarter (July-September 2007); out of 1,029 subjects underwent cataract surgeries, 545 (53%) subjects were female¹¹. Similar study was done by Ferdosh J et al. in 2014 at a tertiary eye hospital of Chittagong district, Bangladesh on 228 patients for visual outcome after cataract surgery; where female participation 134 (58.8%) was greater than male 94 (41.2%)¹². Where they study only on cataract surgery within 40 to 79 years age group instead of all ocular surgeries (12,236) done in 1 to 100+ years aged patients. The number of surgeries was seen to be higher in patients with 50+ years age group 10,419 (84.5%) patients and in cataract surgery it was 8,846 (90.8%). Studies from other developing countries also reported a similar age range to this study¹³⁻¹⁵. Cataract surgery rate was found to be greater in female patients 5,035 (51.7%) than male patients, which was also evidenced in several studies¹⁶. It has been reported that women have slightly increased the age-adjusted risk for cataract,¹⁴ while another study claim that longer life expectancy of the female is the reason for this higher prevalence of cataract surgery¹⁷. Studies found that SICS was the most preferred surgical procedure among the other techniques, despite the fact that overall, better visual outcome was seen in PHACO (PE) surgery. SICS was highly preferred in those studies as it is cost-effective and can produce a considerably improved visual outcome^{16,18,19}. In our study we found PE surgery was little more (51.8%) than SICS 48.2% of cataract surgery. In our one-year study 1,673 (13.67%) patients were operated for CDC and female patients were most common 68.4% (1144 of 1673). Five years study in LV Prasad Eye Institute during 2013-2017 for incidence of lacrimal drainage disorders; found average about 2,000 patients of acquired lacrimal drainage disorder, and two-third was female²⁰.

Conclusion

About 10,000 cataract surgery (PE & SICS) was done in 2019, which is 80% of total surgery done in this hospital. For cataract surgery PE was the first choice followed by SICS. Lacrimal drainage system disorders presented the second most common causes of surgery.

References

1. United Nations. Sustainable development goals. Available at <https://sdgs.un.org/goals> [Accessed on November 15, 2020].
2. Pizzarello L, Abiose A, Ffytche T, Duerksen R, Thulasiraj R, Taylor H, et al. VISION 2020: The Right to Sight: a global initiative to eliminate avoidable blindness. Arch Ophthalmol. 2004; 122 (4): 615-20.
3. Shrestha MK, Guo CW, Maharjan N, Gurung R, Ruit S. Health literacy of common ocular

- diseases in Nepal. *BMC Ophthalmol.* 2014; 14: 2.
4. Islam FM, Chakrabarti R, Islam SZ, Finger RP, Critchley C. Factors Associated with Awareness, Attitudes and Practices Regarding Common Eye Diseases in the General Population in a Rural District in Bangladesh: The Bangladesh Population-based Diabetes and Eye Study (BPDES). *PLoS One.* 2015; 10 (7): e0133043.
 5. Pan CW, Zhao CH, Yu MB, Cun Q, Chen Q, Shen W, et al. Prevalence, types and awareness of glaucoma in a multi-ethnic population in rural China: the Yunnan Minority Eye Study. *Ophthalmic Physiol Opt.* 2016; 36 (6): 664-70.
 6. Farmer L, Innes-Wong C, Bergman-Hart C, Casson RJ, Crompton J. Visual Acuity, Quality of Life and Visual Function Outcomes after Cataract Surgery in Bali. *Ophthalmic Epidemiol.* 2015; 22 (4): 274-82.
 7. Yuan J, Wang X, Yang LQ, Xing YQ, Yang YN. Assessment of visual outcomes of cataract surgery in Tujia nationality in Xianfeng County, China. *Int J Ophthalmol.* 2015; 8 (2): 292-8.
 8. Lindfield R, Kocur I, Limburg H, Foster A. Global initiative for the elimination of avoidable blindness. In: Johnson GJ, Minassian DC, Weale RA, West SK, Editors. *The Epidemiology of Eye Disease*, 3rd ed. USA: Imperial College Press; 2012. pp 601-6.
 9. Bourne RR, Dineen BP, Ali SM, Huq DM, Johnson GJ. Outcomes of cataract surgery in Bangladesh: results from a population based nationwide survey. *Br J Ophthalmol.* 2003; 87 (7): 813-9.
 10. Dineen BP, Bourne RR, Ali SM, Huq DM, Johnson GJ. Prevalence and causes of blindness and visual impairment in Bangladeshi adults: results of the National Blindness and Low Vision Survey of Bangladesh. *Br J Ophthalmol.* 2003; 87 (7): 820-8.
 11. Khanna RC, Kaza S, Palamaner Subash Shantha G, Sangwan VS. Comparative outcomes of manual small incision cataract surgery and phacoemulsification performed by ophthalmology trainees in a tertiary eye care hospital in India: a retrospective cohort design. *BMJ Open.* 2012; 2 (5): e001035.
 12. Ferdosh J, Uddin M, Husain R. Visual outcome after cataract surgery in a tertiary eye hospital of Chittagong district, Bangladesh. *Asian J Med Biol Res.* 2019; 5 (3): 212-8.
 13. Lundström M, Barry P, Henry Y, Rosen P, Stenevi U. Visual outcome of cataract surgery; study from the European Registry of Quality Outcomes for Cataract and Refractive Surgery. *J Cataract Refract Surg.* 2013; 39 (5): 673-9.
 14. Olawoye OO, Ashaye AO, Bekibele CO, Ajayi BG. Visual outcome after cataract surgery at the university college hospital, ibadan. *Ann Ib Postgrad Med.* 2011; 9 (1): 8-13.
 15. Thapa SS, Khanal S, Paudyal I, Twyana SN, Ruit S, van Rens GH. Outcomes of cataract surgery: a population-based developing world study in the Bhaktapur district, Nepal. *Clin Exp Ophthalmol.* 2011; 39 (9): 851-7.
 16. Ashaye AO, Komolafe OO. Visual outcome of cataract surgery in University College Hospital, Ibadan Nigeria. *West Afr J Med.* 2009; 28 (2): 102-5.
 17. Marmamula S, Khanna RC, Shekhar K, Rao GN. Outcomes of Cataract Surgery in Urban and Rural Population in the South Indian State of Andhra Pradesh: Rapid Assessment of Visual Impairment (RAVI) Project. *PLoS One.* 2016; 11 (12): e0167708.
 18. Ilechie AA, Boadi-Kusi BS, Ndudiri OV, Ofori EA. Evaluation of Post-Operative Visual Outcomes of Cataract Surgery in Ghana. *Int J Health Res.* 2012; 5 (1): 35-42.
 19. Murthy GV, Vashist P, John N, Pokharel G, Ellwein LB. Prevalence and vision-related outcomes of cataract surgery in Gujarat, India. *Ophthalmic Epidemiol.* 2009; 16 (6): 400-9.
 20. Das AV, Rath S, Naik MN, Ali MJ. The Incidence of Lacrimal Drainage Disorders Across a Tertiary Eye Care Network: Customization of an Indigenously Developed Electronic Medical Record System-eyeSmart. *Ophthalmic Plast Reconstr Surg.* 2019; 35 (4): 354-6.

Citation of this article

Islam MA, Siddique MAB, Iqbal SS, Azad MAK, Siraj MS, Ahmmmed S. Profile of Ocular Surgery in A Tertiary Eye Hospital in Southern Region of Bangladesh. *Eastern Med Coll J.* 2021; 6 (1): 11-14.