

Frequency of low vision patient and their causes presenting in Madinah Teaching Hospital, Pakistan

Abstract

Aim: The aim of our study to determine the frequency of low vision patient and their causes presenting in Madinah Teaching Hospital.

Methods: 400 patients were screened in the duration of five month from JAN to MAY 2019.80 subjects were taken as a low vision patient according to WHO, whose visual acuity was less than 6/18 with correction. The main causes of low vision were observed high refractive errors, retinitis pigmentosa, cataract, glaucoma and diabetic retinopathy all patients presenting in ophthalmology department with either gender and age ranging from 10-80 years. Uncooperative and mentally retarded persons were excluded in our study. After complete history, we examined the all individual's visual acuity with log-mar chart, color vision with isihara and contrast sensitivity with Pelli-robson chart. Data was entered in to SPSS latest version and analyzed by descriptive analysis.

Results: The most common cause determined that is retinitis pigmentosa 17.5%, cataract 15.0%, glaucoma 13.8%, diabetic retinopathy 12.5% other causes are nystagmus 8.8%, high refractive error 6.3%, maculopathy 5.0%, retinal detachment 5.0%, vitreous hemorrhages 5.0%, albinism 3.8%, central retinal vein occlusion 2.5%, optic atrophy 1.3%, keratoconus 1.3%, age related macular degeneration 1.3% and stargardts disease 1.3% in those subjects, Functional vision component was also assessed. Patients with decrease visual acuity recorded were 33.8%, contrast sensitivity 17.5%, color vision 63.8%. 100% patient were suffering from distance vision problem.38.3% patient were near vision problem.50%patient were night vision problem.93.8% patient were day vision problem.78.8% patient were glare problem and 55.0% patient were mobility problem.

Conclusion: Retinitis pigmentosa was the most serious cause of low vision. We observed that in functional vision, the color vision was most affected. There is no proper low vision setup in Faisalabad so that we want to make a proper low vision setup for those patients who were presented in such a big quantity in the duration of four months

Keywords: decrease vision, functional vision, impairment, low vision

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Introduction

The World Health Organization describes a person with low vision as "one who has an impairment of visual function, even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception or a visual field of less than 10 degrees from the point of fixation, but who uses, or is potentially able to use, vision for the planning and/or execution of a task."¹ Eye diseases or conditions can cause visual impairment. Some of the more common causes of low vision include macular degeneration is a disorder that affects the retina, the light sensitive lining at the back of eye where images are focused.² The macula the area on the retina responsible for sharp central vision deteriorates, causing blurred vision difficulty reading. Diabetic retinopathy people with diabetes can experience day to day change in their vision and /or visual functioning as a result of the disease. Retinitis pigmentosa gradually destroys night vision, severely reduces side vision and may result in total vision impairment. In amblyopia the visual system fails to develop normally during childhood.³ Retinopathy of prematurity occurs in infants born prematurity. Glaucoma causes damage to the optic nerve. Signs of damage are defects in peripheral vision and difficulty with night vision. Retinal detachment the retina separates from its underlying layer. It can cause total vision impairment in the affected eye. Cataract

is a clouding of part of the entire lens inside the eye.⁴ People with low vision may experience the following symptoms loss of central vision, night blindness, loss of peripheral vision, blurred vision and hazy vision.⁵ There are many signs of vision loss including finding it difficult or impossible to read write watch television drive a car recognize faces. It may be difficult to set dials and manage glare. With low vision you might have trouble picking out and matching the color of your clothes.⁶ Vision loss has a substantial impact on activities of daily living, symptoms of depression and feelings of anxiety.⁷ Low vision can occur at any stage in life, but it primarily affects the elderly. It is estimated that approximately 17 percent of people over the age of 65 are either or have low vision.⁸ A number of rehabilitation professionals provide services for low vision patients, including ophthalmologists, optometrist, occupational therapists, orientation and mobility specialists, vision rehabilitation teachers, assistants in low vision, psychologists, and social workers.⁹ The ophthalmologist should know of the availability of local services and must be able to initiate an appropriate referral. Orientation and mobility specialists help patients whose ability to move about safely is compromised by vision loss.¹⁰ Through skill training, independent movement (aided by a long cane, remaining visual cues, or a telescope if residual vision is adequate) is encouraged and maintained.¹¹

Methods

Our study was conducted at Department of Ophthalmology, Madinah Teaching Hospital (MTH). The research study was completed in 5 months after the submission and the approval of submitted synopsis. Random sampling technique was used. All Low vision patients attending in ophthalmology Department of Madinah Teaching Hospital (MTH) were included in our study. Mentally retarded persons were excluded. Complete Extensive history of patients was taken to check out the effect on activities of daily living. Distance visual acuity was assessed by LOG-MAR chart at 4 meter distance monocular and then binocularly to evaluate the uncorrected refractive error and most patient was not seen the letters at 4 meter distance so we assessed visual acuity at 2 meter distance and some patients was not seen the letters at 2 meter distance so we measure visual acuity at 1 meter distance. Near visual acuity was measured at a closer distance of 25-40cm. Ishihara test was used for color perception. This test consists of a number of colored plates. Each plate contains a circle of dots appearing randomized in size. Color vision defected person was difficult to identify the plates. Pelli robsn chart

test was used to assess the contrast sensitivity. Ophthalmoscopy was performed to assess the cause of low vision. The study of frequency of low vision patient and their causes presenting in Madinah Teaching Hospital (MTH) duration from 2 Jan-13May 2019. This test was done by entering the whole data into latest version of SPSS. Measurement was done by the application of frequency distribution and descriptive statistics.

Results

Our study included total 400 subjects to see prevalence of low vision patient in Madinah teaching hospital and causes of low vision in these patients and difficulties which suffer from these problems. In which 59% were males and 41.30% were females and age ranging from 10-21 (32.50%), 21-40 (27.50%), 41-6 (27.50%), and 61-80 (12.50%). Retinitis Pigmentosa was greater cause of Low Vision in Madinah teaching Hospital statistically 17% (Figure 1). In this pie chart, it shows the percentages of age 10-21(32.50%), 21-40(27.50%), 41-60(27.50%) and 61-80(12.50%).

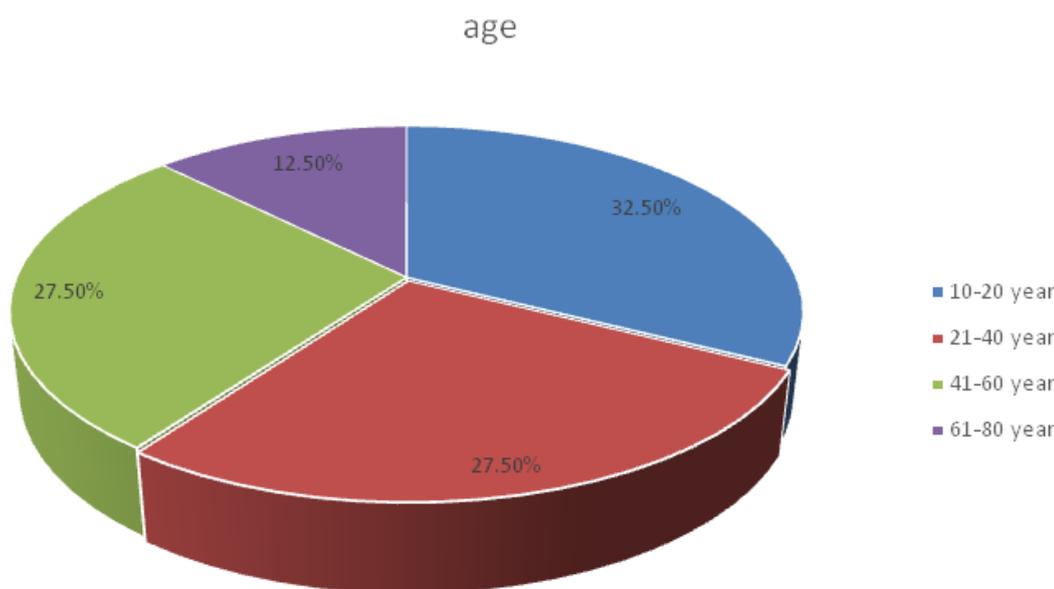


Figure 1 Age distribution.

Figure 2 This Pie Chart shows the percentages of male and female patient. In this study total 47 males and 33 females were included. Figure 3 This Pie Chart shows percentage of causes of low vision patient. Retinitis Pigmentosa is greatest cause of low vision than other causes statistically. Out of these, 12.50% patient mild visual acuity and 53.75% patient moderate visual acuity and 33.75% patient show severely reduced visual acuity. 16.25% patient have normal contrast sensitivity and 17.50% patient show mild reduced contrast sensitivity and 22.50% show moderate reduced contrast sensitivity. And 18.75%

patients have severely reduced contrast sensitivity, 37.50% patients have normal color vision and 62.50% patient have abnormal color vision. 80.0% patient has difficulty in distance vision and 20% patient have not difficulty. 63.75% patient suffer from difficulty at near vision 36.25% have not. 50% patient suffer from difficulty at night vision and 50% have not. 93.75% patients face difficulty at day vision and 6.25% patients have not. 78.75% patient has face difficulty in glare and 21.25% patient have not. 55.0% patient suffer difficulty in mobility and 45.00% patient have not.

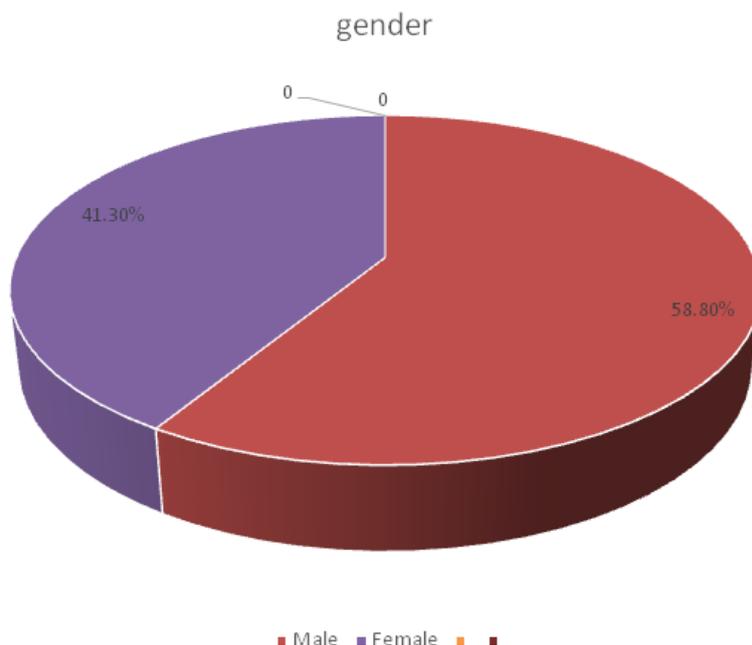


Figure 2 Gender distribution.

Frequency and percentage of causes

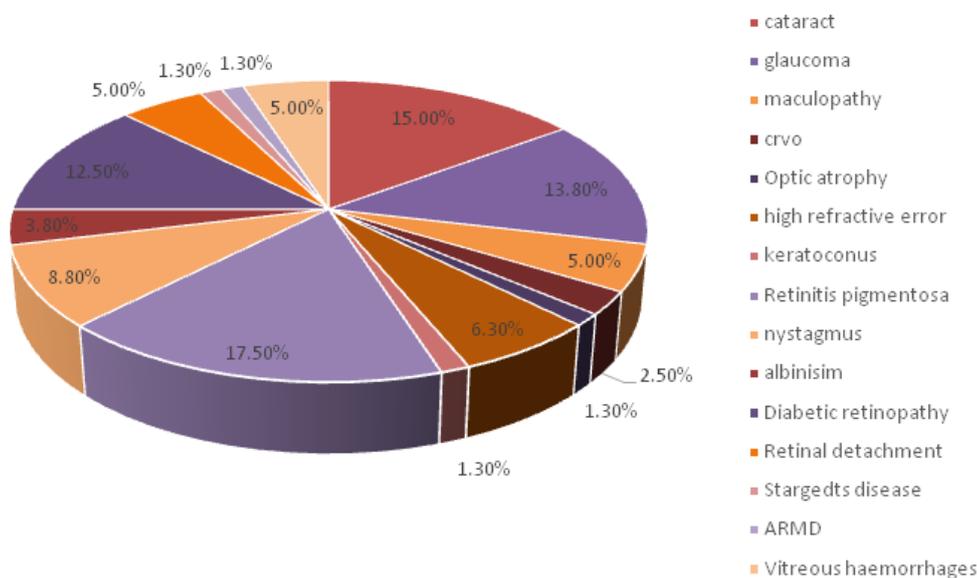


Figure 3 Causes of low vision.

Discussion

According to WHO a person with low vision is one who has impairment of visual function, even after treatment and standard refractive correction and has a visual acuity of less than 6/18 to light perception or a visual field of less than 10% from the point of fixation, but who uses, and is potentially able to use, vision for the planning and performance of tasks. Low vision is most commonly used to refer to

a visual impairment that is not corrected by surgery, pharmaceuticals, glasses or contact lenses. Often known as partial sight, blind, for example, blurry vision or tunnel vision, but also includes legal blindness.¹² In our study we checked the frequency of low vision patients from all patients of both gender of all age group. According to gender of population, 80 males and females are suffering from low vision in Madinah Teaching Hospital. Retinitis pigmentosa is the leading cause of low vision in our study. Retinitis pigmentosa gradually

destroys night vision, severely reduces side vision and may result in total vision impairment.¹³ Retinitis pigmentosa with a frequency of 12 and a percentage of 17%. A study was conducted by TineYin Wong population bases cross sectional study of 3280 participants of Malay ethnicity, aged 40 to 79 years. To determine presenting best corrected visual acuity and the primary causes of visual impairment. Prevalence of low vision in Malay population was lower when compared with other Asian studies. Under-corrected refractive error and cataract was the leading cause of visual impairment.¹⁴ A study was carried out to estimate the prevalence of low vision and identify the main cause of low vision. A cross sectional survey of the population was conducted in May 2005. Prevalence of low vision was 7.7%.¹⁵ Prevalence of low vision increased in both males and females with age. Low vision was caused mainly by trachoma (58.1%) and cataract (29.3%). Visual impairment due to cataract and trachoma increased markedly with increasing age.¹⁶ But our study results describe that Retinitis Pigmentosa was greater cause of low vision who present in Madinah teaching hospital in our study time duration with decreased functional vision and having difficulty to perform daily vision task.¹⁷

A study was conducted to ascertain the prevalence and primary causes of visual impairment. A representative sample of patients who attended ophthalmologist offices in a medium sized Canadian city between 1996 and 2001. Prevalence of low vision in our population was 35.6 and 3.8% according to WHO classification. To find out cataract, visual pathway disease and macular degeneration was the leading cause of visual impairment.¹⁸ Our study shows that Retinitis pigmentosa main cause of low vision patient of Madinah teaching Hospital than other low vision causes. Another study was done to determine the prevalence and causes of low vision in Japanese adult. Study design was population based cross sectional. The overall prevalence of low vision according to the WHO criteria was 0.39% and according to the U.S criteria was 0.98%. The leading causes of low vision in descending order were cataract followed by glaucoma, macular degeneration and trauma.¹⁹ Our study results show that Retinitis Pigmentosa is greatest cause of low vision patients statistically.

Vijaya Lingam worked to evaluate the prevalence and causes of low vision in urban population. Population based cross sectional study exactly 3850 subjects was examined. In this urban population-based study, cataract was the leading cause and glaucoma was the second cause. Primary causes of low vision were refractive errors and cataract.²⁰ Our study shows that retinitis pigmentosa is primary cause of low vision 17% and then cataract was second greatest cause of low vision in Madinah teaching hospital low vision patients.

Conclusion

Retinitis pigmentosa was the most serious cause of low vision reported in Madina Teaching Hospital. Cousin marriages in community is very common and also due to genetic factor. We were observed that in functional vision, the color vision was most affected. There is no proper low vision setup in Faisalabad, Pakistan so that we want to make a proper low vision setup for those patients who were presented in such a big quantity in the duration of four months. Moreover, awareness to reduce consanguineous marriages and cases of retinitis pigmentosa is necessary for residents of Faisalabad.

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Conflicts of interest

Authors don't have any conflict of interest and financial disclosure.

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