STATUS OF CHILDREN IN BLIND SCHOOLS IN THE NORTHERN AREAS OF PAKISTAN

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Background: Prevalence of blindness in Pakistan is estimated to be 0.9%, which comes to about 1.25 million persons. A significant number of these are persons under 20 years of age. To make these children useful citizens in future, special facilities are to be provided to these children for their education and training. A study was done to find out the visual status of the students studying in a blind school in Abbottabad, Pakistan, the only such facility in the region. **Method:** A total of 50 patients were examined during our visit to the blind school in Abbottabad. Age of the patients ranged from 6 to 27 years (mean: 12.32 years). All the students, who were otherwise healthy, were included in the study. **Result:** The most common disorder identified was malformed globe or traumatic eyes (16 cases, 32%), in most of the cases, leading to phthisis bulbi. Other conditions noticed were Retinitis Pigmentosa (10 cases, 20%), Keratoconus, Optic atrophy, Buphthalmos (6 cases each, 12%), corneal opacity (4 cases, 8%) and retinal detachment (2 cases 4%). **Conclusion:** We should work towards betterment of these schools by providing them with more funds, equipment and manpower. Regular visits of Ophthalmologists to these schools may be helpful. Genetic counselling should be arranged for the families.

Key words: Blindness; Children; Cause; School.

INTRODUCTION

Pakistan is a developing country situated in the Eastern Mediterranean Region of the World Health Organization (EMRO, WHO). The population of approximately 132 million people comprises 52% males and 48% females. The overall literacy rate is 44% and approximately 67% of the national population lives in rural areas.[1]

Prevalence of blindness in Pakistan according to a survey done in 2003 is estimated to be 0.9%, which comes to about 1.25 million persons.[2] A significant number of these are persons under 20 years of age. To make these children useful citizens in the future, special facilities are to be provided to these children for their education and training.

Although much work is done in the field of treatment of eye diseases in the form of setting up of new referral centres, clinics and hospitals as well as upgrading the already present hospitals both in reference to equipment as well as skill in the public as well as in the private sector, but not enough work has been done in the field of prevention and rehabilitation of the blind persons. There are limited facilities for the education and training of these persons in Pakistan. Moreover, most of these facilities are available in the urban areas only. Total number of blind schools in Pakistan are 60, 24 each in Punjab and Sind provinces, 9 in North West Frontier Province and 3 in the federal territory and federally administered tribal areas. There are no blind schools in Balauchistan province.

A study was done to find out the visual status of the students studying in a blind school in Abbottabad, the only such facility in the region.

MATERIALS AND METHODS

A total of 50 patients were examined during our visit to the blind school in Abbottabad. The ages of the patients ranged from 6 to 27 years (mean: 12.32 years). All the students, who were otherwise healthy, were included in the study. Oral informed consent was taken from all the subjects. A detailed history was taken, with a special emphasis on the family history. Examination was done that included visual acuity assessment with the help of Snellen's chart, refraction, to find out the best corrected visual acuity, dilated fundal examination with direct and indirect ophthalmoscope. Five patients who needed detailed examination and investigations were called to Ayub Teaching Hospital, Abbottabad, and were examined using a slit lamp and slitlamp biomicroscopy using a +90D lens. Tonometry was also done where indicated. Ultrasonography of the eyes was done in three patients.

RESULTS

A total of 50 students, 28 (56%) male and 22 (44%) female, were examined (Figure-1). Age range was from 6–27 years (mean age 12.32 years). Twenty-eight patients (56%) gave a positive family history of some form of eye disorder. The visual acuity ranged from no perception to light to counting fingers at half a meter (Table-1).

The most common disorder identified was malformed globe or traumatic eyes (16 cases, 32%), in most of the cases, leading to phthisis bulbi. The history of trauma or otherwise was not clear in most of the cases because either the patient did not understand it properly or it was long forgotten and the parents were not available. The next common

condition noticed was Retinitis Pigmentosa (10 cases, 20%). Keratoconus, Optic Atrophy and Buphthalmos were seen in 6 cases each (12% each), corneal opacity in 4 cases (8%) and retinal detachment in 2 cases (4%) (Figure-2).

Table-1: Visual acuity of patients

Visual Acuity	No. of Patients
No Perception of Light	14
Perception to Light	14
Hand Movement	6
Counting Fingers ½ Metres	16

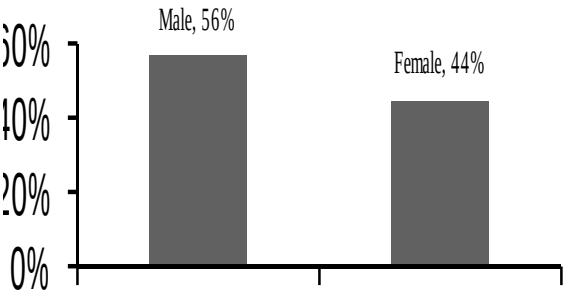

Figure-1: Graph showing sex distribution of the patients

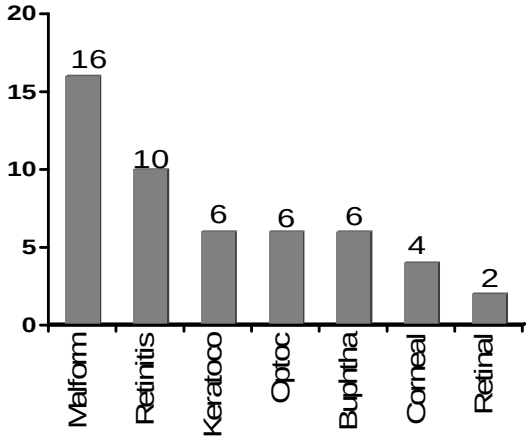

Figure-2: Disease Distribution

With treatment, we were able to improve the visual acuity to a certain extent in 3 (6%) of the patients. One of the patients who had a traumatic eye, had NdYAG laser capsulotomy and his vision improved to counting finger at 3 meters. Two other patients were referred to low vision department and their vision also improved to the same level by prescribing them low vision aids.

DISCUSSION

Overall prevalence of blindness in Pakistan is estimated to be 1.8% according to 1987–90 survey.[3] Another survey which was conducted in 2002–04, where the prevalence of blindness was reported as 2.7%, but that survey included only adult population over 30 years of age.[2] According to this survey, prevalence of blindness was 0.4% in persons aged 30–39 years whereas it increased to 15.7% in persons over 70 years of age. Estimated prevalence of blindness from the same survey in all age groups is 0.9%. The total number of blinds will increase to almost double in the year 2020, if the prevalence rate remains the same (1.25 million in 2003 to 2.4 million in 2020). Although it is apparent that the number of blinds in the lower age group is less, but when we think in terms of the increased years of blindness[4] and the lost man hours which we get when a child is born blind or becomes blind afterwards, the situation becomes much more serious. It is said that restoring sight of one child from cataract is equivalent to restoring the sight of ten elderly adults from cataract.[5]

It is clear from this that when a child loses sight in the early age, the amount of resources that are lost are enormous. Moreover in a country like Pakistan, blindness and poverty are interlinked,[6] so the poorer the socioeconomic background of the patient, more chances of the person becoming blind because of lack of facilities and resources available to the patient both financial and material. The same problems are being faced in the whole region.[7]

In this study, we found out that the highest number of patients were in the group of malformed/ traumatic eyes (32%).[8] Although it was not very clear how many of them were lost due to trauma and how many were congenitally malformed, but it is clear that many of these eyes could have been saved simply if proper precautions were taken by the parents/guardians, and moreover if proper treatment was given to them at proper time. In developed countries. medical/surgical treatment has reduced the impact of treatable conditions on visual impairment to the extent that their prevalence has decreased.[9] Educating the masses in this regard may be helpful. Provision of proper eye care facility is also very important.

The second cause that we found were advanced cases of Retinitis Pigmentosa which were seen in 10 (20%) patients. Retinitis Pigmentosa is a hereditary disease and is transmitted in a variety of ways, i.e., Autosomal dominant, autosomal recessive and X linked.[10] These children are not blind at birth and develop blindness later in the life. A study done in Africa shows that these children adapt less well to their visual impairment.[11] Educating the parents

regarding genetically transmitted diseases as well as diseases caused by prematurity and pregnancy counselling may help in reducing the incidence of blindness.[12]

The other causes which were encountered (Keratoconus, optic atrophy, buphthalmos, corneal opacity and retinal detachment), it may have been possible that at least some of the vision could have been saved if the patients had access to an eye care facility earlier. The cause may have been inaccessibility or ignorance or both.

Even at this stage, we were able to improve the vision of 3 (6%) children to a certain extent, which may prove to be a big help to them in future as they may get navigational vision.

Another important point which has to be highlighted is the lack of the training and rehabilitation facilities which are available in our country. There is lack of blind schools and the ones that are available do not have even basic facilities and financial resources and are in a very poor state. (Figure-3 and 4).

Figure-3: A blind school in Abbottabad

Figure-4: Condition of blind school

CONCLUSION

Most of the blind schools in Pakistan are in a very poor state, lacking even basic facilities. This needs to be improved through provision of more funds, equipment and manpower.

Regular visits of Ophthalmologists to these schools is recommended. If vision could be improved to a certain extent, may be navigational, it may help these patients to be relatively independent and may be able to cope with their lives in a better way to lead a better life.

As 56% of the children had a positive family history, genetic counselling needs due consideration.

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