

CAUSES OF BLINDNESS AMONG BLIND STUDENTS IN OGUN STATE, NIGERIA

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ABSTRACTS

A total of 28 blind students in 3 schools for the handicapped and 3 regular secondary schools were studied between October 1996 and May 1997. They comprised of 21 (75%) males and 7 (25%) females. Eleven (39.3%) were of primary education level, 13(46.4%) in secondary schools and the remaining 4(14.3%) in vocational training. The main causes of blindness were: corneal scarring/staphyloma 11(39.3%), cataract/aphakia/couching 4(14.3%), cortical blindness 2(7.1%) and retinitis pigmentosa 2(7.1%). Eleven of the students with corneal blindness admitted to having measles prior to blindness. 6(21.4%) of the students examined had conditions needing treatment i.e. cataract, aphakia and subtotal corneal opacities. From the study, preventable and treatable conditions are responsible for over 70% of cases of blindness in the schools studied. To reduce the burden of childhood blindness in the state, relevant recommendations were made.

KEY WORDS: *Blindness, Blind students, Causes, Prevention.*

INTRODUCTION

Blindness in children has been extensively studied in the world. It is estimated that approximately 1.5 million children are blind worldwide, 85% of who live in Africa and Asia¹ and there are up to 500,000 new cases every year². Many causes had been attributed to it but there is a clear disparity between causes in the industrialized countries and the developing world. These differences are mainly related to the presence or absence of highly specialized medical manpower, adequate facilities, high level of economic well being of the population, level of education and stability of health policies^{3,4,5}. In a developing country like Nigeria, of which Ogun State is somewhat representative, inadequate medical manpower, largely rural population and lack of necessary facilities can result in children becoming blind (and/or remaining blind) from avoidable causes.

Blind school studies^{3,6,7,8} indicate that 14-42% of children are blind from entirely preventable causes in Africa, Asia and Latin America and conditions that can be treated to prevent blindness or to restore function are responsible for a further 16-33%¹.

In Ogun State, there is no known programme of screening blind children before school admission. Thus, as has been reported in some other developing countries^{3,6} and even in Nigeria^{7,8}, there may be some students with treatable eye conditions but already admitted as incurably blind.

This study was done in order to determine the major causes of blindness among students in Ogun State schools and detect those of them that can be treated. This will enable a proper recommendation to be made to the State Government on better management of childhood blindness.

MATERIALS AND METHODS

A survey of causes of blindness among the blind students in the handicapped and secondary schools in Ogun State was carried out between October 1996 and May 1997, as part of the activities of The Committee for the Prevention of Blindness.

Three handicapped schools and three secondary schools were covered. The schools covered were:

1. School for the Handicapped, Ilaro
2. WAPCO School for the Handicapped, Sagamu
3. Ade Okubanjo Institute for the Blind, Ijebu-Igbo
4. Egbado College, Ijebu-Igbo
5. Molusi College, Ijebu-Igbo
6. Adeola Odutola College, Ijebu-Igbo

All blind students in the schools during the survey were examined. Two teams led by ophthalmologists examined the students. Each team covered three schools.

During the survey the bio-data of the students, onset of blindness, level of education at the time of examination visual loss were determined and recorded using the WHO Eye Examination Record for the children with Blindness and Low vision⁹. The main anatomical site, as well as the underlying cause of visual loss for each eye was recorded. If the causes were different in the two eyes, the most preventable or treatable or recent cause was selected.

The eye examination was carried out using pen torch and loupe for the anterior segments, and the posterior segments were examined using a direct ophthalmoscope. Pupils were dilated when necessary using mydriacyl 1% eye drops.

RESULTS

A total of 28 students, comprising 21 males (75%) and 7 females (25%) were examined during the survey. Twenty-seven

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(27) of the students were aged between 10 and 25 years whilst the remaining one was 30 years (Table 1). Seven of them became blind from birth, whilst the rest became blind before 20 years of age. As expected, majority of the students (24 i.e. 85%) are of Ogun State origin.

Level of vision:

Fourteen (50%) of the students were totally blind in both eyes (with visual acuities of no light perception), whilst 12(24%) had visual acuity less than 3/60 Snellens chart in the better eye but not worse than light perception.

The visual acuity in one student could not be determined because of mental retardation (Table 2).

Level of education:

Eleven (39.3%) of the students were of primary education level, 13(46.4%) were of secondary education level and the remaining 4(14.3%) were in vocational training.

Table 1: Distribution of Students Examined

Age Range (Yrs)	Male	Female	Total	Percentage (%)
10-15	6	3	9	32.1
16-20	8	2	10	35.7
21-25	7	1	8	28.6
26-30	-	1	1	3.6
Grand Total	21	7	28	100

Table 2: Categories of Visual Impairment by Sex

WHO Category (Visual acuity in the better eye)	Male	Female	Total
Severe visual impairment (6/60-3/60)	-	1	1
Blind 3/60 – light perception	9	3	12
Totally blind (NLP in both eyes)	12	2	14
Total	21	6	27

CAUSES OF BLINDNESS:

The distribution of causes of visual loss in the students is shown in Table 3.

The causes of corneal blindness found other than measles keratopathy include complicated epidemic keratoconjunctivitis (the use of traditional eye medicine could not be ruled out) in one student; exposure keratitis (unconscious for one week) was the determined etiology in one; congenital corneal opacity in another; whilst the etiology could not be determined in two students (although the use of traditional eye medicine could not be ruled out). From the table, corneal blindness was responsible for 57.1% of causes in the schools out of which measles keratopathy is the primary cause in over two-third of them.

Cataract and related causes was responsible for 14.3% only. In one of the subjects who had cortical blindness, the underlying cause was cerebral palsy from neonatal jaundice. The underlying

TABLE 3: Causes of Visual Loss

S/N	Cause	Male	Female	Total
1	Corneal scarring/staphyloma			
	- From measles	9	2	11(39.3%)
	-Other causes	5	-	5(17.9%)
2	Cataract/Aphakia	1	3	4(14.3%)
3	Cortical Blindness	1	1	2(7.1%)
4	Retinitis pigmentosa	2	-	2(7.1%)
5	Buphthalmos	1	-	1(3.6%)
6	Uveitis	1	-	1(3.6%)
7	Optic Atrophy	1	-	1(3.6%)
8	Microphthalmos	-	1	1(3.6%)
	Total	21	7	28(100%)

cause in the other could not be determined.

Six students (21.4%) had conditions needing treatment. One student needed cataract surgery in one eye and aphakia correction in the other. Two students needed only aphakia correction, whilst three students may benefit from optical iridectomies or corneal transplants.

DISCUSSION

The 28 blind students found in the schools in Ogun State cannot be representative of the burden of incurably blind children in the state. It is well known that blind children tend to die earlier from other diseases, partly due to deliberate neglect from frustration of parents especially in the rural areas. Also, there is ignorance of availability of rehabilitation facilities for the blind in most rural communities, which can still make the children productive and non-independent members of the family.

Of the students examined, there were more males than females. This may reflect the Yoruba tradition where male children are given more attention in terms of education and upbringing than their female counterparts. Also, female children may be more vulnerable to neglect when they become blind than males and therefore die earlier.

Most of the students examined were much older than their education level, which is similar to findings in most developing world where the handicapped get sent to special schools later than necessary^{3,6,7}.

In this study, all the students examined are blind by WHO definition but one had a visual acuity of 3/60 in the better eye, which was sufficient for her independent mobility. However, all the students already had mobility training to find their way around due to familiarity with the environment.

The proportion of children in this study who had visual loss from corneal pathology (57.1%) and cataract (14.3%) is similar to findings in other studies in the developing/underdeveloped world^{3,6,10,11}. However, the major causes in developed countries are congenital and genetic, comprising congenital cataract, congenital glaucoma, albinism, optic atrophy, etc¹². In a similar study done in eastern Nigeria, cataract and related causes accounted for 27.4% whilst corneal scarring caused 17.7%⁷. It is

not clear if this difference is statistically significant. The relatively high ratio of cataract may be an isolated finding as the study was done in only one school, although with a large population of blind students.

Measles and vitamin A deficiency are preventable causes of blindness, whilst cataract is treatable, thus, more than 70% of causes of blindness in children as found in this study, are either preventable or treatable (i.e. avoidable).

Therefore, more emphasis needs to be given to health education, for mothers in particular. The need for childhood immunization including measles vaccination, importance of appropriate breast-feeding and weaning, early health clinic consultation for eye ailments and avoidance of dangerous traditional eye medicine has to be included. All this in addition to availability of surgical eye care services can take care of over 70% of the burden of childhood blindness in Ogun State.

In some of the remaining children examined during the study, the causes of blindness were retinitis pigmentosa, buphthalmos, optic atrophy and microphthalmos. These causes may have been genetically determined. Thus, there is need also for genetic counselling services in our health centres and clinics. One subject had cortical blindness from cerebral palsy secondary to neonatal jaundice in our environment.

About 21.42% of the students had conditions, which require treatments. This type of scenario is easily avoided if it is established that all blind students are sent for ophthalmic experts assessment before admission into schools. The treatable conditions found i.e. cataract, aphakia and corneal opacities are similar to those found in similar study done in Eastern Nigeria⁷. Although most of these six students are expected to be amblyopic already, surgical treatments offer the possibility of improving their functional vision.

CONCLUSION AND RECOMMENDATIONS

It is clear from this study that preventable and treatable conditions are responsible for over 70% of causes of childhood blindness in Ogun State. Specifically, most cases are secondary to measles keratopathy, associated childhood nutritional deficiencies especially that of protein and vitamin A, and congenital cataract. To reduce the burden of childhood blindness in the state, the following recommendations are suggested:

1. More publicity is necessary as to the availability of rehabilitation facilities for incurably blind children in the state;
2. Emphasis and support for childhood immunization including measles vaccination must continue- 100% coverage should be targeted;
3. Vitamin A supplementary distribution programmes as well as appropriate agricultural practices and childhood nutrition education must be strengthened;
4. To strengthen rehabilitation centers for the blind in terms of facilities for boarding, feeding, clothing and relevant manpower to cater for many more students.

5. To establish easy modalities for screening all admissions into schools for the blind, as well as regular school screening in the state; and
6. To integrate the relevant health education for eye care into the maternal and child health programmes.

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