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Causes of blindness and career choice among pupils in a blind school; South Western Nigeria

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Abstract

Background: The causes of Blindness vary from place to place with about 80% of it been avoidable. Furthermore Blind people face a lot of challenges in career choice thus limiting their economic potential and full integration into the society. This study aims at identifying the causes of blindness and career choice among pupils in a school for the blind in South –Western Nigeria.

Materials and Methods: This is a descriptive study of causes of blindness and career choice among 38 pupils residing in a school for the blind at Ikere –Ekiti, South Western Nigeria.

Results: Thirty eight pupils comprising of 25 males (65.8%) and 13 females (34.2%) with age range from 6-39 years were seen for the study, The commonest cause of blindness was cataract with 14 cases (36.84%) while congenital glaucoma and infection had an equal proportion of 5 cases each (13.16%). Avoidable causes constituted the greatest proportion of the causes 27 (71.05%) while unavoidable causes accounted for 11 (28.9%). The law career was the most desired profession by the pupils 11 (33.3%) followed by Teaching 9 (27.3%), other desired profession includes engineering, journalism and farming.

Conclusion: The greatest proportion of causes of blindness identified in this study is avoidable. There is the need to create public awareness on some of the notable causes particularly cataract and motivate the community to utilize available eye care services Furthermore there is need for career talk in schools for the blind to enable them choose career where their potential can be fully maximized.

Keywords: Blindness, blind school, causes, career choice

Résumé

Contexte: Les causes de cécité varient d'un endroit à l'autre avec environ 80 % de celui-ci a été évitable. En outre les personnes aveugles font face à beaucoup de défis dans les choix de carrière, limitant ainsi leur intégration économique potentielle et complète dans la société. Cette étude vise à identifier les causes de la cécité et la carrière de choix parmi les élèves d'une école pour les aveugles au sud et au Nigéria.

Méthodes et matériaux: Il s'agit d'une étude descriptive des causes de cécité et la carrière de choix parmi 38 élèves résidant dans une école pour aveugles à Ikere –Ekiti, South Western Nigeria.

Résultats: Trente huit élèves comprenant de 25 mâles (65,8 %) et 13 femelles (34,2 %) avec la tranche d'âge de 6-39 years ont été observées pour l'étude, la cause la plus fréquente de cécité était la cataracte avec 14 cas (36.84 %) tandis que le glaucome congénital et infection avait une proportion égale de 5 cas chacun (13,16 %). Causes évitables ont constitué la plus grande partie des causes 27 (71,05 %) tandis que les causes inévitables représentés 11 (28,9 %). La carrière de droit était la profession plus désirée par les élèves 11 (33,3 %), suivi par l'enseignement 9 (27,3 %), autre profession souhaitée comprend l'ingénierie, journalisme et agriculture.

Conclusion: La plus grande proportion des causes de cécité dans cette étude est évitable. Il y a la nécessité de sensibiliser le public sur certains de la notable provoque notamment la cataracte et de motiver la communauté d'utiliser les soins oculaires disponibles services il y a de plus nécessaire pour parler de carrière dans les écoles pour les aveugles pour leur permettre de choisir carrière où leur potentiel peut être entièrement maximisée.

Mots-clés: Cécité, école aveugle, les causes, les choix de carrière

Introduction

The World Health Organization,[1] defines blindness as visual acuity of less than 3/60 (20/200, 0.05) or visual field of less than 10° from fixation with best correction in the better eye and low vision as visual acuity of less than 6/18 (20/50, 0.3) with best correction in the better eye. Furthermore, the World Health Organization,[2] estimated that about 39 million people are blind worldwide while another 246 million have low vision, 80% of which are avoidable with most occurring in developing countries.

The prevalence and major causes of blindness vary widely between countries and from time to time.Currently by World Health Organization criteria, it is estimated that 1.5 million children are blind worldwide, of whom 1 million live in Asia, 0.3 million in Africa, 0.1 million in Latin America and 0.1 million in the rest of the World.[3,4]

Studies from blind school in some parts of Nigeria[5-7] shows that most of theblindness are from avoidable causes like cataract, glaucoma, corneal infection and measles.

This study sets to identify the causes of blindness among pupils resident in a school for the blind in Ekiti State, South Western – Nigeria, determine the proportion that are avoidable and make appropriate recommendation towards its prevention. It also sets to ascertain their career choices and offer valuable suggestions that can maximize their potentials.

Materials and Methods

A total of 38 pupils resident at the school for the blind, IkereEkiti, South Western Nigeria were evaluated for this study during the month of May 2009. Informed consent was obtained from the Principal of the school and each of the pupils. Also an approval of the Ethics and Research committee of the Institution was obtained. The study was conducted in accordance with the ethical standards of Helsinki declaration.

A proforma questionnaire designed for the study was used to extract data on the background, demographic and relevant family history from each of the pupils by two ophthalmic nurses and the author who is an ophthalmologist. Other information obtained includes the age at onset of blindness, and their career choices. Thereafter each of the pupils had a comprehensive eye examination by the author. The visual acuity was done using a snellen's chart with and without pin hole, those who could not visualize the snellen's chart were tested for finger counting (CF), hand movement (HM) and light perception (LP).

A detailed examination of the anterior segment was done using a magnifying head loupe and a brightly lit pen torch while posterior segment examination was done using a direct ophthalmoscope. Those that had clear anterior segment which did not preclude view of the posterior segment had dilated fundoscopy during subsequent visits after dilating them with tropicamide 1% eye drops.

The findings obtained were recorded using the WHO/PBL examination format for Blindness Screening. The data obtained were presented in tables and was analyzed using the statistical package for social sciences (SPSS) version 15. Tests of significance for some variables were done using chi-square test and a P value of <0.05 was considered significant.

Result

A total of 38 pupils with age range of 6-39 years, (mean 20.3, SD 8.7) were seen for this study. Of these, 25 (65.8%) were males and 13 (34.2%) were females with the mf ratio of approximately 2:1.The age and sex distribution is as shown in Table 1

Of the 38 pupils seen, 20 (52.6%) of them were at the primary level of their education based within the premises of the blind institution while the remaining 18 (47.4%) attends the close by State Government College for the secondary level of their education.

Seven (18.4%) of the pupils had positive family history, of these two of them were siblings who had developmental cataracts while the remaining 31(81.5%) did not have positive family history, 10(26.3%) claimed that they were blind from childhood while the rest 28 (73.6%) got blind during adolescence. Majority 32 (84.2%)sought only medical help to no avail before their enrolment into the school whilesix of them (15.8%)claimed they sought additional help from tradomedical doctors to no avail.

Table 1: Age and sex distribution of 38 pupils at the school for the blind Ikere Ekiti

Age in years	Sex		Total	Number %
	M	F		
6- 9	1	1	2	5.3
10-15	3	6	6	23.7
16-20	9	1	10	26.3
21-25	6	3	9	23.7
26-30	4	2	6	15.8
31-35	2	-	2	5.2
Total	25	13	38	100

Only one of the evaluated pupils had associated abnormality of speech defect, the other pupils were virtually normal.

The visual acuity (VA) ranged from count finger to No light perception [Table 2]. None of the pupils had better than CF vision with or without pin hole.

The commonest cause of blindness was cataract with 14 cases (36.8%). Glaucoma and infection had equal proportion of five cases each (13.2%). other causes seen in the study include Steven-Johnson syndrome, retinitis pigmentosa, optic atrophy, and injury due to gun powder explosion. The greatest proportion of the causes were avoidable 27 (71.05%) while the remaining 11 (28.95%) were from non avoidable causes.

Table 3 shows the etiology of blindness, while Table 4 shows the anatomic site of the causes of blindness, with the lens being the most common and significant site (42.1%), *P value* 0.006.

The most preferred profession was Law 11 (33.3%) followed by Teaching 9 (30.3%), other profession desired includes Engineering, farming and journalism, 5 (15.5%) did not give a reasonable response.

There is gender preference for all the profession excluding Law, Teaching and Journalism with a statistical significant *P value* of 0.21 [Table 5].

Table 2: Visual Acuity of 38 pupils at the school for the blind, Ikere Ekiti

Visual acuity	Number of pupils	(%)
CF	6	15.8
HM	13	34.2
PL	7	18.4
NLP	12	31.6
Total	38	100

Table 3: Causes of blindness among 38 pupils at the school for the blind, Ikere Ekiti

Causes	Number	(%)
Avoidable causes		
Cataract	14	36.8
Aphakia	2	5.3
Glaucoma	5	13.2
Infection	5	13.2
Trauma (gum powder)	1	2.6
Sub total	27	71.1
Non avoidable causes		
Nanophthalmos	2	5.3
Optic atrophy	2	5.3
Retinitis pigmentosa	4	10.5
Atypical retinal disorder	1	2.6
Steven Johnson Syndrome	2	5.3
Sub total	11	28.9
Grand total	38	100

Discussion

Causes of blindness vary from place to place and within the same place, different causes are more predominant than the others depending on the socio-economic status of the community, the presence of infective disease, the availability and quality of eye care services among others. In high income countries, the predominant causes of blindness are the optic nerve and the higher visual pathway[8] while in low income countries, avoidable causes such as measles, trachoma and traditional eye medication predominates.[9,10] Common significant causes in all countries include congenital cataract and hereditary retinal dystrophies.[8]

Most studies in Nigeria[5,6,11-14] identify cataract as the commonest cause of blindness, while Glaucoma, Onchocerciasis, Trachoma and Infection such as measles are other notable causes.

In this study, unoperated cataract was the commonest cause of blindness accounting for 14(36.84%). This is comparable to other studies in Nigeria[5,6] in which cataract was found to be the commonest cause of blindness. The proportion of unoperated cataract in this study is higher than the (23.1%) found in the study done in another blind school in South Western Nigeria by Akinsola and Ajaiyeoba.[6] This is probably due to the fact that there was no resident ophthalmologist in Ekiti State since its creation from old Ondo state in 1996 until year 2008, whereas ophthalmologist abound in their own state of study.

Table 4: Anatomic site of causes of blindness among 38 pupils at the School for the Blind, Ikere Ekiti

Anatomic site	Number	(%)
Cornea	2	5.3
Lens	16	42.1
Optic nerve	7	18.4
Retina	5	13.2
Globe	8	21.0
Total	38	100

Table 5: Career Choiceand gender distribution among 33 pupils that responded

Career	No of males	No of females	Total no	Percentage
Law	7	4	11	33.3
Teaching	4	6	9	27.3
Farming	3	0	3	9.1
Engineering	2	0	2	6.1
Journalism	2	1	3	9.1
Music	2	0	2	6.1
Missionary	2	0	2	6.1
Nursing	0	1	1	3.0
Total	22	11	33	100

The finding in this study is in contrast to some other studies,[15-18] where cataract was not the most predominant cause of blindness, for instance Sitorus and coworkers[15] working in Indonesia found hereditary disease to be the most predominant cause of blindness. Hassan, Ashfaq, Ali Shah and co-workers[16] working in Pakistan identified malformed globe as the most common disorder.

Xiao[17] working in China found that hereditary factor accounted for 34.5% of blindness and congenital cataract accounted for 11.6%.

On the other hand Decarlos and Nowakowski[18] found that optic nerve conditions formed the greatest proportion (30.9%) of blindness in their study.

This contrast may be due to the fact that in these countries, availability coupled with accessibility of patients to hi-tech surgery and medical treatment has reduced the impact of treatable conditions like cataract as a cause of blindness.

The second notable cause of blindness in this study was glaucoma with five cases (13.16%). This is similar to other studies in Nigeria.[5-7,12-14] Glaucoma is still a highly challenging cause of blindness among blacks because of the high failure rate of filtration procedures and high cost of topical medication which makes its treatment unsustainable.

Infection had equal proportion with glaucoma and both rank as the 2nd commonest cause of blindness in this study, The infection was most likely due to ophthalmia neonatorium or panophthalmitis and not measles since all the cases seen had phthisis bulbi in their two eyes, Measles in itself does not result into pthisical globe but usually leads to corneal opacity. Similarly, Sitorus and Coworkers working in Indonesia[15] found corneal scar, staphyloma and phthisis bulbi mainly attributable to infection as the 2nd major proportion of causes of blindness in their study rather than measles.

This is in contrast to another study done in Northern Nigeria by Kehinde and Ogwurike[7] who found measles to be the commonest cause of blindness accounting for 35.1% of the causes of blindness among the pupils analyzed. This is probably due to the fact that the expanded programme on immunization (EPI) against some childhood killer diseases including measles was embraced almost totally earlier in South Western Nigeria where this study was conducted, whereas it was not so in Northern Nigeria where their own study was conducted.Similarly Akinsola and Ajaiyeoba[6] working in a similar region with the author did not find measles to be a predominant cause of blindness.

Hereditary retinal disorder, Retinitis Pigmentosa, Steven – Johnson syndrome are some of the other causes seen in this study and might not actually be avoidable, but the case of injury due to gun powder explosion could be avoidable if the victim had used protective goggles.

The most preferred career was law 11 (33.3%) followed by Teaching 9 (30.3%). others include farming, Engineering and Missionary.

Five of them (10.5%) did not give a reasonable response on career choice, while those that did are ignorant of the implications of their choice as regards their visual status.

In a study by Khandekar,Shah and co workers,[19] 19 of 47 respondents preferred the Teaching profession, five wants to be Engineers while two wants to be even pilots, These career choices only imply the need for guidance and career talk so that these pupils can choose career where their full potential can be maximized.

Conclusion

The greatest proportion of causes of blindness identified in this study is avoidable. There is the need to create public awareness on some of the notable causes particularly cataract and motivate the community to utilize available eye care services Furthermore there is need for career talk in schools for the blind to enable them choose career where their potential can be fully maximized.

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