

# Sociodemography and Distribution of Students Attending Schools for the Blind in Oyo State, Nigeria

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## ABSTRACT

**Aim:** To determine the distribution and sociodemographic classification of students attending schools for the blind in Oyo State, Nigeria.

**Method:** This is a descriptive and interventional cross-sectional study. A total sampling of all students in the four schools for the blind in Oyo State was carried out.

**Results:** A total of 86 students from the four schools for the blind in Oyo State were included in the study. This comprised 2(2.3%) students from School for the Deaf and Blind, Eruwa; 22 (25.6%) from School for the Blind, Aperin Oniyere, Ibadan; 11 (12.8%) from School for the Blind, Doba, Oyo Town; and 51 (59.1%) from Ogbomosho Training Centre for the Blind, Ogbomosho. The mean age of the students was 19.4 years (SD=8.19). Thirty percent of the students were less than 16 years, 33.7% were between 17 and 19 years, 16.3% were between 20 and 24 years, 8.1% between 25 and 29 years, and 11.6% were above 30 years. There were more males (73.3%) than females (26.7%), with a male to female ratio of 3:1. Christians constituted 73.3% of the students while Muslims made up the remainder. Majority were from the Yoruba ethnic group (98.9%).

**Conclusion:** More attention needs to be focussed on the sociodemography and distribution of students in schools for the blind in Nigeria as this will assist government and non governmental agencies in the planning and implementation of policies which will help to improve the lot of the students in the schools.

**Keywords:** Distribution, sociodemography, students, schools for the blind, Oyo State

## INTRODUCTION

Childhood blindness is considered a priority of 'Vision 2020 – The Right to Sight'.<sup>1,2</sup> This is a global initiative for the elimination of avoidable blindness. One million, four hundred thousand (1.4 million) of the 45 million people estimated to be blind worldwide are children.<sup>3</sup> One million of them live in Asia and approximately 300,000 in Africa.<sup>1,2</sup> Preventing childhood blindness is a priority to the Vision 2020 initiative because blind children have a lifetime of blindness ahead of them.<sup>1,2</sup> This lifetime includes problems with opportunities for education, employment, earning potential and social relationships.<sup>1,2</sup> Early onset blindness can also have grave adverse effects on social, emotional and psychomotor development.<sup>1,2</sup> It is a well documented fact that blind children have a higher death rate than their sighted counterparts.<sup>1,2</sup>

The provision of low vision services and aids to the students with low vision, who have always been referred to as blind, can help to enhance their residual vision and improve their quality of life.

An estimated 500,000 children become blind each year; 60% of blind children in developing countries die within a year of becoming blind.<sup>1,2</sup> Almost half of all the cases of blindness in children in the developing countries of Africa and Asia are due to avoidable causes that can easily be treated or prevented.<sup>1,2</sup> The prevalence of blindness is higher in developing countries because of the prevalence of potentially blinding yet avoidable conditions which abound and are poorly managed due to inadequate health facilities and shortage of trained medical personnel.<sup>1,2</sup>

In Nigeria, very little has been done in this field of study. In a study by Akinsola and Ajaiyeoba<sup>3</sup> carried out in a school for the blind in Lagos, Nigeria, twenty-six children aged below 16 years were identified as having low vision and blindness and were examined to determine the causes.

Ezegwui et al.<sup>4</sup> carried out a cross-sectional study to identify the major causes of severe visual impairment/blindness (SVI/BL) among students in schools for the blind in south-eastern Nigeria.

Foster<sup>5</sup>, and Kello and Gilbert<sup>6</sup> carried out well documented studies in Ethiopia, highlighting the socio-demographic data of students in the schools for the blind and the types and causes of blindness. Ntim-Amponsah's<sup>7</sup> study in Ghana also included important socio-demographic data.

There has been no study on the socio-demographic data of students in schools for the blind in Oyo State. Such a study is necessary for strategic planning and implementation of policies by the stakeholders – government and non governmental agencies – for the benefit of the students in the schools.

The aim of this study is to determine the distribution and socio-demographic classification of the students attending schools for the blind in Oyo State, Nigeria.

## MATERIALS AND METHODS

### Study Area

Oyo State is located in the southwestern region of Nigeria and is one of the 36 states in the country. It has 33 local government areas and a population of 5.6 million people (National Population Census 2006).<sup>8</sup> The major ethnic group is Yoruba, although other ethnic groups are also present in the state. Ibadan is the capital of the state. Most of the people who reside in urban areas are civil servants, while those who reside in the suburban regions include civil servants, artisans, traders and farmers. There are a total of four schools for the blind in Oyo State.

### Study Site

The study was carried out in all the schools for the blind in Oyo State, a list of which was obtained from the state's Ministry of Education, Special Education Unit. The schools are: Ogbomosho Training Centre for the Blind, Ogbomosho; School for the Blind, Doba, Oyo Town; School for the Blind, Aperin Oniyere, Ibadan; and the School for the Deaf and Blind, Eruwa.

### Study Design

It is a descriptive and interventional cross-sectional study.

### Sample Size

The minimum sample size was determined by using the Kish and Leslie formula for estimating a single proportion. This is expressed as:

$$n = Z_{\alpha}^2 pq / d^2$$

where:

- $n$  = minimum sample size
- $Z_{\alpha}$  = standard normal deviate when  $\alpha$  is 0.05 = 1.96
- $\alpha$  = probability of having a type I error

- $p$  = prevalence of low vision amongst blind students in a 2003 study in eastern Nigeria = 2.4% (Ezegwui et al., 2003)<sup>4</sup>
- $q$  = 1- $p$
- $d$  = level of precision = 5%

This gives a minimum sample size of 36. Allowing for a

non response rate of 10%, the minimum sample size was 40.

Since the interest of the study was the entire state, a total sampling was carried out because the total blind student population in the schools for the blind in Oyo State outnumbers the number enumerated in the sample size. Thus the study has adequate power.

### Sampling Technique

A total sampling of all students in the schools for the blind in Oyo State was carried out. All the students were assessed by the investigators for visual acuity and associated pathologies and physical handicap. A questionnaire was administered to the students with the assistance of the school heads and teachers. Instruments that were used include:

- Snellen's chart
- Illiterate E chart
- LogMAR chart
- Lea picture charts
- Near visual acuity charts
- Keeler® brand retinoscope
- Trial frame and trial box with trial lenses
- Pin hole, pen torch
- Welch Allyn® direct ophthalmoscope and indirect ophthalmoscope
- Perkins® hand-held tonometer
- Fluorescein (Fluorescein sodium Ph.Eur 1mg) strips
- Tetracaine hydrochloride 0.5% anaesthetic eye drops
- Tropicamide 1% dilating drops
- Phenylephrine hydrochloride 5% dilating drop
- Crayola® brand colour crayons
- Hand-held magnifiers
- Stand magnifiers
- Telescopes
- A tape rule

Students that could not comprehend the questions asked, and that could not respond appropriately were excluded from the study.

### Data Collection Procedure

Permission was obtained from the school authorities and consent was sought from the parents of the subjects. Local ethical clearance was obtained from both the Ethical Committees of the University College Hospital (UCH), Ibadan, and the Ethical Review Committee of the Oyo State Ministry of Health. The study was explained to the parents, teachers, students, and school authorities, and their consent and cooperation sought.

**Data Management and Analysis**

- The data collected was checked for errors by the investigators. It was then analysed using the SPSS version 10 statistical package. Data was also checked for errors after entry. Variables were summarized by the investigators using means and standard deviation for quantitative variables, frequencies and proportions for qualitative variables.
- Distribution of types of blindness, causes, associated pathologies and types of visual aid devices needed were summarized by the investigator using proportions. The relationship between low vision and the socio-demographic characteristics of the students was tested using the chi square test at 5% level of significance.

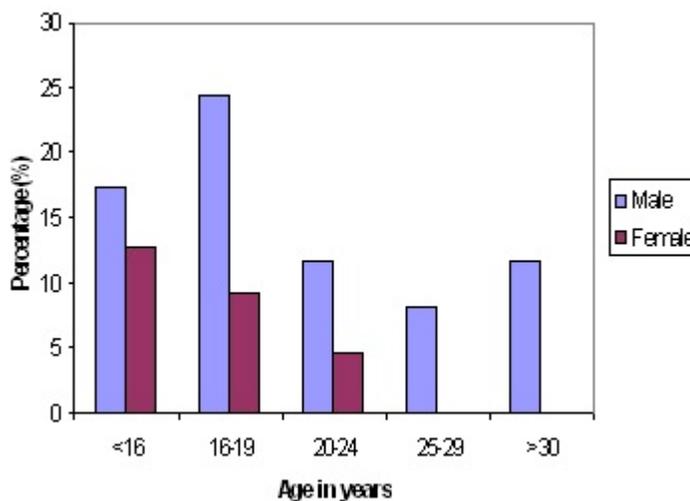
**RESULTS**

Eighty six (86) students were studied in the four schools for the blind in Oyo State. This comprised 2 students (2.3%) from the School for the Deaf and Blind, Eruwa; 22 (25.6%) from School for the Blind, Aperin Oniyere, Ibadan, 11(12.8%) from School for the Blind, Doba, Oyo Town; and 51 (59.1%) from Ogbomosho Training Centre for the Blind, Ogbomosho. The mean age of the students was 19.4 years (SD=8.19) while the age range was from 9 to 35 years. The largest age group among the students (33.7%) were between 16 and 19 years. Among the others, 30% were less than 16 years, 16.3% were between 20 and 24 years of age, 8.1% between 25 and 29 years, and 11.6% above 30 years of age (summarized in table 1). There were more males (73.3%) than females (26.7%), with a male to female ratio of 3:1. There was no female student aged over 24 years in any of the schools. The age-sex distribution is summarized in figure 1. Christians constituted 73.3% of the students while Muslims made up the remainder. Majority were from the Yoruba ethnic group (98.8%). All the students were examined. Of all the students examined, 83 (96.5%) had no associated disabilities, while 5 (5.8%) had a positive history of blindness in close relatives.

The most commonest period of onset was from the first year of life to puberty (34 students – 39.5%), followed by blindness occurring in infancy (27 students – 31.7%). Blindness occurred the least during adolescence amongst the students studied (4 students – 4.7%).

**Table 1. Profile of the 86 students attending schools for the blind in Oyo State**

Characteristic	Frequency	Percentage
<b>Age group(years)</b>		
Less than 16	26	30.2
16-19	29	33.7
20-24	14	16.3
25-29	7	8.1
30+	10	11.6
<b>Gender</b>		
Male	63	73.3
Female	23	26.7
<b>Religion</b>		
Christianity	63	73.3
Islam	23	26.7
<b>Ethnic group</b>		
Yoruba	85	98.8
Others	1	1.2
<b>Associated disability</b>		
Yes	3	3.5
No	83	96.5
<b>Blindness in family</b>		
Yes	5	5.8
No	81	94.2
<b>Onset of blindness</b>		
Since birth	9	10.5
Neonatal life	5	5.8
Infancy	27	31.7
1 year to puberty	34	39.5
Adolescence	4	4.7
Adulthood	8	9.3



**Figure 1.** Age-sex distribution of the 86 students attending schools for the blind in Oyo State

## DISCUSSION

The age range of the students was from 9 to 35 years. The mean age was 19.4 years (SD=8.19), with 30% of the students being under 16 years. Bearing in mind the World Health Organization (WHO) reports<sup>1,2,9</sup> on childhood blindness and its eradication in line with the VISION 2020 initiative, this proportion of students is too significant to be ignored. There are estimated to be 1.4 million blind children worldwide, of whom over 21% live in sub-Saharan Africa, which includes Nigeria.<sup>1-3</sup> The prevalence of blindness in children varies according to socioeconomic development (and also according to the mortality rates of children under 5 years of age), ranging from an estimated 0.3 per 1000 children in high-income countries with low under-5 mortality rates to 1.5 per 1000 children in low-income countries with high under-5 mortality rates.<sup>1-3</sup> Blind children have a lifetime of blindness ahead of them. This lifetime includes problems with opportunities for education, employment, earning potential and social relationships.<sup>1,2</sup> Early onset blindness can also have grave adverse effects on social, emotional and psychomotor development.<sup>1,2</sup> It is a well-documented fact that blind children have a higher death rate than their sighted counterparts.<sup>1,2</sup>

In every age group, there were more male than female students, but there were no female students over 24 years in any of the schools. The high male to female ratio is similar to the results obtained in other studies carried out in developing countries and may be related to the traditional belief that education is more important for the male than for the female child.<sup>6,7,10</sup> The female students would have dropped out of school by adolescence to get married. However, differences in the age of the students, age of onset of blindness, gender, religion, ethnicity, associated disability, and family history of blindness obtained in this study were not statistically significant in the overall analysis, which compares to similar African studies<sup>3,4,9,11</sup> as well as to Asian studies.<sup>3,4,10-13</sup>

Most of the students were from the Ogbomoso and the Ibadan schools which are bigger, better equipped and better staffed. Emphasis should be placed on the training of more teachers for special education as the numbers in the schools visited were not sufficient. Refresher courses should also be organized for the teachers to keep them up to date on current teaching techniques, aids, and services, and on how to use the aids to optimize the students' residual vision.

## CONCLUSION

More attention needs to be focused on the socio-demography and distribution of students in schools for the blind in Nigeria. This will enable government and non governmental agencies to plan and implement policies which will help to improve the lot of the students in the schools for the blind. Far-reaching grassroots policies need to be structured and implemented to ensure childhood immunization, early detection and referral of eye diseases by midwives and birth

attendants, and prompt treatment of eye diseases by ophthalmologists and eye care providers.

Health education to highlight the importance of educating both male and female children should be embarked upon by stakeholders in the health sector. This could be done via jingles, educational talks, plays on radio and television, flyers, pictures, and songs, all directed at women, nursing mothers, teachers, traditional birth attendants, and care givers. These programmes can also be carried out in markets, at schools, hospitals and village squares. They should also be aimed at improving awareness for identification and prevention of common eye problems.

Bearing in mind that most of the students in the four schools studied were over 16 years of age, rehabilitation should not only be educational but also occupational, to equip them with skills that would make them useful in the society.

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