



## Knowledge attitude and practice on eye care facilities in special education settings in Imo State, Nigeria

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### Abstract

Children with special needs are at a higher risk of visual impairment as compared to normal population. Majority of the ocular disorders they suffer, like refractive errors and strabismus, are treatable. This study was aimed to assess the level of utilization of eye care services among children and teens with special needs in selected schools in Imo State, Nigeria. An interviewer-administered semi-structured questionnaire prepared was administered to children and adolescents with special needs, attending three special schools in Imo state, Nigeria. Findings from 185 respondents revealed that 43.2% never utilized eye care services, 13.5% had utilized same in the past. Socio-demographic factors identified as barriers to accessing eye care included parental misconceptions, stigmatization, poverty, ignorance, poor state healthcare facility, and physical inaccessibility. This study demonstrated that the rate of utilization of eye care services among the studied population is suboptimal. Children with special needs have little consideration in accessing proper eye care system. Early ophthalmic intervention by an eye care team at the point of enrolment into schools and establishment of ophthalmic units in special schools to provide periodic eye examination and proper management of ocular disorders are thus recommended.

**Keywords:** Cultural beliefs; Lack of awareness; High cost of eye care; Stigmatization

### 1. Introduction

Vision integrates all the senses and plays a fundamental role in the acquisition of different skills and the general development of a child [1].

Good ocular health is vital for optimal childhood development. It has been noted to play an integral role in the psychosocial development of special needs children as well as compensate for certain impaired functions [2]. Children and young people with Special Educational Needs (SEN) are 28 times more likely to have eye problems than their typically developing peers and an ideal approach to the eye care for children attending special schools in England has been developed [3]. The United Nations International Children's Emergency Fund (UNICEF) reported that the global rate of child disability is high and there are approximately 150 million children with disabilities [4-5]. There is limited access to healthcare services in the low and middle income Sub-Saharan African countries due to poverty, low education,

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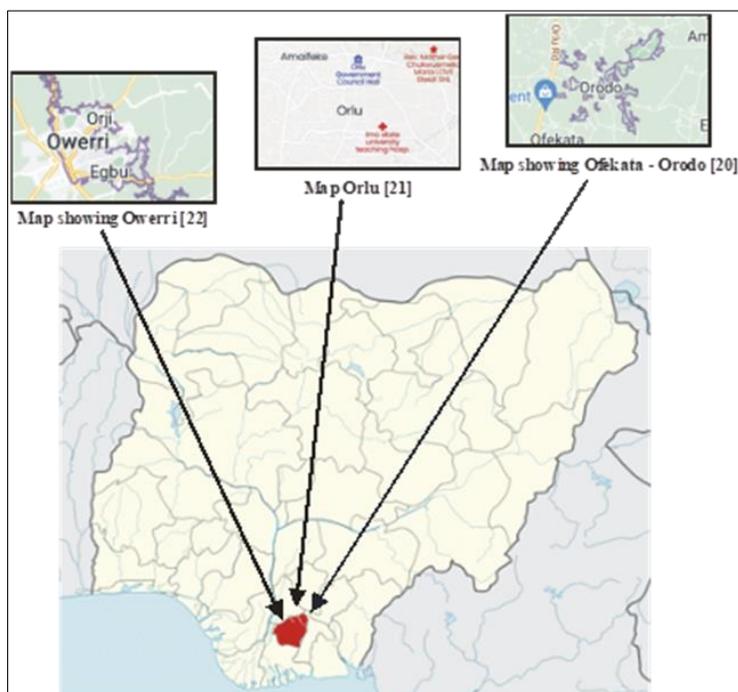
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inadequate healthcare systems, and shortage of healthcare professionals [6]. As a result of seeming neglect, children with special needs are at a higher risk of ocular and visual problems than their peers [7]. Frequently, these children may not be able to express the presence of symptoms adequately [8]. A variety of reports identify that this group of vulnerable children may have difficulty in accessing eyecare services and that where services are accessed, vital information regarding their visual status is not transferred in a meaningful way to education providers [9-12]. Challenges in this area of healthcare is yet to experience significant improvement despite the commendable efforts of missionary and Non-Governmental Organizations (NGOs) as children with special needs are often not in the front burner of the kind gestures of the government in of the developing countries, especially Africa and the aforementioned. The Sub-Saharan Africa is home to a large number of CwDs, many of whom lack access to basic healthcare services [13]. The developed countries are however have set the pace for the other countries to follow in this great area of concern. Several researchers have undertaken studies to ascertain the ideal standard of provision and identify unmet need [9, 14, 11]. Now, more than ever before, there are greater numbers of children with special needs and challenges in the classroom. Fortunately, a visit to the optometrist can go a long way toward getting your special needs child on the right track toward success in the classroom [15]. The aim of this study is to assess the level of utilization of eye care services among children and teens in with special needs in selected schools in Imo State, Nigeria.

## 2. Material and methods

### 2.1. Study Design and Site

This is a prevalence study with adopted cross-sectional study design also with a quantitative method of data collection. The design was chosen due to the nature of the research question. This study covered three special school/rehabilitation centers that offer both formal and vocational education in Imo State, Nigeria, including Cheshire home, Orlu, Special education center, Orlu, and Imo State Secondary School for the deaf, Ofekata - Orodo. Imo state is in the South-East geopolitical zone of Nigeria [16]. The state lies within latitudes 4°45'N and 7°15'N, and longitude 6°50'E and 7°25'E with an area of around 5,100 sq km [17]. It takes its name from the Imo River which flows along the state's eastern border. The state capital is Owerri and its nickname is the "Eastern Heartland." [18].



**Figure 1** Map of Imo State Nigeria showing study sites [19]

### 2.2. Study Population

A population of 185 respondents consenting male and female subjects between the ages of 9 and 19 years from a total of 310 recruited children of ages of 5-25 years drawn from the Imo State Secondary School for the deaf, Ofekata, Mbaitoli, Cheshire home, Orlu and Special education center, Orlu were however used for this study.

### 2.3. Data Collection

Data were collected using well-structured questionnaires. This instrument was administered to the consenting subjects through the help of the staff of the study centers.

An interviewer-administered semi-structured questionnaire prepared for the survey was first validated and pre tested among some students with special needs at Imo State Secondary School for the deaf, Ofekata, Nigeria. Information regarding participants' name, gender and age was derived from parents/guardians/participants and confirmed from school records. The questionnaire captured the socio-demographic data, the ocular, social and medical history, general and ocular examinations and information on utilization of eye care services which highlighted factors surrounding seeking for eye examination and care.

### 2.4. Statistical Analysis

The data collected from this study was recorded into a data collection form, entered and analyzed using the IBM SPSS software version 22. Summary statistics are presented using mean, standard deviation, frequency, bar chart and tables. Tests of association between categorical socio-demographic variables and utilization of eye care facilities were done using the Chi-square test and odd ratio. All hypotheses were tested at 5% level of significance.

## 3. Results and discussion

One hundred and eighty-five participants responded to the question on previous oculo-visual assessment (62.5% response rate). Eighty subjects' (43.2%) parents reported that their wards had never utilized eye care services while 105 (56.8%) respondents reported their wards utilizing eye care services in the past with 25 (13.5%) noticing a change in their vision.

**Table 1** Reasons for seeking eye care in the past

Reason to seek eye care	Responses	Percentage of total responses (%) (n =185)
Concerns about poor vision	25	13.5
Advised by healthcare provider or teacher	15	8.1
Routine check- up	12	6.5
Complaints of double vision	20	10.8
Headaches	9	4.9
Watery eyes	13	7
Concerns eyes not straight/have a turn	26	14.1
Family history	14	7.6
Poor concentration/short attention span	10	5.4
Eye injuries	16	8.6
No reasons selected	25	13.5

Twelve (6.5%) of the respondents reported that their wards did not have eye problems in the past or at the time of the study but they felt a need for routine eye check-up. Fourteen (7.6) respondents' wards reported seeking eye care due to concern of positive family ocular history. Eye injuries accounted for 8.6% of reasons for utilizing eye care services.

Parents were asked to identify possible barriers to accessing eye care. The reasons given by 83 parents (45%) for their wards not having had a previous eye check were, lack of money to pay for eye care services (6.5%), concerns that their wards were too young to have an eye test (3.8%), advised that orthodox medicine would not help (2.7%), stigmatization (2.7%), lack of confidentiality (1.1%). Other reasons are shown on *table 2*.

The number of children who had previous oculo-visual assessment was related to the age of the children and whom they lived with ( $P = 0.05$ ). The associations between the utilization of eye care facilities and socio-demographic characteristics of the respondents are shown in *table 3*.

**Table 2** Responses to the question ‘What reasons may prevent you from taking your child for an eye test?’

Barrier reported	No of responses	Percentage of total responses (%) (n = 185)
No barriers reported	102	55.1
Can't afford eye care services (No money)	12	6.5
Stigma and fear of stigmatization	5	2.7
Lack of awareness (how to arrange)	6	3.2
“an eye check will increase the cost of care for my child”	2	1.1
I think my child is too young to have an eye test	7	3.8
Did not think the problem was important enough	11	5.9
I am worried if my child is given glasses it will make his/her eyes weaker	3	1.6
Far distance to an eye care center (physical inaccessibility)	9	4.9
“my type of child cannot be examined by the eye doctor”	4	2.2
I have been told that my child is too young for an eye test	3	1.6
Was advised that orthodox medicine would not help	5	2.7
Cultural beliefs	3	1.6
Poor reputation of the healthcare facility	2	1.1
Lack of privacy/confidentiality	2	1.1
“Teacher had not recommended an eye check”	7	3.8
“doctor had not recommended an eye check”	2	1.1

Forty-nine (54.4%) less than 10years reported never accessing eye care services while 41(45.6%) had utilized eye care services. Thirty-one children (32.6%) at least 10years old reported never accessing eye care services while 64(67.4%) reported accessing eye care services. Applying Chi squared statistics at 95% level of significance, we reject the null hypothesis that utilization of eye care services is not related to age of children with special needs and conclude that eye care seeking is related to the age of children with special needs ( $P = 8.993$ ). Those who were less than 10years old were 2.5 times less likely to use eye care services compared with those who were at least 10 years old (odd ratio, OR = 0.4 (0.211 - 1.231;  $P = 0.156$ ).

Interestingly, who special needs children live with was found to play a significant role in their eye care seeking behaviour. Fifty-six (53.3%) children who lived with both parents reported utilizing eye care services compared with 30(28.6%) of those who lived with a caregiver and 19 (18.1%) of those who lived with their mothers alone ( $P = 32.71$ ). Those who lived with both parents were 3.1 times more likely to use eye care services compared with those who lived with their caregiver (OR = 3.1;  $P = 0.156$ ), and 9.1 times more likely to use eye care services compared with those who lived with their mother alone (OR = 9.1;  $P = 0.156$ ). Also, those living with their caregivers were also 2.9 times more likely to use eye care services compared with those who lived with mothers alone (95% CI, 0.29 (0.96-0.813;  $P = 0.019$ ).

However, the table shows that though special children whose parents/guardians are educated seem to utilize eye care services more, the educational level of whom they lived with does not to play significant role in affecting their eye care seeking behaviour ( $P = 0.422$  for father; 0.085 for caregiver and 4.91 for mother).

It is quite remarkable that a good number of our subjects (56.8%) had previous ocular examination. While our finding agrees with that of Omolase *et al.*, (2012) [23] which reported that 72.5% of students with special needs had utilized eye care services possibly due to greater awareness among their study population, it is however at variance with reports from two other studies in Nigeria by Majekodunmi *et al.*, 2018 [24] and Ezech *et al.*, 2019 [7]. The relatively high rate of uptake of eye care services in our study population is a pointer to the fact that efforts may have been made in the past to appraise their ocular status. However, there is need for all concerned to build on this and thereby put in place necessary machinery to promote ocular health of this category of people.

The findings of this study suggest that there are commonly reoccurring factors preventing parents from accessing eye care services for their children in Imo State. These factors were identified in different schools across the selected cities where the study was conducted. Reasons given for not having had a previous eye examination - lack of money to fund eye care services, concerns that their wards were too young to have an eye test, being advised that orthodox medicine would not help, the parents or caregivers not feeling there was need for an eye check, 'that neither the child's teacher nor the child's doctor had recommended an eye check', 'concerns that an eye check would increase the cost of care for my child and my type of child cannot be examined by the eye doctor', have also been reported in another study by Ezech *et al.*, 2019 [7]. However, the percentages of each factor differ from study to study. This could be due to differences in socio-economic class of parents/caregivers and relative availability of resources in regions where these studies were conducted. Poverty was the most reported barrier preventing children with special needs from accessing eye care services. In Nigeria, poverty is the most influential factor affecting healthcare service use for children and their mothers [25]. Therefore, parents who were unable to afford to take care of themselves may be reluctant to take their wards to the hospital. Nota *et al.*, 2015 [26], suggested that providing incentives like, transportation money and disability aids may encourage caregivers to bring their wards with disabilities to health facilities.

**Table 3** Association of uptake of eye care with socio-demographic characteristics

Variables		Did not utilize eye-care	Utilized eye-care	Total	$\chi^2$	p-value (P=<0.05)
Age of ward	<10years	49(54.4%)	41(45.6%)	90 (48.6%)	8.993	3.841
	≥10years	31(32.6%)	64(67.4%)	95(51.4%)		
Gender	Male	48(47.1%)	54(52.9%)	102(55.1%)	0.85	3.841
	Female	32(34.4%)	61(65.6%)	93(44.9%)		
Live with	Both parents	14(17.5%)	56(53.3%)	70(37.8%)	32.71	5.991
	Caregiver	23(28.8%)	30 (28.6%)	53(28.6%)		
	Mother alone	43(53.8%)	19(18.1%)	62(34.1%)		
Education-father	No formal	3(33.3%)	6(66.7%)	9	0.422	7.815
	Primary	5(38.5)	8(61.5%)	13		
	Secondary	10(29.4)	24(70.6%)	34		
	Tertiary	5(35.7%)	9(64.3%)	14		
Education-mother	Non -formal	3(50%)	3(50%)	6	4.91	7.815
	Primary	5(55.6%)	4(44.4%)	9		
	Secondary	20(69%)	9(31%)	29		
	Tertiary	7(38.9%)	11(61.1%)	18		
Education-caregiver	Non- formal	-	-		0.085	7.815
	Primary	3(37.5%)	5(62.5%)	8		
	Secondary	12(41.4%)	17(58.6%)	29		
	Tertiary	7(43.8%)	9(56.3%)	16		

It is evident that religious and supernatural beliefs regarding the etiology and management of disabilities can affect uptake of services. This is perhaps one of the most powerful barriers to healthcare access in Africa. Seven parents (3.8%) identified cultural beliefs regarding the causes of disability, such as witchcraft and possession of evil spirits. If a family believed their child's condition was of supernatural cause, they may never seek medical treatment, no matter how adequate the hospital services were. Many families holding these cultural beliefs rather patronize traditional healers rather than orthodox treatment. Aldersey *et al.*, (2014) [27], noted that families in Kinshasa who viewed the causation of intellectual and developmental disabilities as biomedical were more likely to seek medical treatment for their children. These beliefs also heavily contribute to stigma and this therefore could prevent families from being open about their children's conditions and from seeking treatment. Aldersey *et al.*, 2014 [27] also found that families of children with developmental disabilities in Kinshasa hid their children at home and out of sight in order to prevent others from thinking the disability was a punishment to the family for participating in supernatural practices. Other barriers

reported are lack of confidentiality, poor reputation of the healthcare facility, and physical inaccessibility. Two respondents reported being concerned that their case could become subject of gossip. In Uganda and Rwanda, lack of confidentiality was a major concern for children with disability to access health care especially for those with hearing impairments Yousafzai *et al.*, 2005 [28]. Another two respondents reported most of the primary health centers around them being known for poor staffing and equipment.

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#### 4. Conclusion

The rate of utilization of eye care services among the studied population was suboptimal. The prevalence of oculo-visual disorders is higher among teenagers (15-19years), with a general preponderance among the females. Socio-demographic factors identified as barriers to accessing eye care among them include parental misconceptions around eye care and vision for young children, stigmatization, poverty, ignorance, poor state healthcare facility, and physical inaccessibility. By making eye care services available, accessible and affordable to the special children, a lot of the basic problems such as difficulty in obtaining expert attention, traveling long distances to get appropriate treatment, high cost of eye care and patronage of traditional and often use of dangerous eye medication can at least be alleviated.

Early ophthalmic intervention by an eye care team at the point of enrolment into schools and establishment of ophthalmic units in special schools to provide periodic eye examination and proper management of ocular disorders are thus recommended.

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#### Compliance with ethical standards

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##### *Disclosure of conflict of interest*

The authors declare that they have no conflicting interests.

##### *Statement of ethical approval*

Ethical approval (ABSU/REC/OPT/004) was obtained from the research ethical committee of Abia State University, Nigeria and MOE/ADM/687/133 from the special education unit of the education support services of the ministry of education, Imo State, Nigeria.

##### *Statement of informed consent*

Informed consent was obtained from each student's parent/ guardian through the school authority before enrolment into the study.

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#### References

- [1] Holhos LB, Coroi MC, Lazăr L. Observations on Refractive Status and Risk Factors for Visual Impairment in Children with Disabilities. *Medicina*. 2021; 57: 403.
- [2] Joshi RS, Somani AA. Ocular disorder in children with mental retardation. *Indian Journal of Psychiatry*. 2013; 55(2): 170-2.
- [3] Allen LC, Dillon A, Bowen P. Eye Care for Children in Special Schools: An Audit of Provision. *Br Ir Orthopt J*. 2 Feb 2021; 17(1): 27-32.
- [4] Cameron DL, Nixon S, Parnes P, Pidsadny M. Children with disabilities in low-income countries. *Pediatric Child Health*. 2005; 10(5): 269–72.
- [5] UNICEF. Promoting the rights of children with disabilities, Innocenti Digest no 13 [Internet]. 2007 [cited 2022 Jun 13]. Available from: <https://www.unicef-irc.org/publications/474-promoting-the-rights-of-children-with-disabilities.html>

- [6] Adugna M.B, Nabbouh F, Shehata S. et al. Barriers and facilitators to healthcare access for children with disabilities in low and middle income sub-Saharan African countries: a scoping review. *BMC Health Serv Res.* 2020; 20: 15.
- [7] Ezeh EI, Ibanga AA, Duke RE. Visual status of special needs children in special education schools in Calabar, Cross River State, Nigeria. *Nigerian Postgraduate Medical Journal.* 2018; 25(3): 161-165.
- [8] Woodhouse JM. Investigating and managing the child with special needs. *Ophthalmic Physiol Opt.* 1998Mar; 18(2):147-52.
- [9] Black SA, et al. In-school eyecare in aspecial education settings has measurable benefits for children’s vision and behaviour. *PLoS ONE.* 2019; 14(8): e0220480.
- [10] Das M, Spowart K, Crossley S, Dutton GN. Evidence that children with special needs all require visual assessment. *Arch Dis Child.* 1 November 2010; 95(11): 888–892.
- [11] Woodhouse JM, Davies N, McAviney A, Ryan B. Ocular and visual status among children in special schools in Wales: the burden of unrecognized visual impairment. *Arch Dis Child.* 1 June 2014; 99(6): 500–504.
- [12] Little JA, Saunders KJ. A lack of vision: evidence for poor communication of visual problems and support needs in education statements/plans for children with SEN. *Public Health.* 1 February 2015; 129(2): 143–148.
- [13] ACPF. The African report on children with disabilities: promising starts and persisting challenges. [Internet]. 2014 [Cited 2022 Apr 16]. Available from: <https://www.africanchildforum.org>
- [14] Donaldson LA, et al. Findings from an opt-in eye examination service in English special schools. Is vision screening effective for this population? *PLoS ONE.* 2019; 14(3): 0212733.
- [15] Scheer Y. Special Needs Children & Vision: Why should they visit the Optometrist? [Internet]. 2017 [Cited 2022 Apr 16]. Available from: <https://www.brooksideoptometric.com > education >sp..>
- [16] Error! Hyperlink reference not valid.. 2022 [Cited 2022 Apr 22]. Available from: [www.britannica.com](http://www.britannica.com).
- [17] About Imo State. Imo State, Nigeria: Imo State Government. Archived from the original on 17 July 2010. Retrieved 22 April 2022.
- [18] Nigeria's 36 States and Their Slogans [Internet]. 2022 [Cited Apr 22]. Available from: [nigerianfinder.com](http://nigerianfinder.com)
- [19] Map of Imo State [Internet]. 2022 [Cited 2022 Apr 22]. Available from: [https://upload.wikimedia.org/wikipedia/commons/8/81/Nigeria\\_Imo\\_State\\_map.png?20100211040128](https://upload.wikimedia.org/wikipedia/commons/8/81/Nigeria_Imo_State_map.png?20100211040128)
- [20] Map of ofekala-orodo [Internet]. 2022 [Cited 2022 Apr 23]. Available from: <https://www.google.com/maps/vt/data>.
- [21] Map of Orlu [Internet]. 2022 [Cited 2022 Apr 22]. Available from: <https://mapcarta.com/Orlu>.
- [22] Map of Owerri [Internet]. 2022 [Cited 2022 Apr 22]. Available from: <https://www.google.com/maps/vt/data>.
- [23] Omolase CO, Komolafe OO, Adeniji AO, Adetan O, Omolase BO, Akinwalere, AK, Omolade EO. Ophthalmic disorders among students of School for the Deaf. *Otolaryngology Online Journal.* 2012; 2(3): 23–41.
- [24] Majekodunmi OI, Olusanya BA, Oluleye TS. Utilization of eye care services among students attending schools for the hearing impaired in Oyo State, South-west Nigeria. *Annals of Ibadan Postgraduate Medicine.* 2019; 17(2): 181-186.
- [25] Okonofua F, Lambo E, Okeibunor J, Agholor K. Advocacy for free maternal and child health care in Nigeria—results and outcomes. *Health Policy.* 2011; 99(2): 131–8.
- [26] Nota A, Chikwanha TM, January J Dangarembizi, N. Factors contributing to defaulting scheduled therapy sessions by caregivers of children with congenital disabilities. *Malawi Medical Journal.* 2015; 27(1): 25–8.
- [27] Aldersey HM, Turnbull HR, Turnbull AP. Intellectual and developmental disabilities in Kinshasa, Democratic Republic of the Congo: causality and implications for resilience and support. *Intellect and Developmental Disabilit.* 2014; 52(3): 220–33.
- [28] Yousafzai AK, Edwards K, D'Allesandro C, Lindström L. HIV/AIDS information and services: the situation experienced by adolescents with disabilities in Rwanda and Uganda. *Disability and Rehabilitation.* 2005; 27(22): 1357–63.