



## ORIGINAL ARTICLE

# Parents' awareness and perception of children's eye diseases in Nigeria



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### KEYWORDS

Eyecare;  
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### Abstract

**Purpose:** Most causes of childhood blindness are treatable or preventable. Knowledge of parents' awareness and perception of eye problems is important in helping to understand parents' eye care seeking behavior. This understanding becomes necessary as early detection and intervention can be effective when done at an early age.

**Method:** Study was carried out in Benin City, Nigeria. Thirty-five parents aged 38–54 years with a mean age of 43(±2) years were recruited. Twenty six were females and nine males. Ten eye care practitioners aged 30–45 years with a mean age of 40 (±2) were included. Seven were males and three were females. Data was analyzed qualitatively and in percentages.

**Results:** Majority of parents were aware of common eye problems: Blurry vision (85.7%), measles in eye (48.5%), cataract (74.3%), conjunctivitis (48.5%), itching and redness (74.3%), crossed eyes (34.3%), strabismus (57.1%), short sightedness (48.5%) and stye or hordeolum (57.1%). Too much carbohydrate, night reading and too much TV were some of the reasons given for bad eyesight. Self medication and use of local remedies for treatment of conjunctivitis was common practice (94.3%). Chloramphenicol eyedrop was the most common drug used for any eye problem before visiting a doctor (80.0%).

**Conclusion:** Parents are aware of common eye diseases in children but have wrong perception of their causes. Programs to increase public awareness of causes of eye problems and harmful effects of self medication are advocated for to expose inherent dangers.

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**PALABRAS CLAVE**

Cuidados oculares;  
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Padres;  
Niños;  
Enfermedades

## Concienciación y percepción de los padres sobre las enfermedades oculares infantiles en Nigeria

### Resumen

**Objetivo:** Muchas de las causas de la ceguera infantil son tratables o prevenibles. Conocer el grado de concienciación y percepción de los padres sobre los problemas oculares es importante para ayudar a comprender el comportamiento de los mismos en relación a la detección de problemas oculares. Esta comprensión es necesaria, ya que la detección e intervención pueden resultar efectivas cuando se realizan a una edad temprana.

**Método:** El estudio se llevó a cabo en Benin City, Nigeria. Se seleccionó a treinta y cinco padres con edades comprendidas entre 38 y 54 años, con una edad media de 43(±2) años, de los cuales veintiséis eran mujeres y nueve varones. Se incluyó a diez oftalmólogos con edades comprendidas entre 30 y 45 años, con una edad media de 40 (±2) años, de los cuales siete eran varones y tres mujeres. Los datos se analizaron porcentual y cualitativamente.

**Resultados:** La mayoría de los padres eran conscientes de los problemas oculares comunes: visión borrosa (85,7%), manifestaciones oculares de la rubeola (48,5%), cataratas (74,3%), conjuntivitis (48,5%), picazón y enrojecimiento (74,3%), bizquera (34,3%), estrabismo (57,1%), miopía (48,5%) y orzuelos (57,1%). El exceso de carbohidratos, lectura nocturna y televisión fueron algunos de los motivos aducidos para la mala visión. La auto-medicación y el uso de remedios locales para el tratamiento de la conjuntivitis constituyeron una práctica común (94,3%). Los colirios de cloramfenicol fueron los fármacos más comúnmente utilizados para cualquier problema ocular, antes de visitar al médico (80,0%).

**Conclusión:** Los padres son conscientes de las enfermedades oculares comunes en los niños, aunque tienen una percepción errónea de sus causas. Proponemos la realización de programas para incrementar la concienciación pública sobre las causas de los problemas oculares y los efectos dañinos de la auto-medicación, para evitar daños inherentes.

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## Introduction

Childhood blindness refers to a group of diseases and conditions occurring in childhood or early adolescence which if left untreated results in severe blindness or some visual impairment that are likely to be untreatable later in life.<sup>1,2</sup> World Health Organization (WHO) defined blindness as a visual acuity less than 3/60 or a corresponding visual field loss of less than 10 diopters in the better eye with the best possible correction.<sup>3</sup> By WHO criteria, there are 1.5 million children worldwide who are blind: 1.0 million in Asia, 0.3 million in Africa, 0.1 million in Latin America and 0.1 million in the rest of the world.<sup>3</sup>

Steinkullar<sup>4</sup> estimated that about 5% of worldwide blindness involved children younger than 15 years of age. In developing countries, 50% of the population is in this age group. The prevalence of blindness in children varies from approximately 0.3 per 1000 children in wealthy regions of the world to 1.2 per 1000 in the poorer countries or regions.<sup>5</sup> Three main reasons have been attributed to this. First, diseases that can lead to blindness such as measles, vitamin A deficiency and ophthalmia neonatorum are still prevalent in poor regions of the world. Second, there are fewer well equipped facilities and personnel trained in the management of treatable causes of blindness in poorer countries. Third, in rural areas, ignorance, poverty and superstitions

contribute to disease causation and propagation and these work against treatment and prevention.<sup>5</sup>

Senthilkumar et al.<sup>6</sup> reported on parents' perception and awareness of children's eye diseases in Chennai, India and concluded that one of the prerequisites of health-seeking behavior is knowledge of disease and their symptoms, which seemed to be lacking in the parents of children studied.

Also, parental concerns about general developmental problems have been shown to be associated to the type of disease which may also cause blindness. These factors collectively impact negatively on the perception of eye diseases and encourage the use of harmful traditional eye medications which can result in avoidable blindness.<sup>7-10</sup>

Parents as primary care givers make decisions on seeking health care service for their children.<sup>11</sup> Understanding parents' perception and awareness of eye problems is important in understanding why some parents seek care for their children whereas others do not.<sup>12-14</sup> This understanding becomes necessary because early detection and intervention serves best when given at an early age.<sup>15-17</sup>

The high number of blind years resulting from childhood blindness was one reason for the control of childhood blindness to become a priority for the World Health Organization/International Agency for Prevention of Blindness (WHO/IAPB) VISION 2020; The Right to Sight Program (WHO, 1997). Children who are blind must overcome a lifetime of

emotional, social and economic difficulties which also affect the family and society.<sup>18–21</sup>

Visually impaired children have reduced role to play in the economy.<sup>22</sup> More so, this can have severe negative impact on the education, personal development and future economic productivity of the individual.<sup>22</sup> This impact is greater and has more severe consequences in poor or less developed parts of the world like Nigeria, where resources and educational support are lacking. Poor education and inability to participate fully in daily life activities add greatly to the difficulty and suffering that poor vision or blindness cause in childhood.

The purpose of this study was to determine how much parents know about their children's eye problems, the causes of these problems and if the eyecare providers are aware of the parents' knowledge and perception of these diseases.

## Method

This was a qualitative study carried out in Benin City, Edo state Nigeria. Thirty-five parents who had children aged between 5 and 12 years and that were residing with these children for at least the past one year were enlisted for this study. They were parents who could understand and speak English language or broken English (pidgin) comfortably and were willing to participate in this study. Ability to communicate in English language (or broken English) was a criterion because of its convenience as a lingua franca. Benin City, Nigeria, is populated by people from many diverse tribes and ethnicity, who all speak different languages. The parents were aged 38–54 years with a mean age of 43(±2). There were twenty six (26) females and nine (9) males.

Ten eye care practitioners aged between 30 and 45 years with a mean age (±SD) of 40 (±2) were also included in the study. Seven (7) of them were males and three (3) were females. Eyecare providers were included so as to ascertain their level of awareness of parents' perception and knowledge of their children's eye diseases. This would be an important factor for doctors when planning public enlightenment/educational programs for communities to improve the eyecare seeking behavior of parents for their children. Parents were randomly selected and grouped according to those who sought eye care for their children for any eye problem and those who did not seek eye care for their children for any eye problem. Parents of children with special needs or multiple disabilities were excluded from this study.

Eye care practitioners were selected homogenously, including optometrists and ophthalmologists either in private practice or working in tertiary eye care hospitals. The practitioners must have worked for a minimum of 3 years and were willing to participate. A minimum of 3 years work experience was required for participation to make allowance for adequate consultation visits with parents. The average work experience of the eye care practitioners in this study was 8 years. Practitioners who do not treat children in their practice were not included in the study.

According to the convenience of the parents, they were included in either focus group discussions (FGDs) or in-depth

interviews (IDIs) which were held in various locations in Benin City. Four FGDs and two IDIs were conducted with parents while ten in-depth interviews were conducted with eye care practitioners. Recordings were made with an electronic voice recorder after informed consent was obtained from the participants.

Simple demographic data were obtained from both parents and practitioners before the commencement of the study. This contained the sex, age and years of working experience of the practitioners.

Theoretical framework used to develop the interview for parents and practitioners was as reported by Senthilkumar et al.<sup>6</sup> This gave a guide to the structure of sample questions for both parents and eye care practitioners that were used in the interviews.

## Data analysis

The FGDs and IDIs were conducted until redundancy of responses was obtained in every domain. Verbatim transcription of the interviews was completed. The familiarized data were coded using both deductive and inductive approach and themes were generated. Data are presented in percentages.

## Results

Thirty five parents of mean age 43(±2) years participated in 4 focus group discussions (FGDs) and 2 in depth interviews (IDIs). Twenty one (60%) of the parents had sought care for their children and 14 (40%) of them had not sought care for their children for any eye problems. Among the parents who participated, 26 (74.3%) were females and 9 (25.7%) were males.

The parents who sought care for their children had gone to the eye clinic because of eye problems like difficulty in seeing the blackboard which they referred to as short sightedness (48.5%), itching (24.8%), redness of the eye locally called '*apollo*' (25.0%), discharging and sticky eyes (26.1%), squeezing the eyes and muscles of the forehead in an attempt to see clearly (25.0%), skipping lines when reading (24.4%), using finger as place marker while reading (22.0%), always rubbing the eyes when reading (20.0%), sitting close to the Television set (40.4%), inability to recognize people from a distance and strabismus which they referred to as crossed eyes or '*half past four eyes*' (20%). Some parents gave more than one symptoms for why they sought care.

Seven themes were raised from the FGDs and IDIs conducted. These are reported below.

### Parents' awareness of children's eye problems

Majority of the parents were aware of most common eye problems. Among the ones mentioned include blurry vision (85.7%), measles in the eye (48.5%), cataract (74.3%), high pressure in the eye (25.0%), conjunctivitis or '*apollo*' (48.5%), itching or redness (74.3%), eye discharge or infection (24.4%), crossed eyes or '*half past four eyes*' (34.3%), long sightedness (20.0%) and short sightedness (48.5%), tearing (24.4%), eye pain or ache (25.0%), blunt trauma to the

eyes. Most (57.1%) parents also mentioned stye or hordeolum which they described as 'boils'. Others (34.3%) mentioned *ophthalmia neonatorum* which they referred to as newborn baby eye infection.

*'That eye problem where the person is talking to you and the eyes are looking at another place away from you. That is half past four eyes...'- FGD 1: Mother who previously sought care for child with conjunctivitis.*

*'When child sit in front of TV to see well. That is eye problem...'- FGD 2: Mother who had previously sought eye care for child with refractive error.*

*'I have a friend; one of his eyes is closing and cannot open very well...'-FGD 3: Father.*

When the eye care practitioners were asked about the common eye problems that parents might be aware of, they mentioned the same conditions as the parents. Other conditions mentioned are nystagmus, photophobia, ptosis, cornea opacity or ulcer, growth in the eyes and headache from eye problems.

*'parents are usually aware of those conditions that the child cannot hide like always rubbing on the eyes, sitting close to the TV or holding a book too close to the face...'-IDI: Optometrist.*

### Parents' awareness of amblyopia

When asked about amblyopia, only one (2.9%) of the parents said he had heard of it from a doctor on one of his visit to the eye clinic. He said a patient had it and the doctor referred to it as 'lazy eye'. The practitioners were in agreement that majority of parents would not know about amblyopia unless their child was diagnosed with the condition.

*'Most parents do not know what amblyopia means. This is an advanced term and they would not hear about it commonly unless a child or ward is diagnosed to have it and an explanation is given to them about the condition...'-IDI with Ophthalmologist.*

*'Doctor say child has lazy eye because the eye does not see properly...it is called amblyopia...'-FGD 3: Father.*

### Parents' awareness and perception of refractive error

Most parents (71.4%) were well aware of eye conditions that needed the use of glasses. They said glasses are needed when someone cannot see well at a distance, like recognizing people's faces or seeing what was written on the blackboard in school and when one has difficulty with reading. Some parents (51.4%) associated poor performance in school to eye problems that might require the wearing of glasses. A few parents (22.9%) associated headaches with eye problems which might require the use of glasses. The eye care practitioners agreed that most parents associated the rubbing of the eyes, difficulty in copying from the blackboard, sitting close to the TV or holding book too close to the face as symptoms of refractive error that require the use of glasses.

*'When child sits too close to TV, he needs glasses. When he cannot copy correctly from blackboard in school, he needs glasses... when child that sits at the back of class move forward to copy from the blackboard, there is eye problem and the child need glasses...'- FGD 3: Dad who had sought care for child with refractive error.*

*'Parents often know the signs of those conditions that their children might require glasses for. Usually they will come into the clinic actually asking for glasses for the child because he or she cannot see properly until they get close to the object of regard or because they keep making mistakes when reading or holding material too close to the face...'-IDI with Ophthalmologist.*

### Parents' knowledge of treatments for common eye problems

Some parents (51.4%) said they would prefer drugs to prescription of glasses for their child. A favorite drug among the parents (80.0%) for the treatment of any eye condition was chloramphenicol, an antibiotic eye drop which can be bought over the counter at the chemist or drug store. Some parents (42.9%) were worried that when a child is given glasses too early, the eyes would become 'addicted' to them and cannot function well on their own.

Some parents (34.3%) think that certain 'drugs' like vitamin A and vitamin C, as well as carrots and yeast tablet or powder can be used to treat eye problems instead of glasses. Eating lots of fruits, fish, eggs and vegetables were other forms of treatment suggested.

*'Yeast powder in food is very good for eye problem. It makes eye very clear. Not all the time you give glass. Cod liver oil is good. Plenty vegetable and fruit also make eye clear...'- FGD 4: Dad who had not sought care for child.*

When asked if they had any homemade or local treatments for eye conditions, some parents (17.1%) said they had put sugar solution, early morning urine and breast milk, if available, into a child's eye for the treatment of 'apollo' (conjunctivitis) at one time or another. Others (34.3%) admitted to using water on coconut leaves, cassava water, local roots and herbs to treat one form of eye problem or the other. Some parents (14.3%) used palm wine to wash the eyes when there is measles in the eyes. Other parents (28.6%) had used shea butter, locally called 'orioryor' for the treatment of 'boil'. Although they could not vouch for the safety of these practices, they relied on them because the practices had been going on for ages among their forefathers and were deemed effective.

*'You can put sugar in water and use to treat 'apollo'... Some roots and leaves are very good for eyes. When you squeeze the water out and put in the eye it can cure scratching of eye and pus from eyes. Also breast milk or early morning urine can be put in the eyes to cure 'apollo'. Our people have been doing it...'- FGD 2: mothers.*

*'Most of the parents would have used one form of traditional or local remedy on the child's eye before coming to see the doctor. Self medication is very prevalent as well as drug abuse and the most popular drug for any eye*

*condition among parents is chloramphenicol eye drops. 90% of the parents would have used it before seeking eye care...'* IDI with Optometrist.

### Perception of causes of refractive errors

When the parents were asked what they thought was responsible for long or short sightedness in children for which they would need to wear glasses for, some (31.4%) of them said too much carbohydrates in the diet was a cause. Other parents (20.0%) said hygiene was another reason, as some children put all sorts of things in their eyes and clean their faces with dirty rags. Some said when people do not take care of their eyes as well as they should, they could get infection. Others (40.0%) thought night reading or straining one's eyes to read especially with candle light and reading too much could cause a child to need glasses because the eyes become too weak. A few parents (34.3%) thought too much TV and computer games could result in refractive errors. They complained that children watch too much television these days and hardly go outside to play anymore.

Practitioners said parents always complained that too much TV damages children's vision. Malnutrition and anemia were also seen as causes of refractive error.

*'If child read with poor light like candle, it can affect eye...Using dirty rags to clean eyes can cause infection...when children watch too much TV or read too much it can affect the eye...'* FGD 3: Mothers.

### Parents' awareness of strabismus

Most parents (57.1%) were aware of the fact that the two eyes should be coordinated and work together for a person to see properly. Non alignment of the eyes was perceived as an anomaly. This is locally referred to as *'half past four eyes'*. Most of the parents (75.0%) said the condition was hereditary while others said it was congenital. Not many of them were aware of the treatment options for strabismus. A few parents (17.1%) were of the opinion that exercises could cure strabismus while most think the eyes would get better as the child grows. A parent (2.9%) said she was aware that strabismus can be corrected surgically because she had a niece who was taken to India for surgery for such a condition and the eyes became better.

*'You can use operation to treat misalignment because my sister's daughter had misalignment of eyes and she was taken to India for operation. After the operation the eyes were better...'* FGD 1: Mother.

*'Parents do not usually seek treatment for strabismus because they do not think it affects vision. A few of them however are concerned about the cosmesis...'* IDI with Optometrist.

### Parents' perception of eye health

Parents were of the opinion that good food was beneficial to eye health. Lots of vitamin A in the diet for bright eyes from cooking with palm oil instead of bleached oil was suggested by most parents (62.9%). Also, not allowing children watch

too much TV was advocated for (51.4%). Other suggestions offered by the parents include encouraging children to play outside as this was a healthy habit, not allowing children play roughly to avoid incidents of protruding injuries to the eyes and cautioning children against throwing sand, stones and sticks at each other while playing. A few of the parents (22.9%) wanted eye care practitioners to pay yearly visits to schools to examine children's vision at the beginning of every school year. Others (14.3%) advocated home visits by eye care practitioners.

Eye care practitioners advocated enlightenment campaigns to educate parents on causes of eye diseases and identifying the signs and symptoms of these diseases. The need for parents to visit eye clinics for early interventions and treatment was stressed.

*'Children should be given good food with plenty vitamin so they will have good eye sight...they should play rough less to avoid accident and injury...they should run outside and climb trees to have good energy...'* FGD 1: mothers.

### Discussion

The WHO reported that about 50% of the total blindness worldwide was due to avoidable causes.<sup>3</sup> The expected number of blind years is more for children than adults, therefore childhood blindness is given a higher priority in eye care policy making in various parts of the world, especially in the developing regions.

Due to the economic situation in Nigeria, programs for the detection and management of childhood blindness at primary, secondary and tertiary levels are not in place. Although it is important for every school child to have a comprehensive eye examination, Nigeria does not have enough Optometrists to periodically perform this regularly, therefore the duty of providing eye care to children now depends on how knowledgeable the parents are about these conditions as it would tend to affect their eye care seeking behavior.

In this study, parents were aware of common eye problems such as conjunctivitis, refractive errors, cataract, blunt trauma and measles infection of the eye. The practitioners also reported that parents are usually aware of conditions like refractive errors, because the child cannot hide the signs. These signs include the child constantly rubbing the eyes, sitting close to the TV or holding a book very close to the face. The parents were aware of conditions that required the use of glasses, they mentioned various signs which are indicative of refractive errors such as child sitting very close to the TV and holding reading material close to the face. They agreed this could lead to poor performance in school as the child would not be able to see well or copy correctly from the blackboard. However, most parents were hesitant to provide spectacle correction for their children with vision problems because they perceived wearing glasses as a stigma. This supports report by Senthilkumar et al.<sup>6</sup> It also supports the study by He et al.<sup>23</sup> that reported on barriers to spectacle use among children 5–15 years of age in urban China. Their study reported that 49% of parents do not want their child to wear glasses despite the awareness of refractive errors.

In this study, practitioners reported that most parents might not be knowledgeable about a condition like amblyopia. Only one parent had heard of amblyopia. This is similar to reports by Senthilkumar et al.<sup>6</sup> where only one parent quoted amblyopia as an eye problem.

Amblyopia is a preventable and treatable condition especially if detected early in children below the age of eight. Parents need to be educated about these conditions so as to reduce their effects on vision.

Most parents were aware of strabismus as an ocular problem. Although most of them knew it as 'half past four', which is the local term for it. They agreed that children with this condition would find it difficult relating with other children and are usually alone. This is worse for the girl child in a society like ours where a high premium is placed on cosmetic appearance. They understood that misalignment of the eyes meant that both eyes would not work together for proper vision.

Not many were aware of the possible treatment options available for strabismus. Some parents think exercise is a choice of treatment while others believed the eyes get better on their own. Very few were aware of the consequences of leaving a child untreated. Satterfield et al.<sup>24</sup> reported that strabismus has a negative impact in many aspects of the individual's life like causing difficulty with self image, securing employment, interpersonal relationships, school, work and sports.

Parents attributed diet, hygiene, poor lighting such as the use of candles while reading or reading for long hours as factors that could cause vision problems in children. Reports from practitioners indicated that while some parents were aware of the signs of refractive errors and would usually come to the clinic asking for glasses for their child who cannot see well, others would not get glasses for their children even when it is recommended for them. Despite the knowledge of common eye problems among parents, not all were able to tell the cause or likely treatment for the problems mentioned.

The use of local or traditional treatment was common among the parents. The study revealed that there was a high patronage of over the counter medications. Self medication was prevalent among the parents. The commonest and most popular drug used for nearly all eye conditions by the parents was chloramphenicol eye drop, which all the parents agreed they had used at one time or the other, without seeing a doctor. This is in agreement with the study by Ebeigbe and Omokhua<sup>25</sup> on pattern of self medication by patients before visiting the eye clinic. They reported that the most frequently used product was chloramphenicol eye-drop 15.1%.

A lot of respect is accorded to advice given by elders in our society<sup>26,27</sup>. Most parents tend to treat their children based on the counsel of a grandfather or mother. Sometimes the decision to seek or not seek orthodox care is made by these grandparents, who were usually of the opinion that western medicine was either too costly and a waste of time<sup>28</sup>. Nirmalan et al.<sup>29</sup> on perception of eye diseases and eye care needs of children among parents in rural south India concluded that differing advice provided by the medical community for the same condition was an issue. The discussions also brought out that eye doctors were approached

last for eye care, after traditional healers and general physicians.

In developing parts of the world, poverty and cultural beliefs have been known to play a major role in parental awareness and knowledge of children's diseases. In Nigeria, Feyisetan et al.<sup>30</sup> reported that four reasons affect mothers' management of childhood diseases, lack of accurate information about the causes of some childhood diseases, lack of confidence to recommend modern curative measures, spiritual belief in the afterlife and reliance on treatment from traditional healers and religious institutions irrespective of the nature of the illness.

In rural Uganda, results by Mbonye<sup>31</sup> showed that although the perception of childhood diseases by parents was high, the care-seeking practices were poor. Nirmalan et al.<sup>29</sup> in their study estimated that India alone houses about 200,000 blind children. This number is five times more than that in developed countries.

Parents' perceived that good nutrition and healthy eating habits are beneficial to ocular health. Some parents were of the belief that foods and certain habits can be used to treat refractive errors. Furthermore, some said children should be allowed more time to play outdoors instead of remaining inside playing on the computer. They thought this would prevent incidence of poor vision or eye diseases.

A possible bias that might exist in this study could be as a result of sample selection. Parents with younger children may not have visited the clinic frequently compared to those with older ones. Those who visited the clinics frequently may have better knowledge. This might have some bearing on the results presented. This study concludes that although most parents are aware of common eye diseases in children, they have wrong perception of the causes of these diseases. Public enlightenment and health education programs are advocated for to keep parents abreast of the implications of these conditions, their causes and the effects they might have if left untreated.

## Conflict of interest

Nothing declared.

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