

The State of Paediatric Eye Care in Nigeria: A Situational Review and Call for Action.

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ABSTRACT

The fight against childhood blindness is being given top priority by the World Health Organization especially in regions of the world, like Nigeria where the gross income per capita is relatively low with up to 60.9% of them living in absolute poverty as at 2010. Avoidable causes of blindness in children needs to be eliminated through the development of sustainable and equitably distributed high quality children eye care services as part of our national health care system. However enough attention has not been given to achieve this yet. The purpose of this editorial is to highlight the challenges in childhood eye care in this country as well as discuss ways the current negative trend can be reversed.

KEYWORDS

Paediatric, Nigerian child; Ophthalmology; Subspecialty

CORRESPONDENCE

INTRODUCTION

Paediatric ophthalmology is the subspecialty that deals with ocular disorders in the pediatric age group. Most common ophthalmologic problems in children are different from the most common ones in adults. As a result, the skills and competence required for pediatric ophthalmology care are peculiar and should not be generalized as children are not merely small adults. Childhood eye care not only requires discipline and dedication as more effort is taken to elicit any response from them but also requires the complete trust of not just the parent but the

child himself. Trained pediatric ophthalmologists are therefore needed in addition to adopting a programmatic approach in the care of children.

Reducing visual impairment and blindness in children in resource poor countries is one of the key components of the major global prevention of blindness initiative, VISION 2020: the Right to Sight.¹ Currently it is responsible for 4% of blindness in the world.²

Nigeria with a total population of around 167 million³, however, has its childhood population of 75 million largely under served in terms of eye care for various reasons. Many needy children are not identified to have eye problems and these children tend to die early and further worsen the infant mortality rate (currently 100 deaths/1000 live births^{3,4}).

A child allowed to remain visually disabled will spend a much longer period or years of disability than an adult. This means the lifelong impact is very large.⁵ This therefore puts more strain on an already strained health and economic system and lays a burden on the social system in terms of care. Rehabilitation of the irreversibly blind is also important as it is only available in certain areas in the country for certain age groups which makes it out of reach in most cases from those who require them. There is basically very little structure on ground to address this. Most of the eye care available generally in the country does not suit the needs of children. The establishment of eye care systems specifically targeted at the care of the Nigerian child's eye is of utmost importance. The purpose of this editorial is to present reasons why this happens and suggest ways to correct this trend.

The burden of blindness in Nigerian adults.

The recently concluded Nigerian National

survey of blindness and visual impairment released in 2008^{6,7} showed a high prevalence of blindness (4.2%) among Nigerian adults among a representative study population of respondents over 40 years old. In over 84% of these cases, blindness was due to avoidable causes; with cataract responsible for 43% of blindness, glaucoma 16.7%, uncorrected aphakia 8.4% and corneal opacity 7.9%. This means over 1.1 million adults in this age group are currently blind in Nigeria (95% CI: 1.03-1.25 million). The northwest geopolitical zone has the largest burden (28%). A further 2.7 million and 400,000 adult in this age group are estimated to be moderately and severely visually impaired respectively. Thus a total of 4.25 million adults aged >_40 years in Nigeria are either visually impaired or blind. The commonest cause of blindness is cataract (43% of cases) and glaucoma (16.7% of cases).

The burden of blindness in Nigerian children.

In Nigeria, 75 million are estimated to be children 0-15 years out of which 75,000 are blind from various causes.⁴ Blindness in children is even more devastating because it is related closely to mortality rate. It is estimated that every minute a child goes blind in both eyes in a developing nation^{8,9} and 60% die within a year of going blind.¹⁰

The Nigerian National survey of blindness and visual impairment also examined children. Though the sample may not be a truly representative sample^{6,7} the findings are still a good indicator of the existing situation of childhood blindness in the country. Over 5000 children aged 10-15 years residing in a household where there was at least one respondent >40years were examined. The prevalence of blindness was found to be 0.6% in the surveyed children with a lower prevalence for mild, moderate and severe visual impairment. Place of residence whether rural or urban did not affect the prevalence of blindness in this age group. Females had a higher prevalence of blindness (0.89%) than males (0.33%). Prevalence of blindness was 1.53% among illiterate children. The lowest prevalence of blindness was in the South West geo political

zone (GPZ) while the highest prevalence of blindness was in the South South GPZ.

The causes of blindness in children

About 40-75% of childhood blindness is avoidable and curable.^{4, 8,9-11} The leading causes of blindness in this age group are cataracts (in Nigeria 7,500 children are blind due to cataract⁴), corneal scarring from harmful eye practices and eye injuries^{12, 13}. Other leading causes include vitamin A deficiency and neonatal infections, congenital and developmental glaucoma and uncorrected refractive errors which can usually be prevented by the early use of corrective eye glasses.

Some of these aetiologies require primary level public health interventions (corneal scar-with immunisation and good nutrition) while others require tertiary or even quaternary level paediatric ophthalmology interventions (cataract, glaucoma-surgery, refractive services, and low vision services).

The current state of ophthalmology services in Nigeria.

A recent study sponsored by the International Council of Ophthalmology (ICO), the unifying body of ophthalmologists worldwide, has found out that 2/3rd of all ophthalmologists are from developed countries while the rest of the world shares the remaining 1/3^{rd14}. This is probably the reason for the gross inadequacy in the delivery of safe eye care in the country and similar countries. These countries unfortunately are the ones who bear the burden of the higher numbers of the reversibly blind and visually impaired for which something distinctly measurable can be done if the numbers trained were to be enough.

There are approximately only about 400 ophthalmologists in Nigeria (including those in training)¹⁵. Most of these have very poor experience with childhood eye care. In addition, these ophthalmologists are unevenly distributed with 95-99 % practicing in the urban areas and state capitals in particular compared to the extremely very few in suburban and rural areas.⁴ The consequence of this scenario is very poor access to eye care for children living in these

areas.

The state of paediatric ophthalmology services in Nigeria. Human resource:

There are extremely few numbers of paediatric trained ophthalmologists with over two thirds of the states of the federation without any.

Out of these 400 plus general ophthalmologists, there are only 4 with full fellowships (additional training outside of general ophthalmology training of 4-5 years normally ranging between 1 year and 1 & a half years) in paediatric ophthalmology and 8 others with 3 to 6 month (short term) fellowships and one about to go for training in South South (full fellowship). Others are paediatric oriented (meaning no formal training yet but a distinct interest shown in paediatric eye care).

Altogether there are 12 paediatric ophthalmologists with 3 in the South South, 4 in the South West, 3 in North Central, 2 in North West, none at all in North East and South East GPZ. This very small number obviously cannot cope with the large number of children in the country (75 million) thus more paediatric ophthalmologist are needed. Efforts need to be made to attract more general ophthalmologists into this unique field in order to ensure that our children's eyes are properly taken care of.

Paediatric eye care team:

A Typical team comprises of-Paediatric ophthalmologist, optometrist skilled in refracting children, orthoptist, anaesthetist skilled in childhood anaesthesia, low vision and rehabilitation specialist, paediatric ophthalmic nurse.⁸ This area of eye care needs a team approach to be successful and identifying modalities of training of a composite team of all these eye care workers needs to be addressed. The World Health Organization (WHO) strongly recommends a team approach. One without the others will not make for effective delivery of paediatric eye care services. Unfortunately currently there is not even one orthoptist available in the country and the numbers of those with low vision & rehabilitation training is less than 5 in the whole country.

Facility availability:

It is advocated by WHO that there should be one paediatric ophthalmology tertiary service centre per 10 million population.⁸ However in Nigeria, these paediatric tertiary centres are not evenly spread. They are mainly concentrated in North Central and South West. The most active and equipped tertiary paediatric centres are in Kano and in Lagos (both of which are privately owned) -they actually do more than 2/3 of paediatric eye surgeries with referrals from most parts of Nigeria. However the combined annual output from these centres is still low, with less than 2500 children operated upon annually⁴. The government owned tertiary centres are ill equipped to handle paediatric ophthalmic cases due to poor funding. Our primary and secondary eye care facilities are also not adequately prepared to support the tertiary.

Program implementation and planning:

Less than half of the 36 states in Nigeria currently have a VISION 2020 plan and only a few states have active Prevention of Blindness Committees or are actually implementing it.⁶ There is also no strategic national plan for the implementation of paediatric ophthalmic care as at the time of writing this review.⁴ In addition school eye health programs are not widespread and the few that exist, are not properly monitored and evaluated regularly by the relevant body. It is advocated that this programs should be implemented and anchored by the Ministries of Education and Health. This approach will help identify eye problems in children early, before it can affect a child's education. The other key aspects of the school eye health program which should be implemented includes the School screening and primary eye care which should include teacher screening, sibling screening, health education of common eye diseases and research and advocacy.¹⁶

Eye care expenditure:

In recent years, the Nigerian government has spent less on healthcare per person/adult. In 2010, just 3.4% (161.84 billion naira) of the budget was allocated to health.¹⁷ (WHO recommends a minimum of 5%.¹⁸). Very little of

this was spent on eye care. In that year's budget, less than 0.005% was allocated to eye care generally for the whole country. Whereas 2.011 trillion (50 % of the total budget of 4.07 trillion) was spent on recurrent expenditure.¹⁷

The state of child health care funding and health system challenges.

Even less is spent on child eye care. There is hardly any provision in budget for child eye care services which happen to be even more expensive than adult eye care. For instance, to do a simple cataract extraction in a child costs 5 to 10 times more than in an adult.

Currently, there is a weak health care system that is underfunded; in addition to the prevailing widespread poverty rate of 71.5% , a situation which is worse in some states like Sokoto state with a rate of up to 86.4% of the population living below the poverty line of less than a dollar per day as at 2011^{4,19}. This burden of poor healthcare funding is worsened by a weak National Health Insurance Scheme. All these factors contribute to the less than optimal quality of eye care services in the country which is reflected in the low productivity by ophthalmologists and other eye care workers; as shown by the cataract surgical rate in 2009 of 333²⁰ in Nigeria as opposed to the 2000 recommended for Africa²¹.

There are also very poor motivational strategies for health workers. This situation does not encourage optimal performance and productivity. In addition to these, other problems that have been identified include unclear roles of the local governments in the administration of primary health care and primary health centres. This system challenges have also contributed to poorly functional primary health care system which impacts negatively on primary level child eye care.

The access to specialized child eye care is also a major system challenge. Many children in need of eye care never reach the paediatric/secondary/tertiary centre due to the poor availability of specialized services at the grass roots level. This makes the follow up of care of children is also very difficult, as it is entirely depends on

parent's/guardian's inclination. Home care follow up and monitoring for which is important for primary level child eye care is thus nonexistent. The absence of an effective social welfare system to look out for children at risk and or who are in need of eye care is also unavailable²².

All these systemic challenges highlight the current challenges in the attainment of optimal child eye care system and services in Nigeria.

Prospect and solutions to the current paediatric eye care service challenges.

On the long term, in line with the WHO 1999 has recommendation of 1 adequately staffed and equipped and fully functional paediatric eye centre per 10 million population of children¹⁰ we need at least 5 to 6 more of such centres in Nigeria which are good geographic spread for National coverage to complement the already existing two centres in order to cater for the needs of the 75 million population children in the country.

The initiatives aimed the prevention of blindness in children should be sustained and scaled up. The collaboration by governmental agencies to ensure maximum uptake of measles vaccination and vitamin A supplementation is important with the addition of the measles, mumps rubella (MMR) vaccine into National child immunisation regimen to prevent high incidence of paediatric cataract of German measles origin.

A well structured and sustainable referral system linking children with sight threatening conditions in the communities all the way to the paediatric eye care centres is necessary. This will enable these centres attain the required productivity and function in an efficient way without wasting resources. The access to these facilities by children in need should be structured in an equitable manner without the limitation imposed by the inability to pay for the service out of pocket. This implies that paediatric eye care services should be covered by the NHIS at no cost to children who need the service without a compromise in delivering high

quality service.

The development of a system that clearly identifies and empowers all stakeholders and facilitators of an effective child eye care program should be developed. This program must have a carefully documented plan for effective implementation.

The sustainability of developed child eye care systems and program should be ensured in order to make them remain effective and achieve the set goals. This will require effective marketing in terms of widespread health information and education through the production and distribution of public information materials. Community participation in these programs is also advocated in order to ensure sustainability.

On the short term however, advocating for interest in children eye care among all cadres of eye care workers is essential. Incentives and other motivational strategies should be utilised. These strategies may include guarantee of maintained modern equipments for use on return from training and job security. This will greatly improve the numbers of those trained to deliver quality eye care.

Also, it is advocated to engage in the training and use of primary health care workers and 'key informants' to case find needy children till we find our feet in terms of efficiency in our systems^{4, 23}. Studies^{4,23} have shown the effectiveness of this method in assisting in the delivery of eye care services to the grass roots. These key informants can also engage in prevention of childhood blindness activities in their catchment areas.²⁴

CONCLUSION

Paediatric eye care is an integral part of eye care and therefore requires attention which appears to be lacking. Properly equipped paediatric tertiary centres which are adequately funded are needed to be geographically spread in an equitable manner. These are expected to deliver efficient service with the assistance of proper referral systems from the grass roots to the secondary and then to these tertiary centres.

Steps to have a proper eye care plan for children needs to be taken, in addition to attracting and building up on the current sparse human resource level. All the cadres of paediatric eye care human resource should be trained in excellent high volume centres and equipped and incentivized to work in these centres when they return so that their training will not be in vain. It is important to facilitate affordability of services by poor children through subsidies to be funded locally for sustainability.

For a sustainable program, leadership and ownership of the program needs to be defined for proper oversight and monitoring of the resources so that they can be preserved to deliver good quality eye care to the children of this country. Future attention can then be on developing quaternary centres to deal with special paediatric eye cases.

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