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Extent and impact of eye disease in children in India and the status of Pediatric Service Delivery

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A few causes for Childhood Blindness
1. Right Eye Congenital Cataract 2. Right Esotropia 3. Bilateral Buphthalmos 4. Bilateral microphthalmia with Cyst

Vision impairment and blindness in children are important because of their impact on the child's development, education, future work opportunities, and quality of life. These negative effects are experienced throughout the child's life often lasting for 50 or more years. It leads to serious social and economic burden to the family and the society. India is home to 407 million children under the age of 16 (approximately 40 per cent of the total population)[1], out of which 320,000 are expected to be blind.[2] This alone accounts for one-fifth of blind children worldwide. There have not been any large scale studies on the prevalence of childhood blindness in India. One study done in Andhra Pradesh reported the prevalence of childhood blindness as 6.5 per 10,000.[3] These numbers appear small in comparison to adult blindness. But when one applies the concept of blind person years, paediatric blindness works out to 11.2 million blind person years, compared to 22.5 million blind person years for age related cataract and 5.5 million blind person years for glaucoma.[4] 16.3 - 37 per cent of childhood blindness is preventable or avoidable.[5,6]

Vision impairment in children thus continues to pose a great challenge to health care providers and policy makers. Corneal causes, globe abnormalities, cataract, and retinal causes have been highlighted as important causes in the Indian context.[7-11] Vitamin A deficiency continues to be a problem in some parts of the country. The problem of visual impairment gets bigger if we include refractive errors. Refractive errors account for 61 per cent of visual impairment in rural children12 and 81.7 per cent in urban children.[13] A quarter of attendance in all eye clinics and hospitals is estimated to be due to refractive errors. [14]

Barriers to eye care delivery in children

Not all people seek early treatment. Lack of awareness, affordability, poor socio-economic status, adverse advice by friends/quacks/other medical practitioners, traditional practices, and distance from the eye care provider are some of the reasons given by parents.[15] Screening for eye problems in developed countries helps promote awareness. A routine screening programme however, is not in place in India. Not many institutes are interested in providing free services for the poor with the exception of Government-run hospitals and a few private tertiary eye care centres. There is also a pressing need for better co-ordination between the private and government-run institutes.

A review of currently available paediatric eye care delivery systems in India

The DBCS, many NGO's, and some private practitioners have been active in screening of school children. Screening of school children is the second largest programme of the NPCB after cataract. It is currently the priority of Sarva Shiksha Abhiyan. A majority of these programmes rely on trained school teachers, though some have utilized ophthalmic assistants and

Continues overleaf ➤

bilaterally blind/ visually impaired children so that the overall goal of elimination of avoidable blindness is achieved. Gender and socio-economic considerations should have precedence in service delivery.

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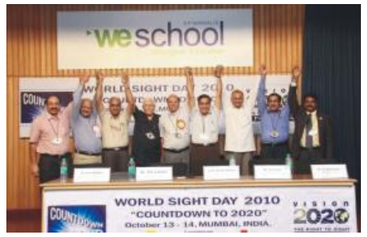
WORLD SIGHT DAY 2010 Celebrations



To focus attention on this issue in India, VISION 2020 INDIA and its partners organised a scientific symposium and a public awareness rally on the global theme Countdown to 2020. The Local partners, including representatives from the Government of Maharashtra participated in the event as well as contributed their resources (financial and non-financial) to the success of this event.

The Scientific Symposium was organised to inform and educate ophthalmic fraternity about the achievements in the past 6 years, the opportunities identified and the challenges to be overcome to achieve the goal of elimination of avoidable blindness from India.

Sri Suresh Shetty, Minister for Public Health and Family welfare, Government of Maharashtra presided over the session. The Keynote speaker, Dr R Parajasegaram from WHO message was scintillating and thought-provoking and made the audience to think beyond statistics and strategies and introspect and look at the wider picture, and consider the impact and consequences our work has on the lives of the people for whom we work.

On 14th October, the Public Function started of with a human Rally from Dadar TT to Matunga (Welingkar Institute) the venue for the WSD celebrations. Around 250 people participated in the rally, including Dr. T.P. Lahane (Dean of the J.J. Group of Hospitals, Mumbai), Dr. A.S. Rathore (Government of India), Dr Ashok Potdar (Joint Director, Health Services and Officer responsible for the Blindness Control Programme in Maharashtra). The rally was organised to create public awareness about the blindness prevention program. It also provided a platform for the VISION 2020 members to come together and spread the message. There was active participation from the students from Blind School. This rally culminated in a meeting at the Welingkar Auditorium. A cultural program was conducted, where various songs were sung and a skit performed by children.

STRATEGIC PLANNING RETREAT
(Pune, 23rd 25th February, 2011)

This is being planned as follows

1. Objectives: VISION 2020 INDIA Strategic Plan 2012-2020
2. Target group: VISION 2020 INDIA Members and other key stakeholders
3. Approx dates: February 23-25, 2011
4. Names of organiser/host organisation: Organised by VISION 2020 INDIA and Its PBMA HV Desai Eye Hospital, Pune
5. Facilitated by: External Facilitator and a Core Team of Dr GV Rao, Mr Kashinath B and Dr Rajesh Noah.

An initial planning meeting was conducted on 30th November.
Participants: Dr GV Rao, Ms Elizabeth Kurian, Dr Sara Varughese, Mr Kashinath B, Dr Rajesh Noah.

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EXTENT AND IMPACT OF EYE... *Continued*

ophthalmologists for primary screening.[16] The Government of India bears the cost of running the programme including the provision of spectacles.[17] Screening however, is not compulsory in all schools and the standard of screening is not uniform either. The fact that not all children in the country enroll themselves in schools or continue their education beyond the primary grade makes this programme an incomplete one. A formal screening programme for pre-school children is not in place.[18]

There is no second opinion that to treat children with ocular ailments, a doctor with training in paediatric ophthalmology would be the best. Refraction services in India are mainly provided by general ophthalmologists and paramedical workers, while common ailments are managed by general health care staff. Out of 23,000 Primary Health Centers (PHCs) in the country, only forty per cent are equipped to provide refraction services. Ideally, an ophthalmic assistant should be available at each PHC. Currently however, they are serving a larger population as they are based at Community Health Centers (CHCs) or Block PHCs.[17]

Paediatric ophthalmology as a subspeciality has recently gained popularity among the young ophthalmologists. Not many institutes offer a comprehensive training programme to satisfy the interest and requirement. The WHO recommends one pediatric ophthalmology unit for every 10 million population. In India, it is estimated that there are 0.63 units per 10 million population. Majority of these seem to have basic level diagnostic and surgical equipment. Only a few are supported by a full fledged team. The distribution of the available units is inequitable. Urban areas have much better access to paediatric eye care services than rural areas.[19]

Advances in neonatal medicine have enabled us to salvage very premature and low birth weight babies. It is sad that screening for Retinopathy of Prematurity has not kept pace and is not a routine practice in India.[20]

When we look at the causes of childhood vision impairment, all of us agree that there are a significant number of diseases that modern medicine can't treat. We are not sure how many of these have been helped with rehabilitation services. We have insufficient data on the available infrastructure and impact of blind schools, integrated education, and vision rehabilitation services. This topic has also received insufficient attention in the medical curriculum. There is also a need for inter-sectoral co-ordination in rehabilitating the disabled.

Planning for the future

Dealing with children's eye problems calls for sound and appropriate preparation and organized service delivery. We need to ensure that children are brought early for treatment. It is important to increase the awareness among parents, teachers and the medical fraternity about the advances made in the field of paediatric ophthalmology, apart from bringing in a practical and effective approach towards screening for eye problems starting from day 1 of birth. In particular, obstetricians and paediatricians need to be briefed about the common eye diseases in children including retinopathy of prematurity and the need for early referral. Rehabilitation services need to be strengthened.

In addition to screening all school children, we have to expand our programmes to include the children in Balwadi's and pre-school children. Congenital rubella syndrome remains an important cause of visual and systemic morbidity in children. It is important that all adolescent girls and women of child bearing age be immunized against rubella. Blindness due to Vitamin A is getting less and less, but it continues to linger in some states. Recognizing this, a biannual strategy through 'Bal Swasthya Poshan Mah' (BSPM-Child Health & Nutrition Month) has been adopted in Uttar Pradesh to improve the existing poor coverage of Vitamin A supplementation.[21] This programme can be expanded to cover other needy states as well. Steps for preventing recessively inherited eye diseases should be taken especially in south India, where consanguineous marriages are common.

We are happy to know that the Government has made many initiatives in the 11th five-year (2007-2012) plan period which include strengthening the screening of school children, development of more Paediatric Ophthalmology Units, Low Vision Services Centres, provision of latest equipments, Low-Visual aids at identified public institutions (Medical colleges and Regional Institutes of Ophthalmology) and non-governmental organizations (NGOs), strengthening of eye banks and services for corneal transplantation, provision of financial assistance for corneal transplantation in NGO sector and development and dissemination of resource material on various childhood eye disease like Vitamin A deficiency, eye injuries, refractive errors, corneal opacities, and retinopathy of prematurity (ROP).[17]

In the last decade, ORBIS International with the help of ORBIS India has launched the India Childhood Blindness Initiative. Through this initiative, ORBIS plans to develop 50 paediatric ophthalmology centers across the country by 2012. Apart from strengthening the existing infrastructure with ORBIS-trained staff in place, ORBIS has already succeeded in introducing paediatric ophthalmology services in more than twenty institutes and helped raise public awareness of how paediatric blindness could be prevented. The units assisted by ORBIS have been crafted to have a child-friendly atmosphere with exclusive attention to paediatric ophthalmology.[2] We believe that ophthalmologists are not fully aware of the aforementioned developments. Thus, there is a necessity to generate a national database which allows speedy access to the current status of implementation and the areas which need attention.

In summary, visual impairment in Indian children remains a challenge. A number of initiatives are already in place, but much more needs to be done if we are to achieve the targets set by Vision 2020 and reduce the prevalence of childhood blindness to less than 4 per 10000.

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An overview of childhood blindness and paediatric eye care services in India

GVS Murthy
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The elimination of avoidable blindness in children (ABC) is a global priority[1]. Unlike adults, only half the blindness in children is avoidable[1]. In India, the proportion of childhood blindness that is avoidable ranges from 25%-50% in studies done in schools for the blind[2-7].

Evidence on childhood blindness in India is available from a few studies. A prevalence proportion of 1.7/ 1000 children was recorded in Andhra Pradesh (presenting vision)[8]at the start of the millennium. Recently in rural Karnataka a prevalence proportion of 1.06/1000 children ≤ 15 years was reported(best corrected)[9]. The NPCB uses an estimate of 0.8/ 1000 children using the correlation between under five mortality rates and prevalence of blindness[10].

Causes of childhood blindness in India differ based on whether they are collated from schools for the blind or from population-based surveys. Schools data observe that retina, cornea and the whole globe are the commonest anatomical sites affected and congenital, lens related, retinal and corneal scarring are the commonest etiological causes [2-7], while population-based studies show that refractive errors and amblyopia are the commonest causes (using presenting vision)[8,11] while the situation is similar to that seen in schools for the blind if best corrected vision is used[9].

In the Vision 2020 Action plan, Government of India recognized the need to train 200 ophthalmologists, paediatricians, anesthetists and paramedics in various fields related to paediatric ophthalmology to combat childhood blindness in India [10,12]. The Government has reiterated its support to set up 50 Paediatric Ophthalmology Units in the country so that there is at least one Paediatric Eye Centre for every 20 million population in the country[10]. WHO recommends setting up such units for 10 million population[13].

The availability and deployment of trained human resources and the establishment and adequate functionality of available infrastructure are both important for the control of childhood blindness.

A survey on the availability of trained human resources and infrastructure for paediatric eye care was undertaken in India in 2005[14]. Less than a third of the 668 responding institutions stated that they provided services for children. A quarter of the 192 institutions providing services for children, stated that they had a dedicated paediatric ophthalmology unit. The NGO sector had significantly higher proportion of institutions providing specialized paediatric eye care services. 75% of NGO hospitals providing paediatric eye care services organized daily outpatient clinics. Less than 10% of the hospitals providing paediatric eye care performed > 500 paediatric surgeries/year. Cataract and squint were the commonest surgical procedures reported. A significant proportion of the hospitals did not have regular access to an anaesthetist or paediatrician. Only a third of the respondent hospitals reported having basic diagnostic equipment for paediatric eye care, while a quarter had basic paediatric surgery equipment available. More ophthalmologists had the benefit of specialty training compared to other personnel.

Dr.P.Vijayalakshmi

A School Screening Camp in Progress

Conclusion

The development of paediatric eye care facilities in India seems ophthalmologist-centred. A specialty like paediatric eye care needs a trained team rather than one highly skilled ophthalmologist for comprehensive eye care services. This aspect has not been addressed adequately. It was also evident that paediatric eye care services to be viable would need to provide a basket of services including services for unilateral blindness or visual impairment. Such an approach is critical as children have limited access to specialty services and because the paediatric team should have adequate work load to keep them interested. Such an approach also enhances the credibility of the hospitals. Having said that, it is important that attractive packages (which may need to be heavily subsidized), be offered to the

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