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Paediatric Eye Care in Nepal

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Visual development is an important aspect of infant and child development. Vision is a complex sensorineural process, the development of which begins soon after the birth. Healthy eyes and good vision are key components to achieve many important developmental milestones in children. Hence Paediatric eye care should be started as soon as the child is born and continue throughout childhood and adolescence. It is an important public health component as childhood blindness carries a lifetime of economical and psychosocial impact. The childhood blindness is considered a priority disease by the World Health Organisation (WHO) (WHO, 2000).

The Paediatric Ophthalmology as a subspeciality care took its momentum in the western world around 90s and soon after that in south asian subcontinent. However, until early 2000s it was still a very new concept in Nepal. Even though paediatric eye care services were available, there were no dedicated paediatric ophthalmology facilities in Nepal. With the help of organisations like WHO, Orbis International, and Himalayan Cataract Project (Now Cure Blindness Project), ophthalmologists received Paediatric Ophthalmology fellowship training from various institutes outside Nepal. The paediatric ophthalmology services slowly started in institutes like Tilganga Institute of Ophthalmology, Lumbini Eye Institute, B.P. Koirala Lions Centre for Ophthalmic studies, and B. P. Koirala Institute of Health Sciences. Later, after the start of fellowship programs in the country in around 2016-2017, the need for going to other countries for the fellowship training gradually decreased. From then onward, the number of fellowship-trained Paediatric Ophthalmologists gradually increased; with a handful number a decade ago to now 40 fellowship trained Paediatric Ophthalmologists serving in various parts of the country and providing state of the art paediatric eye care services ranging from basic vision screening tests to ocular genetic services for the children from both Nepal and abroad.

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The prevalence of blindness in children around the globe ranges from 0.3/1000 children in high- income countries to 1.5/1000 children in the least developed countries (Solebo et al., 2017).

Similarly, the aetiology also varies from region to region with Cerebral Visual Impairment (CVI), Retinopathy of Prematurity (ROP), and retinal dystrophy being the leading causes of blindness in the developed world while vitamin A deficiency, measles, and uncorrected refractive errors being the leading causes in the developing world. (Gilbert et al., 2008).

Conducting population-based studies can be challenging because of the substantial costs and manpower required, as well as geographical challenges that may be present. Collecting data from schools for the blind or using hospital-based data on Visual Impairment (VI) is one of the alternative methods to investigate the prevalence and aetiology of childhood VI and blindness.

Between 2008 and 2017, childhood VI and blindness have been investigated in several studies in Nepal (Kansakar et al., 2008; Shrestha et al., 2012; Uprety et al., 2016; Byanju et al., 2019, Adhikari et al., 2015). Kansakar et al. and Shrestha et al. conducted studies in integrated schools for the blind. They found that corneal diseases were the leading causes of childhood VI and blindness in Nepal. Similarly, large population-based studies identified childhood ocular morbidity and blindness in several parts of the country. These studies found the prevalence of childhood blindness ranged between 0.03% to 0.06% with amblyopia being the leading cause, and the prevalence of low vision ranging from 0.1% to 0.5% with refractive error and retinal diseases being the leading causes. However, these studies were conducted some 10 years back. In the last decade, after introduction of an effective nutritional program by the Government of Nepal, eye care is becoming increasingly accessible and awareness of paediatric eye diseases in the community is growing. A recent study by Adhikari et al., established this fact that there is a changing trend in the aetiology of childhood blindness and visual impairment in the country. Retinal diseases and congenital anomalies are the leading causes of childhood blindness contrary to the corneal disease more than a decade back (Adhikari S et al., 2023). Similarly, Refractive error being the leading cause of visual impairment and "heredity factor" is the leading aetiology contrary to "childhood factors" a decade back. Also, due to improved neonatal care, increasing prematurity and decrease in the neonatal mortality rate, diseases such as ROP ,CVI and hereditary retinal diseases, the common aetiology in western world is now slowly leading the list in Nepal. However, we need more such studies from different parts of the country to support these findings.

Myopia, a burning issue worldwide is increasing in Nepal as well due to urbanisation and exposure of digital devices. Myopia care in Nepal, started in 2018 with low dose atropine is now taking its momentum with availability of other treatment modalities as well (Adhikari et al., 2023).

Despite progress in the paediatric eye care in Nepal, there exits few challenges such as setting up of a good anaesthesia facility and

availability of Paediatric Anaesthesiologists. Equally important is the support of well-trained paramedical staffs. Another big challenge is the paediatric ophthalmology practice centred mostly in the urban areas. Along with the increase in number of human resources, priority should be on increasing infrastructure needed for management of children's eye diseases in every corner of the country.

There should be a focus on mandatory neonatal vision screening, mandatory vision test before school enrolment and the periodic eye screening program to tackle childhood VI and blindness. Active involvement of all the stakeholders is equally important.

In summary, paediatric eye care in Nepal is growing faster with increasing manpower and improving services and yet carrying the challenge of tackling diseases like ROP, hereditary diseases, refractive error, myopia and CVI. On the lighter side, Nepal is developing!

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