

Ocular Morbidity in a Community Based Rehabilitation Center.

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ABSTRACT

Introduction: Community based rehabilitation centers work for the betterment of people with disabilities within the communities. This study was conducted to find out ocular morbidity in Patan community based rehabilitation center.

Methods: A cross-sectional study was conducted at Patan Community Based Rehabilitation Center, Patan in Lalitpur district of Nepal with sample size of 42, where children and adults of different age groups come on daycare basis. All patients underwent assessment of visual acuity, orthoptic evaluation, anterior segment and posterior segment evaluation and cycloplegic refraction.

Results: Age ranged from 7 to 35 years (mean age 14.5 years) with 64.28% of participants within the age group 11-20 years followed by 26.19% within the age group 1-10 years. Male:Female ratio was 1:1.33. Regarding the ethnicity, 71.43% comprised of Tibeto-Burman origin and 28.57% of Indo-Aryan origin. Regarding the general morbidity, 40.48% among the participants had intellectual disability, 16.67% had autism, 14.29% had cerebral palsy, 11.90% had down syndrome, 11.90% had multiple disabilities, 2.38% had physical disability and 2.38% had visual impairment. Regarding the ocular diseases, 26.19% had refractive error only, 19.04% had strabismus only, 9.52% had refractive error and strabismus, 4.76% had cataract, 2.38% optic atrophy and 2.3% had retinitis pigmentosa.

Conclusions: Refractive error and strabismus are the commonest ocular morbidities found in Patan community based rehabilitation center.

Keywords: community based rehabilitation; ocular morbidity; refractive error; strabismus.

INTRODUCTION

Community based rehabilitation (CBR) programs involve people with disabilities, their families, communities and related professional experts. They act for awareness creation and advocacy, vocational training, self-employment and even mainstreaming people with disabilities.

Patan Community Based Rehabilitation Centre initially providing rehabilitation services to only 60 children has expanded to cover three districts of Nepal that is Lalitpur, Kathmandu and Nuwakot. It focuses on enhancing the quality of life of people with disabilities and their families. The intensive efforts of Patan CBR has created awareness within the community so that parents of children with disabilities are willing to refer their children to centers with CBR facilities.

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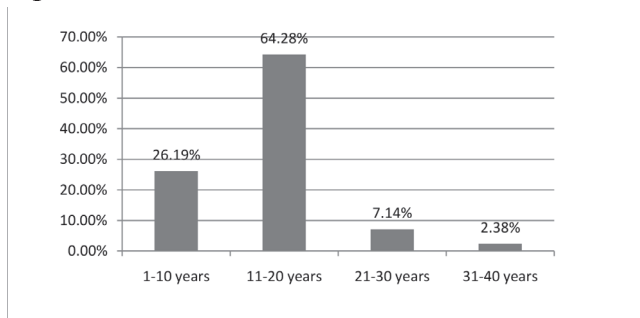
METHODS

A cross-sectional study was conducted jointly by Nepal Eye Hospital and Professional Support Service Nepal at Patan Community Based Rehabilitation Centre in the year 2010 with the sample size of 42. Visual acuity testing was done using Snellen's chart/illiterate E chart at 6 meters distance in verbal children. In non-verbal children, visual acuity was tested with fixation pattern and forced choice preferential looking test. Orthoptic evaluation included extra ocular movements examination, cover test at near and distance, accommodation and convergence. Detailed anterior segment evaluation was done. Dilated fundus evaluation was done with direct and indirect ophthalmoscope. Cycloplegic refraction was done in all the cases. Informed consent was taken from the guardians and/or teachers of the centre. Participants were examined in familiar setting with their teachers around them.

RESULTS

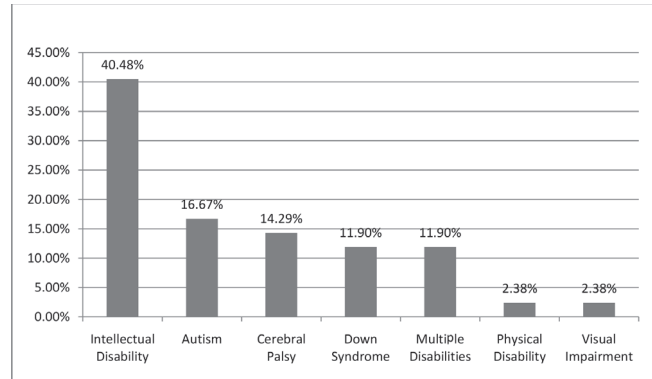
A total of forty two participants were enrolled in the study at Patan CBR. Age of the participants ranged from 7 to 35 years with the mean age being 14.5 years. The maximum number of participants (64.28%) was within the age group 11 -20 years followed by 26.19% within the age group 1 -10 years (Figure 1).

Figure 1. Age Distribution



Regarding gender distribution, 43% were males and 57% were females with male female ratio of 1:1.33. Tibeto-Burman ethnicity comprised 71.43% and Indo-Aryan ethnicity comprised 28.57%.

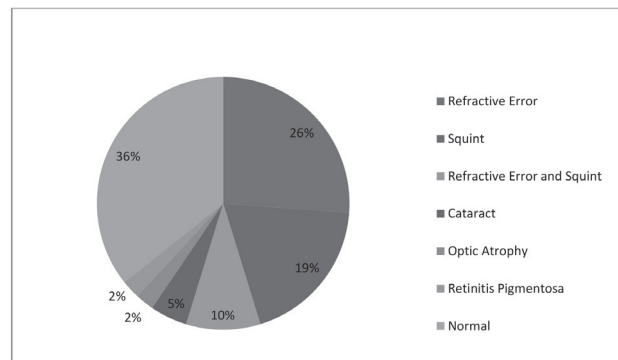
Figure 2. Disability distribution



A variety of disabilities were found among the participants with intellectual disability in 40.48% followed by autism and cerebral palsy (Figure 2).

Sixty four percent of participants at Patan CBR had some form of ocular morbidity. Refractive error and strabismus were the commonest ocular morbidity found among the participants. Refractive error alone

Figure 3. Distribution of ocular morbidity.



was present in 26%, strabismus alone in 19% and refractive error with strabismus in 10%. Similarly, cataract was present in 5%, optic atrophy in 2% and retinitis pigmentosa in 2% (Figure 3). Associated nystagmus was present in 4.76% and associated congenital ptosis was present in 2.38%.

Regarding ocular morbidity according to gender, ocular morbidity was present almost equally among males (64.70%) and females (64.00%). Among the participants with intellectual disability, strabismus and refractive error were the commonest ocular morbidities (Figure 4). Even among autistic children, refractive error and strabismus were common (Figure 5). Similarly, in cases with cerebral palsy, 33.33% had strabismus (Figure 6).

Figure 4. Distribution of ocular morbidity in case with intellectual disability.

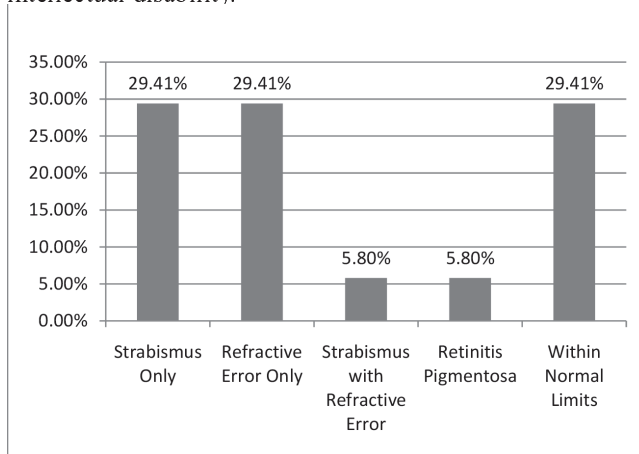


Figure 5. Distribution of ocular morbidity in case with Autism.

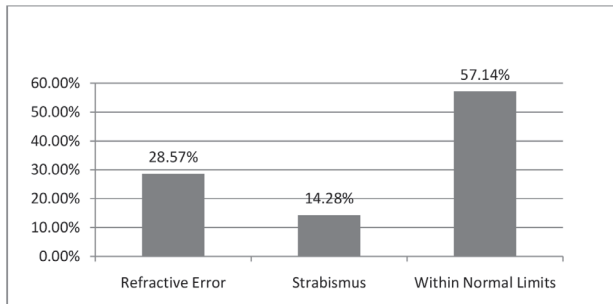
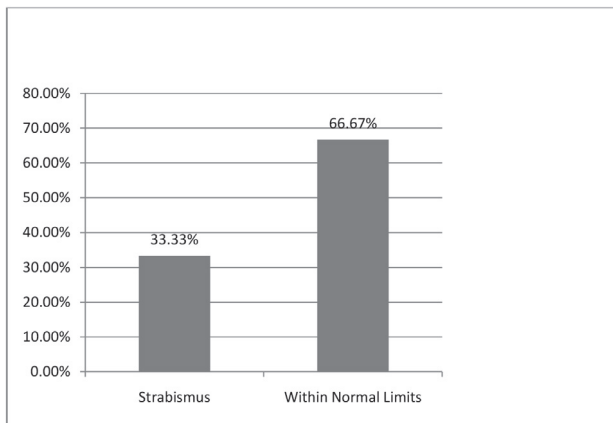


Figure 6. Distribution of ocular morbidity in case with cerebral palsy.



DISCUSSION

Community based rehabilitation has evolved into a multi-sectoral strategy that empowers persons with disabilities to access and benefit from education, employment, health and social services.

Intellectual disability is the most common developmental disorder. Refractive error, strabismus,

cataract and keratoconus are more common among individuals with intellectual disability than those without intellectual disability¹. In the present study also, 40.48% had intellectual disability. Refractive error and strabismus comprised 64.62% of cases. Among those participants with strabismus, all had exodeviation. It has been found that visual impairment and blindness were specifically highly prevalent in people with severe or profound intellectual disability (51% < 50 years of age)². At the same time, prevalence of visual impairment increased dramatically with the severity of intellectual disability and with age. Regular professional assessment of eye disorders, visual acuity and refraction are warranted in residents in both hospital community care³.

Association of certain eye defects with cerebral palsy has been known since 1834⁴. Strabismus and refractive error are common in these children⁵. In the general population, the incidence of strabismus is 2-3%⁶. Incidence of strabismus with cerebral palsy ranges from 15-62%⁷. Higher prevalence and magnitude of refractive error in cerebral palsy points to impairment of emmetropization process⁸. In the present study, cerebral palsy was present in 14.29% and among them 33.33% had strabismus. Among those with strabismus, all the participants had exodeviation.

Vision problem are very common in individuals with autism. In the present study, 28.57% had refractive error and 14.28% had strabismus. Kaplan et al in a study of 34 autistic individual between ages 7-19 found strabismus in 50% of cases among which 65% had exotropia and 35% had esotropia⁹. In this study, all the participations with strabismus had exodeviation.

In a study by Arroyo et al, refractive errors are found to be more frequent in patients with down syndrome and cerebral palsy as compared to normal children¹⁰. In the present study also, among those with down syndrome, 50% had refractive error while 25% had cataract. Probably due to small number of participants with cerebral palsy, refractive error was not found among them although strabismus was present in 33.33%.

CONCLUSION

Children and adults in community based rehabilitation centres can also have high rate of ocular morbidities which are often neglected and ignored. Early intervention in correction of refractive error and strabismus helps to prevent amblyopia. Apart

from that, visual rehabilitation can also help in the improvement of quality of life of these children and adults. As they are mentally challenged and physically deprived, somebody needs to be their voice.

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