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Primary School Vision Screening Involving Teachers in Nampula, Mozambique

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MOZAMBIQUE EYECARE PROJECT

Primary school vision screening involving teachers in Nampula, Mozambique.

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Introduction

There is no plan for a national child eye care programme or existing human resource infrastructure to address the immediate challenge of child eye health in Mozambique.[1] Furthermore, the prevalence and incidence of refractive error, visual impairment (VI) and child blindness (CB) in Mozambique is unknown. VI and CB have devastating personal, developmental, economic and social implications for the child, the family, the community and indeed, the nation. [2]

Aim

To design, implement and evaluate a school based paediatric vision screening service, to identify those in need of eye care services, among Mozambique's 11,561,000 children . [3]

Figure 1.Learning in the shade and two classrooms in School C, Nampula, Mozambique

Materials and methods

Primary School Screening took place in three schools (urban, suburban and semi-rural) in Nampula, Mozambique in September 2010 and March 2011.

Selection of children for screening was random with a preference given to children with obvious eye abnormalities or children identified by teachers as having an eye problem or poor vision.

Children's vision was screened by an optometry student, optometrist or teacher with LogMAR Illiterate E letter chart at 4 Meters. Other materials included a tape measure, black out sheets, record charts

Figure 2. Screening Chart, Optometrist screening sheet, Teacher screening sheet

A subject was classified as myopic if either eye was myopic and hyperopic if either eye was hyperopic and they had not been previously classified as myopic, as per the Refractive Error Study in Children (RESC) protocol.[4]

Pathway of Referral

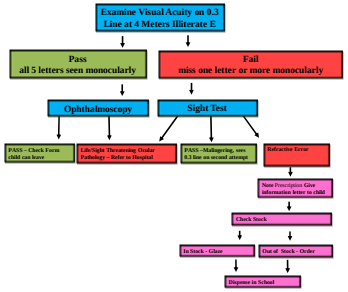

Figure 3. Schematic of screening process

Myopia is defined as -0.50DS or more myopic spherical equivalent refraction (SER) and hyperopia as >/=+2.00DS SER. [5]

Ophthalmoscopy was performed on all children by qualified optometrists.

Children requiring refraction were refracted on site, those needing ophthalmological assessment were referred to the ophthalmologist in Nampula Central Hospital.

Figure 4. School children at various stages in the screening process

Results

770 children (408 male, 361 female, one sex not recorded, ranging from 5 – 18 years were screened in total. The mean (±SD) age was 11.5 (±) years.

The ocular abnormality detection rate was 10.65%, comprising 7.40% of children who required spectacle provision, and 3.25%, who required referral to the Ophthalmology Unit.

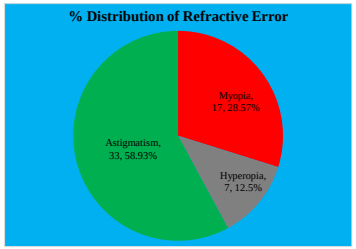

Figure 5 .Pie Chart of the breakdown of the Refractive errors found among school children

The distribution of myopia, hyperopia and astigmatism among children provided spectacles was 28.57%, 12.5% and 58.93% respectively, and overall prevalence in the study sample was 2.21%, 0.91% and 4.29% respectively.

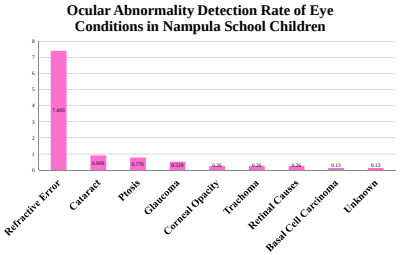

Figure 6. Bar Chart with the breakdown of ocular abnormalities detected

The most common causes of referral for ocular health abnormality included, cataract (26.92%), ptosis (23.08%), and glaucoma (15.38%).

All teachers interviewed were eager to participate in a vision screening programme. Two Primary School Teachers were trained in vision screening. Teachers scored 100% case detection agreement with optometrists and student optometrists, with no noted false positive or false negative referrals

Conclusions

The prevalence of significant and uncorrected refractive error and other undiagnosed ocular abnormalities among the school-going population in Nampula, would support the concept of development of a low cost, school based vision and ocular health screening project.

Refractive Error was present among this population but none of the children observed wore spectacles

Teachers appear to have an adequate level of education and interest to undertake vision screening in children. The ideal teacher profile for Vision Officers within schools is trainee teachers who can be taught the basics of vision screening and eye health through through their existing studies.

Teachers are suitably placed in the community to become advocates for eyecare and can encourage students to become aware of eye conditions among their peers and in the community.

This study will inform a regional pilot teacher screening project for Nampula, which will include the addition of "Vision Screening" to teacher training modules at Universidade Pedagogica, Nampula, as part of a plan to develop a national child eye care programme for Mozambique.

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For further information

Please contact *aoife.phelan@dit.ie*. More information on this and related projects can be obtained at ***www.mozeyecare.org***

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