- *Abstract* -

This study was designed in order to determine a significant void in the ophthalmic literature of Sri Lanka, the prevalence and causes of visual impairments and other eye diseases among children aged 3-14 years. A special emphasis was given to amblyopia and visual fields.

A two stage screening for visual defects and other abnormalities was carried out. Stage one at the community, pre schools and schools whilst stage two at an eye clinic with optimum conditions for all positive, doubtful & difficult cases. Complete ophthalmological examination was performed on children with visual defects & other eye abnormalities. Visual fields of amblyopes were recorded and occlusion therapy recommended. Follow-up examination was carried out after one year.

Coverage of the target population (7619) was 74.1%(5649) with a sex ratio of 111 males to 100 females. Majority was Sinhala (86.3%) and 13.3% were Muslims.

Failed vision (9.7%) was the commonest cause for referral to stage two

Prevalence of ophthalmic diseases was 7.8%(78/1000). There were 6.9%(69/1000) and 0.9%(9/1000) with & without visual defects respectively. Visual acuity defects due to refractive errors was 6.2% and non-refractive causes were 0.6%. Combination of refractive and non-refractive type was observed in 0.1%.

Prevalence of "other eye diseases"(non-refractive type) was 1.6%(16/1000): congenital diseases (0.58%), infections (0.21%) nutritional diseases (0,25%), allergic conditions (0.04%), traumatic conditions (0.17%) and other vague conditions (0.30%). Some important prevalence values of group 2 diseases were: Congenital cataract: 1/2000, congenital ptosis: 2/1000, degenerative changes of macula: 1/1000, congenital toxoplasmosis: 1/1000, traumatic cataract: 2/1000, and corneal scarring: 1/2000.

Prevalence of Strabismus was 1.8%(18/1000). Refractive errors caused esotropia in 0.3% and exotropia in 1.3%. Alternating type of strabismus was 0.12%. Strabismus due to other eye diseases was 0.10%(exotropia).

The prevalence of amblyopia was 23/1000children with of 2.1% of refractive amblyopia and 0.2% of deprivation amblyopia. Refractive amblyopia consisted of 1.9% anisometropic amblyopia and 0.2% strabismic amblyopia. Prevalence of unilateral refractive amblyopia was 14/1000children(1.4%) and bilateral refractive amblyopia was 7/1000 children (0.7%). A statistically significantly higher proportion of unilateral refractive errors had given rise to amblyopia than bilateral refractive errors($p<0.05$).

Prevalence of different types of refractive errors showed simple myopia:1.7%, simple hypermetropia: 1.0%, myopic astigmatism:2.6%, hypermetropic astigmatism: 0.2%, compound myopic astigmatism: 0.3%, compound hypermetropic astigmatism: 0.05% and mixed astigmatism: 0.3%.

Prevalence of blindness according to WHO classification (worse eye) due to uncorrected and corrected refractive errors was 0.07% & 0.05% respectively. Blindness due to other diseases was 0.16% giving a total prevalence of 0.21%(2/1000).

Severe visual impairment (SVI) in the worse eye was 0.8%(43) in corrected refractive errors and 0.6%(34) in group 2 diseases giving a total prevalence of 1.4% (14/1000). Bilateral "SVI" was observed in 0.14% (14/10,000).

Visual fields of amblyopes showed generalized constriction in the central visual fields (unilateral or bilateral) in 77.5%. A unilateral defect was found in 32.7% of unilateral amblyopes and 3.6% of bilateral amblyopes. Bilateral type was identified in 40.4% of unilateral amblyopes and 82.1% of bilateral amblyopes indicating more field defects in bilateral amblyopes.

Prevalence of colour vision defects was 2.6%(26/1000): males 4.0%(40/1000) and females 1.1%(11/1000)

Follow up study showed good treatment compliance in 37.8% while 42.2% were complete defaulters. Improvement in corrected visual acuity was observed in 33.0%. Of them 35.3% had reached non-amblyopic status. Neglect in correction of refractive errors caused reduction in corrected visual acuity in nearly 40.0%.