

PREVALENCE OF REFRACTIVE ERRORS AND OTHER OCULAR DISORDERS IN SCHOOL GOING CHILDREN OF SRIKAKULAM DISTRICT ANDHRAPRADESHSuryachandra Mallireddy¹, Rajkumar Patra²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: OBJECTIVE: assessment of the prevalence of refractive errors and other ocular disorders in school going children of Srikakulam District, Andhra Pradesh. **MATERIALS AND METHODS:** Aim of this study is to assess the prevalence of Refractive errors and ocular disorders in school going children between the ages 5–15 years. Different randomly selected 56 schools were taken into study which were situated in both Urban and Rural areas of Srikakulam District, Andhra Pradesh. Multistage cluster sampling was used to identify the sample population of School going students in the age range 5-15 years. 5296 students were examined in the school which included assessment of visual acuity and refraction. Identified cases of refractive errors were recommended spectacles and some other cases which needed further evaluation were referred to Rajiv Gandhi institute of Health sciences, Srikakulam. **OBSERVATION:** Total 5296 students were screened in this study where 2543 were from schools situated in Urban Srikakulam and 2753 students were from the schools situated in Rural parts of Srikakulam District. Among 5296 students screened, 276(5.2%) students from Urban areas had eye problems and 373(7.04%) from the Rural areas had eye problems. In this 77(1.45%) students from Urban areas had Refractive errors and 101(1.9%) from Rural areas had Refractive errors which needed Spectacle correction. Commonest found eye problem was Refractive errors (3.32%) followed by Vernal/Allergic conjunctivitis (3.06%). Corneal Opacity, a condition which causes childhood blindness was present in 0.04% of students. Colour Blindness was present (0.02%). Some other eye disorders were also detected during this study which needed medical attention so referred to Tertiary centre RIMS, Srikakulam for further evaluation. These conditions were Sty (0.096%), and others like blepharitis, dacryocystitis, and developmental cataract were 0.51%. **CONCLUSION:** Eye disorders including Refractive errors in School going children is considerably high. Even though Government is implementing many programmes through National Programme of Control of Blindness, there is not enough proof or study in India to confirm its reaching children effectively. Ocular Disorders in Children has to be taken as serious as Cataract and enough Funds and man power should be spent to achieve better Goals.

KEYWORDS: Refractive error, School Children, Ocular Disorders, School teacher Education, Ocular Morbidity.

INTRODUCTION: Refractive error remains one of the primary causes of visual impairment in children worldwide¹ and is the second major cause of blindness in India after cataract and the most common reason for patients to consult ophthalmologist or ophthalmic assistant. Over a quarter of the outpatient attendance at all eye clinics and hospitals is due to refractive errors.² Refractive errors remain major problem because it affects very early ages of an individual and it affects performance in

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school and has a negative influence on the development and maturity. It affects their ability to perform for the rest of their life.³ Though no population based nationwide survey has been undertaken on the prevalence of blindness in India, it is estimated to be 0.8/1000 children in the age group of 0-15 years. Currently, there are an estimated 270, 000 blind children in India.^{4,5}

Strategies have been devised In India to address the eye health of children on school eye health programs. School eye screening programs have been part of the activities of the district blindness control society (DBCS) activities since 1996.⁶ Screening of children in schools is most commonly done by trained school teachers although some programs utilize ophthalmic assistants and ophthalmologists for primary screening. Screening school children is arguably the second largest program of the national programs for control of blindness in India after cataract surgery by the government. However, studies pertaining to school screening programs in India is scarce,⁷ especially when compared to evidence for initiatives addressing Ocular disorders. In this study we report the existing Ocular problems in Srikakulam District of Andhra Pradesh and its percentage so that effectiveness of different programmes can be assessed.

MATERIAL AND METHODS: Aim of this study is to assess the prevalence of Refractive errors and ocular disorders in school going children between the ages 5–15 years. Under the Coordination of Dr. Raman Kumar (Ophthalmologist, RIMS Srikakulam), different randomly selected 56 schools were taken into study which were situated in both Urban and Rural areas of Srikakulam district, Andhra Pradesh. The cross sectional study was done from October 2014 to march 2015. Multistage cluster sampling was used to identify the sample population of School going students in the age range 5-15 years.

5296 students were examined in the school itself. The examination included assessment of visual acuity and refraction. Identified cases of refractive errors were recommended spectacles and some other cases which needed further evaluation were referred to Rajiv Gandhi institute of Health sciences, Srikakulam. Also in the programme, 1 to 2 teachers of each school were selected and taught methods of screening of refractive errors and were supplied necessary charts for the procedure so that in future they can diagnose early cases of Refractive errors or other causes of diminution of vision in school children.

OBSERVATIONS: Total 5296 students were screened in this study where 2543 were from schools situated in Urban Srikakulam and 2753 students were from the schools situated in Rural parts of Srikakulam District.

	Number of Students Examined	Number of Students with any Eye Problems	Number of Students with Refractive Errors
Urban	2543	276	77
Rural	2753	373	101
Total	5296	649	176

Table 1: Number of Students Screened

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Among 5296 students screened, 276(5.2%) students from Urban areas had eye problems and 373(7.04%) from the Rural areas had eye problems. In this 77(1.45%) students from Urban areas had Refractive errors and 101 (1.9%) from Rural areas had Refractive errors which needed Spectacle correction.

Sex	Number of Students Examined	Number of Students with any Eye Problems	Number of Students with Refractive Errors
Male	2482	266	85
Female	2814	383	91
Total	5296	649	176

Table 2: Eye Screening by sex

Among 5296 students, 266(5.02%) were male who had eye problems and 383(7.23%) were Female. Similarly 85(1.6%) male students had Refractive errors which needed spectacle correction and 91(1.72%) were Female students.

Diagnosis	Male	%	Female	%	Total	%
Refractive error	85	1.6%	91	1.72%	176	3.32%
Vernal conjunctivitis	79	1.49%	83	1.57%	162	3.06%
Infective Conjunctivitis	44	0.8%	37	0.7%	81	1.5%
stye	4	0.076%	1	0.02%	5	0.096%
Corneal Opacity	2	0.04%	0	-	2	0.04%
Colour Blindness	0	-	1	0.02%	1	0.02%
others	12	0.23%	15	0.28%	27	0.51%

Table 3: Diagnosis report

Commonest found eye problem was Refractive errors (3.32%) followed by Vernal/Allergic conjunctivitis (3.06%). Corneal Opacity, a condition which causes childhood blindness was present in 0.04% of students. Colour Blindness was present (0.02%).

Some other eye disorders were also detected during this study which needed medical attention so referred to Tertiary Center RIMS, Srikakulam for further evaluation. These conditions were Stye (0.096%), and others like blepharitis, dacryocystitis, and developmental cataract were 0.51%.

DISCUSSION: Current study included total 5296 students in which 2543 were from schools situated in Urban Srikakulam and 2753 students were from the schools situated in rural parts of Srikakulam District.

Among 5296 students screened, 276(5.2%) students from Urban areas had eye problems and 373(7.04%) from the Rural areas had eye problems. In this 7(1.45%) students from Urban areas had Refractive errors and 101(1.9%) from Rural areas had Refractive errors which needed Spectacle correction.

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Among 5296 students, 266(5.02%) were male who had eye problems and 383(7.23%) were Female. Similarly 85(1.6%) male students had Refractive errors which needed spectacle correction and 91(1.72%) were Female students. In this study Female students had more Refractive errors to be corrected than male Students. It correlates with study conducted by NitinBatra et al⁸ which also found more Refractive errors in Female children than male children. However a study conducted by Murthy et al 2002⁹ showed no such difference probably because age-sex distribution of examined population was not significantly different.

Commonest found eye problem was Refractive errors (3.32%) followed by Vernal/Allergic conjunctivitis (3.06%). Corneal Opacity, a condition which causes childhood blindness was present in 0.04% of students. Colour Blindness was present (0.02%). A study conducted by Anmol Gupta et al⁷ in Shimla also tells prevalence of Refractive errors is 4.2% and colour blindness is 0.3% and Datta et al⁶ from Calcutta proved 2%.

A study from Nigeria by Kehinde et al¹⁰ told the chances of refractive errors in their school going children is 1.7%. This low percentage is because of fact that in African race chances of Refractive errors is considerably low as compared to our race. They had Vernal conjunctivitis 14.5% and infective conjunctivitis was 1.4%. Their country being tropical country, percentage of VKC remained higher.

Some other eye disorders were also detected during this study which needed medical attention so referred to Tertiary Center RIMS, Srikakulam for further evaluation. These conditions were Stye (0.096%), and others like blepharitis, dacryocystitis, and developmental cataract were 0.51%.

CONCLUSION: This study concluded that, Eye disorders including Refractive errors in School going children is considerably high. Even though Government is implementing many programmes through National Programme of Control of Blindness, there is not enough proof or study in India to confirm its reaching children effectively. Refractive errors especially in Children is one of the main cause of Ocular morbidity considering number of years those children will spend with it. If not treated effectively as early possible, it may affect children's performance at school, development and maturity. It affects their ability to perform for the rest of their life. Ocular Disorders in Children has to be taken as serious as Cataract and enough Funds and man power should be spent to achieve better Goals. Also school teachers can be used more effectively and large scale to diagnose Refractive errors using basic charts so that they can diagnose such morbidity early and refer those children to higher centers for further care.

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