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TO STUDY AMBLYOPIA AND ASSOCIATED WITH RISK FACTORS IN POPULATION OF GRADE I CHILDREN

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ABSTRACT

Amblyopia is a decrease of visual acuity in one eye when caused by abnormal binocular interaction and also occurring in both eyes as a result of pattern vision deprivation during visual immaturity. So present study was carried out to assess the magnitude of amblyopia and its associated risk factors in school going children and to correct the amblyopia by whatever treatment Modality feasible depending upon the form of amblyopia and to observe up the affected person for any improvement in it. The present study was conducted as a prospective, observational study at Department Of Ophthalmology, Bhaarith Medical College and Hospital, Chennai on 1500 school going children during the period from November 2021 to May 2022. Out of 1500 cases, 50 cases had amblyopia. Prevalence of amblyopia was 3.5%. Anisometropia turned into the maximum essential danger issue related to amblyopia. Which (36%) changed into maximum common. Amblyopia become extra commonplace in youngsters with lower socio-economic historical past (28%). Maximum sufferers had unilateral (68%) and moderate amblyopia (32%). Association bet Early diagnosis and remedy can minimize risk of permanent deficit of imaginative and prescient in amblyopia if detected in advance in particular before 10 years of age. Screening programs in faculty going children can come across amblyogenic factors earlier to save you main everlasting deficit in vision via amblyopia so screening of kids need to be executed through faculty surveys, attention ought to be spread thru various campaigns most of the teachers and parents of the children approximately amblyopia.

Key words: Amblyopia, refractive errors, Anisometropic, myopia

INTRODUCTION

Amblyopia is a decrease of visible acuity in a single eye resulting from the ordinary binocular interplay and also occurring in both eyes because of sample vision deprivation for the duration of visual immaturity. [1] For early analysis through imaginative and prescient screening, referrals for complementary examinations and early interventions cause better visible consequences.[2] Based on the American Academy of Ophthalmology (AAO) and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) endorse imaginative and prescient screening at some stage in the preschool years at the least as soon as in all youngsters elderly three to five years to detect amblyopia and its danger elements. [3]

The latest look examined 6,935 children and anticipated that the prevalence of formative years blindness was zero.17% of which treatable refractive error brought about 33.3%, accompanied by way of sixteen.6% preventable reasons wherein eight. 3% due to vitamin A deficiency and eight.3% due to amblyopia after cataract surgery. [4] Such reviews screen that fifty% of blindness is avoidable. Most of the young population in India is in rural regions where attention to the conditions causing avoidable youth blindness is relatively unknown. Educating dad and mom and instructors with good enough know-how on those situations might help stop the causes of visual impairment, early detection, and early intervention of those situations.

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In the system of screening, schoolteachers were applied for detecting eye problems in some of the youngsters after providing a concise education. This examination desired to analyze the effectiveness of instructors' involvement in seeing youngsters via preliminary screening within the pursuit of inspecting each toddler inside the college and appropriately referring for addressing each and every eye condition; easy to complex. Henceforth, a certified optometrist and instructors who had been clean to this form of application were utilized on this look. This takes a look at reports on the effectiveness of teacher's training which reduces the time of ophthalmic employees in early detection and accessibility for up-taking eye care services by means of youngsters belonging to marginalized quarter groups. So the aim of the have a look at a prospective a look at of amblyopia and related to risk factors in the populace of Grade I kids

MATERIAL AND METHODS

The present study was conducted as a prospective, observational study at Department Of Ophthalmology, Bhaarath Medical College and Hospital, Chennai on 1500 school going children during the period from November 2021 to May 2022. All the school going children between 5-9 years of age were included whereas children with anterior segment or posterior segment abnormality; any congenital ocular anomaly other than congenital cataract and ptosis and with history of ocular trauma or any ocular surgery were excluded in this study.

After obtaining ethical clearance from Institute's ethical committee, written consent was taken from all the parents of children. Permission for screening of children on particular date was taken from the respective school principal. Government and Private Higher secondary Schools were selected from both urban and rural areas around the Chennai.

All the children fulfilling the inclusion criteria were screened and examined during school visit. Detailed sociodemographic history pertaining to age, gender, socioeconomic status was obtained using questionnaire. Visual acuity of all the children of age group 5-9 years was checked on distant Snellens visual acuity chart then torch light examination of anterior segment and direct and indirect ophthalmoscopy for fundus examination was done.

Those children who had reduced visual acuity and abnormal ocular findings were referred to Ophthalmology OPD at Bhaarath Medical College and Hospital, Chennai. A total 30 cases of amblyopia detected and all of them were studied in detail. The presenting complaints were

recorded in chronological order and detailed history of presenting illness was taken. Past history of any ocular trauma or ocular surgery or infection taken. Any history of similar illness in family members was asked.

Then ocular examination for amblyopia was done under following headings such as.

Visual acuity, Head posture, Ocular movements, Anterior segment, fundus examination hrishbreg.

Alternate and cover/uncover test- to detect heterotropia and heterophoria. These tests were performed both for near and distance fixation.

Prism Bar Cover Test- angle of deviation

Retinoscopy: For retinoscopy cyclopentolate 1% eye drop was instilled in each eye and repeated in every 15 min for 60 minutes till full mydriasis.

Refraction was done after retinoscopy: First dry retinoscopy was done and immediate acceptance was noted then wet retinoscopy was done after instilling 1% cyclopentolate eye drop and glasses were prescribed after 3 days. Refractive correction was given to those children who had refractive error during school visit after being called in eye OPD and also to children with amblyopia as one of the management procedure. The amblyopic patients were treated by optical correction with glasses, occlusion and by operative intervention like surgery for strabismus and ptosis.

Patching was done using micropore eye patch according to following schedule-

1. Mild amblyopia – 2 hourly patching of normal eye with constant near work.
2. Moderate/severe amblyopia – 4 hourly or 6 hourly

Patching of normal eye with constant near work

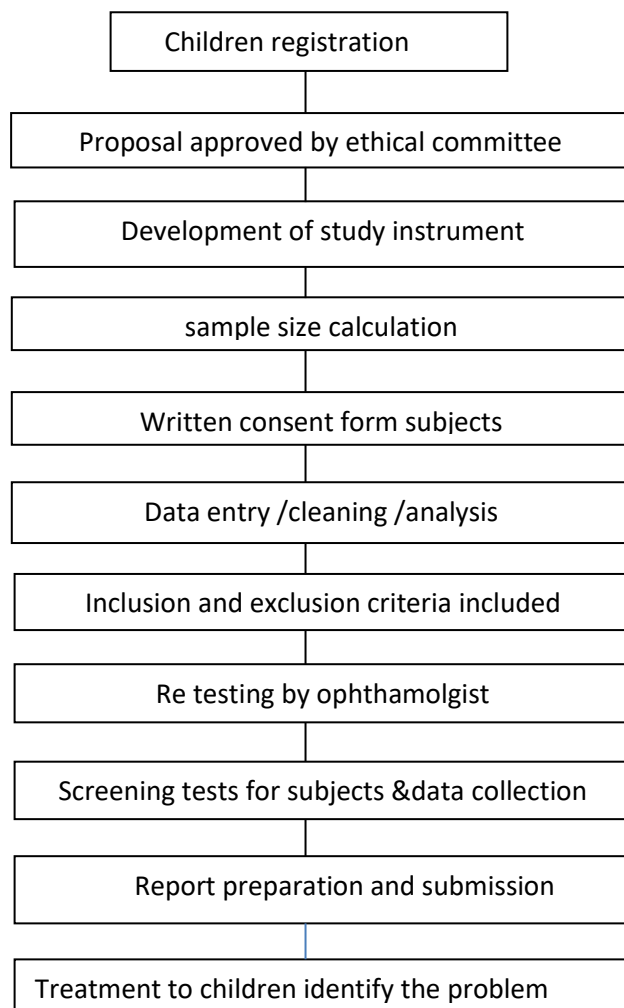
*Alternate 2/4/6 hourly patching of eye was done in case of ametropic amblyopia.

Amblyopia types were categorised on the basis of American Academy of Ophthalmology and severity of amblyopia.

All the children were followed up after 1 month, 3 months and 6 months.

Visual improvement was tested on each follow up visit by Snellen's distant visual acuity chart.

Data was compiled using MS Excel and analysed using IBM SPSS software version 20. Data was grouped and expressed as proportions. Chi square test was used to assess the association between proportions and p value of less than 0.05 was considered statistically significant



RESULTS

A total of 1500 children were screened between the age range of 5 and 9 years.

Table 1: Distribution according to gender of children screened

Gender	No of subjects	percentage
Boys	986	65.7%
Girls	514	34.2%

Table 2: Age wise distribution

Age wise	Number of Children (n=1500)	Percentage
2-3yrs	44	2.9%
4-5yrs	679	45.2%
6-7yrs	421	28%
8-9yrs	356	23.7%

Table 3: Children with amblyopia according to sociodemographic variables

Age wise	Number of Children (n=1500)	Number of cases(50)	Percentage
Gender	Boys	31	62%
	girls	19	38%
Age group	2-3yrs	4	8%

	4-5yrs	26	52%
	6-7yrs	12	24%
	8-9yrs	8	16%
Socioeconomic	Upper class	5	10%
	Upper middle	9	18%
	Lower middle	12	24%
	Upper lower	10	20%
	Lower	14	28%

Table 4: According To Risk Factors And characteristic Amblyopia

		No of cases amblyopia (50)	Percentage
Characteristic of amblyopia	Anisometropia	18	36%
	Myopia	4	8%
	Hypermetropia	5	10%
Risk factors	astigmatism	2	4%
	Strabismus	9	18%
	Ptosis	2	4%
	Congenital cataract	2	4%
	Anisometropic	20	40%
	ametropic	9	18%
Type of amblyopia	Meridional	2	4%
	Strabismic	9	18%
	Sensory deprivation	4	8%
Laterality	Bilateral	9	18%
	Unilateral	34	68%
	Mild	14	28%
Grading	Moderate	16	32%
	Severe	8	16%
Refractive error	Myopia	12	24%
	Hypermyopia	17	34%
	astigmatism	10	20%
Squint	Esotropia	4	8%
	Exotropia	6	12%

Table 5: Duration of occlusion therapy on visual improvement

Duration of patching	Amblyopia	No. of with >2 snellens line improvement	Percentage
2 hours	14	10	71.4%
4 hours	16	10	62.5%
6 hours	8	5	62.5%

DISCUSSION

Amblyopia has advanced into an emergent socio-monetary hassle as it's miles one of the most not noted ordinary sensory anomalies of the attention. The frequency of amblyopia in the current study became three. 5% which changed into correlated to the Saxena et al examination eight (2.11%) [5] is may also be due to exclusive local

elements, sample size, diversetechniques, and standards used for diagnosing amblyopia.

Jarwal et al ⁶study showed that documented maximum frequency of amblyopia (51.61%) in five-10 years age organization which becomes stopped executed by using gift take a look at; most instances (seventy three percentage) of amblyopia were located inside the age

institution among four-7 years resulting from decreased compliance for spectacles in five-10 years age organization kids after refractive correction.

In the present examination, amblyopia become noted in 62% of boys and 38% of girls. These consequences became much like the take a look at of Gupta et al⁷ in which can be male predominance became found for amblyopia. A reason for this gender discrepancy can be because of the unfairness that fewer women report to hospitals and faculties, particularly in rural areas, and the higher boys' women ratio in the popular populace.

Amblyopia become extra common in kids with decreased the socioeconomic background (28%) in our examination. These results were supported by the way of Ikuomenisan et al examine.⁸ This can be possible because of illiteracy and lack of awareness of regular eye take a look at-ups, the importance of the use of spectacles, less affordability for sanatorium attain, lack of knowledge of minor proceedings, less or no commercial to conscious the populace through digital and print media approximately the amblyopia.

In present take a look at most everyday chance things associated with amblyopia present look at becoming anisometropia (36%) followed by using strabismus (18%), hypermetropia (10%), myopia(8%), astigmatism (4%), ptosis (4%) and congenital cataract (four%), right here there may be no single cause of prematurity and coffee delivery weight was observed. Mohamed D, et al⁹ examine amblyopia turned into now not associated with LBW, preterm birth, maternal age, or maternal smoking throughout pregnancy.

Prevalence of anisometropic amblyopia turned into maximum in our take a look at (40%) than different hazard factors styles of amblyopia. Which is similar findings had been documented via Janti et al¹⁰ (36.20%)

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take a look at. Reason in the back because of anisometropia is the most commonplace danger element and generally, youngsters do no longer pay interest for unilateral refractive error in the long term.

At present examine a higher percentage of unilateral amblyopia in 34 instances (68%) than bilateral amblyopia 9 instances (18%) this is maybe because of the regular physiological phenomenon of the mind, which suppresses the eye that is less correctly working and sell the higher eye in a way to enhance visual excellent resulted in a better wide variety of unilateral amblyopic cases¹⁰.

The study look at determined that the majority of cases had slight amblyopia followed by slight and extreme amblyopia. This will be because the present examination had extra of anisometropic amblyopes than Strabismic. Strabismic amblyopia is associated with an extreme diploma of amblyopia

CONCLUSION

Amblyopia is a developmental cortical sickness of the visible pathway that contributes to amblyopia formation essentially due to odd visible stimulus reaching the binocular cortical cells which may be multivariate. Most not unusual causative threat factor of amblyopia in terms of refractive errors was located to be with anisometropia. Early diagnosis and treatment can limit danger of permanent deficit of imaginative and prescient in amblyopia if detected in advance mainly before 10 years of age. Screening applications in faculty going children can stumble on amblyogenic factors in advance to prevent major permanent deficit in vision via amblyopia so screening of children should be executed via school surveys, recognition must be spread thru various campaigns most of the instructors and parents of the children approximately amblyopia.

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