

“Study of Vision Screening in School Children between 5 and 15 Years”

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Abstract:-

➤ *Background:*

In India, children make up 31% of the populace. There are 1.4 million blind children in the globe, according to estimates. Another 7 million people have low vision, and 10 million toddlers have a correctable refractive error that impairs their vision. The prevalence of blindness in India, despite the fact that no population-based national study has been conducted, is thought to be 0.8/1000 children in the age range of 0 to 15 years. It's crucial to identify and address preventable eye diseases and visual impairment in children as early as possible.

➤ *Materials:*

Using the standard ophthalmological examination procedure, visual screening was conducted. Snellen's charts, common near vision charts, torch lights, direct ophthalmoscopy, retinoscopy, and auto refractor were used to test children.

➤ *Results:*

Of the 2016 school-aged children who were evaluated, 1040 (51.6%) of them were men and 976 (48.4%) were women. Prevalence of ocular morbidity was 283 (14.04%), refractive errors were 222 (11.01%), strabismus was 6 (0.30%), amblyopia was 4 (0.20%), vitamin A deficiency was 5 (0.25%), allergic conjunctivitis was 19 (0.94%), and other eye morbidities like blepharitis, hordeolum, coloboma, etc. were 27 (1.34%). Out of 222 kids with refractive errors, 154 (or 7.6%) had myopia, 38 (or 1.88%) had hypermetropia, and 30 (or 1.48%) had astigmatism, indicating high incidence of myopia (P value 0.05) compared to other issues.

➤ *Conclusion:*

It was found that school-aged adolescents had a high prevalence of ocular morbidities and more refractive errors. It backs up the suggestion that vision testing of schoolchildren in developing nations could be a helpful instrument in identifying treatable causes of decreased vision, particularly refractive errors, and in minimising long-term permanent visual impairment.

School children form an important large target group for screening ocular morbidities.

I. INTRODUCTION

There are 270,000 blind children in India, where the prevalence of blindness is reported to be 0.8/1000 children in the 0–15 age group. While refractive errors are a significant factor in both vision impairment and blindness, corneal and lenticular conditions are the most common causes of blindness. Common vision impairments, such as myopia, are typically acquired and progressive. Refractive errors are more common in some states and countries than others, and this varies according to socioeconomic standing, environmental factors, genetic make-up, race, ethnicity, and climate, as well as access to medical treatment (1). One of the leading causes of blindness is refractive error, and the years of blindness brought on by these diseases place a significant economic and social burden on both communities and people. Childhood blindness is considered as one of the five causes of avoidable blindness under the Global initiative for eliminating avoidable blindness. (2)

There is no question about the significance of early detection and treatment of preventable eye diseases and vision impairment in infants. In order to prevent childhood blindness, it is essential to pinpoint significant preventable causes in each nation and track the evolving trends of children who are severely visually impaired or blind over time in various parts of the nation (3). Measles, stress, traditional harmful practises (TMP), autosomal dominant diseases, and TORCH infection are examples of preventable causes. Cataract, glaucoma, amblyopia, refractive errors, retinopathy of prematurity, and congenital cataract are all treatable reasons. High measles vaccination rates, breastfeeding support, health and nutrition instruction, and ongoing initiatives to combat Vitamin 'A' deficiency through child survival programmes are all part of primary prevention. (4,5)

II. MATERIALS AND METHODS

- By carefully and methodically examining the eyes of schoolchildren between the ages of 5 and 15 (from first grade to tenth grade), the current research aims to determine the prevalence of common eye problems among children attending schools in Bangalore.
- A detailed action plan was created and distributed to all schools where screening was meant to take place.
- A distinct document sent to each school's headmaster during the student screening process.
- The goal and procedure of the student examination were explained to the class teachers and the physical education teachers during the teachers' orientation.

• *The Team:*

- ✓ Paediatrician
- ✓ One Ophthalmologist / P.G. in Ophthalmology.
- ✓ One Senior Ophthalmic assistant.
- ✓ Two junior staff / Paramedical Ophthalmic Assistant students.

The school personnel assisted and actively participated in the screening, which was carried out on pre-arranged fixed dates in accordance with the schedule. The indicated date was used to tour each school during regular business hours. Teachers were requested to gather introductory information such as name, age, class, etc.

An expansive room (6 metres long) with an electrical source and plugging infrastructure was chosen for screening. Each student underwent visual acuity tests with the assistance of the physical education instructor and the class teacher.

Students who had vision of 6/9 or less underwent a thorough evaluation, which included retinoscopy and fundus examination.

➤ *Method of Examination:*

- The Snellen visual acuity letters chart was used to measure visual acuity at both a distance of 6 metres and a close distance of 33 centimetres. When required, a 'E' letter card with four identical optotypes was also used. Both children who wore glasses and those who did not were examined. A 33 cm distance was used for the close vision test using the common near vision charts.
- A thorough inspection of the eyes using a torch and loupe in diffuse lighting to look for any adnexal and anterior segment diseases. Children with normal vision

(6/6), no complaints, or other obvious results were not subjected to refraction and thorough testing.

- Children with eye acuity of 6/9 or less underwent a thorough examination.
- The cover test and the cover-uncover test for extraocular motility and muscular balance.
- The digital tension in each eye was assessed, and the results were contrasted. Where suitable, the confrontation technique was used to evaluate visual fields.
- Direct ophthalmoscopy to validate the clarity of the visual axis, rule out media opacities, and fundus pathology.
- Verbal informed consent from parents or instructors for any necessary cycloplegic procedure.
- Examining the refractive state of the eye: To increase the validity of the screening program, children with visual acuities of 6/9 or less were grouped individually and reassessed after finding the visual acuities of each eye with and without glasses. They were closely inspected. Cycloplegic refraction was used on kids with pin-hole enhancement. For those kids who didn't better their pinholes, a more thorough examination was performed to check if any ocular pathologies were present. Children who had pinhole improvement but could not read any of the lines on Snellen's chart were classified separately as doubtful amblyopics. These two groups of kids were assigned for additional assessment and management.
- Retinoscopy and auto refraction were performed on toddlers whose visual acuity was 6/9 or less.
- In order to determine the prevalence of refractive errors in school-aged children, myopia, hypermetropia, and astigmatism in either or both eyes equivalent to or more than absolute value of 0.5 D were taken into account for the analysis of data.
- Refractive mistake correction is one of the services offered.(b) The management of common allergies and eye infections at the classroom level.(c) Children were given 2 ml (2,00,000 I.U.) of vitamin A syrup on two successive days in accordance with the schedule, and were then monitored for up to six months.services for referring those who need additional testing or therapy. (Neuro-ophthalmology, paediatrics etc.).
- Children, school staff, and parents receive health education about the importance of ocular hygiene and eye health care, teacher orientation programs, classroom illumination, maintaining good posture while reading and writing, the importance of good nutrition, and the signs, symptoms, and complications of refractive errors and other ocular conditions. They also received advice on how to properly wear eyewear and schedule follow-up appointments. (once in 6 months to 1 year).

III. OBSERVATION AND RESULTS

Table 1 Distribution of Children Screened

No. of students screened	Males	Females
2016	1040	976
%	51.6	48.4

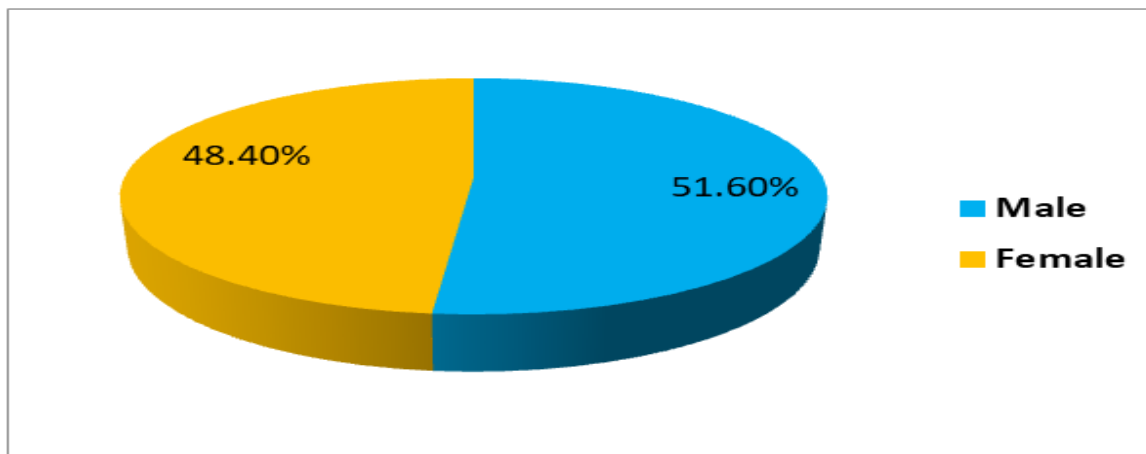


Fig 1 Sex Distribution

Out of 2016 students screened for ocular morbidities 1040 (51.6%) are males and 976 (48.4%) are females.

Table 2 Distribution of different Refractive Errors and other Ocular Morbidities (N=2016)

SL	Ocular Morbities	No	%	P-value
1	Myopia	154	7.64	0.032*
2	Hypermetropia	38	1.88	0.56
3	Astigmatism	30	1.49	0.324
4	Vitamin-A Deficiency	5	0.25	0.86
5	Strabismus	6	0.30	0.441
6	Amblyopia	4	0.20	0.689
7	Allergic Conditions	19	0.94	0.714
8	Others	27	1.34	0.362
	Total :	283	14.04%	

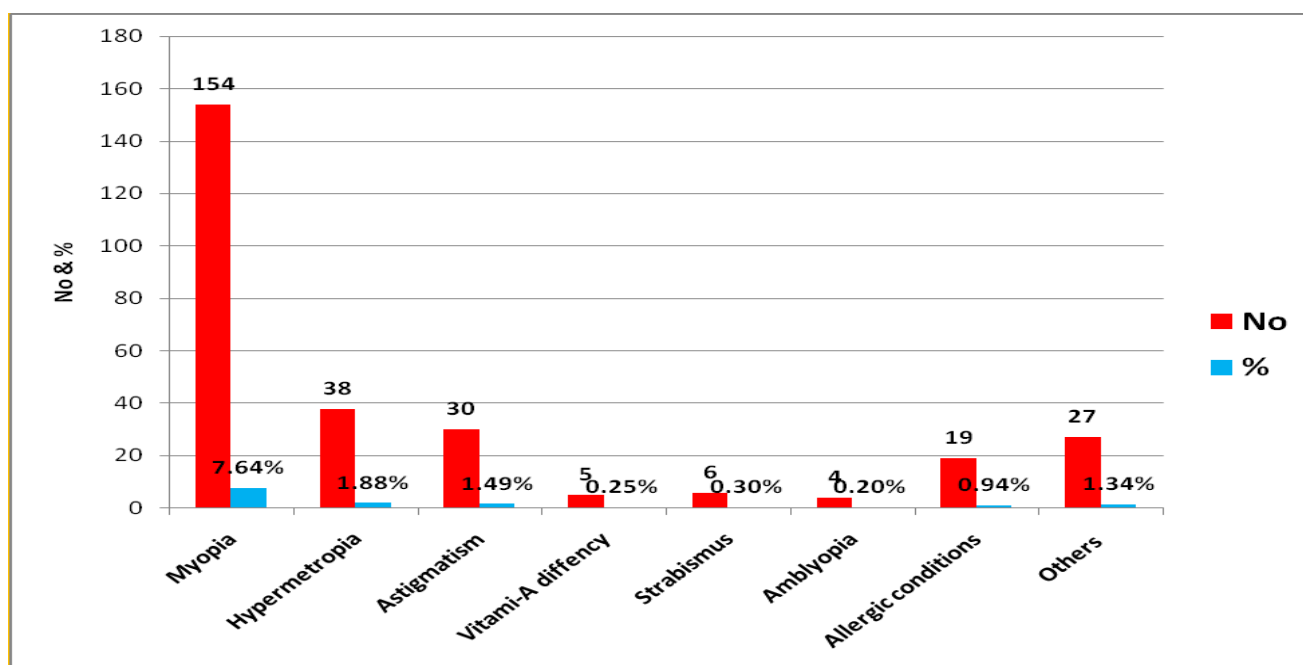


Fig 2 Distribution of different Refractive Errors and other Ocular Morbidities (N=2016)

Of the total number of children 2016 screened, 283 (14.04%) have ocular morbidities, most prevalent is myopia 154(7.64%) with P-value of <0.05.

Table 3 Prevalence of Refractive Errors and Confidence Interval Determination

SL	Total No. of Students Examined	No. of Students with Refractive Errors	Prevalence	CI-95%
01	2016	222	11.01%	9.28-12.36

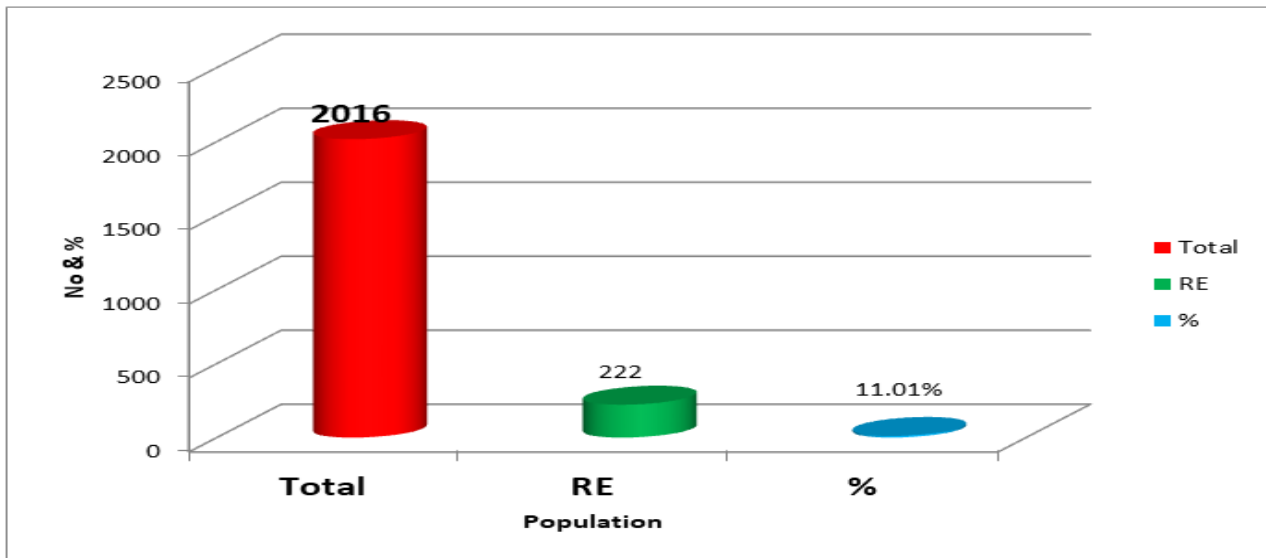


Fig 3 Prevalence of Refractive Errors and Confidence Interval Determination

The above table shows Prevalence of Refractive Errors in school children as 11.01%. The present study is compared with the study conducted by Kalikivayi.V et. al.and by Rakhi Dandona et. al., study conducted in Andhra Pradesh, South India (Rural), study by Mausumi Basu, Palash Das et.al., in surat (urban) in North India and study by Munoz B, West SK on Americans and Caribbeans.

Table 4 Distribution of different types of Refractive Errors among Children

Type of RE	No. of Students with RE	Percentage	P-value
Myopia	154	7.639	0.021
Hypermetropia	38	1.885	0.362
Astigmatism	30	1.488	0.652
Total	222	11.01	

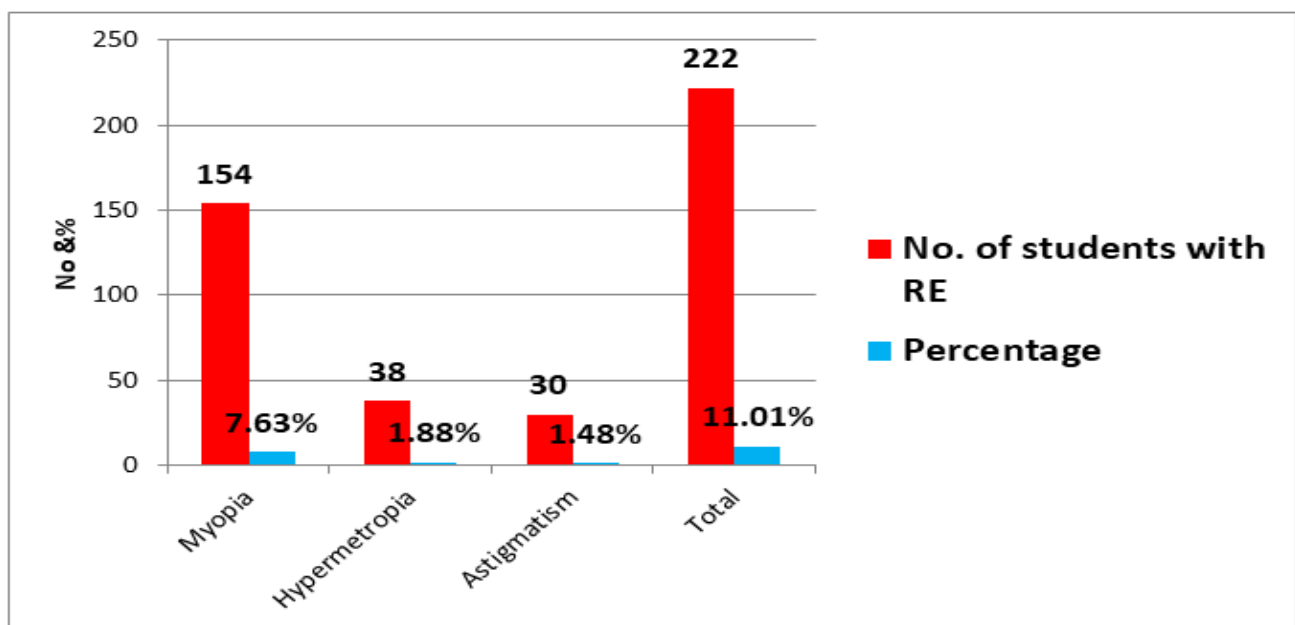


Fig 4 Distribution of different types of Refractive Errors among Children

This table shows out of 222 (11.01%) children with refractive errors, children with Myopia are 154(7.6%),Hypermetropia are 38(1.89%) and astigmatism are 30(1.49%).Indicates that prevalence of myopia is more compared to other refractive errors with significant finding of P value<0.05.

Table 5 Pattern of Age and Sex distribution of Children with Refractive Errors

Age group in years	Males		Females		Total		P-Value	CI-95%
	No. of Students	%	No. of Students	%	Total Students	%		
5 – 9	44	2.18	28	1.38	72	3.57	0.36	1.96-4.25
10 – 15	70	3.47	80	3.96	150	7.44	0.02	6.32-8.11
Total	104	5.654	108	5.35	222	11.01		

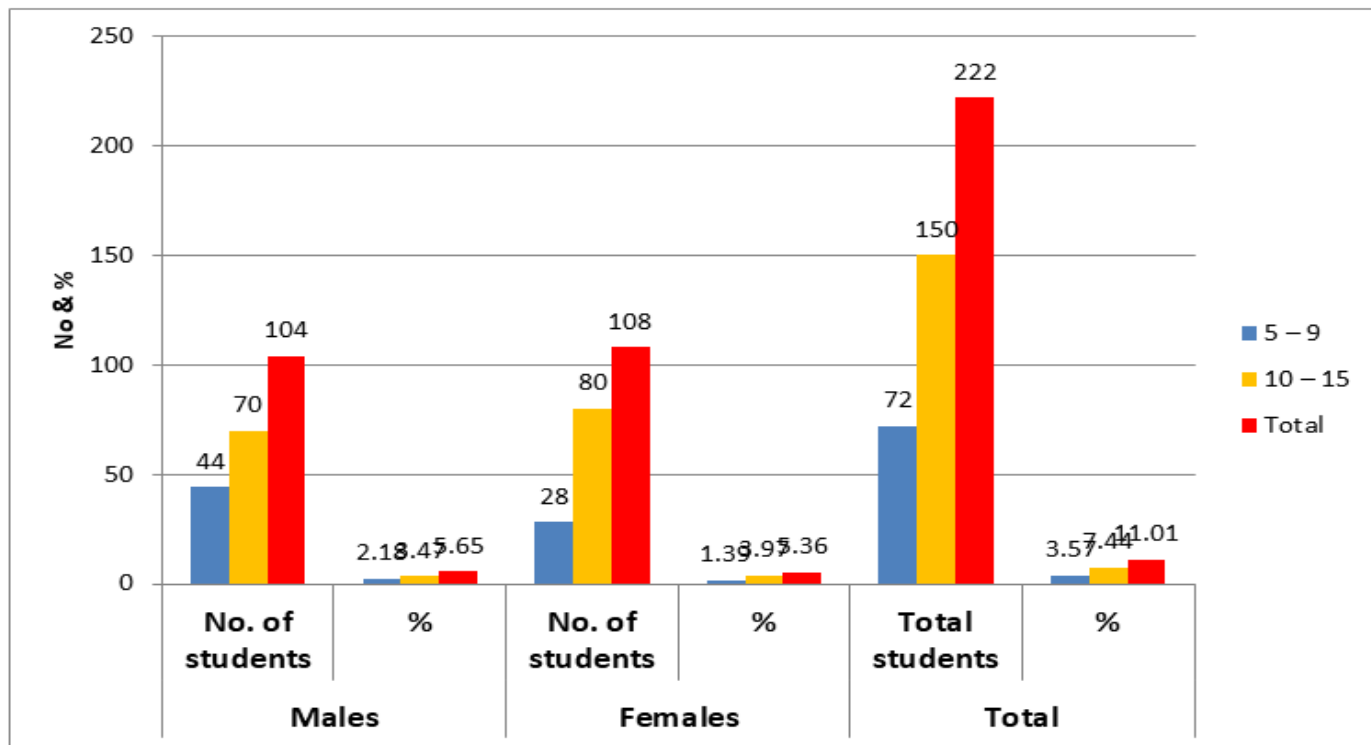


Fig 5 Pattern of Age and Sex distribution of Children with Refractive Errors

This table shows that the prevalence of refractive errors is more in 10-15 years age group compared to 5-9 years age group. Also the prevalence is more in females when compared to males.

Table 6 Age and Sex-Wise distribution of Refractive Errors

Age in Years	No. of Children Examined		Total	No. of Children Found with Refractive Errors		Total	Prevalence %		Pooled (%)
	Males	Females		Males	Females		Males	Females	
5	29	39	68	2	0	2	0.19%	0.00%	0.10%
6	68	61	129	8	2	10	0.77%	0.20%	0.50%
7	114	115	229	8	2	10	0.77%	0.20%	0.50%
8	148	139	287	10	18	28	0.96%	1.84%	1.39%
9	144	137	281	18	6	24	1.73%	0.61%	1.19%
10	116	134	250	18	8	26	1.73%	0.82%	1.29%
11	141	133	274	12	20	32	1.15%	2.05%	1.59%
12	102	116	218	16	14	30	1.54%	1.43%	1.49%
13	60	30	90	14	12	26	1.35%	1.23%	1.29%
14	51	39	90	6	12	18	0.58%	1.23%	0.89%
15	67	33	100	4	12	16	0.38%	1.23%	0.79%
Total :	1040	976	2016	116	106	222	11.15%	10.86%	11.01%

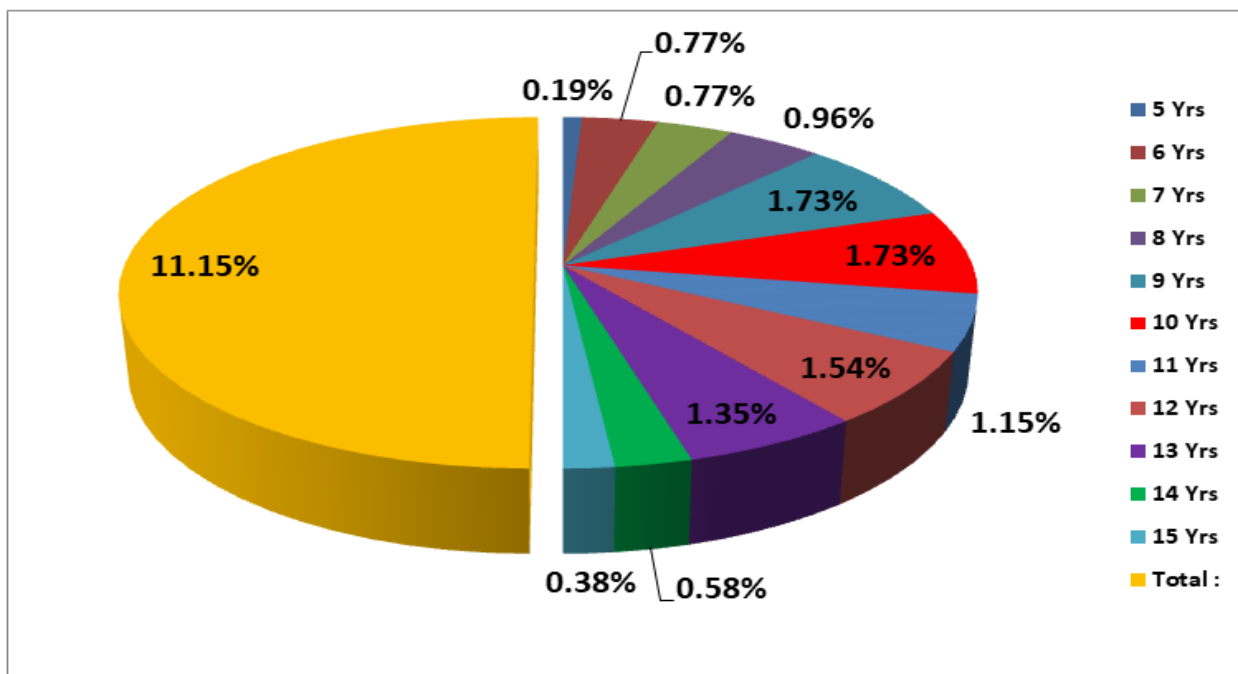


Fig 6 (A) Prevalence of Refractive Errors in Male Children with Different Age Group (N=1040)

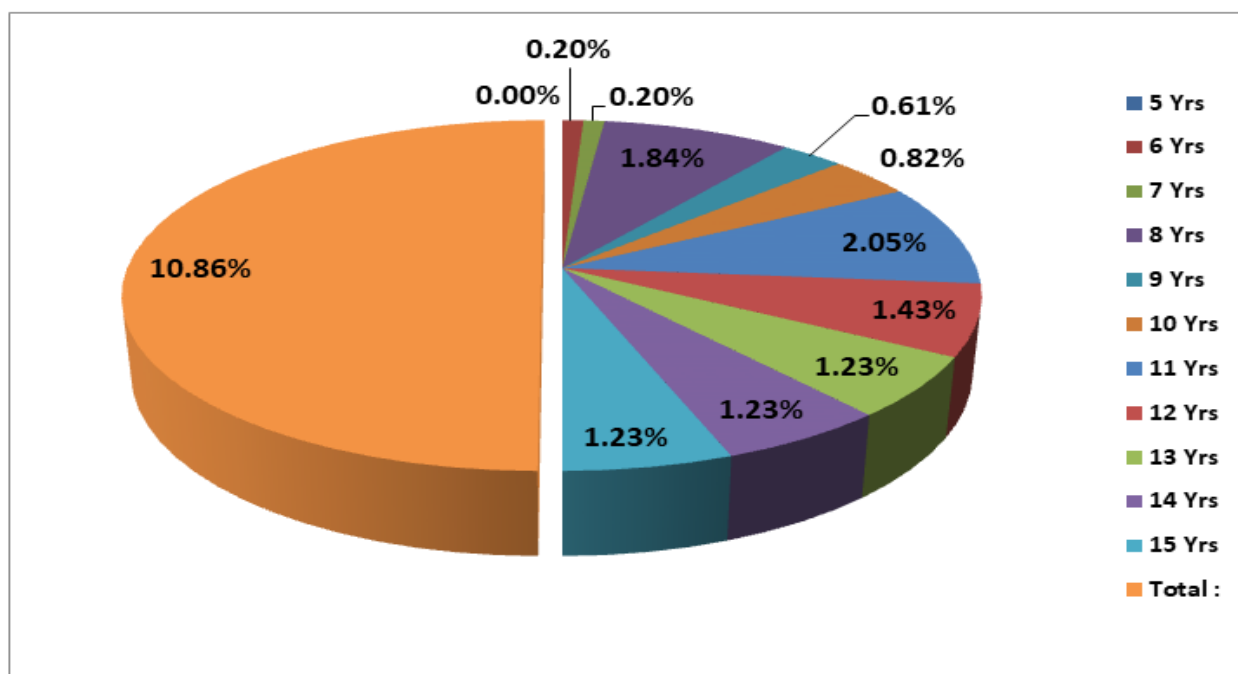


Fig 6 (B) Prevalence of Refractive Errors in Female Children in different Age Group (N=976)

The above table shows age and sex-wise prevalence of refractive errors. There is a gradual increase in the prevalence of refractive errors from 5-13 years. Maximum prevalence is seen at 11-12 years of age i.e., at puberty.

Mean age of children with total RE's = 10.73 years
 Mean age of males = 8.63 years
 Mean age of females = 11.09 years

Table 7 Pattern of Myopia According to distribution of Age

Age Group in Years	Total no. of children with RE	%	No. of Students with Myopia	%
5-9 Yrs	74	3.67%	46	2.282%
10-15 Yrs	148	7.30%	108	5.357%
Total	222	11.01%	154	7.639%

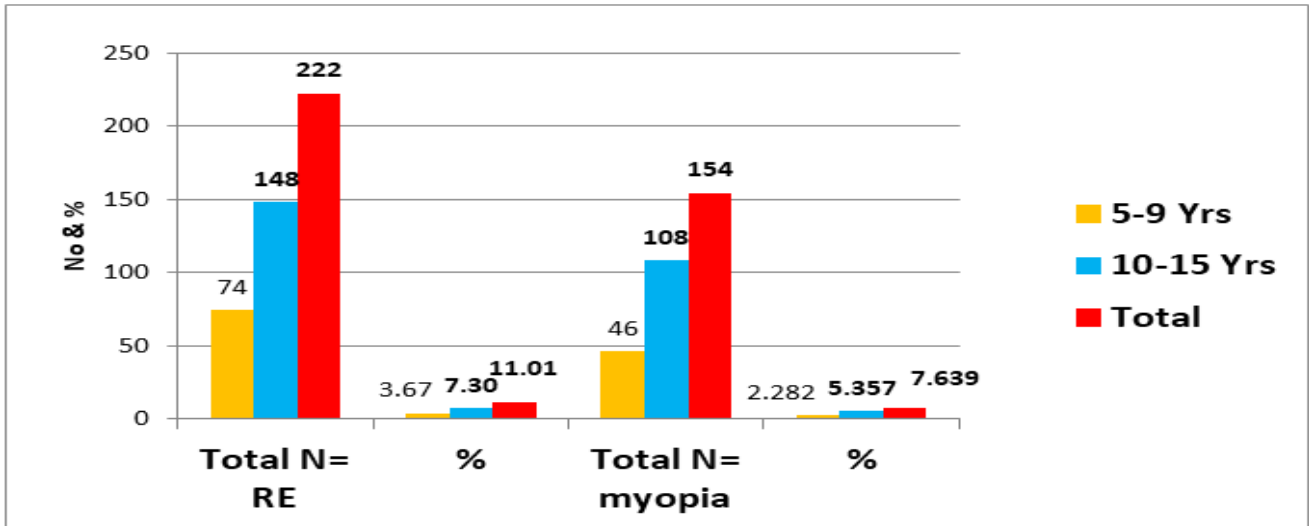


Fig 7 Pattern of Myopia According to distribution of Age

A 69.36% specific incidence of myopia was discovered. Therefore, compared to hypermetropia, myopia was found to be the most significant and prevalent pattern of refractive error in the current research, and it was more common in older age groups. Myopia prevalence rose from 62.16% in the 5 to 9 year age group to 72.97% in the 10-15 year age group, suggesting that myopia prevalence increased with age.

Table 8 Age Wise distribution of Myopia

Age in years	Males	%	Females	%	Total	%
5	0	0	0	0	0	0
6	6	7.5	2	2.70	8	5.19
7	2	2.5	2	2.70	4	2.59
8	8	10	12	16.22	20	12.98
9	10	12.5	4	5.41	14	9.09
10	12	15	6	8.11	18	11.68
11	6	7.5	14	18.92	20	12.98
12	16	20	10	13.51	16	10.38
13	10	12.5	10	13.51	20	12.98
14	6	7.5	8	10.81	14	9.09
15	4	5	6	8.11	10	6.49
Total	80	100	74	100	154	100

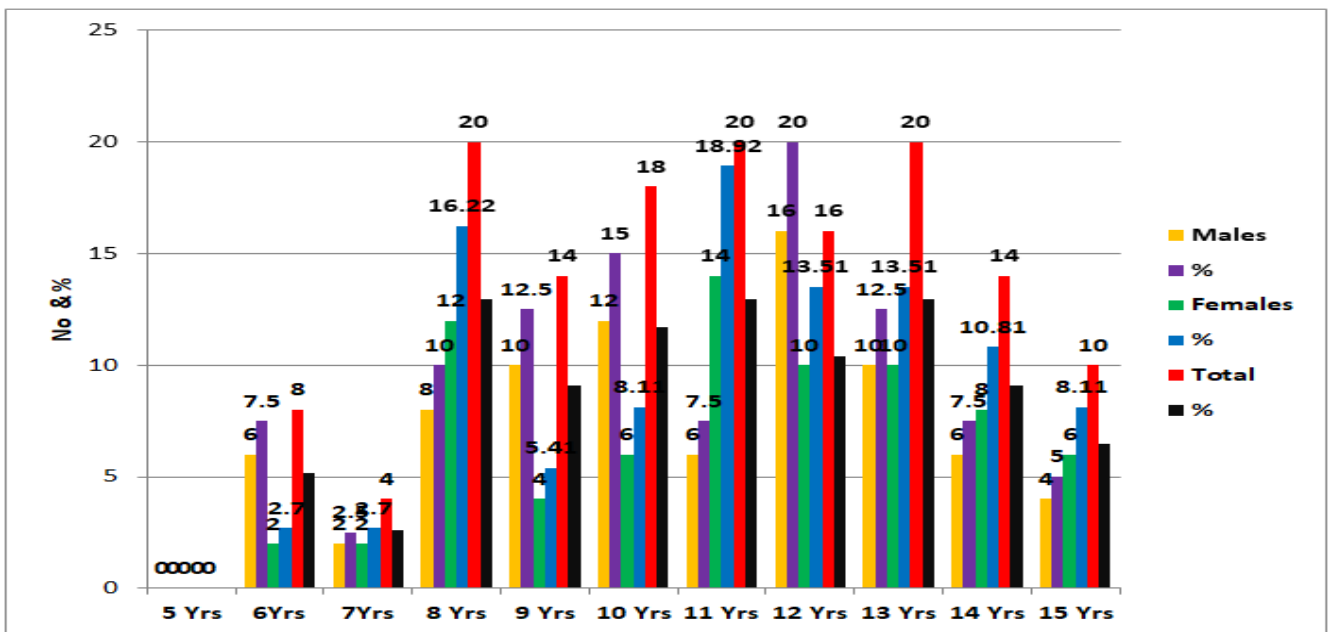


Fig 8 Age wise distribution of Myopia

This table shows the number and percentage of male and female children in each year of age with myopia.

Table 9 Prevalence of Myopia according to Sex

Sex	No. of students with myopia	Percentage
Males	80	51.95
Females	74	48.05
Total	154	100

There was no significant difference in the distribution of myopia among males and females.

Table 10 Pattern of Myopia according to Sex distribution

Gender	No. of students with myopia	No. of students without myopia	Total	Chi square value
Males	80(7.69%)	960(92.30%)	1040	8.902* P<0.05
Females	74(7.58%)	902(92.41%)	976	
Total	154(7.63%)	1862(92.38%)	2016	

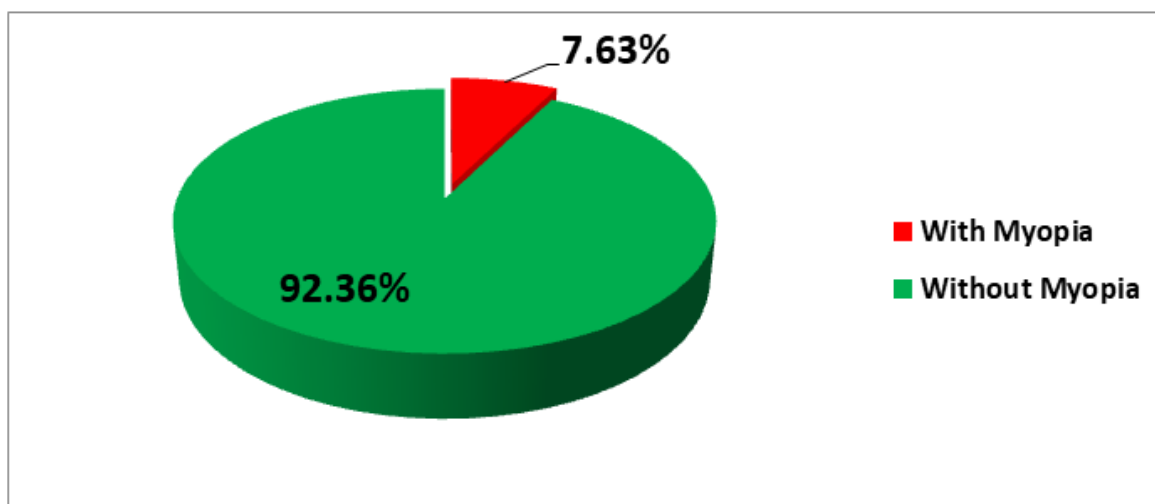


Fig 9 Status of With or Without Myopia

Table 11 Prevalence of Myopia according to Age and Sex

Age group (years)	Males	%	Females	%	Total	%
5-9	26	2.5	20	2.04	46	2.28
10-14	54	5.19	54	5.53	108	5.35
Total	80	7.69	74	7.58	154	7.63
Chi square	6.44*, P<0.05					

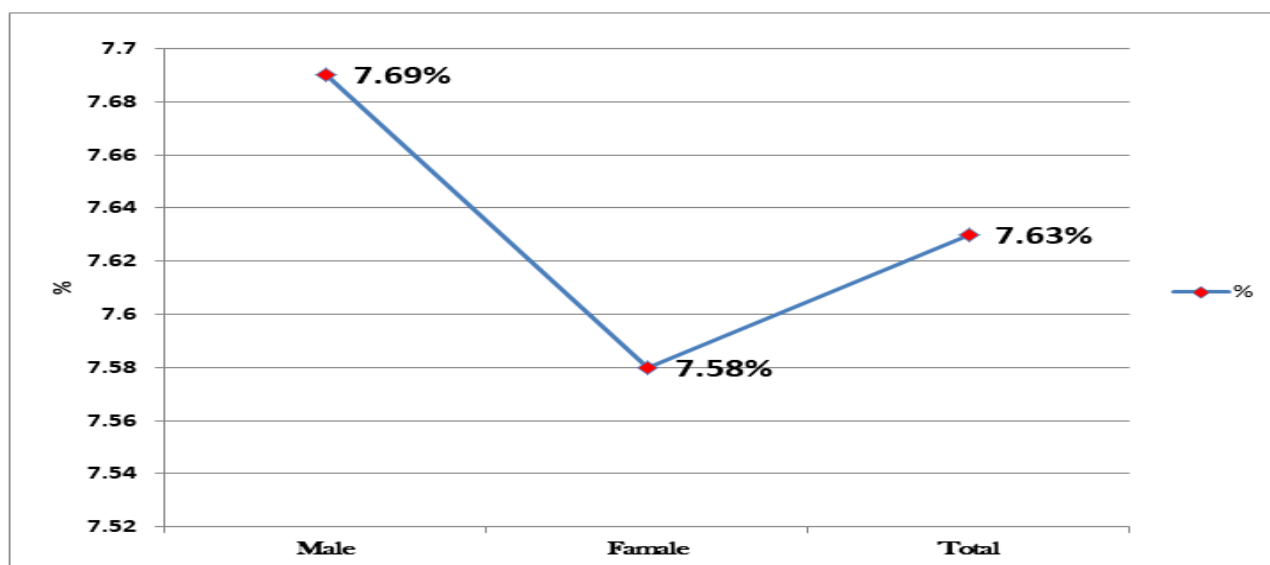


Fig 10 Myopia according to Age and Sex

Myopia was found to be more common in males of younger age group, whereas it was equally distributed among males and females of older age group.

Table 12 Prevalence of Hypermetropia according to distribution of Age

Age Group (years)	Total no of Students with RE	%	Students with Hypermetropia	Percentage
5-9	74	3.67	18	0.89
10-15	148	7.34	20	0.99
Total	222	11.01	38	1.88
Chi square	3.98*p<0.05			

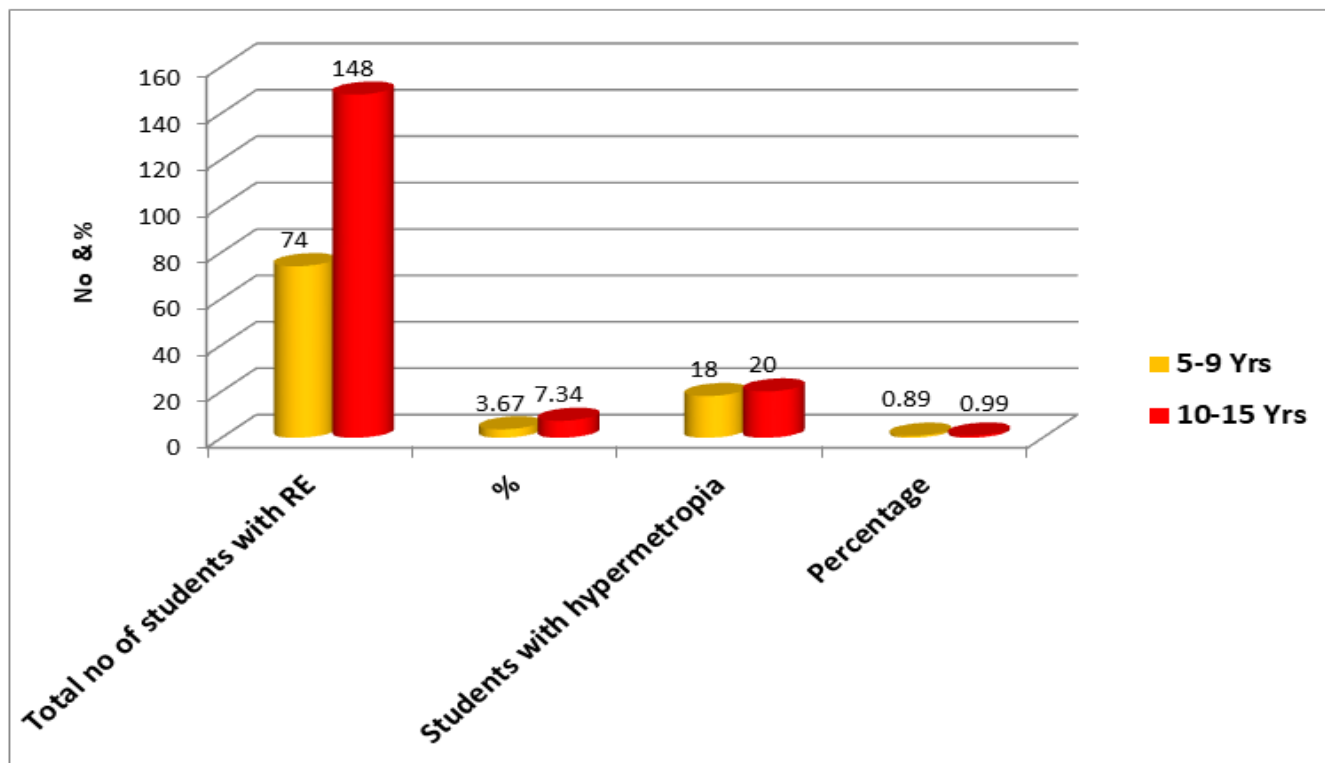


Fig 11 Prevalence of Hypermetropia according to distribution of Age

It was discovered that pupils with RE had a specific prevalence of hypermetropia of 1.88% of 11.01%, or 17.7%. Children under the age of 10 had a higher prevalence of hypermetropia than those over that age. As people get older, hypermetropia is less common with a P-value of 0.05, this result is extremely significant.

Table 13 Age wise distribution of Hypermetropia

Age in years	Males	%	Females	%	Total	%
5	2	0.19	0	0	2	0.09
6	2	0.19	0	0	2	0.09
7	4	0.38	0	0	4	0.19
8	2	0.19	4	0.40	6	0.29
9	4	0.38	0	0	4	0.19
10	4	0.38	0	0	4	0.19
11	-	0.00	4	0.40	4	0.19
12	-	0.00	2	0.20	2	0.09
13	2	0.19	2	0.20	4	0.19
14	-	0.00	4	0.40	4	0.19
15	-	0.00	2	0.20	2	0.09
Total	20	1.92	18	1.84	38	1.88

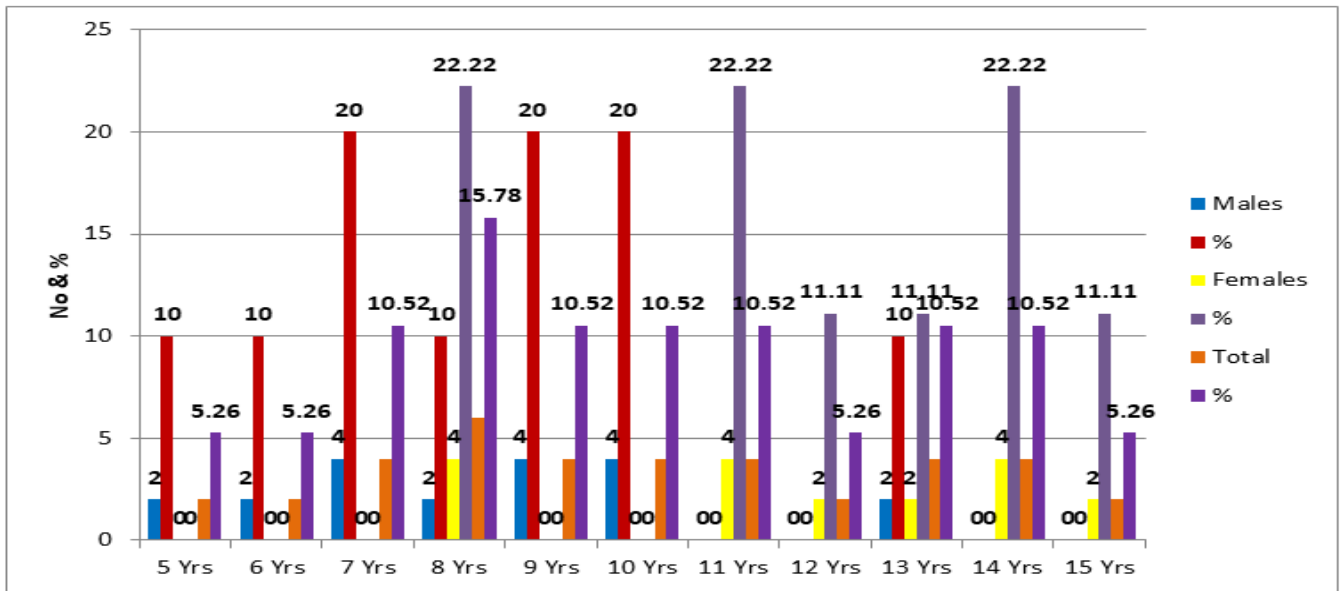


Fig 12 Age wise distribution of Hypermetropia

Hypermetropia was more common in male children of younger age group, whereas it was more common in female children of older age group. But overall prevalence of hypermetropia among males and females was almost similar (52.63% in males and 47.36% in females).

➤ *Distribution of Astigmatism:*

Table 14 Pattern of Astigmatism according to Age and Sex distribution

Age group (years)	Total no. of students with RE	Males with Astigmatism	Males %	Females with Astigmatism	Females %	Total with Astigmatism	Total %
5-9	72	6	8.33	4	5.55	10	4.50
10-15	148	10	6.75	10	6.75	20	9.00
Total	222	16	7.20	14	6.30	30	13.51

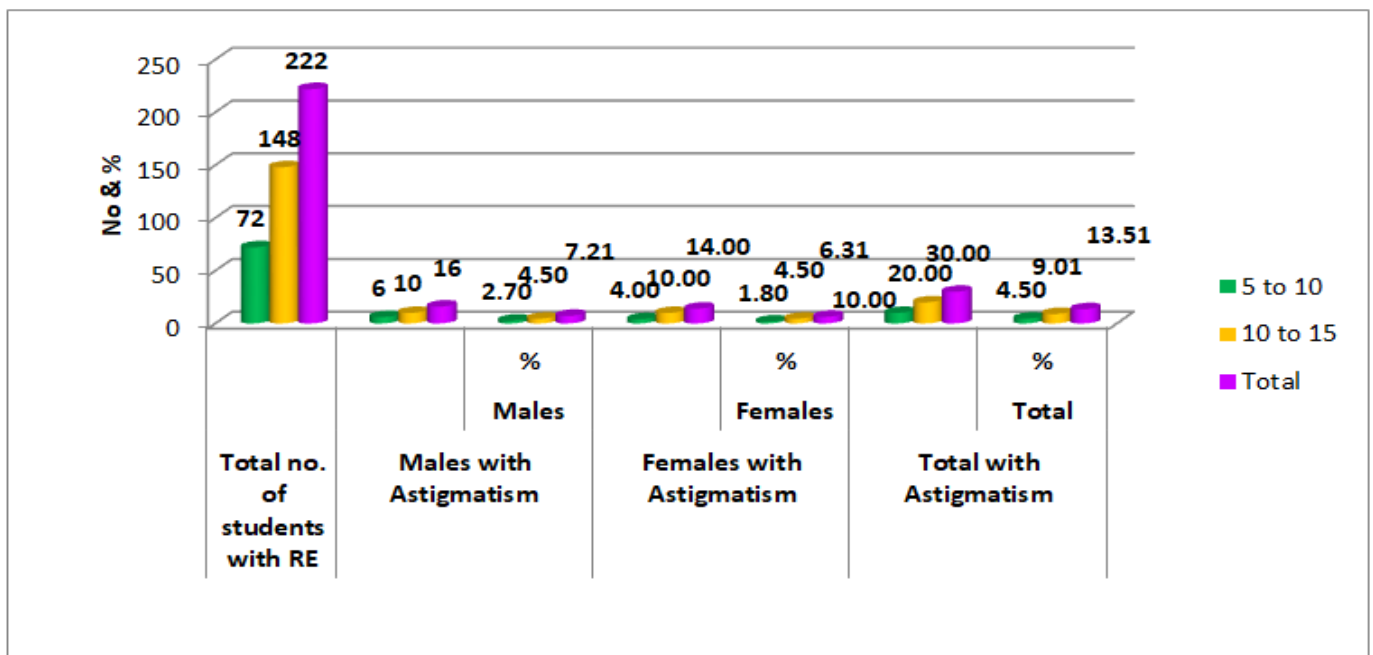


Fig 13 Pattern of Astigmatism according to Age and Sex distribution

Prevalance of astigmatism was similar and equal among younger and older age group of students. The specific prevalence of astigmatism was found to be 13.51%. It was found that Astigmatism was the least common type of refractive error while Myopia was the most common type.

Table 15 Mean Age of Students with Hypermetropia

Sex	Mean in years	SD
Males	8.4	2.04
Females	11.78	2.21
Total	10	2.18

Mean age of students with hypermetropia was found to be 10 ± 2.18 . Mean age in male students was 8.4 years while it was 11.78 years among females.

Table 16 Mean Age of Students with Astigmatism

Sex	Mean Age in years	S.D.
Males	10.13	2.16
Females	11.43	2.01
Total	10.73	2.07

Mean age of students with astigmatism was found to be 10.73 ± 2.07 years.

Table 17 Pattern of distribution Astigmatism according to Age distribution

Age group (years)	Total no. of students with RE	Total no. of students with Astigmatism	Percentage
5-9	74	10	4.50
10-15	148	20	9.00
Total	222	30	13.51

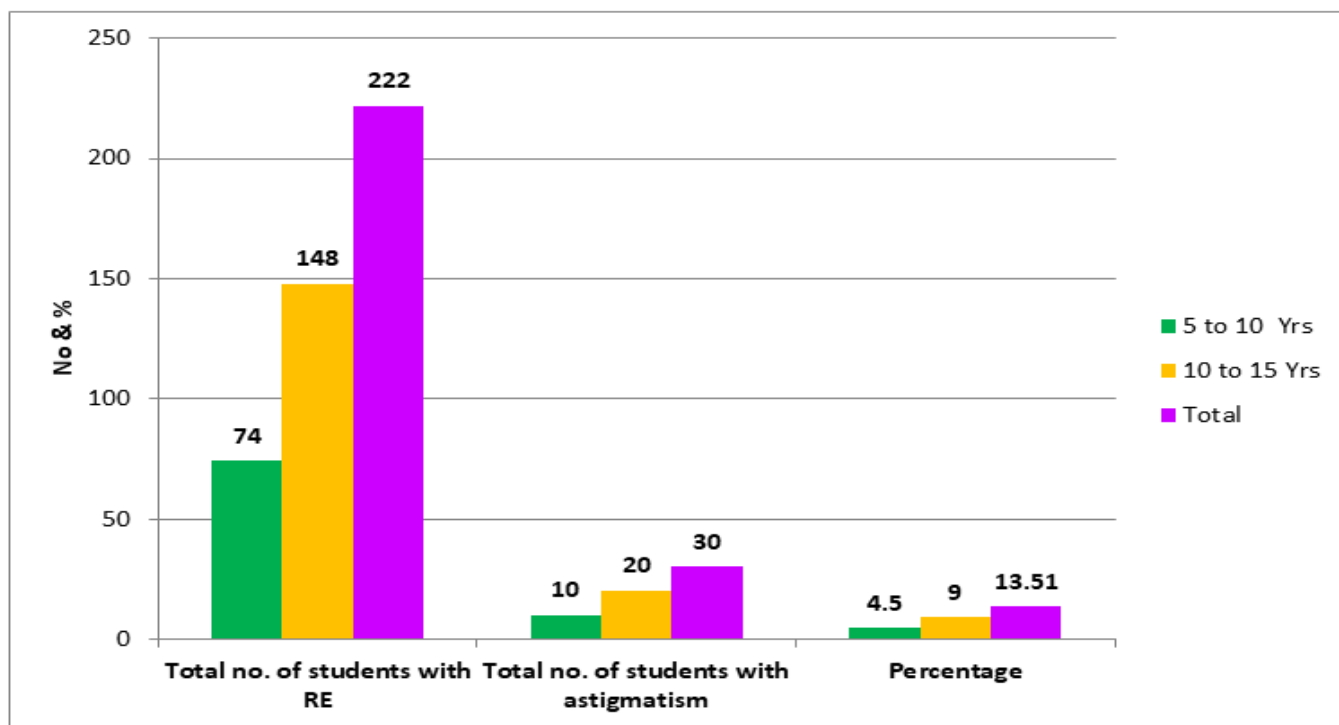


Fig 14 Pattern of distribution Astigmatism according to Age distribution

Astigmatism was more prevalent among older age group both in males and females.(9.00%)

Table 18 Pattern of Astigmatism according to Sex distribution

Sex	No. of Students with Astigmatism	Percentage
Males	16	1.53%
Females	14	1.43%
Total	30	1.48%

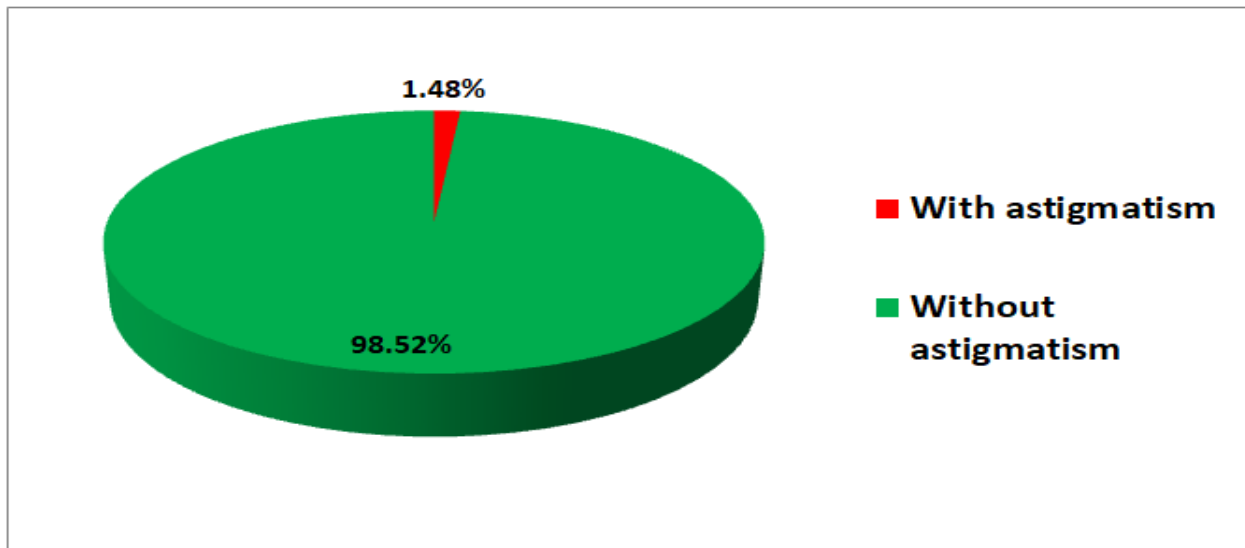


Fig 15 Pattern of Astigmatism according to Sex distribution

Distribution of astigmatism was found to be slightly more among male children compared to that of female children.

Children of all ages and both sexes who made up the research sample as a whole had a prevalence of refractive errors that was found to be 11.01% overall. Myopia prevalence was 7.639%, hypermetropia prevalence was 1.885%, and astigmatism prevalence was 1.48%. Myopia was more common in males than in females of the same age group in younger children, but it was similarly common in both sexes of the older age group.

Male children were slightly more likely than female children to experience all three kinds of refractive errors. In contrast to female children of older age groups, male children of younger age groups had increased chance of hypermetropia.

Table 19 Prevalence of Amblyopia

No. of Children Examined	Males	Females	Children with Amblyopia	Prevalence
2016	0	4-(0.198%)	4 (0.198)	0.198%

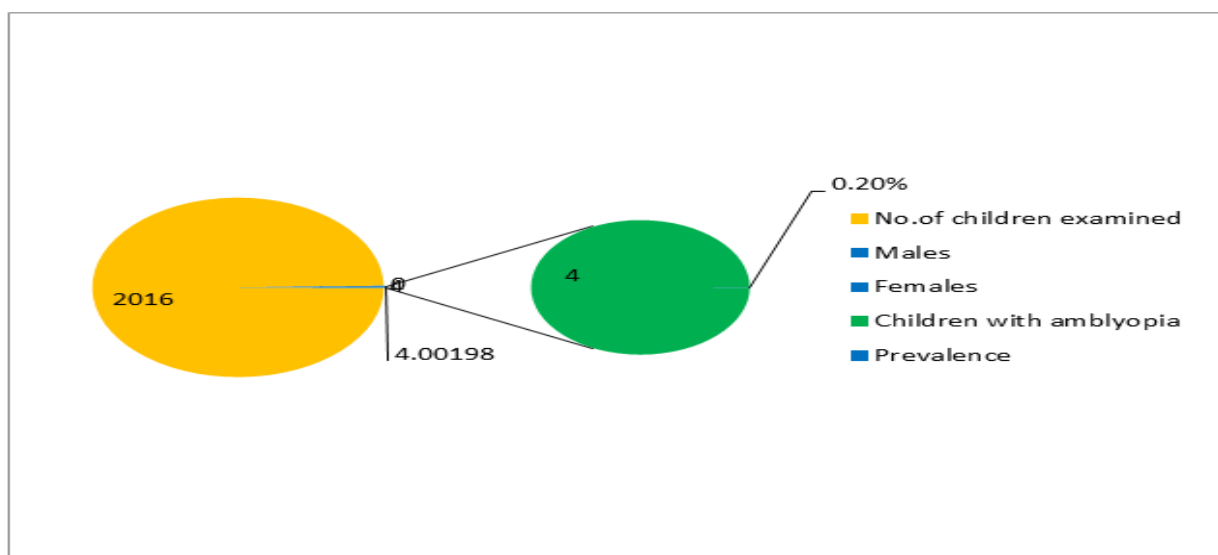


Fig 16 Prevalence of Amblyopia

The above table shows the prevalence of amblyopia. Out of 2016 children examined, 4 children had amblyopia and all 4 were female.

Table 20 Prevalence of Strabismus

No. of Children Examined	No. of Children With Strabismus	Males	Females
2016	6-(0.29%)	4-(0.198%)	2-(0.099%)

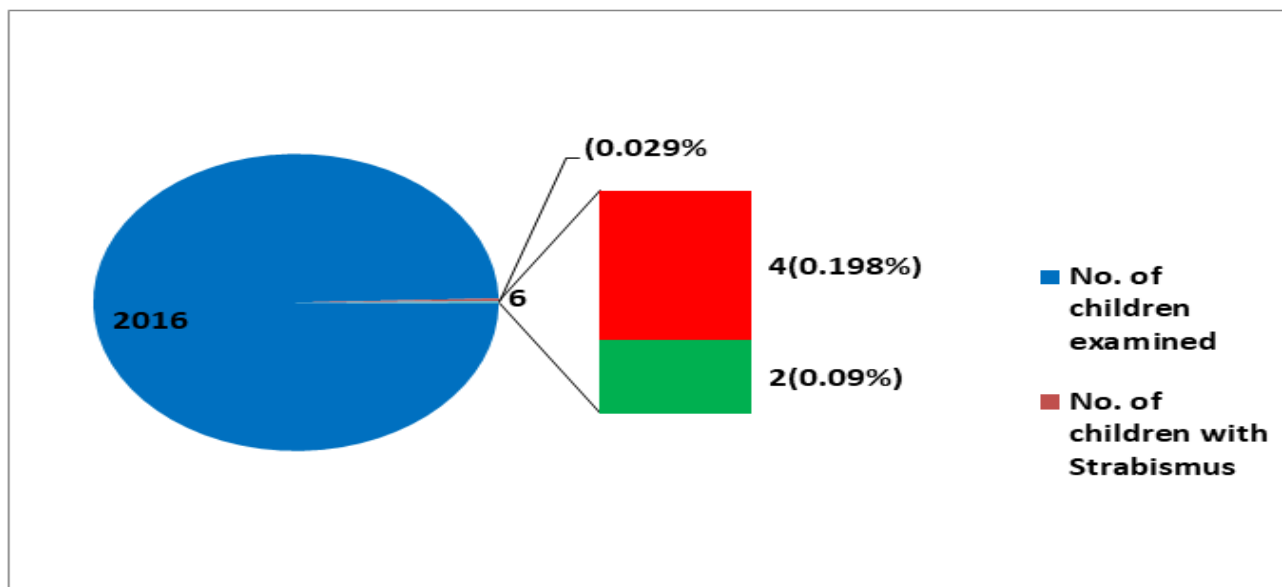


Fig 17 Prevalence of Strabismus

The above table shows the prevalence of strabismus. Out of 2016 children examined, 6 children had strabismus of which 4 males and 2 female children.

Table 21 Prevalence of Allergic Conjunctivitis

No. of Children Examined	No. of Children with Allergic Conjunctivitis	Males	%	Females	%	Prevalence
2016	19-(0.94%)	13	1.25	6	0.614	0.94%

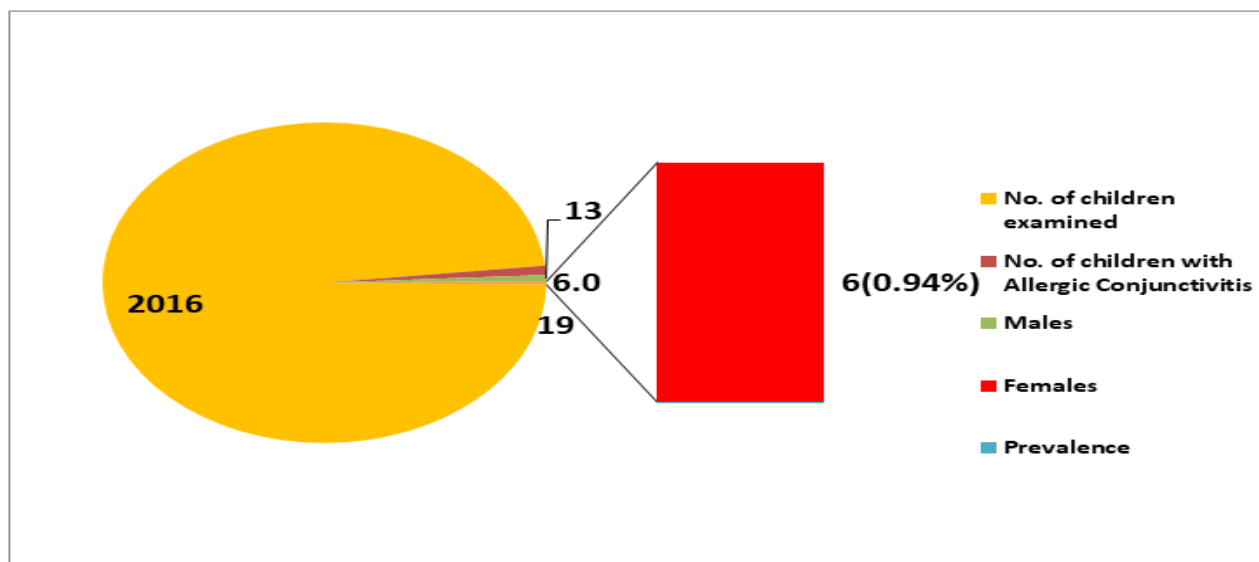


Fig 18 Prevalence of Allergic Conjunctivitis

The above table shows the prevalence of allergic conjunctivitis. Out of 2016 children examined, 19 children presented with allergic conjunctivitis of varying severity among which, there were 13 males and 6 females. Vernal conjunctivitis was mainly prevalent among male children of older age group.

Table 22 Prevalence of Common Eye Problems

Eye conditions	Males	%	Females	%	Total	Percentage
Blepharitis	4	0.384	4	0.40	8	0.39
Meibomitis	3	0.28	1	0.10	4	0.19
Hordeolum	6	0.57	3	0.30	9	0.44
Chalazion	2	0.192	1	0.10	3	0.14
Others	2	0.19	1	0.10	3	0.14
Total	17	1.63	10	1.02	27	1.33

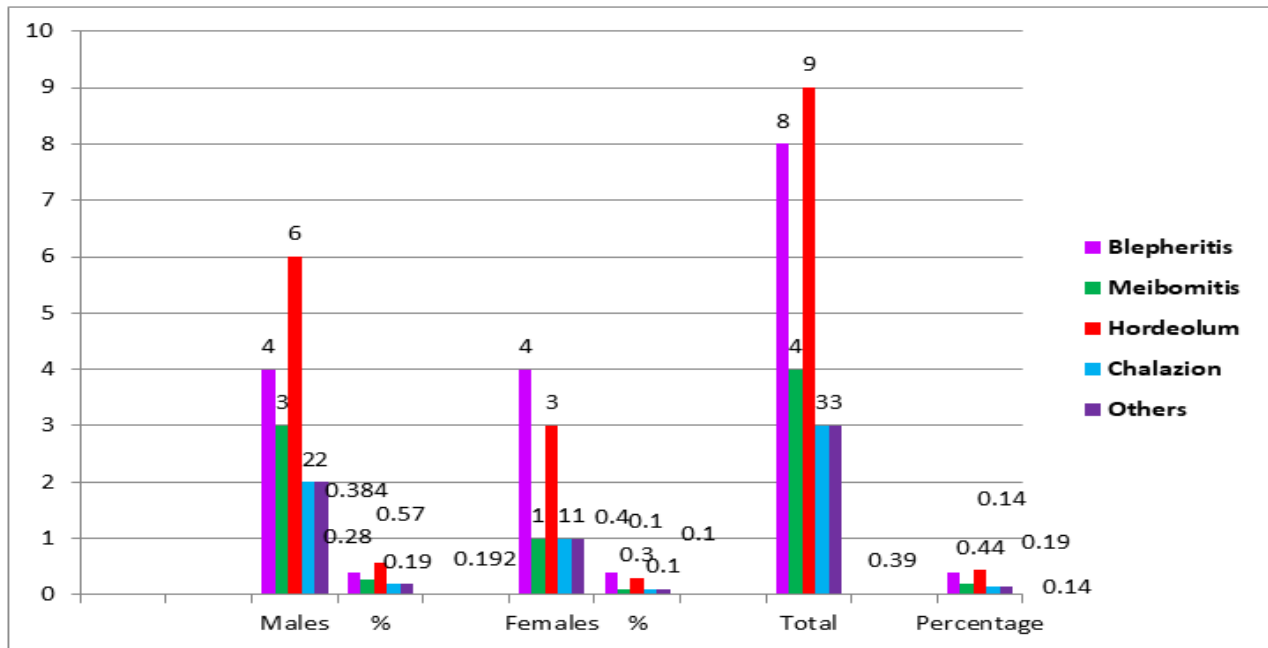


Fig 19 Prevalence of Common Eye Problems

One hundred and seventy-seven of the 2016 children who were evaluated had minor ocular abnormalities other than refractive errors, vitamin A deficiency, strabismus, amblyopia, and allergic conjunctivitis. Blepharitis, meibomitis, hordeolum externum, etc. were among them. One youngster had asymmetrical pseudophakia. (operated for traumatic cataract).

All of the children listed above who had minor (treatable) eye issues like blepharitis, blephero-dermatitis, meibomitis, hordeolum, etc. were given the proper treatment advice and requested to visit Manipal Hospital Bangalore for follow-up care.

Visual acuity measurements unaided and also which improved with subjective refraction readings in both eyes are tabulated according to the pattern of refractive error and other ocular conditions causing diminution of vision in the master chart.

IV. DISCUSSION

In the present study, a total of 2016 school children aged 5 to 15 years underwent vision screening out of which, 1040 were males (51.59%) and 976 were females (48.41%).

Table 23 Showing Comparison of the Present Study with Similar Studies

Place of study / Year	Study conducted by	Age group	Sample size	Prevalence of RE in %
1) South India – Hyderabad (1997).	Venkataramana Kalikivayi et. Al.,	3-18	4029	3.13%
2) Surat-Gujarath(2007)	Mausumi Basu, Palash Das	5-15	3002	15.22%
3) South India – Andhra Pradesh (Rural), 2001.	Rakhi Dandona et. Al.,	7-15	7074	2.6%
4) Urban area of Shimla-2002	Madhu Gupta, Bhupinder P Gupta	6-16	1561	22.0%
5) Low-income families in Kolkata, India 2012	Sambuddha Ghosh, Udayaditya Mukhopadhyay	6-14	2570	14.7%
6) Present study (2014) Bangalore city, Karnataka	-	5-15	2016	11.01%

235 children in the study group had unaided visual acuities of 6/9 or better in one or both eyes, 222 of whom had visual acuities of less than 6/9 owing to refractive errors like myopia, hypermetropia, and astigmatism. Six children with strabismus, four children with amblyopia, two children with genetic anomalies (chorioretinal coloboma and iris coloboma), and one child with traumatic (unilateral) blindness all had visual acuities of less than 6/9.

The theory that myopia is promoted by reading for extended periods of time without adequate illumination and close work is consistent with the parent's instruction about myopia in children. In fact, if parents with greater education levels typically had myopia, the observed association may have a genetic basis. One explanation for the variations in refractive errors between urban and rural populations examined in various regions of our country was provided by this. There was no discernible difference in the prevalence

of refractive error in the current study between children who were male (11.15%) and female (10.86%). The age group of children between the ages of 11 and 12 has been found to have the highest prevalence of refractive error (1.59%), with female children having a greater prevalence (1.43%) than male children (1.54%), and children under the age of 5 having the lowest prevalence (0.10%). Refractive error prevalence rose from 3.57% in the age range of 5 to 9 years to 7.44% in the age range of 10 to 15 years, indicating that the incidence of refractive errors rises with age.

The prevalence of myopia rose from 2.28% in the age group of 5 to 9 years to 5.357% in the age group of 10-15 years. Myopia was found more frequently in this age range. Out of 154 myopes, 50 kids had a family history of myopia.

Myopia prevalence is influenced by both genetic and environmental variables. The quality of education received also clearly plays a role in this frequency. From the perspective of the widely accepted theory for the development of myopia, genetic factors, dietary factors, and the amount of close work, this can be examined.

Refractive Error Study in Children (RESC) was a population-based cross-sectional study of school-aged kids between the ages of 5 and 15 to determine the prevalence of refractive error and vision impairment in people of various racial and ethnic backgrounds. The investigations were carried out in India, Nepal, China, and Chile. Out of the 2016 children tested, VAD in children was found in 5 of them. In the current research, the prevalence of vitamin-A deficiency was 0.25 percent, which was more prevalent in male children and those who were younger in age.

All five kids had Bitot's patches, but only one had corneal xerosis. All five vitamin A-deficient kids had average visual acuity, though. All of the aforementioned kids received therapeutic amounts of vitamin A (in the form of an oral suspension of retinol palmitate), and were observed for six months. Health education was provided to the affected children's classmates, instructors, and parents, as well as information on vitamin-A-rich foods.

Six of the 2016 toddlers whose eyes were examined had strabismus, including 4 boys and 2 girls. Five of the six exotropia-affected infants have decreased vision in the affected eye. After explaining to the parents and the concerned teachers the need for frequent follow-up for a long time as well as the visual prognosis, all the strabismus-afflicted children in the aforementioned list were transferred to the squint clinic at Manipal Hospital for further assessment and management.

Amblyopia: Of the 2016 births, 4 of the amblyopic infants were female and aged 6, 8, 9, and 13 respectively. For additional assessment and treatment, the Ophthalmic section at Manipal Hospital received referrals for all four kids.

Allergic conjunctivitis: Of the 2016 children analyzed, 19 children—13 boys and 6 girls—presented with allergic conjunctivitis of different severity. Male children of higher ages were more likely than female children to develop vernal conjunctivitis. Atopic allergic conjunctivitis was more common in toddlers who were female. All of the aforementioned kids were given the go-ahead for the proper care and follow-up at the Manipal Hospital Ophthalmic Unit's outpatient section after two weeks, as well as any additional follow-ups that might be required. Health instruction was provided to kids, parents, and instructors on topics like ocular hygiene, personal hygiene, and avoiding allergens and pets. They were also informed about the disease's chronic character, recurrences, and the requirement for frequent, long-term follow-ups.

V. CONCLUSION AND RECOMMENDATIONS

The main eye morbidity was discovered to be refractive errors, which accounted for 11.01% of cases. Allergic conjunctivitis came in second with 0.94% of cases, and other conditions with prevalences of less than 0.5% included unilateral amblyopia, congenital anomalies, blepharitis, sty, chalazion, and traumatic unilateral blindness.

According to the aforementioned research, school-aged children are more likely to experience refractive errors. Symptomatic refractive errors are present in the majority of these pupils. Despite the fact that many kids are already myopic when they undergo screening, very few of them receive frequent ophthalmologist checkups and wear the right corrective lenses.

Therefore, frequent screenings for ocular and visual morbidity in school-aged children are necessary. Refractive error can be easily, affordably, and effectively treated. The provision of high-quality, reasonably-priced ophthalmic care ought to be a fundamental component of the screening programme. We can also identify treatable causes of decreased vision early in life, which helps to reduce long-term, permanent visual impairment, which will have a negative impact on a child's ability to learn and develop.

For the purpose of early discovery of ocular morbidities, routine visual screening of school children, particularly those aged 5 to 15, is highly advised. The children should be screened as part of a standard immunisation procedure. According to the findings of the aforementioned research, screening preschool children is advised in order to identify and treat ocular morbidities and conditions that cause refractive errors as early as possible.

Along with refractive error testing, a school eye health programme must provide teachers with orientation regarding prevalent eye issues. Through health talks, slide shows, and modest eye care displays, health instruction should be provided regarding ocular hygiene, classroom lighting, and nutrition.

Each kid should go through a required visual screening at least twice while attending school, spaced 4 to 5 years apart, and children who wear glasses should have an eye exam every 6 to 10 months.

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