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Research Article

ASSESSMENT OF THE EXTENT OF MYOPIA AND ITS ASSOCIATED FACTORS IN CHILDREN OF AGE BETWEEN 6 TO 12 YEARS

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Abstract:

Background: The main reason of visual disability is myopia that can be avoided.

Objective: The goal of this research study was to assess the extent of myopia and its associated factors in children of age between 6 to 12 years. These children were presented to ophthalmology outpatient of Sir Ganga Ram Hospital, Lahore.

Patients and methods: From 1st July, 2017 to 30th June 2018, this research study was organized. The children selected for this study were between 6 to 12 years. The study was carried out in ophthalmology outpatient department of Sir Ganga Ram Hospital, Lahore. Written agreement was sign by the parents of children visiting Ophthalmology outpatient department. Ethical committee of the Hospital accepted the consent. By means of questionnaire, factors that were associated with the disease were noted. Personal information of every child selected for study, was assembled. In this way by using Snellen's chart, sensitivity of each child was noticed. 1% cyclopentolate eye drops were used for these children who were observed sensitivity less than 6/6. Then these children experience refraction. Refraction was carried out by means of retinoscopy. If any dissimilarity was presented, it was examined through chi square test. SPSS-21 was employed for data entry and assessment. The value of P was <_0.05 which was considered valuable.

Results: Total children selected for study were 2936. The percentage of female was 67.37%. The percentage of children between 6-8 years, 9-11 years and 12 years of age was 32.86%, 54.67% and 12.47 respectively. The percentage of myopic children was 57.93%. The time duration of TV watching was ≤1 hour per day, 2-4 hours and >4 hours in 62.39%, 35.62% and 2.02% children respectively. The percentage of the children were playing games or using computer for 1 hour was 60.72%, 35.66% for 2-4 hours and 3.62% for >4 hours. 17.3% children were reading for ≤1 hours, 76.22% for 2-8 hours and 6.48% for >8 hours. The family background of 65.8% children was positive for myopia.

Conclusion: Work and myopia had strong association. Parental myopia was also linked to myopia.

Keywords: Myopia, Risk factors, Reading hours.

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INTRODUCTION:

Myopia is a refractive error. In different regions of Asia, myopia is very frequent. In Asia, various people are unable to see faraway objects clearly, (1,2). World health organization stated that in children, optical disability is caused by refractive error that is unprevented (3). Myopia not caused medical complexities but direct and indirect socioeconomic costs are costs suffered by it. Management of myopia complexities like retinal detachment and contact lens related corneal ulcer are related to indirect costs. On the other hand, treatment of myopia like refractive eye wear and surgery are related to direct costs. For many years, researches have been carried out in order to determine the causes of myopia. But still, there is no certainty regarding causes of myopia. The possible causes has been en ironmen. All aspects and contribution of genetic predisposition. Among children, higher socioeconomic status, more near-work activities and accomplishment of education are the stated environmental hazards of myopia (4.5).refractive errors is the third most common reason of treatable blindness in Pakistan (6).Along with the visual disease like trachoma, refractive errors are highlighted in the Global initiative of 2020 for the reduction of reasons of blindness (7). Laser, refractive surgery, glasses and contact lenses are used as the treatment of refractive errors. The goal of this research study was to assess the extent of myopia and its associated factors in children of age between 6 to 12 years. These children were presented to Ophthalmology Outpatient Department of Sir Ganga Ram Hospital, Lahore.

PATIENTS AND METHODS:

From 1st July, 2017 to 30th June 2018, this research study was organized. The children selected for this study were between 6 to 12 years. The study was

carried out in Ophthalmology Outpatient Department of Sir Ganga Ram Hospital, Lahore. Written agreement was signed by the parents of children visiting Ophthalmology Outpatient Department. Ethical committee of hospital accepted the consent. Those children were expelled from the research study who were unwilling to experience the examination, with optic nerve disorders, contract, hyperopia, pseudophakia, corneal issues glaucoma and who were using medication for some disorder. By means of questionnaire, factors that were associated with the disease were noted. Personal information of every child selected for study, was assembled. In this way, by wing Snellen,s chart , sensitivity of each child was noticed. 1% cyclopentolate eye drops were used for those children were observed with sensitivity less than 6/6. Then these children experienced refraction. Refraction was carried out by means of retinoscopy. If any dissimilarity was present, it was examined through chi square test. SPSS-21 was employed for data entry and assessment. The value of P was <_0.05 which was considered valuable.

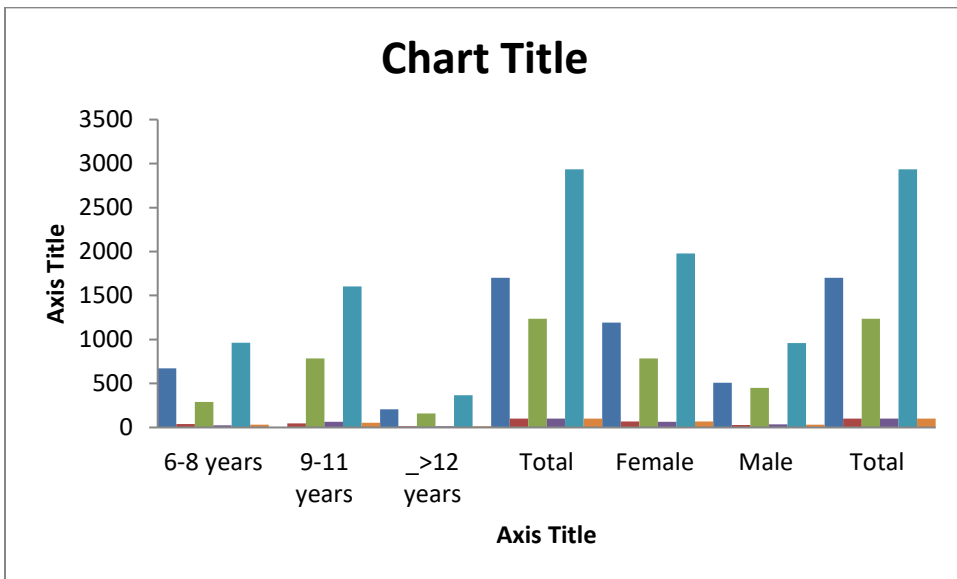
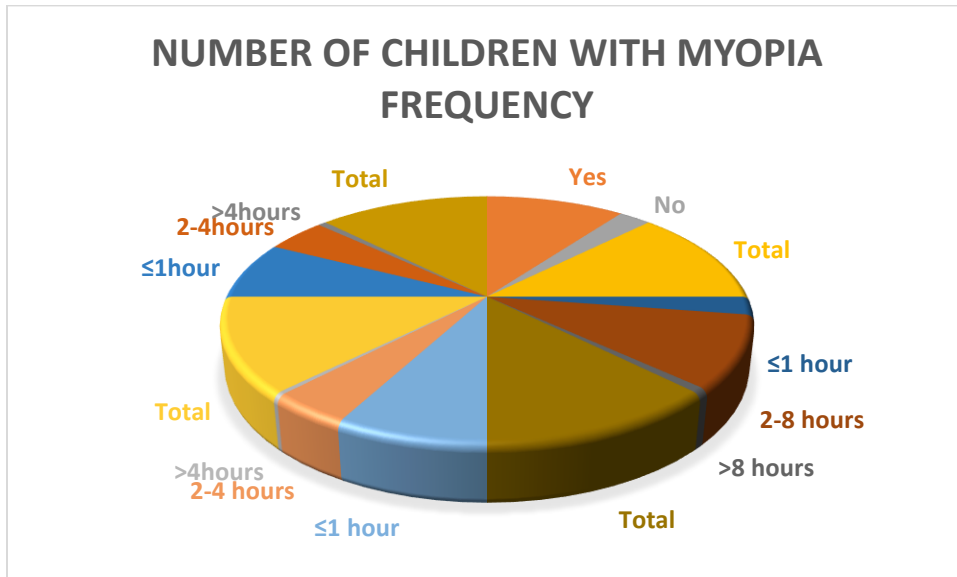
RESULTS:

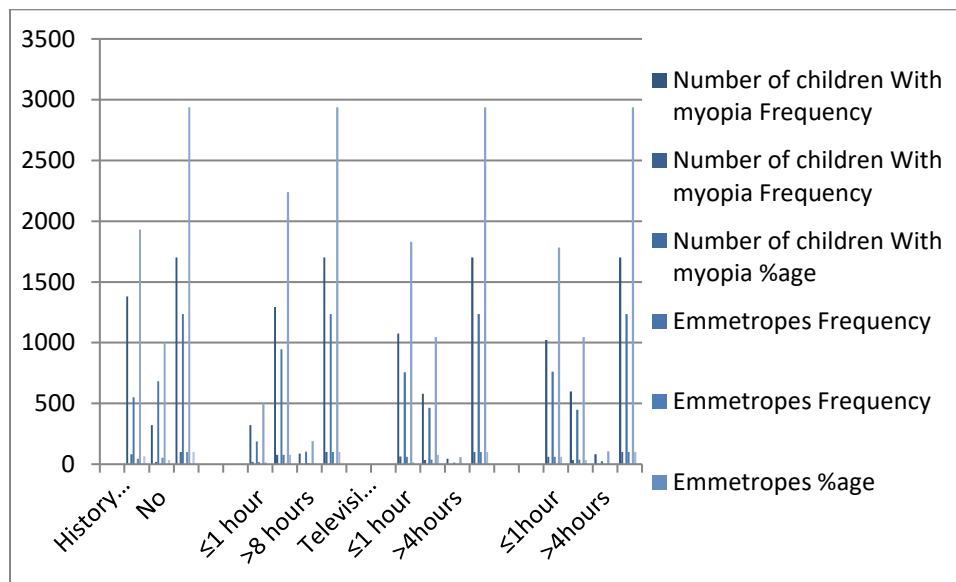
Total children selected for study were 2936. The percentage of female was 67.37%.The percentage of children between 6 -8 years, 9-11 years and 12 years of age was 32.86% ,54.67% and 12.47 respectively. The percentage of myopic children was 57.93%. The time duration of TV watching was <_1 hour per day, 2-4 hours and >4 hours in 62.39% ,35.62% and 2.02% children respectively. The percentage of the children were playing games or using computer for 1 hour was 60.72% ,35.66% for 2-4 hours and 3.62% for >4 hours. 17.3% children were reading for <_1 hours, 76.22% fir 2-8 hours and 6.48% for>8 hours. The family background of 65.8% children were positive for myopia.

Risk factors of myopia:

Variables	Number of children With myopia		Emmetropes		Total		P values
	Frequency	%age	Frequency	%age	Frequency	%age	
Family History of myopia							0.0000
Yes	1380	81.12	552	44.69	1932	65.80	
No	321	18.88	683	53.31	1004	34.20	
Total	1701	100	1235	100	2936	100	0.0001
Reading hours per day							
≤1 hour	321	18.87	187	15.14	508	17.30	
2-8 hours	1293	76.01	945	76.51	2238	76.22	
>8 hours	87	5.12	103	8.35	190	6.48	
Total	1701	100	1235	100	2936	100	

Television watching hours per day							0.0080
≤1 hour	1076	63.25	756	61.21	1832	17.30	
2-4 hours	581	34.15	465	37.65	1046	76.22	
>4hours	44	2.60	14	1.14	58	6.48	
Total	1701	100	1235	100	2936	100	
							0.0004
≤1hour	1022	60.08	761	61.61	1783	60.72	
2-4hours	598	35.15	449	36.35	1047	35.66	
>4hours	81	4.77	25	2.04	106	3.62	
Total	1701	100	1235	100	2936	100	





OPERATIONALIZATION:

Myopia: spherical equivalents equal to more than 0.50 D in either eye.

Hyperopia: spherical equivalents equal to or greater than + 2.0 D in either eye.

Emmetropia: The children with neither eye myopic or hyperopic in both eyes.

Total children selected for study were 2936. The percentage of female was 67.37%. The percentage of children between 6-8 years, 9-11 years and 12 years of age was 32.86%, 54.67% and 12.47% respectively. The percentage of myopic children was 57.93%. The time duration of TV watching was ≤ 1 hour per day, 2-4 hours and >4 hours in 62.39%, 35.62% and 2.02% children respectively. The percentage of the children were playing games or using computer for 1 hour was 60.72%, 35.66% for 2-4 hours and 3.62% for >4 hours. 17.3% children were reading for ≤ 1 hours, 76.22% for 2-8 hours and 6.48% for >8 hours. The family background of 65.8% children was positive for myopia.

DISCUSSION:

Total children selected for study were 2936. The percentage of myopic and emmetropic children was 57.93% and females were 32.63% and females were two third of total children. 57.6% was the frequency of myopic children in a study organized by Chaudhary et al. This frequency was similar to our study (8). In our study, as compared to male, frequency of myopia was observed higher in females. These results are comparable to the study organized by Mavracanas TA

et al (9). Yingyong P organized a study in which it is stated that myopia is transmitted from parents to children (10). Similar results are observed in our study ($P=0.0000$). Relation between television watching time per day and myopia ($p=0.0080$), myopia and time spent on computers or playing videogames per day (0.0004) and myopia and reading hour per day (0.0001) has been significant. Khaddar Ys et al organized a study in which daily hours spent on watching television, computer use and reading were related with myopia (11). These results are comparable to our as well as other studies. On regular basis, screening of young children for refractive errors is necessary.

CONCLUSION:

Total children selected for study were 2936. The percentage of female was 67.37%. The percentage of children between 6-8 years, 9-11 years and 12 years of age was 32.86%, 54.67% and 12.47% respectively. The percentage of myopic children was 57.93%. The time duration of TV watching was ≤ 1 hour per day, 2-4 hours and >4 hours in 62.39%, 35.62% and 2.02% children respectively. The percentage of the children were playing games or using computer for 1 hour was 60.72%, 35.66% for 2-4 hours and 3.62% for >4 hours. 17.3% children were reading for ≤ 1 hours, 76.22% for 2-8 hours and 6.48% for >8 hours. The family background of 65.8% children was positive for myopia. The results concluded that work and myopia had strong association. Parental myopia was also linked to myopia.

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