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Research Article

### AN ASSESSMENT OF EXTENT OF MYOPIA AND ASSOCIATED RISK FACTORS AMONG CHILDREN OF 6 YEARS – 12 YEARS OF AGE

<sup>1</sup>Dr Shaista Razzaq, <sup>1</sup>Dr. Mahpara Zahid, <sup>2</sup>Dr Rida Yasin

<sup>1</sup>Nishter Hospital Multan, <sup>2</sup>BHU Aghapur.

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**Abstract:**

**Background:** The main reason for 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 presented at the hospital.

**Patients and methods:** We carried out this research at Services Hospital, Lahore in the time frame of July 2017 to June 2018. The children selected for this study were between 6 to 12 years. A written agreement was sign by the parents of children visiting Ophthalmology outpatient department. The ethical committee of the Hospital accepted the consent. By means of a questionnaire, factors that were associated with the disease were noted. Personal information f every child selected for study was assembled. In this way by using Snellen's chart, the 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 was employed for data entry and assessment. The value of P was  $\leq 0.05$  which was considered value.

**Results:** Total children selected for the 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 the computer for 1 hour was 60.72 %, 35.66% for 2-4 hours and 3.62% for  $>4$  hours. 17.3% of children were reading for  $<1$  hour, 76.22% for 2-8 hours and 6.48% for  $>8$  hours. The family background of 65.8% of children was positive for myopia.

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

**Keywords:** Myopia, Risk factors and Reading hours.

**Corresponding author:**

**Dr Shaista Razzaq,**

Nishter Hospital Multan.

QR code



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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 a refractive error that is unprevented [3]. Myopia is 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 eyewear 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 the causes of myopia. The possible causes have been the environment. 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 are the third most common reason for 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 for 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.

**PATIENTS AND METHODS:**

We carried out this research at Services Hospital, Lahore in the time frame of July 2017 to June 2018. The children selected for this study were between 6 to 12 years. A written agreement was signed by the parents of children visiting Ophthalmology Outpatient Department. The ethical committee of the 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 using Snellen's chart, the 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 was employed for data entry and assessment. The value of P was  $< 0.05$  which was considered valuable.

**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.

**RESULTS:**

Total children selected for the 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  $\leq 1$  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 the computer for 1 hour was 60.72 %, 35.66% for 2-4 hours and 3.62% for  $> 4$  hours. 17.3% of children were reading for  $\leq 1$  hour, 76.22% for 2-8 hours and 6.48% for  $> 8$  hours. The family background of 65.8% of children was positive for myopia.

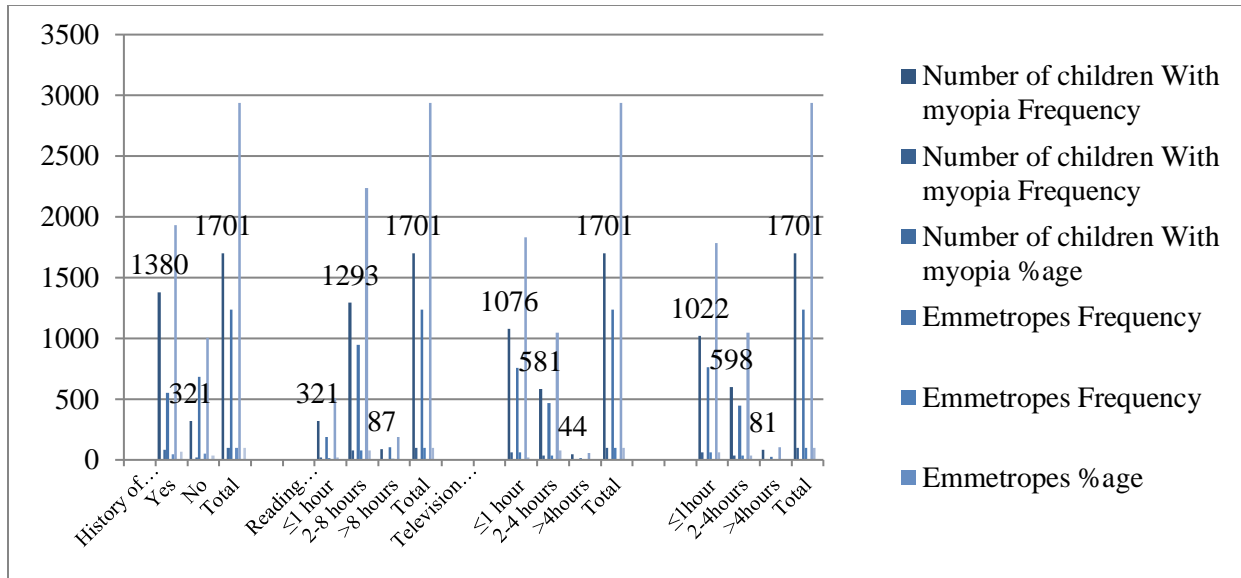


Figure – I: Stratification of Patients

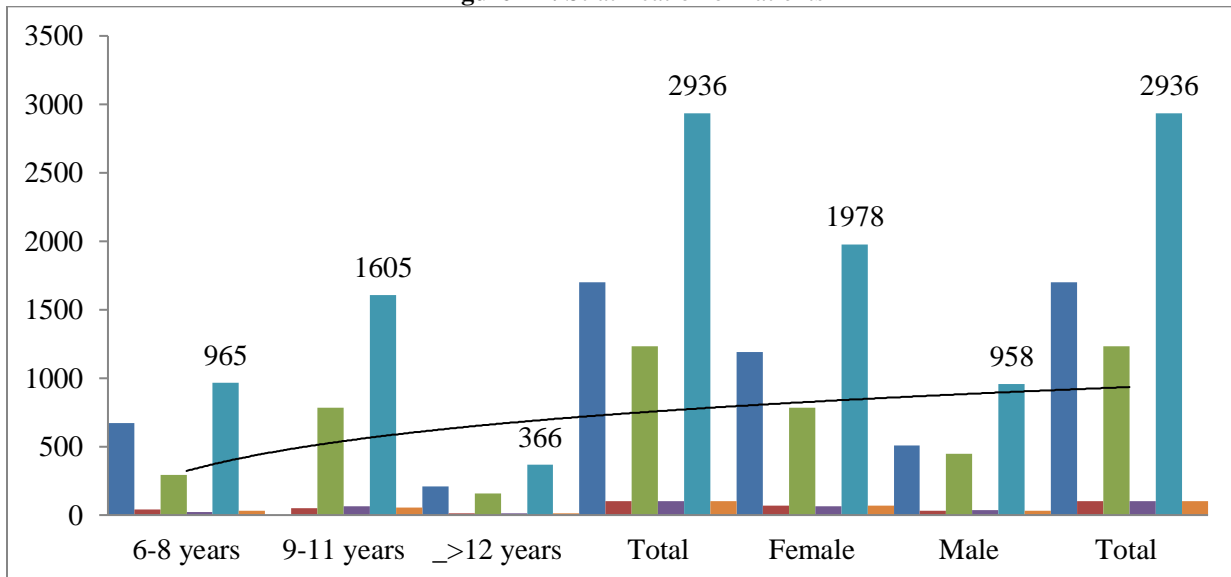


Figure – II: Age Brackets

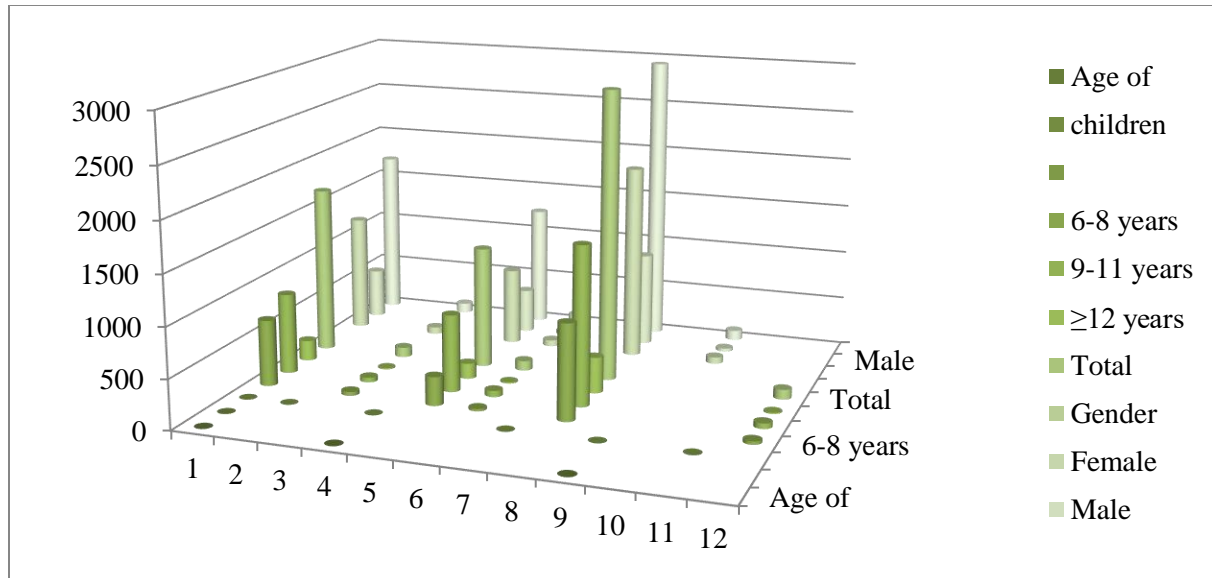


Figure – III: Myopia Frequency with Gender and Age

Table – I: Frequency of Myopia with age and gender distribution of the children

Age of children	Number of children with myopia		Emmetropes		Total	
	Frequency	% age	Frequency	% age	Frequency	% age
6-8 years	673	39.57	292	23.64	965	32.86
9-11 years	820	48.20	785	63.56	1605	54.67
≥12 years	208	12.23	158	12.80	366	12.47
<b>Total</b>	<b>1701</b>	<b>100</b>	<b>1235</b>	<b>100</b>	<b>2936</b>	<b>100</b>
<b>Gender</b>						
Female	1193	70.13	785	63.56	1978	67.37
Male	508	29.87	450	36.44	958	32.63
<b>Total</b>	<b>1701</b>	<b>100</b>	<b>1235</b>	<b>100</b>	<b>2936</b>	<b>100</b>

Table – II: Risk Factors

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	
<b>Total</b>	<b>1701</b>	<b>100</b>	<b>1235</b>	<b>100</b>	<b>2936</b>	<b>100</b>	
Reading hours per day							0.0001
≤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	
<b>Total</b>	<b>1701</b>	<b>100</b>	<b>1235</b>	<b>100</b>	<b>2936</b>	<b>100</b>	
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	

### DISCUSSION:

Total children selected for the 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]. Yingying 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 ( $P=0.0000$ ). The relation between televisions 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 et al. organized a study in which daily hours spent on watching television, computer use and reading were related to myopia [11]. These results are comparable to our as well as other studies. On a regular basis, screening of young children for refractive errors is necessary.

### CONCLUSION:

The results concluded that work and myopia had a strong association. Parental myopia was also linked to myopia.

### REFERENCES:

- Mavracanas TA, Mandalos A, Peios D, Golias V, Megalou K, Gregoriadou A, et al. Prevalence of myopia in a sample of Greek students. *Acta Ophthalmol Scand* 2009;78(6):656-59.
- Yingyong P. Risk factors for refractive errors in primary school children (6-12 years old) in Nakhon Pathom Province. *J med assoc.* 2010;93(11):1288-93.
- Khader YS, Batayha WQ, Abdul-Aziz SM, et al. Prevalence and risk indicators of myopia among school children in Amman, Jordan. *Eastern Mediterranean Health Journal.* 2006; 12:434-39.
- Quinn GE, Shin CH, Maguire MG, et al. Myopia and ambient lighting at night. *Nature* 2009; 399:113-14.
- Dandona R, Dandona L. Refractive error blindness. *Bull World Health Organ.* 2001;79(3):237-43.
- World Health Organization, Geneva. Global Initiative for the Elimination of Avoidable Blindness. Geneva WHO/PBL/97.61
- Chaudhary r, Ali H, Sheikh HN. Frequency and underlying factors of myopia among medical students. *Biomedical.* 2011;27(2):154-60.
- Chung KM, Mohidin N, Yew PT. Prevalence of visual disorders in Chinese school children. *Optom Vis Sci.* 2006;73(11):695-700.
- Morgan I, Rose K. How genetic is school myopia? *Prog Retin Eye Res.* 2005;24(1):31-38.
- Pizzarello L, Abiose A, Ffytche T, Duerksen R, Thulasiraj R, Taylor H, et al. The vision 2020: The Right to Sight: a global initiative to eliminate avoidable blindness. *Arch Ophthalmol.* 2004;122(4):615-20.
- Wong TY, Foster PJ, Johnson GJ, et al. Education, socioeconomic factors and ocular dimension in Chinese adults: the Tanjong Pagar Survey. *Br J Ophthalmol.* 2008;86(9):963-68.