

Research Article

Effect of television watching on vision of school children in semi urban area of Kashmir

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ABSTRACT

Background: Schoolchildren form an important target group as any ocular morbidity in this age group has huge physical, psychological and socio-economical implications. Considering the fact that one-third of India's blind lose their eyesight before the age of 20 years and many of them are under five years when they become blind, early detection and treatment of ocular morbidity among children is important. This study aims to highlight the prevalence of ocular morbidity in governmental schools in a sub-urbanized area of India. Research question of current study was to study the Effect of TV watching on vision in school children.

Methods: Study area: Government schools in a sub-urbanized area of India. Sample size: 1128 school children from class 5th to 12th. Study design: A cross-sectional study was conducted and the study population comprised of school children who were examined in their schools and afterwards referred to the hospital if required. Data was gathered using a questionnaire, snellens charts and retinoscopes. Statistical analysis: simple proportion. Data was analysed statistically using SPSS software, version 14.

Results: 1128 children were examined. Percentage of male children was 42.73% and females were 57.18%. Ocular abnormality was detected in 21.3% children with refractive errors contributing 18.26%, conjunctivitis-1.95%, blepharitis-0.62%, dacryocystitis-0.17%, sty-0.35%, color blindness-0%. It was also observed that children watching TV for less than 1 hour had visual acuity of 6/6 in 42.4%, whereas children watching TV for 1-2 hours, 2-3 hours and >3 hours had lower visual acuity.

Conclusion: It was concluded that moderate to high prevalence of ocular morbidity among high school children is present in block Hazratbal. Finally, the aim of all blindness control programs should be to propagate awareness in the masses of eye care and to teach the essentials of ocular hygiene and eye healthcare.

Keywords: Visual acuity, Ocular morbidity, Refractive errors

INTRODUCTION

Vision plays a vital role in the reading process. Refractive error (RE) leading to low vision is one of the most common problems undiagnosed for long periods. The World Health Organization (WHO) has grouped uncorrected RE with cataract, glaucoma, trachoma and macular degeneration, infectious disease, and vitamin A deficiency among the leading causes of blindness and vision impairment in the world.¹

Children who lack good basic visual skills often struggle unnecessarily in school. A major portion of all learning is done visually. Reading, spelling, writing and homework rely on vision. When a child struggles to read, write or fully participate in school, a visually-related learning disability could be the cause. With an accurate diagnosis and the right support, people with such learning disabilities can reach their full potential and flourish in school and in life.

Correction of RE and low vision are one of the priorities of global initiatives for Vision 2020. India is committed to reduce this burden of blindness by adopting the strategies advocated for vision 2020 - The Right to Sight.² Children in the school-going age group (6-18 years) represent 25% of the population in the developing countries.³ They offer significantly representative material for these studies as they fall best in the preventable blindness age group, are a controlled population i.e., they belong to a certain age group and are easily accessible and schools are the best forum for imparting health education to the children. Schools are also one of the best centers for effectively implementing the comprehensive eye healthcare program.

The present study is a preliminary survey to determine the prevalence of RE and low vision among schoolchildren in order to plan effectively for prevention and/or managing avoidable blindness among school children. The present study was undertaken as a part of the national programme for the control of blindness under which the funds were provided to one of the medical colleges.

METHODS

A cross-sectional study using multistage sampling technique was done to select the study participants. First, we enlisted all the villages and wards (defined geographical area in the district with their respective population) according to the recent census and sampled the clusters with a probability proportional to size. List of all the government primary, middle and high schools in the selected villages were obtained from the zonal education office and all the schools in the selected villages were covered however from the sampling frame all schools children between the age of eight to eighteen years were selected through a simple random sampling technique.

A total of 1128 school children, were examined. The data collection instrument was a pretested structured questionnaire. Queries from children were asked in Kashmiri language, while information was filled in English language. Visual acuity (unaided) was assessed by using Snellen's chart and torch examination of the eye was done.

Children with VA \leq 6/18 in both eyes with best correction were categorized as low vision. Unaided eye examination was also done to check for signs if present of conjunctivitis (def.: as redness of eye, burning sensation, itching and watering in one or both the eyes). Blepharitis (def.: as inflammation of eyelids with redness, swelling and dried crusts). Dacryocystitis (def.: inflammation of lacrimal glands at the medial aspect of eye causes excessive watering, sticky eyes and discomfort).

RESULTS

A total of 1128 children of age 10-18 years were enrolled from 5th to 12th class in government schools. Males in the study were 482 (42.73%) and females 645 (57.18%) (Table 1). Point prevalence of refractive errors was 18.26%, conjunctivitis-1.95%, blepharitis-0.62%, dacryocystitis-0.17%, styne-0.35%, colour blindness-0% (Table 2). Visual acuity of all children was also done, It was also observed that children watching TV for less than 1 hour had visual acuity of 6/6 in 42.4%, whereas children watching TV for 1-2 hours, 2-3 hours and >3 hours had lower visual acuity (Table 3).

Table 1: Children examined by sex.

Sex	Frequency	Percentage
Male	482	42.73%
Female	645	57.18%
Total	1128	100%

Out of total 1128 children examined, the percentage of male children were 42.73% and female children were 57.181%

Table 2: No. of examined children with other Ocular problems.

Problem	Frequency	Percentage
Conjunctivitis	22	1.95%
Blepharitis	7	0.62%
Dacryocystitis	2	0.17%
Stye	4	0.35%
Total	35	3.09%

Total number of children with other ocular problems was 3.09% with 1.95% having conjunctivitis, 0.62% had blepharitis, 0.17% had styne, 0.35% had dacryocystitis.

Table 3: Age wise distribution of visual acuity of examined children.

Age	Visual acuity							
		6/6	6/9	6/12	6/18	6/24	6/36	6/60
Male								
10-12 years	R	129	8	8	5	1	0	0
	L	130	9	6	0	5	0	0
13-15 years	R	230	32	7	6	1	1	3
	L	222	25	15	6	7	0	2
>16 years	R	39	3	2	0	2	2	0
	L	38	26	0	0	0	3	0
Female								
10-12 years	R	156	18	6	1	1	0	0
	L	155	15	7	3	0	0	0
13-15 years	R	168	22	18	16	0	1	0
	L	170	23	11	2	2	0	0
>16 years	R	144	16	5	3	1	0	0
	L	135	25	5	3	1	0	0

Table 4: Percentage relation between time spent on watching TV & visual acuity.

Time spent	Visual acuity							
		6/6	6/9	6/12	6/18	6/24	6/36	6/60
<1 hour	R	42.4%	2.2%	1.89%	0.63%	0.31%	0%	0%
	L	41.7%	3.16%	1.89%	0.31%	0.31%	0%	0%
1-2 hours	R	25.9%	2.8%	0.63%	0.63%	0.31%	0.31%	0%
	L	26.2%	2.8%	0.31%	0.31%	0%	0.63%	0.54%
2-3 hours	R	10.7%	0.31%	1.58%	0%	0%	0%	0%
	L	11.07%	0.63%	0.63%	0.31%	0%	0%	0%
>3 hours	R	7.5%	0.63%	0.31%	0%	0%	0%	0%
	L	7.5%	0.63%	0%	0%	0.31	0	0

Table 4 shows that among children who spend less than one hour on television, 42.4% had visual acuity of 6/6 as compared to children who spend more than three hours only 7.5% had visual acuity of 6/6 which was proved to be statistically significant.

DISCUSSION

Considering the fact that 30% of India's blind lose their eyesight before the age of 20 years and many of them are under five years when they become blind, the importance of early detection and treatment of ocular disease and visual impairment among young children is quite obvious.³

Visual impairment is a worldwide problem that has a significant socioeconomic impact. Childhood blindness is a priority area because of the number of years of blindness that ensues. The available data suggest that there may be a tenfold difference in prevalence between the wealthiest countries of the world and the poorest, ranging from as low as 0.1/1000 children aged 0-15 years

in the wealthiest countries to 1.1/1000 children in the poorest.¹

Children do not complain of defective vision, and may not even be aware of their problem. This warrants an early detection and treatment to prevent permanent disability. Effective methods of vision screening in school children are useful in detecting correctable causes of decreased vision, especially refractive errors and in minimizing long-term visual disability.

In this study among the ocular morbidities, the refractive errors constitute the maximum burden contributing about 18.26%. The overall incidence has been reported to vary between 21% and 25% of patients attending eye outpatient departments in India.² Similar prevalence of refractive errors has been observed among children of 12-17 years in Ahmadabad city as per data available.⁴

Internationally, lower prevalence of refractive errors (2.7-5.8%) has been reported among children of age 5-15 years from Africa, Finland, Chile and Nepal as compared

to the present study. These differences may be explained by the different diagnostic criteria used by different authors, racial or ethnic variations in the prevalence of refractive errors, different lifestyles or living conditions.⁵⁻⁷

Prevalence of conjunctivitis in this study is 1.95% only. Higher (3-17.5%) prevalence of conjunctivitis has been reported in other parts of India.⁸ However; Robinson et al. reported 1.5% prevalence of conjunctivitis among children of 1-17 years in North America, which is similar to this study.¹¹

In this study it was observed that prevalence of defective vision was more in cases of longer duration of TV watching, children who spend less than one hour on television 42.4% had visual acuity of 6/6 as compared to children who spend more than three hours only 7.5% had visual acuity of 6/30. It has also been suggested that extended close viewing of a computer monitor (or TV) can cause eye strain and fatigue as reflected by neck and shoulder problems, headache, blurred vision, double vision, red or watery or dry eyes and pain around the eyes and face. Extended close work can also cause a person to become more near-sighted (myopic), requiring the need for stronger corrective lenses.

The present study suggests that screening of school children for ocular problems should be done at regular intervals and it should be one of the prime components of the school health program. For this, school teachers should be oriented and trained in identifying common eye problems among school children so that these children can be referred for prompt treatment. They should also impart awareness regarding ocular hygiene among school children. In this manner the incidence of preventable causes of blindness among school children will be minimized. The limitation of this study could be overlooking seasonal variation in the ocular morbidity as the study period mainly involved summer months.

Recommendations

Based on the observations made during the course of this study and analysis of findings, the following recommendations are made so as to enhance learning and reduce the prevalence of LRVPs among students:

- Every student should have a routine eye examination to test both near and distant vision. However, vision screening should not be a substitute for a complete eye and vision assessment by an eye doctor (optometric physician/eye care provider).
- Comprehensive eye and vision examinations should be made mandatory for all children first entering school and, regularly throughout their school years to ensure healthy eyes and adequate visual skills essential for successful academic achievement.

- The importance of continuing eye care should be discussed with parents and caregivers. Parents and guardians should pay close attention to their children and wards with regard to their academic performance

CONCLUSION

It was concluded that moderate to high prevalence of ocular morbidity among high school children is present in block Hazratbal. Refractive errors were the most common ocular disorders. School health programs should focus on the ocular health of children. Health education activities should be intensified in schools and also the community should be informed and awareness inculcated regarding signs and symptoms of ocular disorders. Finally, the aim of all blindness control programs should be to propagate awareness in the masses of eye care and to teach the essentials of ocular hygiene and eye healthcare.

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