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A STUDY ON THE PREVALENCE OF OCULAR MORBIDITY AMONGST SCHOOL CHILDREN AGED BETWEEN 6 AND 14 YEARS IN RURAL AREA OF WEST TRIPURA DISTRICT

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ABSTRACT: INTRODUCTION: World Health organization estimated 285 million people are visually disabled of whom nearly 39 million are blind. About 80% of blindness is avoidable i.e. either curable potentially preventable. Childhood blindness is an important public health problem in developing countries due to its social and economic implication. Though prevalence of childhood blindness is low as compared to blindness in the aged, it assumes significance due to large number of disability years of child remaining blind. The school age is a formative period, physically as mentally, transforming the child into promising adult. Poor vision in childhood affects performance in school and has negative influence on the child future life. Hence, this study was designed to estimate the prevalence of ocular morbidities among school children's of Mohanpur, West Tripura District. **OBJECTIVE:** 1. To estimate the prevalence of ocular morbidities among school students aged between 6 to 14 years in Mohanpur, West Tripura District. **MATERIALS & METHOD:** A cross-sectional study was conducted during November 2011 to December 2013. The 30-cluster sampling technique was used to cover an optimum sample size of 600 students in 30 schools from 129 schools in Mohanpur, West Tripura District. Statistical analysis was done using epi. info version 6. **RESULTS:** Over all prevalence of ocular morbidity among study participants found to be 23.17%. Refractive error, Conjunctivitis and vitamin A deficiency were found to be 8.33%, 4.88% and 2.33% respectively. **CONCLUSION:** A high prevalence of ocular morbidity among high-school children was observed. Refractive errors were the most common ocular disorders.

KEYWORDS: Prevalence, ocular morbidity, school children, West Tripura.

INTRODUCTION: Blindness and visual impairment by its sheer magnitude forms an enormous problem, not only in human suffering, but also in terms of economical loss and social burden. Blindness, with its social and economic consequences, represents a significant public health problem in many parts of the world.¹ WHO estimated 285 million people worldwide are visually disabled of whom nearly 39 million are blind. About 80% of blindness is avoidable, i.e., either curable or potentially preventable.² Considering the fact that 30% of India's blind lose their sight before the age of 20 years, the importance of early detection and treatment of ocular morbidity and visual impairment in young children is obvious.³

School children form a sizeable segment of the community. Children in school going age group (6-15years) represent 25% of the population in developing countries.⁴ They are easily accessible and schools are the best forum for imparting health education to the children. Schools are also one of the best centres for effectively implementing the comprehensive eye health care programme.⁵ WHO have recommended Integration of vision screening and refractive services for school student with

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screening for health issues.^{6,7} There are limited knowledge and information on the prevalence in Tripura. Hence, this study was designed to estimate the prevalence of ocular morbidities among school children's in rural area of West Tripura District.

OBJECTIVE: To estimate the prevalence of ocular morbidities among school students aged between 6 years and 14 years in Mohanpur, West Tripura District.

MATERIALS AND METHODS: The present cross-sectional study was carried out in Mohanpur, rural field practice area of Department of Community Medicine, Agartala Government Medical, Agartala, West Tripura. The study population was all school children aged between 6 and 14 years in various schools of Mohanpur. In Mohanpur, there were 129 schools with 27829 students under 6 – 14 years of age. The study duration was two years (November 2011 to October 2013). The formula used for calculating sample size was $4pq/L^2$, where $p = 40\%$ (prevalence obtained from previous studies)⁸, $q = (1-p)$, $L =$ (Limit of allowable error) is 10% of $p = 4$. Thus sample size was calculated 568 and it was rounded off to 600. By using probability proportional sampling procedure 30 clusters selected from 129 schools.

The Principals of the selected schools were informed about the study and permission sought from them to conduct the study in their schools. They informed the parents of the student regarding the study and permission taken from the guardian of the student to be examined. A pre - tested and pre - designed questionnaire were used for collection of data, which included Information regarding the age, sex, residential address and other socio – demographic profiles and detail examination of eye for diagnosing ocular morbidity. A home visit was also made to complete the information whenever required.

All the subjects were clinically examined with Standard procedures by ophthalmologist. Examinations were performed in the respective school compounds. Examination of the eyelid margins and cilia, bulbar and tarsal conjunctivae, the cornea and anterior segment was done using a pen-torch and a 2x magnifying loupe. The visual acuity was tested by Snellen's E chart for far vision keeping it at six meters distance from the subjects. Both eyes were tested separately. Near vision was tested with the help of Jaeger's chart keeping the distance of 25-30cm from the eyes of the subjects. Visual acuity of 6/9 in any one eye was taken as a sign of visual impairment. The extra – ocular movements were examined by asking the participant to follow with their eyes, the light of the torch in the 6 diagnostic positions. A cover-uncover test to look for latent or manifest ocular deviation. Ishiara's pseudochromatic plates were used for colour vision test. Ethical clearance was taken from Institutional Ethical committee of Agartala Govt. Medical College.

Data entered into MS-Excel 2007 and Epi-info version 6.0. used for data analysis. Continuous variables expressed as mean $\pm$ SD and categorical data expressed as frequency.

RESULT: A total of 600 students between aged 6 – 14 years were studied. Mean age of the study participants was 10.8 ± 2.50 years. In the present study 59.8 % were males, 40.5% were in 12 – 14 years age group, 35% were in the VII – VIII standard and 84.5% were Hindu in religion. The prevalence of ocular morbidity in the study was found to be 23.17%. Commonest cause of ocular morbidity was refractive error with a prevalence of 8.33% followed by conjunctivitis (4.83%), Vitamin A deficiency (2.33%) and other diseases.

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DISCUSSION: In this study the overall prevalence of ocular morbidities was found to be 23.17%. Almost similar results observed in different studies.^{9,10,11,12} But some studies revealed high prevalence than present study.^{13,14} This may be due to difference between the study populations. In this study refractive error was the leading cause of ocular morbidity (8.33%). Similar kind of finding observed by Pavita MB et al¹⁵ and Kumar et al¹⁶ in Lucknow. But low prevalence observed by Seema et al¹⁷ in Haryana. Different studies in different part of the world showed variation of prevalence of refractive error from 2.3% in Nepal¹⁸ to 15.8% in Chile.¹⁹

This may due using different operational definition and other demographic factors. Conjunctivitis found to be second (4.83%) leading cause of ocular morbidity. Others studies also observed Conjunctivitis as a leading cause of ocular morbidity.^{12,20} Prevalence of Vitamin A deficiency observed 2.4% in present studies and similar observation made other studies also.^{21,22} But high prevalence observed by Prajapati et al.²³

CONCLUSION AND RECOMMENDATION: The results of the present study revealed high prevalence of the ocular morbidity (23.17%) in Mohanpur. The major causes of ocular morbidity were refractive error, Conjunctivitis and Vitamin A deficiency, which can prevented and treated. So, by regular eye screening of school children, health education and supplementation of Vitamin A, these morbidities can be reduced.

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Socio – Demographic characteristics		Study participants (n=600)	
		Number	Percentage (%)
Gender	Male	349	59.8%
	Female	241	40.2%
Age group	6 – 8 years	207	34.5%
	9 – 9 years	150	25.0%
	12 – 14 years	243	40.5%
Class	I – II standard	135	22.5%
	III – IV standard	149	24.8%
	V – VI standard	106	17.7%
	VII – VIII standard	210	35%
Religion	Hindu	507	84.5%
	Muslim	9	1.5%
	Christian	83	13.8%
	Others	1	0.2%

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Education of father	Illiterate	22	3.7%
	Primary school	132	22.0%
	High school	161	26.8%
	Higher Secondary	172	28.7%
	Graduate and above	113	18.8%
Education of mother	Illiterate	73	12.2%
	Primary school	215	35.5%
	High school	221	36.8%
	Higher secondary	90	15.0%
	Graduate and above	1	0.2%
Social economic status	Class I	00	00
	Class II	97	16.2%
	Class III	205	34.2%
	Class IV	197	32.8%
	Class V	101	16.8%

Table 1: Socio–Demographic profile of participant

Ocular Morbidity	Study participants (n= 600)	
	Present	Percentage (%)
Refractive error	50	8.33%
Conjunctivitis	29	4.83%
Vitamin a deficiency	14	2.33%
Blepharitis	13	2.17%
Stye	10	1.67%
Strabismus	8	1.33%
Cataract	5	0.83%
Ocular trauma	4	0.67%
Corneal ulcer	4	0.67%
Dacryocystitis	2	0.33%

Table 2: Distribution of ocular morbidity amongst school going children

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