AWARENESS AMONG SCHOOL TEACHERS REGARDING COMMON EYE DISEASES IN RURAL AND URBAN AREAS OF LUDHIANA

Navnoor Singh[1], Nitin Batra[2], Gurvinder Kaur[3], Rupali Chopra[4]

[1]Postgraduate Student, Department of Ophthalmology, Christian Medical College, Ludhiana, Punjab.
[2]Professor and HOD, Department of Ophthalmology, Christian Medical College, Ludhiana, Punjab.
[3]Professor, Department of Ophthalmology, Christian Medical College, Ludhiana, Punjab.
[4]Professor, Department of Ophthalmology, Christian Medical College, Ludhiana, Punjab.

ABSTRACT

BACKGROUND

Early detection and treatment of eye diseases in children are necessary to meet the challenges of childhood blindness. Awareness of eye diseases is important in teachers because they are the first ones to identify symptoms in a child and report them to the parents. Lack of awareness in teachers regarding diseases can lead to visual impairment and ocular morbidity. Various teacher training programmes can be designed on the basis of the awareness present in teachers and they can be trained accordingly in identifying various symptoms of an eye disease and refer the child to an ophthalmologist in time.

The aim of the study is to evaluate the awareness among school teachers regarding common eye diseases in rural and urban areas of Ludhiana, Punjab.

MATERIALS AND METHODS

This prospective study included 80 teachers from the age group of 18-55 years from 8 randomly selected rural and urban schools of Ludhiana district. These teachers were interviewed with a predesigned questionnaire consisting of 26 questions. Data was collected and analysed using SPSS software and results were obtained.

RESULTS

96.3% (77/80) reported that they were aware of common eye diseases in children. 96.3% (77/80) teachers reported to be aware of refractive errors and allergic conjunctivitis. 81.3% (65/80) were aware of squint while 7.5% (6/80) were aware of amblyopia. However, the treatment options for these conditions were not fully clear among all the teachers.

CONCLUSION

Teachers were generally aware of symptoms of common eye diseases except amblyopia. To increase the awareness among teachers regarding common eye problems, more teacher training programmes need to be conducted so that children can be referred to an ophthalmologist by the teachers in time.

KEYWORDS

Awareness, School Teachers, Eye Diseases.

HOW TO CITE THIS ARTICLE: Singh N, Batra N, Kaur G, et al. Awareness among school teachers regarding common eye diseases in rural and urban areas of Ludhiana. J. Evid. Based Med. Healthc. 2019; 6(5), 272-276. DOI: 10.18410/jebmh/2019/56

BACKGROUND

Blindness is defined as having a visual acuity of <3/60 in the better eye by World Health Organisation (WHO). Childhood blindness refers to a group of diseases and conditions in childhood or early adolescence which if left untreated results in severe blindness or some visual impairment that are likely to be untreatable later in life.[1] According to WHO, there are 1.5 million children in the world who are blind out of which 1.0 million are in Asia.[2] Early detection and treatment of eye diseases in children is imperative to meet the challenges of childhood blindness. The Right to Sight program launched by the WHO has included "Control of Childhood Blindness" among its priority programs because most of the causes of childhood blindness are treatable or preventable.[3] Studies have report that 42.9 to 49.9% childhood blindness in India was avoidable and the major cause was refractive errors.[4,5] Apart from refractive errors, children also commonly suffer from amblyopia, strabismus, vitamin A deficiency and allergic conjunctivitis. Awareness of common eye diseases is important in teachers as they are the first to recognise a symptom in the child and report it to the parents. Lack of awareness in teachers regarding common eye diseases can lead to visual impairment and ocular morbidity. Awareness of home remedies is important as some of these can be unhealthy for the child and need to be stopped. In a study conducted by Kaur et al in Punjab, out of 30,205 school children screened, trained teachers identified 4523 (14.97%) children with eye problems, out of which 2137 children were confirmed to have an eye problem by the ophthalmologist. Thus, teachers were able to identify 47.25% children with an eye problem correctly.[6] Similar

Financial or Other, Competing Interest: None.
Submission 09-01-2019, Peer Review 11-01-2019,
Acceptance 25-01-2019, Published 01-02-2019.
Corresponding Author:
Dr. Navnoor Singh,
Department of Ophthalmology,
Christian Medical College, Brown Road,
Ludhiana-141008, Punjab.
E-mail: navnoor.singh@gmail.com
DOI: 10.18410/jebmh/2019/56

teacher training programmes can be designed on the basis of the awareness present in teachers and they can be trained accordingly in identifying various symptoms of an eye disease and refer the child to an ophthalmologist in time.

MATERIALS AND METHODS

This prospective study was conducted in 8 randomly selected rural and urban schools of Ludhiana district in Punjab. Ten teachers in the age group of 18 – 55 years were selected from each school. Prior permission was taken from the district education officer and principals of the respective schools.

Each teacher was interviewed with a predesigned questionnaire which included the name, age, gender of the teacher and a consent form for participation in the study. It included 26 questions regarding awareness of various symptoms of common eye diseases like refractive errors, squint, amblyopia and allergic conjunctivitis. Teachers were also asked about various treatment options or any home remedies that they are aware of. The reliability of the questionnaire was calculated using the Krippendorff's alpha score which was 0.871 indicating a strong inter-rater reliability. The collected data was entered in Microsoft excel spreadsheet and analysed using SPSS software and results were obtained

RESULTS

The study included a total of 80 teachers of which 8.75% (7/80) were males and 91.25% (73/80) were females. The mean age was 22.98 years. 96.3% (77/80) teachers reported that they were aware of common eye diseases in children. 96.3% (77/80) teachers reported to be aware of refractive errors and allergic conjunctivitis. 81.3% (65/80) were aware of squint. Awareness regarding amblyopia was only 7.5% (6/80).

	Frequency	Percentage
Aware of Common Eye Problems in Children	77	96.3%
Aware of Refractive Errors	77	96.3%
Aware of Amblyopia	6	7.5%
Aware of Squint	65	81.3%
Aware of Allergic Conjunctivitis	77	96.3%

Table 1. Awareness

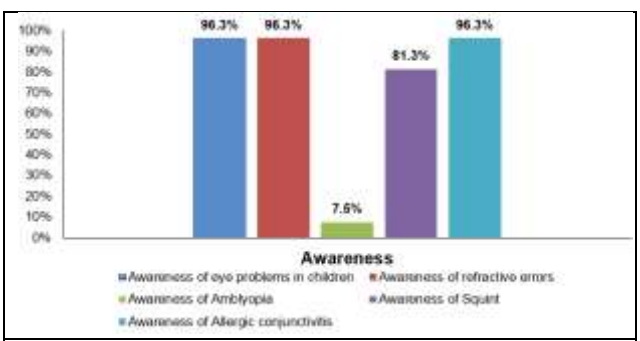

Figure 1. Awareness

When asked about refractive errors, 93.8% (75/80) teachers reported that they were aware of blurring of vision and headache as a symptom of refractive error followed by heaviness of eyes which was reported by 91.3% (73/80) of teachers. Only 52.5% (42/80) teachers were aware of treatment options or home remedies available among which the most common was washing eyes with water as reported by 18.8 % (15/80) teachers followed by spectacles which was reported by 10% (8/80) teachers. Other treatment options or home remedies included massaging eyes with ghee, applying saliva in the early morning, applying onion juice, eating almonds and frequent blinking as reported by 17.5 % (14/80) of the teachers.

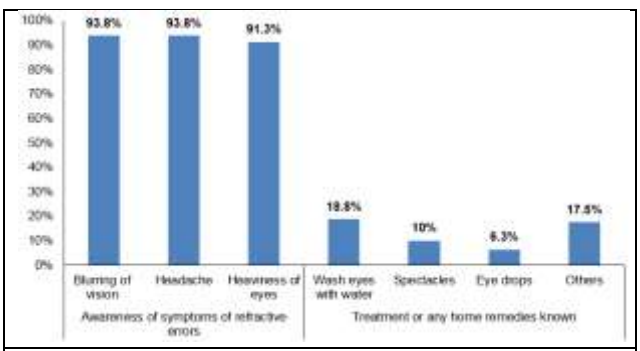

Figure 2. Awareness About Refractive Errors

When asked about squint, 50% (40/80) teachers reported that they were aware of head tilt or chin lift as a symptom of squint followed by blurring of vision and double vision as reported by 46.3% (37/80) and 35% (28/80) teachers respectively. Treatment options or home remedies were only reported by 12.5% (10/80) of the teachers with surgery being the most common option as reported by 10% (8/80) teachers.

Awareness of Symptoms of Squint	Frequency	Percentage
Blurring of Vision	37	46.3%
Double Vision	28	35.0%
Head Tilt or Chin Lift	40	50.0%
Treatment or Home Remedies Known	10	12.5%
Surgery	8	10.0%
Spectacles	1	1.3%
Eye Drops	1	1.3%

Table 2

When asked about allergic conjunctivitis, 93.8% (75/80) teachers reported that they were aware of frequent rubbing of eyes as a symptom of allergic conjunctivitis followed by watering of eyes, redness of eyes and discharge from eyes as reported by 92.5% (74/80), 92.5% (74/80) and 67.5% (54/80) teachers respectively. Treatment options or home remedies were only reported by 52.5% (42/80) of the teachers with washing eyes with water being the most common option as reported by 27.5% (22/80) teachers followed by eye drops as reported by 15% (12/80) teachers. Other treatment options or home remedies included putting

rose water, chloramphenicol applicaps and applying ice packs by 10 % (8/80) of the teachers.

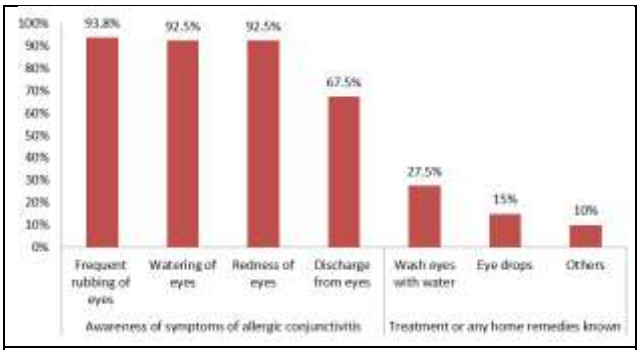

Figure 3. Awareness About Allergic Conjunctivitis

TV and excessive mobile phones were reported as the most common aggravating factor by 58.8% (47/80) and 48.8% (39/80) teachers respectively. Dust and pollution, inappropriate reading distance, malnutrition was reported by 21.3% (17/80), 18.8% (15/80), and 25% (20/80) of the teachers. Other factors like stress, vitamin A deficiency, excess sunlight exposure were other aggravating factors reported by 6.3% (5/80) teachers.

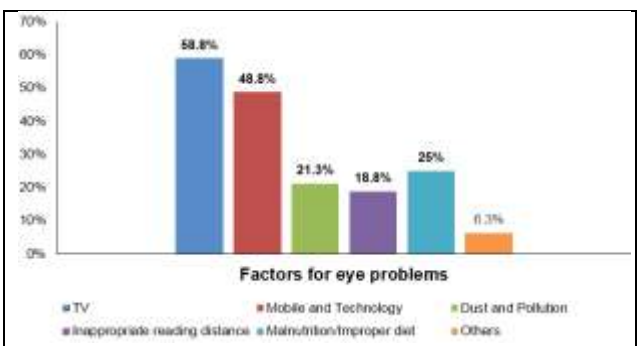

Figure 4. Aggravating Factors for Eye Problems

On being asked to enumerate factors that make a child more prone of getting an eye problem, TV and excessive mobile phones were reported by 50% (40/80) of the teachers followed by dust and pollution which was reported by 27.5% (22/80). 5% (4/80) of the teachers reported that hereditary factors are also responsible. Other factors included stress, bad hand hygiene, sunlight exposure, lack of sleep as reported by 12.5% (10/80) teachers.

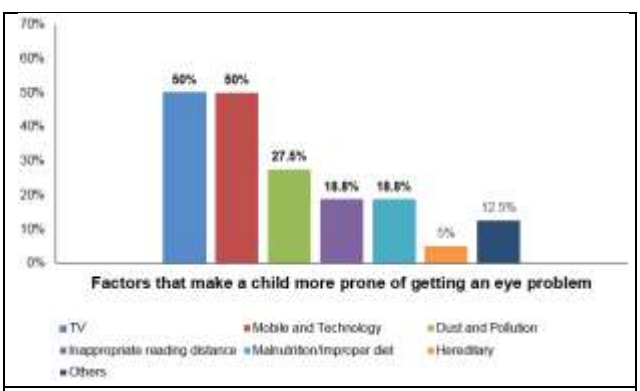

Figure 5. Factors That Make A Child More Prone to Getting an Eye Problem

When asked about various treatment options for eye problems in different age groups of children, only 20% (16/80) had an idea what treatment can be given. Treatment options have been summarised in table 3.

Awareness of Treatment Options in Different Age Groups	Frequency	Percentage
3-10 Years		
Eye Drops	6	7.5%
Diet	4	5.0%
Spectacles	2	2.5%
11-14 Years		
Eye Drops	5	6.3%
Diet	4	5.0%
Spectacles	1	1.3%
15-18 Years		
Eye Drops	2	2.5%
Diet	5	6.3%
Surgery	6	7.5%

Table 3. Awareness of Treatment Options in Different Age Groups

When asked regarding the benefits of treatment for an eye problem, 66.3% (53/80) teachers answered that the child's eye sight will become stable and the problem will not progress, whereas 33.7% (27/80) teachers answered that the child will improve in studies and academics. Improvement in personality and confidence were also some answers given by some teachers.

Following responses were observed when teachers were asked directly regarding various treatment options in different eye diseases.

	Frequency	Percentage
Do you think spectacles help in treatment of refractive errors?		
Yes	74	92.5%
No	0	0%
May be	6	7.5%
Do you think spectacles help in treatment of squint?		
Yes	20	25.0%
No	34	42.5%
May be	26	32.5%
Do you think surgery helps in treatment of squint?		
Yes	46	57.5%
No	9	11.3%
May be	25	31.3%
Do you think patching helps in treatment of amblyopia?		
Yes	3	3.8%
No	2	2.5%
May be	75	93.8%

Do you think topical medications help in treatment of refractive errors or squint?		
Yes	45	56.3%
No	15	18.8%
May be	20	25.0%
Do you think topical medications help in treatment of allergic conjunctivitis?		
Yes	72	90.0%
No	0	0%
May be	8	10.0%

Table 4

92.5% (74/80) teachers reported that spectacles are helpful in treatment of refractive errors. Role of spectacles in squint was not clear among the teachers and only 25% (20/80) teachers reported that they are helpful in squint. 57.5% (46/80) teachers reported that surgery is helpful in treatment of squint. Teachers were not clear regarding the patching as a treatment option for amblyopia, only 3.8% (3/80) reported that it is helpful. 90% (72/80) teachers reported that topical medications are helpful in treatment of allergic conjunctivitis.

100% of teachers reported that they refer their children to an ophthalmologist in case of an eye problem or they report the problem immediately to the parents. 85% (68/80) teachers reported that parents agree that their child needs treatment but 21.3% (17/80) reported that they have to make an extra effort to convince the parents to get their child checked and 3.8% (3/80) reported that even after repeated efforts, some parents delay and do not get their child checked on time.

48.7% (39/80) teachers gave additional comments for maintaining good eye health when asked at the end of the questionnaire. 37.5% (30/80) teachers laid emphasis on regular eye check-up and education of the parents regarding eye health. 18.7% (15/80) teachers commented regarding restricting the amount of TV and mobile phone usage. Other comments included avoiding excess sunlight and making eye health practices as a part of school curriculum.

DISCUSSION

Prevalence of blindness among adults is around 10 times more than children. Because the expected number of blind years is more for children than adults, childhood blindness needs to be a higher priority in eye care programmes in various parts of the world, especially in a developing country like India.[7] Nirmalan et al reported that according to the WHO criteria, 6.2 of 10,000 children were blind in India. 42.9% blindness was avoidable, and the major causes were refractive errors and lens anomalies which included congenital cataracts also. Refractive errors and squint were the causes of ocular morbidity in children who were 15 years or younger. The prevalence of uncorrected refractive error among children ranges from 2.63 to 2.7% in rural areas and 5.46 to 6.4% in urban areas.[8-10] It is important that every child receives a proper comprehensive eye examination but unfortunately, there is no proper infrastructure for detection and management of childhood blindness at primary and secondary health care level, and very few centres at tertiary level are equipped to manage childhood blindess.[11] In India, schools do not have a school nurse or a health care official to look for eye problems and perform vision screening from time to time, hence the responsibility lands up on the teacher for providing eye care. Thus, understanding teachers' awareness is important, for better detection of eye problems in children and for eliminating harmful traditional home remedies.

Teachers were generally aware of common eye diseases like refractive errors, squint and allergic conjunctivitis. Teachers were aware of symptoms of refractive errors and allergic conjunctivitis, but symptoms of squint were not clear among all. The awareness of amblyopia was poor among most of the teachers as only 6 teachers reported to be aware of this condition. Only 3 teachers were aware of patching as a treatment modality for amblyopia. A study was conducted by Senthilkumar et al in 35 parents and 16 eye practitioners regarding awareness of eye diseases and only one parent was aware of amblyopia as an eye problem.[7] Teacher training programmes need to lay more emphasis on amblyopia and its treatment options along with others diseases because it is a preventable and treatable condition especially if detected below 8 years of age.[12] If not treated, form deprivation and abnormal binocular inhibition may lead to reduced visual acuity and ocular morbidity in future.

Most of the teachers were aware of symptoms of refractive errors but only 10% (8/80) teachers were aware of spectacles as a treatment option. When asked directly if spectacles are helpful in refractive errors, most of the teachers said yes. Similar results were found by Senthilkumar et al in parents who were well aware of refractive errors, but cosmetic appearance was considered more important according to parents. They were hesitant to provide spectacle correction.[7]

The symptoms and treatment options of squint were not fully clear among the teachers as only 12.5% (10/80) teachers were aware of any form of treatment or home remedy. Only 10% (8/10) reported surgery as the treatment. When asked directly if surgery is helpful, 57.5% (46/80) said yes. Most of the teachers were not aware of spectacles as a treatment option for squint. Satterfield et al assessed the psychosocial impacts of living and growing up with squint and reported that it led to difficulties in self-image, employment, school, work.[13] Nirmalan et al report on the awareness of parents and grandparents reported that they considered squint to be non-treatable and a sign of good luck.[14] No such myth was reported by any teacher in our study.

Most of the teachers were aware of symptoms of allergic conjunctivitis but treatment with eye drops were only reported by 15% (12/80) teachers. When asked directly if topical medications are helpful, 90% (72/80) said yes. Most common home remedy reported was washing the eyes with

water. In a study conducted in Ghana by Kyei et al in 1000 undergraduate students, 34.7% were aware ocular allergy. 86.5% were aware of itching as a symptom while 79.8% were of redness as a symptom. Only 10.1% reported that best way of treating ocular allergy is topical eye drops.[15]

TV and excessive mobile phone use was reported as the most common aggravating factor and the most common factors that make a child more prone to getting an eye problem. Teachers also perceived that good nutrition and certain food habits can be used to treat eye problems. In studies conducted in parents by Senthilkumar et al[7] and Nirmalan et al,[14] parents considered unhealthy eating habits and lack of proper nutrition caused ocular disorders. Additional factors were watching television, playing video games and not taking proper oil baths.

In a study done in UP by Agarwal et al, teachers were randomly selected for training and assessment regarding eye health. Knowledge among teachers was found to be poor in many aspects of eye and vision health, which showed remarkable improvement after training.[16] The aim of this study was to report the awareness in school teachers regarding common eye diseases in Ludhiana district of Punjab, but this study cannot be generalised to other locations and countries. It may provide a useful framework for comparison among different professions and educational backgrounds. Thus, the study indicates that teachers were aware of common eye diseases like refractive errors, allergic conjunctivitis, squint but not amblyopia. The study results will help eye care professionals in designing awareness programmes for teachers. Awareness programmes included in school screenings and popularised through advertisements in newspapers and television may lead to better eye care in the community.

CONCLUSION

Based on the awareness present in teachers, school screening programmes can be designed to increase the teachers' knowledge regarding common eye problems and specific diseases that can be targeted and given more importance so that children can be referred to an ophthalmologist by the teachers in time.

REFERENCES

[1] World Health Organization. Priority eye diseases. https://www.who.int/blindness/causes/priority/en/index3.html

[2] World Health Organization. 2015. VISION 2020: right to sight global initiative for the elimination of avoidable blindness: action plan 2006–2011. http://www.who.int/blindness/Vision2020%20-report.pdf

[3] Resnikoff S, Pascolini D, Etya'ale D, et al. Global data on visual impairment in the year 2002. Bull World Health Organ 2004;82(11):844-851.

[4] Nirmalan PK, Vijayalakshmi P, Sheeladevi S, et al. The Kariapatti pediatric eye evaluation project: baseline ophthalmic data of children aged 15 years or younger in Southern India. Am J Ophthalmol 2003;136(4):703-709.

[5] Dandona R, Dandona L. Childhood blindness in India: a population based perspective. Br J Ophthalmol 2003;87(3):263-265.

[6] Kaur G, Koshy J, Thomas S, et al. Vision screening of school children by teachers as a community based strategy to address the challenges of childhood blindness. J Clin Diagn Res 2016;10(4):NC09-NC14.

[7] Senthilkumar DS, Balasubramaniam SM, Kumaran SE, et al. Parents' awareness and perception of children's eye diseases in Chennai, India. Optom Vis Sci 2013;90(12):1462-1466.

[8] Murthy GV, Gupta SK, Ellwein LB, et al. Refractive error in children in an urban population in New Delhi. Invest Ophthalmol Vis Sci 2002;43(3):623-631.

[9] Dandona R, Dandona L, Srinivas M, et al. Refractive error in children in a rural population in India. Invest Ophthalmol Vis Sci 2002;43(3):615-622.

[10] Padhye AS, Khandekar R, Dharmadhikari S, et al. Prevalence of uncorrected refractive error and other eye problems among urban and rural school children. Middle East Afr J Ophthalmol 2009;16(2):69-74.

[11] Eye Care in India. A situation analysis. Family Health and Development Service Research Foundation. Hyderabad, India. Available at: https://www.sightsaversindia.in/wp-content/uploads/2014/06/16482_Eyecare-in-India-A-Situaltion-Analysis.pdf

[12] Webber AL. Amblyopia treatment: an evidence-based approach to maximising treatment outcome. Clin Exp Optom 2007;90(4):250-257.

[13] Satterfield D, Keltner JL, Morrison TL. Psychosocial aspects of strabismus study. Arch Ophthalmol 1993;111(8):1100-1105.

[14] Nirmalan PK, Sheeladevi S, Tamilselvi V, et al. Perceptions of eye diseases and eye care needs of children among parents in rural south India: the Kariapatti Pediatric Eye Evaluation Project (KEEP). Indian J Ophthalmol 2004;52(2):163-167.

[15] Kyei S, Tettey B, Asiedu K, et al. Knowledge and awareness of ocular allergy among undergraduate students of public universities in Ghana. BMC Ophthalmol 2016;16(1):190.

[16] Agrawal D, Tyagi N, Nagesh SR. Awareness levels of school teachers regarding healthy vision and eye screening in Dist Gautam Budh Nagar, U.P. Natl J Community Med 2018;9(8):614-617.