



Comparative Evaluation of Knowledge of Primary Eye Care in Trained vs. Untrained Teachers

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Objective: To determine whether primary eye care training of teachers plays a role in knowledge improvement of teachers about primary eye care or not.

Material and Methods: A total number of 300 teachers (150 trained and 150 teachers without any formal training in primary eye care) were assessed in this comparative cross sectional study. All 300 teachers were from Government. Data were collected by Performa designed for this purpose which includes different variables like teacher's levels of education and experience etc. Each teacher was asked a few questions about primary eye care.

Results: Most of the trained and untrained teachers were highly experienced. Many of the untrained teachers had serious misconceptions about primary eyecare. Trained teachers showed better knowledge in most areas of primary eye. There was less difference in knowledge of trained and untrained teachers about nutrition for eye care, referring the child with eye disease or refractive error, red eye infection and deviated eyes. There was, however, a lack of knowledge even in trained teachers about giving first aid in chemical burns of the eyes and to make immediate referral for foreign body patient etc.

Conclusion: Teachers' training is an effective primary eye care service to early identify some diseases and refractive errors in developing countries with lack of general eye care facilities and eye care professionals. But there are some weak areas where teachers' training can be improved with proper supervision.

Key Words: Primary eye care, trained vs. untrained teachers, childhood blindness.

Introduction:

Health of a child is of basic importance in national progress. Eighty percent of what we learn is through our eyes. Most causes of childhood blindness are avoidable, either we can prevent them or treat them.

The following categories are used in The World Health Organization's (WHO) system for classifying blindness and low vision in children:¹

Whole globe (e.g. anophthalmos, microphthalmos)

Cornea (e.g. corneal scarring, keratoconus)

Lens (e.g. cataract, aphakia)

Uvea (e.g. aniridia)

Retina (e.g. retinal dystrophies)

Optic nerve (e.g. atrophy)

Glaucoma

Conditions where the eye appears normal (e.g. refractive errors, cortical blindness, amblyopia)

Vision develops in early stages of life therefore it is urgent to manage children with visual problems as delay in treatment can lead to amblyopia.

According to World Health Organization, there is an estimated 45 million blind and 300 million visually impaired people worldwide.² The prevalence of childhood blindness is 1.5 million in the world.³ Studies show that blindness incident is less in developed countries i.e. about 0.1 per 1000 children but in developing countries its prevalence is very high i.e. about 1.1 per 1000 children.⁴ In developing countries 7% to 31% of childhood blindness and visual disability can be avoided, 10% to 58% is treatable and 3% to 28% is preventable.⁵

The World Health Organization (WHO) and the International Agency for the Prevention of Blindness take a global initiative to eliminate avoidable blindness by the year 2020; "Vision 2020: the right to sight"⁶ For this appropriate human resources and educated trained people in eye care services are very useful. Therefore screening among children can be effectively done by school teachers and can also reduce the workload of eye care professionals.

In Pakistan and many other developing countries, a general lack of health care workers as health educators, supports the involvement of teachers in eye health education. However, there is a lack of literature on what they themselves know about common eye diseases, and their detection and management.

College of Ophthalmology and Allied Vision Sciences (then named Punjab Institute of Preventive Ophthalmology) was established in 2004 to eradicate preventable & curable blindness from the country and from the province of Punjab, in

particular. This is the fifth such Institute in the world & the second in Pakistan.⁷ Teachers training sessions are conducted here every year under Pakistan Urban Pediatric Eye Care Program.

Teachers are being trained in basic primary eye care services i.e. vision screening, common eye diseases and awareness about prevention from childhood blindness. In some cases they can give first aid to children or refer them to near eye care center.

Materials and Methods:

Study Design: It was a comparative cross sectional study (analytical).

Study Universe and Study Population: Sample was divided into two groups. Sample size was 300 teachers. 150 teachers were trained and 150 teachers had not received any formal training in primary eye care.

Criteria of study Population: Random selection of geographically defined clusters was used to identify the study sample. All teachers were from Government institutes. 150 were from schools of District Lahore and 150 from other cities of Punjab.

Data Collection: After finalizing the sample size all the information required for the study was collected through self-designed Performa. All the data was collected by the researcher herself

Inclusion criteria:

Government teachers

Exclusion criteria:

Private teachers

Methodology for Epidemiological components and Data collection:

Each teacher was asked a few questions about primary eye care. To achieve the objectives of the study the data was collected in a period of three months.

Statistical Analysis: All the data was entered and analyzed using Statistical Package for Social Science (SPSS Version 20.0). All the data was presented in forms of bar charts.

Results:

150 teachers were trained and 150 teachers had not received any formal training in primary eye care. Most of the trained and untrained teachers were highly experienced. Many of the untrained teachers had serious misconceptions and trained teachers showed better knowledge in some areas of primary eye care i.e. instilling traditional medicines (kohl, rose water, honey etc.) in eyes can be harmful and need of eye examination for every child before going to school. There is less difference in knowledge of trained and untrained teachers about nutrition for eye care, referring the child with

eye disease or refractive error, red eye infection and deviated eyes. There is a lack of knowledge even in trained teachers

about giving first aid in chemical burns of the eyes and to make immediate referral for foreign body patient and to not rub his eyes.

Sr#	Question	correct answer by trained teachers	correct answer by untrained teachers
1	In your opinion what should be instilled in a child's eye after birth?	26.67%	04.67%
2	In national campaign of polio, what kind of drops is given to a child for eye health with polio drops?	88.67%	73.33%
3	What will I you advise to a child for his/her eye care?	88.00 %	62.67%
4	What will you prefer to do if any student complains that he/she cannot see the board?	91.33%	88.67%
5	What can be the effect of instilling traditional medicines in eyes?	75.33%	43.33%
6	every child should undergo visual examination	58.67%	31.33%
7	How conjunctivitis can be transferred from one person to another?	42.00 %	18.00 %
8	In your opinion what is most necessary for the prevention of red eye?	69.33%	56.67%
9	What are the other signs of conjunctivitis?	88.67%	92.67%
10	If a child can't read the first letter E on the chart then what will you does?	93.33%	94.00 %
11	If a child have deviated eyes when should he see the doctor?	86.00 %	90.00 %
12	If a child hold book very close to eyes then.	92.00 %	96.00 %
13	What should you do if something hits the eyes and eye became very red and painful?	96.00 %	90.00 %
14	What to do if something falls in eyes?	69.33%	54.00 %
15	What step you will take if some chemical burns the eyes?	10.00 %	19.33%
16	What can be the possible cause of children who have headaches and squeeze their eyes to see the blackboard?	73.33%	78.00 %
17	Which food is not rich in vitamin A?	88.00 %	89.33%
18	Is it a good idea to put herbs given by Hakeem in the eyes to treat any disease?	60.67%	54.67%

Discussion:

In Pakistan and many other developing countries, a general lack of health care workers supports the involvement of teachers in eye health education. However, there is very less literature on what they themselves know about common eye diseases and their detection.

The Government of Pakistan focused the issue of childhood blindness and that's why they started to train school teachers in primary eye care. Teachers are trained by the optometrists based in community eye care program. Some of the international agencies are also playing a great role in teachers' training i.e. the Sight Savers International.

Teachers are being trained in basic primary eye care services i.e. vision screening, detecting common eye diseases and awareness of prevention from childhood blindness. In some cases they can give first aid to children or refer them to near eye care center.

I conducted this study to evaluate and compare the knowledge of primary eye care in trained and untrained teachers of District Lahore and other cities of Punjab and to find out the effectiveness of teachers training, its need and benefits.

I assessed about 300 school teachers with equal number of trained and untrained teachers. The results I found shows significant better knowledge in trained teachers as



compared to untrained in some areas of primary eye care i.e. instilling traditional medicines (kohl, rose water, honey etc.) in eyes maybe harmful and need of eye examination for every child before going to school. There is less difference of knowledge in trained and untrained teachers about nutrition for eye care, referring the child with eye disease or refractive error, red eye infection and deviated eyes. There is a lack of knowledge about giving first aid in chemical burns of the eyes and immediate referral for foreign body patient and to not rub his eyes.

No studies were conducted to compare the knowledge of primary eye care in trained and untrained teachers. But many studies were conducted to assess the role of teachers in primary eye care and they found it effective. I concluded that this study may be beneficial for the required standard of teachers' training by emphasizing on the improvement of knowledge of primary eye care in School teachers so that they will work together with eye care professionals to eliminate the childhood blindness which is preventable and treatable.

Conclusion:

Teachers' training is an effective primary eye care service to early identify some diseases and refractive errors in developing countries with lack of general eye care facilities and eye care professionals. But there are some weak areas where teachers' training can be improved with proper supervision.

1. To assess and evaluate the knowledge of different components of primary eye care (red eye, injury, malnutrition, decrease of vision etc) in school teachers.
2. To compare the knowledge of teachers who are trained in primary eye care with those who had not received any formal training in primary eye care.
3. Hypothesis: Trained teachers may show better knowledge of primary eye care as compared to untrained teachers.

Recommendations:

1. Similar studies should be conducted worldwide to assess the required improvement in knowledge of primary eye care in trained teachers and their role in the detection and referral of refractive error and eye diseases.
2. The trained school teachers should be provided with essential kit (screening card, a rope or measuring tape and pen torch) so that they can work properly.
3. The material taught to the teachers should be updated, defined and explanatory to understand and know more about their role in primary eye care.
4. The Government should conduct more training sessions to improve the quality of teachers' training.
5. Number of teachers in each session should be less so that they can be taught individually.
6. Time duration of training sessions should be more.

7. Any eye care professional should supervise teachers at the time of screening.
8. Emphasis should be made on when they can give first aid to the child and when not and giving first aid should be taught practically and individually.
9. Teachers' training program is very effective and it should be continued.

Strength and limitations of study

1. The main limitation of the study was small sample size being only 300.
2. The other limitation was exclusion of teachers from private institutes.

Competing Interest:

The authors declare that they have no competing interests.

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