



Original Article

Effectiveness of video assisted teaching on detection of visual impairments in children among primary schools teachers

Abstract:

Introduction: A Poor vision in childhood affects performance in school and at work and has a negative influence on the future of the child.

Objective: To evaluate the effectiveness of video assisted teaching on detection of visual impairments in children, among teachers of primary schools.

Methodology: An evaluative research approach was adapted with convenience sampling. The study was conducted among fifty primary school teachers from five primary schools in Udupi, Karnataka.

Result: The finding showed that in the pre-test only 26.0% had adequate knowledge whereas in the post-test, 70% had adequate knowledge and in the pre-test all 50 were unskillful whereas in the post-test only 10 were unskillful. The mean post test knowledge score of teachers were significantly higher than that their mean pre-test score ($t=8.93$, $p=0.001$). There was significant difference between pre-test and post-test skill scores ($Z= 6.17$, $p=0.001$). Hence the video assisted teaching was an effective method of increasing knowledge of teachers. Chi-square test results indicated that there is no significant association between the pre-test knowledge scores and variables, age, working experience, qualification; source of information related to visual impairments and association was found significant between knowledge score and gender. There was no association found between the pre-test skill score and selected variables and there was positive correlation between the post-test knowledge and skill scores.

Keywords: Effectiveness, visual impairment, video assisted teaching, primary school teachers.

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Introduction

Eyesight is the window to the world for individuals to see, to perceive, to comprehend, to express and to communicate about everything. Any kind of substitutive methods for the blind cannot match a person with the normal vision. Hence care and preservation of eye should be the foremost concern of every human being.¹ Poor vision in childhood affects performance in school and at work and has a negative influence on the future of the child.¹

According to WHO, approximately 314 million people worldwide live with low vision and blindness. Of these, 45 million people are blind and 269 million have moderate or severe visual impairments. Around 145 million people's visual impairment is due to uncorrected refractive errors (near-sightedness, far-sightedness or astigmatism). In most of these cases, normal vision could be restored with eyeglasses. Eighty percent of blindness is avoidable i.e., due to causes which are curable,

treatable and/or preventable by cost-effective means.²

More than 30 % of children aged less than six in Bangalore, Karnataka suffer from vision impairments such as refractive errors and squint. This is because parents tend to ignore their children's complaints of eye discomfort in the mistaken belief that the child is too young to have vision problems. If detected early and treated on time, most of them could be saved from vision defects.³

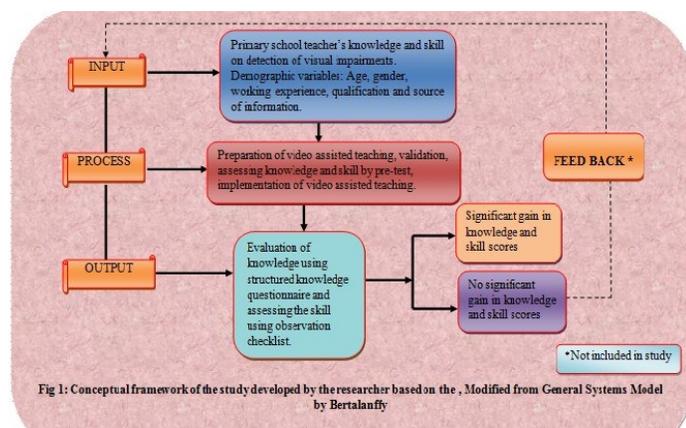
School teachers take the role of "second parents". Therefore, teachers are in a unique position to identify the impairments in the early stage itself. Teachers should be trained to screen children for eye problems.

Objectives of the study were to evaluate the effectiveness of video assisted teaching on detection of visual impairments in children among teachers of primary schools, to find the association between pre-test knowledge and age, gender,

working experience, qualification and source of information related to the detection of visual impairments. Also to find the association between pre-test skill with demographic variables. Another objective of the study was to determine the relationship between the post-test knowledge and skill scores on detection of visual impairments in children among teachers of primary schools.

Conceptual framework

The framework of present study is based on the “General System Model” (Bertalanffy). It was developed in response to modern science to analyze complex phenomena by breaking them into their component parts. System has four components. They are: Input, process, output and feedback.⁹



Hypotheses

All the hypotheses were tested at 0.05 level of significance.

H1- There will be significant difference between mean pre-test and post-test knowledge scores of primary school teachers on detection of visual impairments.

H2 -There will be significant difference between median pre-test and post-test skill scores of primary school teachers on detection of visual impairments.

H3-There will be an association between the pre-test knowledge of primary school teachers and age, gender, working experience, qualification and source of information related to the detection of visual impairments.

H4 -There will be an association between the pre-test skill of primary school teachers and age, gender, working experience, qualification and source of information related to the detection of visual impairments.

H5- There will be a significant relationship between the post-test knowledge and skill scores of the primary school teachers on detection of visual impairments.

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Methodology

The research design selected for the study was “One group pre-test post-test design”. The approach used for the study was evaluative approach. The study was conducted in Dandathirtha English medium, Kaup, St. Francis Xavier lower primary school, Udyavar, S.V.S High school, Katapadi, Vidhyodaya Public school, Udupi and B.M school, Parkala. Sample were consisted of fifty primary school teachers. Data collection instruments used by the researcher were Demographic proforma, Exposure to mass media, Structured knowledge questionnaire on detection of visual impairments in school children. Demographic proforma and knowledge on detection of visual impairments of primary school teachers were collected by self administered questionnaire, skill on detection of visual impairments was assessed by observation checklist and video assisted teaching was given on the same day. Post-test was done on 8th day and the same questionnaires were administered and skill was assessed using checklist on vision test.

Result

The majority (64.0%) of teachers were less than 35 years of age, 76.0% were females, 64.0% had working experience less than or equal to 5 years, 38.0% had the qualification of BA/ BEd and majority, 64.0% got the information on detection of visual impairments through mass media.

The mean difference between the pre-test and post-test knowledge score is 4.56 which is significant at 0.05 level (Table 1).

Table 1: Mean, Mean difference, Standard Deviation Difference and 't' value of pre-test and post-test of knowledge scores of the primary school teachers on detection of visual impairments. n=50

Knowledge scores	Mean	Mean Difference	Standard Deviation Difference	't' value	p value
Pretest	9.68	4.56	0.45	8.93	0.001*
Post test	14.24				

Data presented in Table 1 shows that the mean difference between the pre-test and post-test knowledge score was 4.56 which was significant at 0.05 level. Therefore it was concluded that the teaching program was effective in improving the knowledge scores of primary school teachers.

The skill scores of primary school teachers on detection of visual impairments before and after video assisted teaching is significant at 0.05 level ($Z=6.17, p<0.001$) (Table 2).

Table 2: Wilcoxon signed-rank test for the effectiveness of the video assisted teaching in terms of gain in skill scores. n=50

Skill scores	Median	Interquartile Range	Z score	p value
Pre-test	4.0	2	6.17	0.001*
Post-test	15.0	3		

Data presented in Table 2 shows that the median skill scores of primary school teachers on detection of visual impairments before and after video assisted teaching was significant ($Z=6.17$, $p < 0.001$). Hence it was inferred that there was significant increase in skill scores which was due to video assisted teaching.

Chi square test was used to find the association between the pre-test knowledge scores and selected variables. Results indicated that there is no significant association between the pre-test knowledge scores and variables like age, working experience, qualification and source of information, and significant association was found between knowledge score and gender. Man Whitney U test and Kruskal Wallis test were used to find the association between the pre-test knowledge scores and variables. Results indicated that there is no significant association between the pre-test skill score and selected variables.

There is a positive correlation between the post-test knowledge and the skill scores; which means as the knowledge increases, skill increases. Hence the null hypothesis was rejected.

Table 3 Relationship between post-test knowledge and skill scores. n= 50

Variables	Spearman's rho value (r)	p value
Knowledge	0.32	0.02*
Skill		

* $p < 0.05$

Data presented in Table 3 shows that there a was positive correlation between the post-test knowledge and the skill scores; which means as the knowledge increased, skill also increased. Hence the null hypothesis was rejected.

Table 4: Association between pre-test knowledge scores and selected variables n=50

Sl. No	Variables	Knowledge scores		Chi square (χ^2) values	df	p value
		Inade-quate knowledge	Ade-quate knowle dge			
1.	Age of the teachers in years			2.36	1	0.12
	< 35	26	6			
	≥35	11	7			
2.	Gender			8.48	1	0.004*
	Male	12	0			
	Female	25	13			
3.	Working experience			0.88	2	0.64
	≤ 5 years	25	7			
	6- 10 years	5	3			
	>10 years	7	3			
4.	Qualification			3.20	1	0.07
	Graduate	32	13			
	Post graduate	5	0			
5.	Sources of information related to the detection of visual impairments			0.23	1	0.88
	Training programme	14	4			
	Mass media	23	9			
	Nil	3	1			

* Significant

Data presented in Table 4 shows that there was no significant association between pre-test knowledge scores and selected variables like age, working experience, qualification and source of information, and a significant association was found between knowledge score and gender. Therefore, it was concluded that the pretest knowledge on detection of visual impairments was independent of sample characteristics like age, working experience, qualification and source of information.

Discussion

The present study findings showed that 76.0% teachers were females, 64.0% had working experience less than or equal to 5 years, 38.0% had the qualification of BA/BEd and majority 64% got the information on detection of visual impairments through mass media.

This finding is supported by a study conducted by Chacko C et al. on role of teaching programme in early detection of visual impairment in children at Mangalore. The study was conducted in six selected primary schools in Mangalore and random sampling technique was used for the selection of 50 sample size. The study showed that majority of the teachers, 98% were females, 32% had experience 16 years and above, majority 44% had qualification of BA/BEd, and 62% teachers obtained the information from the teachers training programme.⁴

The present study findings showed that in the pre-test, only 26.0% had adequate knowledge whereas in the post-test, majority 70.0% of the teachers had adequate knowledge on detection of visual impairments. These finding were supported by a study conducted by Abraham L on planned teaching programme on environment health among anganwadi teachers in Manipal. The sampling technique adapted was convenience sampling and the sample size was 54. The research design adopted was one group pre-test post test design. The result of the study found that in the pre-test only 32% had good knowledge, whereas in the post-test, all 100% had good knowledge.⁵

The present study finding revealed that there was significant difference between mean pre-test and post-test knowledge scores ($t=8.93$, $p=0.001$) of the primary school teachers on detection of visual impairments. The following study findings supported the present findings.

A study was conducted by Eleazar et al. on effectiveness of planned teaching programme on prevention and early detection of cervical cancer for school teachers of selected schools in Mangalore. Purposive sampling technique was used for the selection of 50 school teachers. The study revealed that the mean knowledge scores (30.68) obtained by the school teachers after conducting planned teaching programme was higher than mean pre-test knowledge scores (17.26). There was significant difference between mean post-test and pre-test knowledge scores ($t_{49} = 26$, $p<0.05$). The study concluded that planned teaching programme was an effective teaching method for providing knowledge to school teachers.⁶

The study was conducted by Souza D et al. on effectiveness of planned teaching programme on pre-eclampsia for primigravida women in a selected community at Mangalore. The study revealed that there was a significant difference ($t(29)=3.66$, $p<0.001$) between pre-test and post-test knowledge scores of the respondents indicating significant increase in knowledge after planned teaching programme.⁷

Another study was conducted by Das et al. on effectiveness of planned teaching programme on incubator care among NICU nurses in selected hospitals in Mangalore. Purposive sampling was used to select 30 NICU nurses. The result of the study found that there was a significant difference in mean pre-test and post-test knowledge scores ($t(29) =15.54$, $p<0.05$). The study concluded that planned teaching programme was effective in improving the knowledge of NICU nurses regarding incubator care.⁸

Conclusion

The present study concluded that mean difference between the pre-test and post-test knowledge score was 4.56 which was significant ($t=8.93$, $p<0.05$). Therefore it was concluded that the teaching program was effective in improving the knowledge scores of primary school teachers. Skill scores of primary school teachers on detection of visual impairments before and after video assisted teaching was significant ($z= 6.17$, $p<0.001$). Therefore it was concluded that the teaching program was effective in improving the skill scores of the primary school teachers. The female school teachers had better knowledge on detection of visual impairments than the male school teachers.

Recommendations

Researchers recommend that a similar study can be done in different settings. Replication of the same study on a large sample may help draw conclusions that will be more definite and can be generalized to a larger population. The study even may be replicated on parents of school children. Also comparative study can be done among the teachers of English medium and Kannada medium schools.

Acknowledgement

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Ethical clearance

Permissions were taken from the University Ethical Committee for conducting the research. All required administrative permissions were taken.

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