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Effectiveness of video assisted teaching programme regarding the prevention and management of scabies among students of selected residential school at Kolar

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Abstract
Background: Human scabies is a highly contagious and intensely pruritic skin infestation caused by *Sarcoptes scabiei* var hominis. It is commonly seen in individuals with close physical contact, such as children, mothers, young adults, and the elderly in nursing homes. Health education plays a crucial role in preventing and managing scabies by promoting awareness and personal protective measures.
Objective: This study to evaluate effectiveness of video assisted teaching program regarding the prevention and management of scabies among students of selected residential school at Kolar.
Methods: An evaluative approach was adopted for this study as it aimed to determine the experimental study to assess the effectiveness of video assisted teaching program regarding the prevention and management of scabies among students of selected residential school at Kolar**.** A quasi experimental one group pretest posttest design was adopted for the present study. A Structured Questionnaire was developed to collect the baseline data and to assess knowledge level. The validity of the tool was done by experts. School students in a selected residential school of Kolar were selected by using simple random sampling technique. Video assisted teaching was provided for a period of 30 mts. Pre-test and post-test knowledge scores were obtained. The data obtained were analyzed and interpreted using descriptive and inferential statistics.
Results: Analysis of the level of knowledge among school students shows that that 52(86.67%) students had inadequate knowledge in pre-test whereas none had inadequate knowledge in post-test. 8(13.33%) students had moderate knowledge in pre-test and 21(35%) had moderate knowledge in post-test. No one had adequate knowledge in pre-test whereas 39(65%) had adequate knowledge in post-test. In the pre-test mean $\pm$ SD of the was 18.016$\pm$1.97 whereas in post-test it was 22.067$\pm$4.85 and the calculated paired't' value was -24.123 and it was significant at less than 0.05 level. Hence it is concluded that there is significant gain in knowledge of students through video assisted teaching program regarding prevention and management of scabies. Analysis of association between the pretest knowledge scores and selected baseline variables was done by using Chi square test. No statistically significant association was found between pretest knowledge score and baseline variables.

Keywords: Scabies, prevention, management, video-assisted teaching, school students, knowledge

Introduction
Scabies is a highly contagious parasitic skin infestation caused by *Sarcoptes scabiei* var. hominis, a microscopic mite that burrows into the skin, leading to intense itching and rash. The condition spreads through direct skin-to-skin contact, making it particularly common in crowded environments such as schools, nursing homes, and hostels. Initial infections can take four to six weeks to become symptomatic, during which time the infested individual can unknowingly spread the disease to others [1].

Scabies remains a significant public health concern, especially in developing countries where overcrowding and poor hygiene contribute to its prevalence. Children, mothers of young children, sexually active young adults, and elderly individuals in nursing homes are at the highest risk of infection [1]. Timely diagnosis, treatment, and proper health education about preventive measures are essential to controlling the spread of scabies and reducing its impact on affected populations.

Video-assisted teaching programs have emerged as an effective method for increasing awareness and improving knowledge about disease prevention and management. Visual learning techniques enhance understanding and retention, making them a valuable tool in

health education initiatives. This study aims to evaluate the effectiveness of a video-assisted teaching program in improving knowledge about the prevention and management of scabies among school students in a residential setting.

Need for the study

Scabies is a global health problem, affecting an estimated 200 million people at any given time. It is especially prevalent in resource-limited settings where access to healthcare and awareness about hygiene practices are limited [2]. Studies have shown that scabies outbreaks are common in residential institutions such as hostels and boarding schools, where close personal contact facilitates rapid transmission [3].

Lack of awareness about scabies, its mode of transmission, and effective preventive measures often leads to delays in treatment, increased complications, and widespread infestations. Educational interventions targeted at school children can play a crucial role in preventing outbreaks and reducing morbidity. A well-structured video-assisted teaching program can enhance knowledge, promote behavioral change, and encourage early identification and management of scabies [4].

Previous research has demonstrated the effectiveness of video-assisted teaching in improving health-related knowledge and practices among students [5]. Given the importance of scabies prevention in residential settings, this study aims to assess whether a video-assisted teaching program can effectively enhance students' knowledge about scabies prevention and management, ultimately contributing to better health outcomes and reduced disease burden.

Objectives of the study

1. To assess the pretest knowledge level of school students regarding prevention and management of scabies.
2. To assess the effectiveness of video assisted teaching program regarding the prevention and management of scabies among school students.
3. To identify an association between pretest knowledge level with selected baseline variables of school students.

Methodology

- **Research Approach:** An evaluative research approach was adopted.
- **Research Design:** A quasi-experimental, one-group pre-test-post-test design was selected for this study. This design helps measure the effectiveness of the intervention by comparing pre-test and post-test knowledge scores.
- **Research Setting:** The study was conducted in a selected residential school in Kolar, Karnataka.

Variables

- **Independent Variable:** Video-assisted teaching program on scabies prevention and management.
- **Dependent Variable:** Level of knowledge regarding scabies prevention and management among school students.

Population: The target population comprised students from the 6th and 7th standards in a selected residential school in Kolar.

Sample and Sample Size A total of 60 students from the 6th and 7th standards were selected for the study.

Sampling Technique Simple random sampling using the lottery method was employed to ensure an unbiased selection of participants.

Development of Content and Teaching Program

The study content was developed based on extensive literature review and expert consultation. The content covered:

- General information about skin and its functions.
- Causative organism and life cycle of *Sarcoptes scabiei.*
- Mode of transmission and incubation period.
- Signs, symptoms, diagnosis, and treatment.
- Prevention strategies and possible complications.

The content was translated into Kannada by language experts, back-translated to English for validation, and presented in a structured video-assisted teaching program.

Development of Tool: The study instrument consisted of:

- **Section A:** Demographic variables including age, gender, parental education, religion, hostel room occupancy, parental occupation, family type, habits, and source of health information.
- **Section B:** A structured questionnaire with 30 multiple-choice questions assessing knowledge on scabies prevention and management.

Knowledge scores were categorized as follows:

- **0-10:** Inadequate knowledge
- **11-20:** Moderate knowledge
- **21-30:** Adequate knowledge

Content Validity: The tool was validated by a panel of experts, including seven postgraduate faculty members in Community Health Nursing, two dermatologists, and one statistician. The content validity index was found to be 0.81.

Reliability of the Tool: Reliability was established using the test-retest method, yielding an r-value of 0.86, indicating a high level of reliability.

Pilot Study: A pilot study was conducted among six students in a similar residential school setting to determine feasibility. Necessary modifications were incorporated before the main study.

Data Collection Procedure

1. **Pre-Test:** Conducted on 13/06/13 after obtaining necessary permissions and informed consent from participants.
2. **Intervention:** Video-assisted teaching session conducted on the same day.
3. **Post-Test:** Conducted one week after the intervention to measure knowledge improvement.

Plan for Data Analysis

Descriptive Statistics: Frequency, percentage, mean, and standard deviation were used to analyze demographic variables and knowledge scores.

Inferential Statistics

- Paired *t*-test was used to evaluate the effectiveness of

the video-assisted teaching program.
- Chi-square test was used to assess the association between pre-test knowledge scores and demographic variables.

Result

The data obtained were entered in a master data sheet for tabulation and statistical processing. The data was organized and presented under the following sections.

Part 1: Analysis of demographic variables of school students.

Part 2: Analysis of level of knowledge of school students.

A. Analysis of pre and post-test knowledge level of school students.

Part 3: Analysis of effectiveness of video assisted teaching. Comparison of pre-test knowledge scores with post-test scores assessed by structured knowledge questioner using the paired 't' test.

Part 4: Analysis of association between pretest knowledge level and selected baseline variables.

Part 1: Analysis of demographic variables of school students.

Table 1: Demographic Characteristics of Students

Sl. No	Demographic Variable	Categories	Frequency	Percentage (%)
1	Age (years)	9-10	25	41.67
		11-12	35	58.33
2	Gender	Male	22	36.67
		Female	38	63.33
3	Parental Education	No formal education	20	33.3
		Primary education	10	16.7
		Higher secondary education	25	41.7
		Graduate and above	5	8.3
4	Religion	Hindu	56	93.3
		Muslim	4	6.7
5	Parental Occupation	Coolie/Farmer	44	73.3
		Business	4	6.7
		Employee	12	20.0
6	Students per Hostel Room	2-4	-	-
		6-8	-	-
		10-12	60	100
		12-14	-	-
7	Family Type	Nuclear	36	60
		Joint	24	40
8	Sharing Habits	Sharing things	39	65
		Not sharing things	21	35
9	Source of Health Info	Family members/Friends	8	13.3
		Health professionals	9	15.0
		Mass media	-	-
		No information received	43	71.7

The majority (58.33%) were aged 11-12 years, with more females (63.33%) than males. Most parents had at least a secondary education (41.7%), and Hinduism was the predominant religion (93.3%). The primary parental occupation was farming or daily labor (73.3%). All students shared hostel rooms with 10-12 occupants. The majority belonged to nuclear families (60%). In terms of habits, 65% of students reported sharing belongings. Most students (71.7%) had no formal source of health information, while a small percentage received information from family, friends, or professionals.

Part 2: Analysis of level of knowledge of students

A. Analysis of pre and post-test knowledge level of school students.

Table 2: Frequency and percentage distribution of pre-test level of knowledge of students

Sl. No	Grading	Score Inter Pretention	Frequency	Percentage
1	Inadequate	0- 10	52	86.67
2	Moderate	11-20	8	13.33
3	Adequate	21-30	-	-

Before the intervention, 86.67% of students had inadequate knowledge (score: 0-10), while 13.33% had moderate knowledge (score: 11-20). None of the students had an adequate knowledge level.

Table 3: Frequency and percentage distribution of post-test level of knowledge of students

Sl. No	Grading	Score Inter Pretention	Frequency	Percentage
1	Inadequate	0-10	-	-
2	Moderate	11-20	21	35
3	Adequate	21-30	39	65

After the intervention, 65% of students achieved an adequate knowledge level (score: 21-30), while 35% had a moderate knowledge level (score: 11-20). None remained in the inadequate category.

Table 4: Frequency and percentage distribution of pre and post-test level of knowledge scores of students

Knowledge level	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	52	86.67%	0	0%
Moderate	8	13.33%	21	35%
Adequate	0	0%	39	65%

This table highlights a significant improvement in students' knowledge after the intervention. Initially, 86.67% had inadequate knowledge, which dropped to 0% post-test. Meanwhile, those with adequate knowledge increased from 0% to 65%.

Part 3: Analysis of effectiveness of video assisted teaching

Table 5: Comparison of pre-test knowledge scores with post-test scores assessed by structured knowledge questioner using the paired 't' test

	Mean± SD	Mean difference	Df	t-value	p- value	Inference
Pre-test	18.016± 1.97	4.051	59	-24.123	0.001*	S
Post-test	22.067± 4.85					

S=Significant.

The paired t-test analysis showed a significant improvement in knowledge scores. The pre-test mean score was 18.016±1.97, while the post-test mean was 22.067±4.85. The calculated t-value was -24.123, with a p-value of 0.001, indicating a statistically significant improvement.

Part 4: Analysis of association between pre-test knowledge and selected demographic variables

Table 6: The association between selected demographic variables with pre-test knowledge score

SI. No.	Demographic Variables	Number	Inadequate knowledge	Moderate knowledge	χ^2 Value	df	P-value	Inference
1	**Age of the students in years**							
	9-10	26	22	4	0.380	1	0.827	P> 0.05 NS
	11-12	34	30	4				
2	Gender							
	Male	22	19	3	0.03	1	0.258	P> 0.05 NS
	Female	38	33	5				
3	**Education of the parents**							
	No formal education	20	18	2	0.673	2	0.714	P> 0.05 NS
	Primary & secondary education	36	31	5				
	Graduate	4	3	1				
4	**Religion**							
	Hindu	56	48	8	0.659	1	0.417	P> 0.05 NS
	Muslim	4	4	0				
5	Parents Occupation							
	Coolie/farmer	43	39	4	6.487	3	0.020	P> 0.05 NS
	Business	4	4	0				
	Employee	12	9	4				
6	**Parents occupation**							
	Type of family							
	Nuclear	36	29	**7**	2.909	1	0.088	P> 0.05 NS
	Joint	24	23	1				
7	Habits							
	Sharing things	39	34	5	0.25	1	0.873	P> 0.05 NS
	Not sharing things	21	18	3				
8	**Source of health information**							
	Family members & friends	8	7	1	1.712	2	0.425	P> 0.05 NS
	Health professional	9	9	0				
	No information	43	36	7				
	Friends	15	7	8				

NS= Not significant S= Significant

No significant association between knowledge and age, gender, parents' education, religion, type of family, and habits. Parents' occupation had a slight influence on knowledge levels.

Discussion

The findings of this study indicate that a significant number of students had inadequate health knowledge before the intervention. However, the post-test results demonstrated a substantial improvement, highlighting the effectiveness of

video-assisted teaching.

A study by Sharma *et al*. (2018) reported similar findings, where video-based health education significantly improved knowledge levels among school students. In their study, pre-test scores showed that 80% of students had inadequate knowledge, which reduced to 10% post-intervention [6]. This aligns with our study, where inadequate knowledge levels dropped from 86.67% to 0% after the intervention.

Another study by Gupta and Singh (2020) found that multimedia teaching methods resulted in a 60% improvement in students' knowledge retention compared to traditional lecture methods [7]. Our study also observed a notable shift, with 65% of students achieving an adequate knowledge level post-test.

The role of health professionals in imparting knowledge was limited, as only 15% of students received information from them. This is consistent with the findings of Patel *et al*. (2019), who observed that students rely more on informal sources such as family and friends for health information [8].

The statistical analysis of our study further supports the effectiveness of video-assisted teaching, with a paired t-test yielding a significant p-value (0.001). This result is in line with previous research by Thomas *et al*. (2021), where interactive video lessons led to statistically significant improvements in knowledge scores ($p < 0.05$) [9].

Conclusion

The study highlights the effectiveness of video-assisted teaching in improving students' knowledge. Given that a large proportion of students had no formal source of health information, integrating multimedia learning into educational curriculums can bridge this gap. Future research should explore long-term retention rates and compare video-assisted methods with other interactive learning approaches.

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