

Research Article

IMPACT OF VIDEO-ASSISTED TEACHING ON THE KNOWLEDGE AND PRACTICE OF MOTHERS WITH ASTHMATIC CHILDREN UNDER TWELVE REGARDING THE MANAGEMENT AND PREVENTION OF BRONCHIAL ASTHMA EXACERBATIONS AT SELECTED HOSPITALS IN TUMKUR

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ABSTRACT

Background of the study: The management practices and disease control of childhood asthma are significantly influenced by the knowledge possessed by mothers. The knowledge possessed by mothers significantly influences the management practices and disease control of childhood asthma. **Objectives:** The purpose of this study was to assess the influence of video-assisted instruction on the knowledge and caregiving practices of mothers with asthmatic children aged five and under. **Methods:** The research methodology employed for the current study is founded on a pre-experimental research design. The sample for the study will be selected using purposive sampling technique, with a sample size of 150. A structured knowledge questionnaire with 25 MCQ items was developed, and a structured rating scale comprising 20 items was designed to evaluate the mothers' level of practice. The reliability of the tools developed was tested, and validity was obtained from experts in the field of pediatric nursing and pediatric medicine. The interview method was used as the data collection method, and descriptive and inferential statistics were used to analyze the collected data. **Results:** Video-assisted teaching was found to be highly effective in improving both knowledge and practice. The mean and standard deviation score for knowledge level pre-test were 7.59 ± 2.35 , while the post-test mean and standard deviation score showed a significant rise to 17.61 ± 2.66 . The paired t-test value was 38.6 for the degree of freedom 149, indicating statistical significance at a p-value < 0.001 level. Regarding the practice, the pre-test mean and standard deviation score was 12.21 ± 3.24 , and at the time of post-test, the mean and standard deviation practice score were 28.50 ± 3.21 , which showed a significant improvement. The paired t-test score was 43.6 for the degree of freedom 149, indicating statistical significance at a p-value < 0.001 level. **Conclusion:** An asthma education program for mothers of children under five can improve their knowledge and practice in preventing asthma. More studies are recommended to enhance the program's effectiveness. Educating parents about asthma can reduce complications in children.

Keywords: Impact, Video Assisted Teaching Program, Knowledge, Practice, Mothers, Asthmatic Children.

INTRODUCTION

Asthma management is crucial for controlling the disease. Parents of children with asthma should be educated about asthma triggers, medication and devices, self-management techniques, and receive a written action plan.¹ With the appropriate treatment, asthma symptoms can be controlled, resulting in fewer symptoms and no serious asthma attacks. It's important to note that treatment can help manage the condition.²⁻³ Preventing asthma attacks is a significant public health challenge. Having adequate knowledge, positive attitudes, and proper practices are crucial for preventing exacerbations. However, there is a lack of information on these aspects in India.

Asthma is a chronic inflammatory disease that affects millions of people globally. Proper management is key to controlling the disease, and caregivers play a crucial role in managing asthma during childhood. Asthma is a complex and chronic inflammatory condition that affects the airways. It's estimated that between 1% and 18% of children and adults in different communities suffer from this condition. When exposed to certain triggers, such as allergens, viruses, or exercise, the airways can become excessively narrow, leading to increased airway hyper responsiveness. In addition, asthma is often associated with airway inflammation. A diagnosis of asthma is typically confirmed through the presence of symptoms such as

wheezing, shortness of breath, chest tightness, and a cough that becomes increasingly severe over time, along with variable expiratory airflow limitations.⁴

The prevalence, morbidity, and mortality associated with childhood asthma have significantly increased worldwide in the last 40 years. Despite being the most common chronic disease in children, under diagnosis and under treatment remain a problem. There are wide variations in asthma symptoms prevalence among children across the globe, with up to 13-fold differences between countries. The increasing number of hospital admissions for asthma could be due to poor disease management, an increase in asthma severity, or the impact of poverty.⁵ National and international guidelines emphasize asthma education and preventive measures to minimize exacerbations and maximize control of asthma symptoms in adults and children.⁶⁻⁷ Appropriate asthma management in children reduces emergency department visits, hospitalization, and improves the quality of life.⁸ Poor parent knowledge and practices often contribute to inappropriate management of bronchial asthma, leading to deficiencies in the care process.⁹ According to childhood asthma guidelines, parent training to improve their asthma-related knowledge, attitudes, and practices (KAP) should be included in routine clinical care. Asthma-related knowledge includes an understanding of pathological mechanisms, medications, and prevention. To improve childhood asthma management, an assessment of parent knowledge and practice is a significant requirement. The primary objective of this study was to document the knowledge and practice of mothers of children with asthma and identify how knowledge relates to practices.

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OBJECTIVES

1. Assess the level of knowledge regarding the management and prevention of bronchial asthma exacerbations among mothers of children with asthma.
2. To examine the management and prevention of bronchial asthma exacerbations by mothers of asthmatic children.
3. Assess the efficacy of a video-based educational programme in enhancing students' understanding and application of strategies to prevent and manage exacerbations of bronchial asthma.
4. Determine the correlation between the knowledge and behaviour of mothers of children under the age of twelve who have asthma and are concerned about the prevention and management of exacerbations of bronchial asthma.
5. To ascertain the association between the demographic variables of mothers of children under the age of twelve who have asthma and their knowledge of strategies for managing and preventing exacerbations of bronchial asthma.
6. Determine the association between the demographic variables of mothers of children under the age of twelve who have asthma and their adherence to practices regarding the management and prevention of exacerbations of bronchial asthma.

METHODOLOGY

This study employed a pre-experimental design known as a one-group pretest-posttest study. The study was conducted at a private hospital located in Tumkur City, Karnataka. The study duration spanned from October 1st to October 31st, 2023. This hospital was chosen due to its status as a prominent healthcare facility specialising in the treatment of paediatric diseases. The samples were chosen using a non-probability method, specifically employing a purposive sampling strategy. A cohort of 150 moms with asthmatic children was recruited. The inclusion criteria for this study was that the moms had a kid who had been diagnosed with bronchial asthma at least 3 months prior and had attended the outpatient department. The individuals who chose not to participate were excluded. A structured interview was conducted utilising a questionnaire that was adapted from a pre-existing validated instrument. The researcher collected sociodemographic data from both the mother and the kid and inquired about their knowledge on the disease's aetiology, triggering factors, and signs and symptoms. Additionally, the study examined the mother's approach to managing asthma and adhering to the control plan, as well as evaluating the severity of the child's asthma. The child was categorised into four different classifications of asthma: intermittent, mild persistent, moderate persistent, and severe persistent. A scoring system was devised, and participants were assigned a score for each accurate response they supplied. The data was inputted and analyzed using the statistical package for the social sciences (SPSS) version 20. The connection between the independent categorical factors and the major outcomes of this study was determined using a chi-square test. The significance level was defined as a p-value equal to or less than 0.05.

RESULTS

The findings of the study are displayed below.

Table – I: Distribution of Samples According to Socio - Demographic Variables

(n = 150)				
S, no	Socio-Demographic Variables		Frequency	Percentage
1.	Age	20 - 25	40	26.7
		26 - 30	63	42.0
		31 - 35	26	17.3
		36 - 40	21	14.0
2.	"Mother's Education"	Primary	1	.7
		Secondary	18	12.0
		Degree	85	56.7
		Diploma	46	30.7
3.	"Mother's Occupation"	House Wife	95	63.3
		Employer Govt	15	10.0
		Private	40	26.7
4.	Duration of Asthma	3 Months - 1 Years	72	48.0
		1 - 5 Years	71	47.3
		> than 5 years	7	4.7
5.	Severity of Asthma	Intermittent	98	65.3
		Mild	42	28.0
		Moderate	5	3.3
		Severe	5	3.3
6.	Number of Children	One	112	74.7
		Two	31	20.7
		More than 2	7	4.7
7.	Area of living	Urban	72	48.0
		Rural	78	52.0
8.	Previous Knowledge	Yes	35	23.3
		No	115	76.7
9.	Source of Information	Newspaper	2	1.3
		Radio	12	8.0
		Television	14	9.3
		Health	8	5.3
		Professional		

The data presented in Table I illustrates the frequency and percentage distribution of subjects based on their socio-demographic characteristics. The majority of the participants (63, 42.0%) were aged between 26 and 30 years. With regard to education, most of the participants (85, 56.7%) had received some form of degree course. Furthermore, the majority of the participants (95, 63.3%) were housewives. The study revealed that 72 (48.0%) of the participants had an asthma duration of 3 months to 1 year. It was also found that 98 (65.3%) of the participants had intermittent asthma. In terms of maternal status, most mothers (112, 74.7%) had only one child. The majority of the participants (78, 52.0%) were residing in rural areas. It is noteworthy that most of the participants (115, 76.7%) had no prior knowledge of bronchial asthma. Lastly, the majority of the participants (14, 9.3%) had received previous information about bronchial asthma through television.

Table – II: Mean, Standard Deviation, and Variance level of Knowledge and Practice Scores of the Samples

Statistic	Knowledge		Practice	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Mean	7.59	17.61	12.21	28.50
Standard Deviation	2.35	2.66	3.24	3.21
Maximum	15	12	5	22
Minimum	0	23	10	24
Range	15	11	17	10
Variance	5.56	7.09	10.55	10.35

Table II displays the average, standard deviation, and variance levels of the knowledge and practice scores of the samples. The pre-test

knowledge score had a mean of 7.59 with a standard deviation of 2.35. Similarly, the post-test knowledge score had a mean of 17.61 with a standard deviation of 2.66. During the pre-test, the mean and standard deviation of practice scores were 12.21 ± 3.24 , and during the post-test, the mean and standard deviation of the practice scores were 28.50 ± 3.21 .

Figure – 1 shows the percentage distribution of samples according to level of knowledge. During the pre-test majority of the samples (76, 50.7 %) had inadequate knowledge and during the post-test most of the samples (88, 58.7 %) had with adequate level of knowledge.

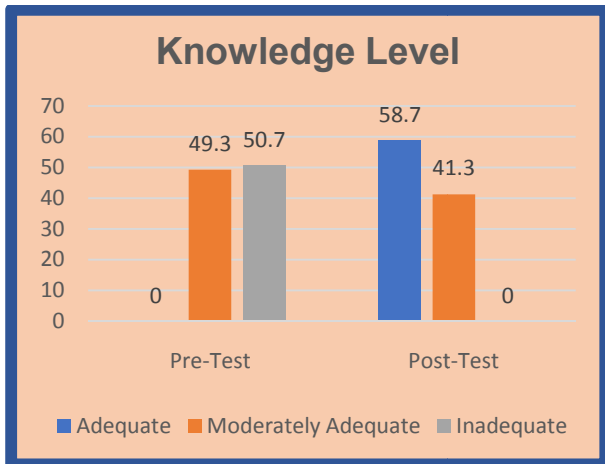


Figure – 1: Percentage Distribution of Samples According to Knowledge Level

Figure – 2 shows the percentage distribution of samples according to the level of practice. During the post-test majority of the samples (148, 98.7%) had an unsatisfactory level of practice and during the pre-test most of the samples (114, 76.0 %) had a moderately satisfactory level of practice.

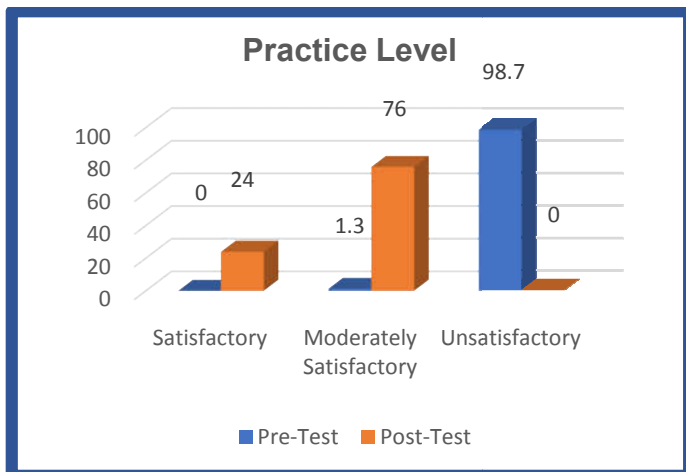


Figure – 2: Percentage Distribution of Samples According to Practice Level

Table – III: Effectiveness of Video-Assisted Teaching on the Knowledge and Practice

(n = 150)

Variables	Pre-Test		Post-Test		Paired t test	P value
	Mean	SD	Mean	SD		
Knowledge	7.59	2.35	17.61	2.66	38.6 (df = 149)	0.001 Significant
Practice	12.21	3.24	28.50	3.21	43.6 (df = 149)	0.001 Significant

According to Table III, video-assisted teaching was found to be highly effective in improving both knowledge and practice. The knowledge level pre-test mean and standard deviation score were 7.59 ± 2.35 , while the post-test mean and standard deviation score rose significantly to 17.61 ± 2.66 . The paired t-test value was 38.6 for the degree of freedom 149, indicating statistical significance at the $p < 0.001$ level.

With regard to the practice pre-test mean and standard deviation score was 12.21 ± 3.24 , at the time of post – test the mean and standard deviation practice score were 28.50 ± 3.21 . the paired t test score was 43.6 for the degree of freedom 149. It shows the significant at p-value < 0.001 .

Table – IV Association Between Pre-Test Knowledge, Practice and Socio-Demographic Variables

(n = 150)

S. No	Socio-Demographic Variable	Knowledge		Practice	
		χ^2	p-value	χ^2	p-value
1.	Age	4.56	0.20	2.10	0.55
2.	"Mother's Education"	11.4	0.01*	0.52	0.91
3.	"Mother's Occupation"	1.79	0.40	0.67	0.71
4.	Duration of Asthma	0.29	0.86	0.09	0.95
5.	Severity of Asthma	0.83	0.84	0.55	0.90
6.	Number of Children	1.43	0.68	0.68	0.70
7.	Area of living	0.02	0.01*	1.87	0.17
8.	Previous Knowledge	1.59	0.10	0.80	0.36
9.	Source of Information	9.26	0.05*	4.06	0.39

* - Significant at p-value < 0.05

Table IV presents the correlation between pre-test knowledge, practice and socio-demographic factors. The data indicates that there is a significant association between pre-test knowledge and socio-demographic variables such as the education level of the mother ($\chi^2 = 11.4$, p-value = 0.01), area of residence ($\chi^2 = 0.02$, p-value = 0.01) and source of information ($\chi^2 = 9.26$, p-value = 0.05). However, the level of pre-test practice was not found to be correlated with any socio-demographic factors of the study participants.

DISCUSSION

The findings of this study demonstrated the following significant findings The pre-test knowledge score had a mean of 7.59 ± 2.35 , while the post-test knowledge score had a mean of 17.61 ± 2.66 . Most samples had inadequate knowledge during the pre-test (50.7%) and adequate knowledge during the post-test (58.7%). The post-test practice scores had a mean of 28.50 ± 3.21 , with a majority of samples (98.7%) having an unsatisfactory level of practice.

According to a study titled 'Effectiveness of Structured Teaching Programme on Knowledge and Techniques Regarding Metered Dose Inhalers (MDI) among Bronchial Asthma Patients in Selected Hospitals of Mangalore Taluk', the findings suggest that the structured teaching program was highly effective in improving the knowledge and techniques of bronchial asthma patients regarding metered dose inhalers. The study was conducted by **Santosh Nadig and R. Rajeshwari in 2016**. The pre-test knowledge score of the patients was 37.5%, whereas the post-test knowledge score was 91.4%, indicating a significant improvement. Similarly, the pre-test technique score was 66.3%, and the post-test technique score was 91.8%, suggesting a substantial enhancement in the patients' knowledge and techniques regarding the use of metered dose inhalers.¹⁰

In 2021, D. Sharma, M.C. Goyal, and M.R. conducted a study at AIIMS, Jodhpur to assess the knowledge and practices of parents with asthmatic children. The study aimed to improve their understanding by providing an informational booklet. Results showed that most subjects had an unsatisfactory level of knowledge and practices regarding asthma. However, significant improvements were observed in both knowledge ($t=11.449$, $p<0.05$) and practices ($t=-8.079$, $p<0.05$) after utilizing the informational booklet. Furthermore, the study found a significant association between the subjects' level of education, occupation, monthly income, and their knowledge level.¹¹ A study conducted by Priya in 2019 aimed to assess the efficacy of a structured teaching program and its correlation with demographic variables in relation to bronchial asthma among mothers of asthmatic children. The results indicated a notable disparity in the level of knowledge and practice between those who received the structured teaching program. The program proved to be effective, as mothers showed a 35% increase in understanding etiology and types, a 31% rise in recognizing signs and symptoms, a 41% improvement in management, a 36.8% overall gain, and a 23.3% increase in practice after intervention. These results demonstrate the success of the structured teaching program intervention.¹²

CONCLUSION

The successful implementation of an asthma education program for mothers of children under five has been found to considerably improve their knowledge and practice in preventing bronchial asthma. However, the current study recommends that more longitudinal and experimental studies be conducted on this issue to further enhance the program's effectiveness. Additionally, raising public awareness and educating parents about asthma disease and standard practice standards and protocols can remarkably reduce asthma exacerbation and related complications in children.

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