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Original Research Article

An evaluation of the effectiveness of a video-based teaching program on mothers' knowledge of infant developmental milestones in selected hospitals of Indore, M.P.

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Abstract

Aim: The study examined the effectiveness of a video-assisted teaching program in improving mothers' knowledge of infant developmental milestones.
Materials and Methods: A quantitative one-group pre-test–post-test Pre-experimental design. was used, with the program as the independent variable and maternal knowledge as the dependent variable. Demographic factors such as age, education, income, religion, and family type were considered extraneous variables. The research was conducted at Tertiary care hospital, Indore, with a purposive sample of 60 mothers.
Results: Pre-test findings showed 21.66% of participants had inadequate knowledge and 78.33% had moderate knowledge, while none achieved adequate knowledge. Post-intervention results revealed 83.33% attained adequate knowledge, 16.66% had moderate knowledge, and none remained in the inadequate category. The mean score improved from 1.78 ± 0.44 to 2.83 ± 0.39, with a mean difference of 1.05. Statistical testing ($z = 14.00$, $p < 0.05$) confirmed significant improvement.
Conclusion: Video-assisted teaching proved to be a practical and effective method for enhancing maternal knowledge of infant developmental milestones, thereby supporting better child development awareness.

Keywords: Video-assisted teaching, Infant developmental milestones, Child development, Health education

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1. Introduction

Every child deserves to grow up in a safe and healthy environment—at home, in school, and within the community. The well-being and development of children today shape the future of society. A baby gradually grows into a child, moves through puberty, and eventually transitions into adulthood, carrying forward his or her unique life and responsibilities.

Childhood is considered a critical phase of development due to the rapid growth and changes that occur during this period. It is marked by significant brain development, the acquisition of new skills, and physical growth. The first year of life is particularly special as it is filled with important milestones such as the first smile, first attempt at grasping, first word, first step, and first sentence—each a foundation for future learning and growth.

During pregnancy and the early years, an infant's development is influenced by both internal factors (physiological and neurological) and external stimuli such as light, sound, touch, posture, taste, and movement. The child's ability to form stable and consistent responses during the first five years largely depends on physical growth, brain development, environmental conditions, and caregiver support.

Growth is a lifelong process that begins in the womb and continues until early adulthood, though its pace varies at different stages. It involves measurable changes in body size and weight, while development refers to the progressive acquisition of skills and maturity. Maturity brings about qualitative improvements in a child's abilities, allowing them to perform at higher levels depending on genetic and environmental influences.

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Globally, it is estimated that nearly 200 million children fail to reach their full developmental potential in their first five years. In India, about 10% of young children suffer from growth retardation, with delays in achieving key milestones. Some children also face chronic motor impairments, such as cerebral palsy, which often become more evident as they grow older.

Health is among the most fundamental rights of every child. Without safeguarding this right and ensuring access to proper resources, achieving major developmental goals becomes impossible (Onis D. Mercedes et al., 2004). As Jawaharlal Nehru rightly said, "Children are the wealth of tomorrow—take care of them. If you wish to have a strong India, ever ready to meet various challenges." In recognition of this, the United Nations, during International Children's Year in 1979, emphasized the need to strengthen growth monitoring, informal education, supplementary nutrition, and referral services (Suraj Gupte, 2004).

1.1 Statement of the problem

"An evaluation of the effectiveness of a video-based teaching program on mothers' knowledge of infant developmental milestones in selected hospitals of Indore, M.P."

1.2. Objectives of the study

1. To evaluate mothers' knowledge about developmental milestones of infants before the teaching program.
2. To evaluate mothers' knowledge about developmental milestones of infants after the teaching program.
3. To determine the effectiveness of the video-assisted teaching program on mothers' knowledge regarding infant developmental milestones.

2.1 Hypothesis

1. ***Null hypothesis (H_{01}):*** There is no significant difference between the pre-test and post-test knowledge scores of mothers regarding infant developmental milestones at the 0.05 level of significance.
2. ***Research hypothesis (RH_1):*** There is a significant difference between the pre-test and post-test knowledge scores of mothers regarding infant developmental milestones at the 0.05 level of significance.

2. Materials and Methods

3.1 Research approach

A quantitative research approach was adopted to evaluate the effectiveness of a video-assisted teaching program on mothers' knowledge regarding infant developmental milestones.

3.2 Research design

The study followed a Pre-experimental design. one-group pre-test–post-test design, aimed at measuring the difference in knowledge levels before and after the administration of the video-assisted teaching program.

3.3 Variables of the study

1. *Independent variable:* The video-assisted teaching program on developmental milestones of infants.
2. *Dependent variable*: Mothers' knowledge regarding developmental milestones of infants.
3. *Extraneous variables*: Factors such as age, education, religion, income, and type of family.

3.4 Research setting

The research was carried out at the Index Medical Hospital and Research Center, Indore. Written permission was obtained from the hospital administration prior to conducting the study.

3.5. Population

The target population consisted of mothers attending selected hospitals in Indore.

3.6 Sample and sample size

The study sample included 60 mothers selected from the chosen hospitals in Indore.

3.7 Sampling technique

A non-probability purposive sampling technique was employed to select participants.

3.8. Inclusion criteria

1. Mothers admitted to the selected hospital in Indore.
2. Mothers who can read and write in either English or Hindi.

3.9. Exclusion criteria

1. Mothers unable to understand English or Hindi.
2. Mothers who were ill during the period of data collection.

3. Results

Section I: Analysis and interpretation of the demographic characteristics of the study Participants (N = 100)

Table 1: Frequency and percentage distribution of caregivers based on demographic variables

S. no.	Demographic Variables	No.	%
1.	Age (in caregivers)-		

	Below 20 year	15	15%
	21 -30 years	20	20%
	31 - 40 years	45	45%
	Above 40 years	20	20%
2.	**Gender**		
	Male	10	10%
	Female	90	90%
3.	**Marital Status**		
	Unmarried	19	19%
	Married	79	79%
	Widow	02	02%
	Divorced	00	00%
4.	**Religion**		
	Hindu	52	52%
	Muslim	38	38%
	Christian	10	00%
	Others	00	00%
5.	**Educational Status -**		
	Illiterate	37	37%
	Primary School	28	28%
	Middle School	12	12%
	High School	10	10%
	Graduate& Post graduate	08	08%
6.	**Occupation**		
	Unemployed	48	48%
	Self employed	24	24%
	Private Jobs	20	20%
	Government	08	08%
7.	**Monthly family income-(In Rs/-)**		
	> 5,000 Rs. / month	00	00%
	5,001 - 10,000 Rs. / month	56	56%
	10,001 - 15,000 Rs. / month	34	34%
	< 15,001 Rs. / month	10	10%
8.	**Types of family**		
	Joint	48	48%
	Nuclear	52	52%
	Extended family	00	00%
9.	**Previous knowledge about tomato flu.**		
	Yes	04	04%
	No	96	96%

Table 2: Assessment of pre-test and post-test knowledge scores N= 100

Level of knowledge	**Pre test**		**Post test**	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
Poor knowledge	52	52%	00	00%
Average knowledge	27	27%	14	14%
Good knowledge	16	16%	56	56%
Excellent knowledge	05	05%	30	30%
Total	100	100%	100	100%

The data in **Table 1** reveals the demographic profile of the caregivers. With respect to age, 15 (15%) were below 20 years, 20 (20%) belonged to the 21–30 years age group, 45 (45%) were between 31–40 years, and 20 (20%) were above 40 years.

In terms of gender, 10 (10%) of the caregivers were male, while 90 (90%) were female.

Regarding marital status, 19 (19%) were unmarried, 79 (79%) were married, 2 (2%) were widowed, and none were divorced.

With respect to religion, 52 (52%) identified as Hindu, 38 (38%) as Muslim, while none identified as Christian or other religions.

Educational background showed that 37 (37%) were illiterate, 28 (28%) had primary education, 12 (12%) had completed middle school, 10 (10%) had high school education, 8 (8%) were graduates, and 5 (5%) had postgraduate qualifications.

In terms of occupation, 48 (48%) were unemployed, 24 (24%) were self-employed, 20 (20%) worked in private jobs, and 8 (8%) were employed in government jobs.

Family income distribution revealed that none of the caregivers had a monthly income of less than ₹5,000. A majority, 56 (56%), reported income between ₹5,001–10,000, 34 (34%) earned between ₹10,001–15,000, and 10 (10%) had an income above ₹15,000.

Regarding family type, 48 (48%) lived in joint families, 52 (52%) in nuclear families, and none belonged to extended f milies.

When asked about prior knowledge of Tomato flu, only 4 (4%) reported having awareness, while 96 (96%) had no prior knowledge.

Section II: Pre-test and Post-test Knowledge Scores on Home Care Management of Children with Tomato Flu among Caregivers

The knowledge assessment tool consisted of 40 multiple-choice questions, each with a single correct answer. Caregivers received 1 mark for each correct response, while incorrect responses were scored as 0. The total scores were categorized into levels of knowledge: poor, average, good, and excellent.

In the pre-test, the frequency and percentage distribution of caregivers' knowledge levels showed that 65 (65%) had poor knowledge, 30 (30%) demonstrated average knowledge, 5 (5%) displayed good knowledge, and none (0%) achieved an excellent level of knowledge regarding home care management of children with Tomato flu.

After administering the informational pamphlet, the same questionnaire was used for the post-test evaluation. The results indicated substantial improvement: 0 (0%) caregivers remained in the poor knowledge category, 14 (14%) demonstrated average knowledge, 56 (56%) achieved good knowledge, and 30 (30%) attained an excellent level of knowledge.

These findings clearly establish that the informational pamphlet was effective in enhancing caregivers' knowledge about home-based management of Tomato flu.

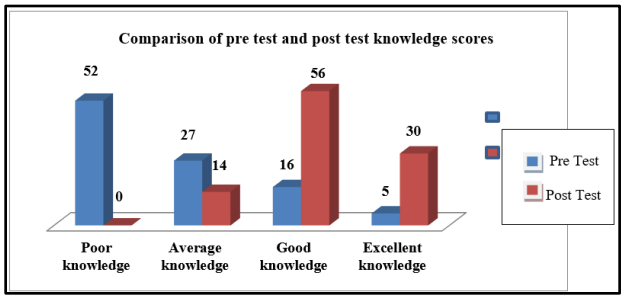

Figure 1: Comparison of pre-test and post-test knowledge scores of caregivers on home care management of children with tomato flu

Section III - Effectiveness of information pamphlet regarding home care management of children

Table 3: Comparison of mean pretest and posttest knowledge score

Knowledge score	Mean	Mean Difference	SD	Df	Paired 'z' value	P Value
Pre test	12.4	14.2	9.4	99	18.67	p <0.05 HS
Post test	26.6		13.3			

The paired 'z' test was applied, yielding a p-value < 0.05, indicating statistical significance. The results in the table show that the mean pre-test knowledge score was 12.4 (SD = 9.04), whereas the mean post-test score increased to 26.6 (SD = 13.3). The mean difference of 14.2 was found to be significant ($p < 0.05$), demonstrating a substantial improvement in knowledge after the intervention. These findings confirm that the informational pamphlet was effective in enhancing caregivers' knowledge regarding home care management of children with Tomato flu.

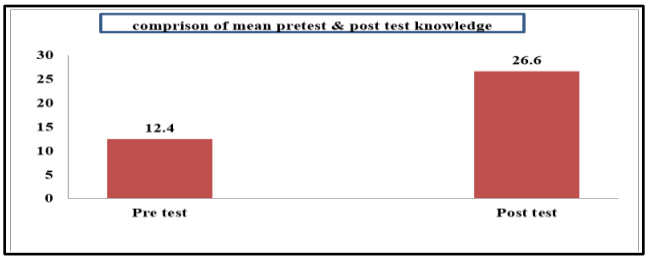

Figure 2: Comparison of mean pre-test and post-test knowledge scores of the sample

4. Discussion

This study aimed to assess how effective an educational pamphlet was in improving caregivers' knowledge about home-based management of Tomato flu. The results showed a marked rise in knowledge levels after the intervention, as evidenced by significantly higher post-test scores compared to pre-test scores. The average pre-test score of 12.4 indicated limited prior knowledge, whereas the post-test mean of 26.6

demonstrated considerable improvement following exposure to the pamphlet.

These results align with earlier research. For instance, Agarwal and Gupta (2022)2 as well as Bhatt and Sharma (2021)1 highlighted that printed health education resources can significantly enhance caregivers' understanding of childhood illnesses and their home care. Similarly, Patel et al. (2020) found pamphlets to be useful in improving parental awareness about communicable diseases.

The observed improvement in this study emphasizes the relevance of community-focused educational interventions. Given that Tomato flu spreads easily through direct contact and contaminated objects, equipping caregivers with knowledge about hygiene practices, recognizing symptoms, and maintaining home isolation is crucial for reducing transmission. The pamphlet proved to be a cost-effective, accessible, and reusable resource, making it particularly beneficial in rural settings and among populations with lower literacy levels. This finding is consistent with the work of Singh and Mehta (2019).

Nevertheless, the study has some limitations. The absence of a control group due to the pre-experimental design reduces the strength of generalizations. Additionally, the use of purposive sampling within a single community may have introduced selection bias. Future research involving larger, more heterogeneous samples, randomized study designs, and extended follow-up periods would provide a clearer understanding of knowledge retention and actual practice changes.

5. Source of Funding

No external funding was received for this study.

6. Summary

The study demonstrated that the use of an informational pamphlet led to a significant improvement in caregivers' knowledge regarding home-based management of Tomato flu. These results emphasize the role of community education in limiting the spread of emerging infectious diseases, particularly in rural settings. Targeted health education programs can empower caregivers and contribute to improved health outcomes among vulnerable populations.

7. Conclusion

The findings of this study confirm that the informational pamphlet was effective in enhancing caregivers' understanding of Tomato flu management in selected rural areas of Indore. Following the intervention, caregivers exhibited increased awareness of symptoms, preventive strategies, and appropriate home care practices. The pamphlet proved to be a practical and valuable educational resource, enabling caregivers to manage Tomato flu more effectively. Overall, such health education initiatives can significantly contribute to disease prevention and better health outcomes in rural communities.

8. Source of Funding

None.

9. Conflict of Interest

None.

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