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AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF HEALTH EDUCATION REGARDING DENGUE FEVER AND ITS MANAGEMENT AMONG CARE GIVERS OF PATIENTS ADMITTED IN CHC, GANDHI NAGAR, BHOPAL, M.P.

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Abstract

Dengue fever (DF) has become a disease of public health concern. The past few years have seen a dramatic rise in the illness. Around the world an estimated 400 million infections and 100 million symptomatic cases occurring annually (<https://www.who.int>). In India an average of 100690 cases per year reported during 2013-2017(<https://journals.plos.org>). In 2018, 110473 Dengue Fever cases were reported in India (<https://www.thelancet.com>). The overall prevalence of Dengue Fever in India was 48.7% (<https://www.thelancet.com>). Therefore the aim of the study was to assess the effectiveness of instructional module in terms of knowledge gain about Dengue fever and its management among care givers of patients admitted in CHC, Gandhi Nagar, Bhopal. The findings of the study indicated that the mean post – test knowledge score (19.3) was higher than that of the pre–test knowledge score (9.9). The ‘t’ test computed ($t=12.6$, $P<0.05$) showed a significant difference suggesting that the self-instructional module was effective in increasing the knowledge regarding Dengue fever and its management.

Keywords

Assess, Effectiveness, Health education, Dengue fever, caregivers, Patients.

Introduction

Dengue fever (DF) has become a disease of public health concern. It has been estimated that around 50% of the world population lives in areas where the disease transmission is favorable. The past few years have seen a dramatic rise in the illness. The overall prevalence of Dengue

Fever in India was 48.7% (<https://www.thelancet.com>). Proper fluid management and close monitoring of the patient is the most trusted method of preventing complications and minimizing mortality. Hence, the care giver's role is vital in the nursing management of dengue patients along with medical management.

Need for the study

Dengue fever is one of the most common tropical diseases worldwide. Treatment consists of supportive care including bed rest, anti-pyretic and analgesics. But some cases will become fatal leads to Dengue Hemorrhagic fever or Dengue Shock Syndrome. Early diagnosis followed by hydration, treatment, rest and appropriate care in time followed by a series of follow up of patients can save Dengue hemorrhagic fever or complicated dengue fever cases. Therefore, care givers of Dengue patients must have the knowledge regarding sign and symptoms of severe Dengue cases, providing appropriate care and seek medical help in time. Therefore, the researcher felt need to prepare a self-instructional module on Dengue fever and its management, which was considered essential to gain knowledge and provide care for their patients, themselves, family members, relatives and community members.

Objectives

- 1) Assess the pretest knowledge regarding Dengue fever and its management among care givers of patients admitted in CHC, Gandhi Nagar.
- 2) Assess the posttest knowledge regarding Dengue fever and its management among care givers of patients admitted in CHC, Gandhi Nagar.
- 3) Find out significance difference between pretest and posttest level of knowledge among care givers.
- 4) Associate the pretest level of knowledge regarding Dengue fever with their selected demographic variables.

Hypothesis

The mean post-test knowledge score of care givers regarding Dengue fever and its management after providing health education will be significantly higher than mean pre-test knowledge score at <0.05 level. There will be a significant association of pre interventional knowledge score of care givers with their selected demographic variables like age and extended family.

Research Methodology

Research design: The research design selected for the study was Pre-experimental one group pretest-posttest design.

The design can be represented as



Key

E – Experimental group (only one).

O₁ – Pre-test knowledge score.

X – Treatment variable (self-instructional module).

O₂ – Post-test knowledge score.

Sampling Technique

In this study the sample consisted of 60 care givers of patients admitted in CHC, Gandhi Nagar, Bhopal, selected by convenient sampling technique.

Development and Description of the tools

Description of tool

The tool consisted of 2 sections.

Section 1: It describes the demographic variables. It comprises of 6 items for obtaining information regarding age, education status of care giver, types of family, monthly income of family, source of information, income.

Section II: - It consists of 30 knowledge items categorized under the following broad areas: Meaning of Dengue Fever, causes and risk factors, mode of transmission, sign and symptoms, complications, management and prevention.

The test items were objective type consisting of multiple-choice questions with one correct answer. Every correct answer was awarded a score of one point and every wrong answer was assigned a zero (0) score.

Table 1: The maximum total score of the knowledge questionnaire was 30. Score was graded as follows.

Score	Grading
1-6	Poor
7-12	Average
13-18	Good
19-24	Very good
25-30	Excellent

Reliability of the tool

The reliability co-efficient of the knowledge test was calculated by using Karl's Pearson's formula. The reliability co-efficient was found to be 0.81 which proved that the tool was highly reliable. No modification was made. Thus, tool was found to be valid, reliable and feasible for the purpose of study.

Development of self-instructional module

The self-instructional module was developed and based on review of related research and non-research literature, discussion with experts and personal experience of the investigator. Self-instructional module was structured for enhancing knowledge among care givers of patients admitted in CHC, Gandhi Nagar.

Pilot study

A pilot study was conducted from 01-02-2023 to 10-02-2023 and the samples used in pilot study was excluded from the main study. Data analysis was done by using descriptive and inferential statistics. The reliability co-efficient of the knowledge test was calculated by using Karl's Pearson formula. The tool and Information booklet was found to be feasible and practicable. No further changes were made in the tool and self-instructional module.

Analysis and interpretation

Raw data was collected and entered in a master sheet for the statistical analysis. It was interpreted by using descriptive and inferential statistics. The data finding has been organized and presented under following sections.

Section I: Sample Characteristics**Table 2: Frequency and Percentage Distribution of Sample Characteristics.**

S. No	Selected demographic variables	Frequency total	Percentage (%)
1	Age in years		
	25-40 years	20	33.3
	41 – 55 years	40	66.6
2	Education of care givers		
	Non literate	20	33.3
	Primary level	28	46.66
	Secondary level	12	20
	Higher secondary level	0	0
3	Type of family		
	Nuclear family	9	15
	Joint family (up to 6 members)	22	36.66
	Extended family up to 8 members	28	46.66
	Extended family more than 8 members	1	1.66
4	Source of information		
	Family members	27	45
	Community	24	40
	Media	6	10
	Health team	3	5
5	Family income per month		
	Up to 2500/-	24	40
	2501-5000/-	21	35
	5001-10,000/-	9	15
	>10,000/-	6	10

Section 11: Knowledge questionnaire.

Section 11-1. The pre-test knowledge score of care givers of patients admitted in CHC, Gandhi Nagar regarding Dengue fever and its management.

Table 3: Pre-test knowledge score of the sample (N=60)

S. No.	Score	Grading	Pretest		Mean	S.D.
			Frequency	Percentage (%)		
1	1-6	Poor	21	35%	9.9	4.7
2	7-12	Average	24	40%		
3	13-18	Good	12	20%		

4	19-24	Very good	3	5%		
5	25-30	Excellent	0	0%		

Pre-test mean score=9.9, S. D=4.7

This data shows that 35% of care givers had poor knowledge i.e. (1-6), 40% had average knowledge ranging from (7-12), 20% had good knowledge ranging from (13-18), 5% had very good knowledge ranging from (19-24) and none had excellent knowledge ranging from (25-30). The mean value in the pre interventional scores of the care givers was 9.9 and the standard deviation was 4.7.

Section II-2: - The post-test knowledge score of care givers of patients admitted in CHC, Gandhi Nagar regarding Dengue fever and its management.

Table 4: Post-test knowledge score of the sample

S. No	Score	Grading	Post- test		Mean	S.D.
			Frequency	Percentage (%)		
1	1-6	Poor	0	0	19.3	3.4
2	7-12	Average	6	10%		
3	13-18	Good	30	50%		
4	19-24	Very good	15	25%		
5	25-30	Excellent	9	15%		

Pre-test mean score=19.3, S.D =3.4

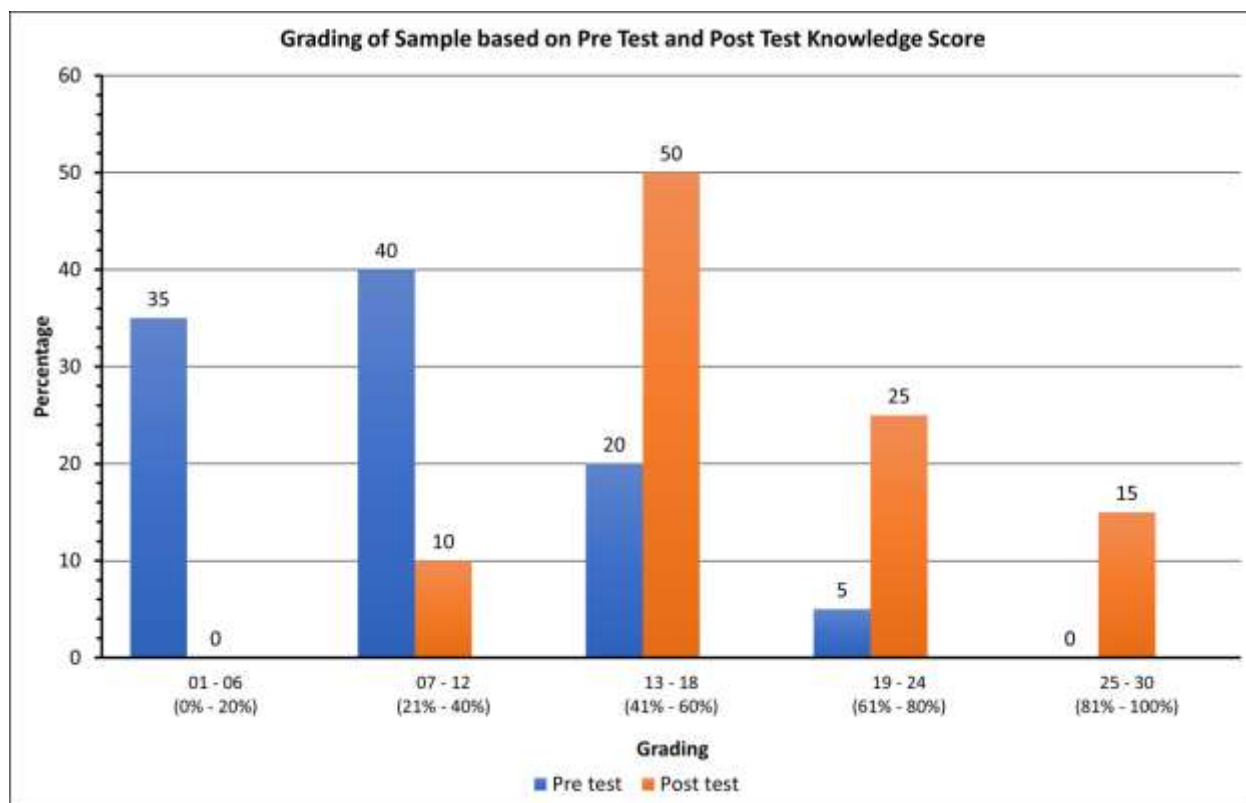


Figure1: Bar diagram showing percentage distribution of pre-test and post-test knowledge score

Section 11- 3: Effectiveness of self-instructional module in terms of gain in knowledge scores.

Table 5: Mean, Standard Deviation and ‘T’ Value of Pre-test and Post-test knowledge score (N=40)

Knowledge	Mean(x)	Mean percentage	SD	Mean difference	T- Value
Pre intervention	9.9	33.91	4.7	9.4	12.6
Post intervention	19.3	66.09	3.4		

‘t’ (59) =12.6, $P < 0.05$

The data presented in the Table No.3 shows that the mean post test score (66.09%) is apparently higher than the mean pre interventional score (33.91%). The dispersion of Pre-test scores ($SD = +4.7$) is more than that of their Post-test scores ($SD = +3.4$) and the computed ‘t’ value shows that there is a significant difference between pre-test and post-test knowledge score ($t_{59} = 12.6$ $p < 0.05$ level). This indicates that teaching module is effective in increasing knowledge score of care givers.

Section 11-4: Association of pre- test knowledge score and selected demographic variables.

In this section findings showed that computed Chi-square value indicates that there are 50% values show no significant difference and 50% values show significant difference in many areas of selected demographic variables and pre-test knowledge score of care givers of patients admitted in CHC, Gandhi Nagar, Bhopal.

Discussion, Summary, Conclusion, Recommendations, implications and Limitations

The data showed that the care givers of patients admitted in CHC, Gandhi Nagar have deficit knowledge regarding Dengue Fever and its management. The total mean score secured by care givers are 9.9 on the scale of 1-30. These findings show that the pre-test knowledge levels of all care givers were inadequate in most areas regarding Dengue Fever and its management. The above findings is supported by P Kosalya (2014), “to evaluate the effectiveness of video teaching program on knowledge and practice regarding control and prevention of Dengue fever among house wives” and the findings revealed that Video assisted teaching was effective in enhancing the knowledge and practice (t’ value 14.8, $P > 0.05$ level).

Recommendations

- i. A similar study may be replicated on a large sample using random sampling, so that the findings can be generalized.
- ii. A comparative study can be conducted to find out the effectiveness between planned teaching program and self-instructional module.
- iii. Studies can be conducted to identify the occurrence of opportunistic infections among Dengue fever patients.
- iv. A similar study could be replicated with a control group.
- v. A comparative study can be undertaken to evaluate different teaching strategies, self-instructional module (SIM), peer evaluation and education by health care teams.

Implications

The findings of the present study have implications for nursing practice, nursing education, community health nursing, nursing administration and nursing research.

- a) **Nursing Practice:** Health education is an important tool of health care agency. It is one of the most cost-effective interventions. The findings of the study indicated that there is need for health education regarding Dengue fever, management and its preventive measures at home.
- b) **Nursing Education:** Today more emphasis is given on self-reliance and client preparation in health care system. The study also implies that nurse plays a vital role in health care delivery system to teach Dengue fever, its management and preventive measures. The nursing curriculum must emphasize self-care in communicable diseases, especially Dengue fever and its management.
- c) **Community health nursing:** Home based individual planned teaching program is very effective to improve knowledge regarding preventive measures, self-awareness and self-care. Community based screening programs are effective to identify the cases in endemic areas.
- d) **Nursing Administration:** Nurse administrators are responsible for conducting in service education program, workshop, seminars and conferences for the staff and students to create awareness about Dengue Fever so that this knowledge can be imparted to the public to manage dengue patients and preventive measures.
- e) **Nursing research:** Research can be conducted to assess the knowledge and preventive measures of Dengue fever and management of Dengue hemorrhagic fever and Dengue shock syndrome.

Limitations

The few limitations of the study are listed below:

1. The findings of the study cannot be generalized because of small sample and convenient sampling technique.

2. Limited time was available for data collection.
3. Structured knowledge questionnaire was used for data collection which restricted the amount of information that could be obtained from the care givers.
4. No attempt was made to measure the retention of knowledge regarding self-care activities after post-test.
5. The study did not use a control group.

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