

# A Pre-Experimental Study to Assess the Effectiveness of Self-Instructed Module (SIM) on Knowledge Regarding Prevention of Dengue Fever among Residents of Selected Urban Slum in Kanpur

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## INTRODUCTION

Dengue fever is an acute infectious life-threatening mosquito born disease, transmitted through *Aedes aegypti* mosquito. It is also called as 'Break bone fever' or 'Dandy fever', occurs more frequently during rainy seasons i.e. in the month of June to September. Characterized by episodes of 'saddle back' fever, muscle and joint pain accompanied by an initial erythema and terminal rash of varying morphology.

The first evidence of dengue fever was reported at Vellore district in Tamil Nadu in 1956. The first dengue hemorrhagic fever outbreak was found in Calcutta (West Bengal) in 1963. Without proper treatment, dengue hemorrhagic fever case fatality rate can exceed 20% with modern intensive supportive therapy; the rate can be reduced to less than 1%.

The course of infection is divided into three phases: febrile, critical, and recovery. Dengue can occasionally affect several other body systems, either in isolation or along with the classic dengue symptoms. A decreased level of consciousness occurs in 0.5–6% of severe cases, which is attributable either to inflammation of the brain by the virus or indirectly as a result of impairment of vital organs, for example, the liver. It is also called as 'Break bone fever' or 'Dandy fever', occurs more frequently during rainy seasons i.e. in the month of June to September.

## NEED OF THE STUDY

The term "dengue" is a Spanish attempt at the Swahili phrase "Ki dengapepo" meaning "cramp like seizure caused by an evil spirit". Dengue is a mosquito born infectious disease that has become a major public health concern found in most tropical and subtropical areas of the world. Dengue fever is now believed to be a most common vector born disease in the world. Currently WHO has estimated that worldwide every year 50-100 million cases are infected with dengue infection and nearly 2, 50,000 individuals per year manifest with severe forms which have mortality rate about 10%. So WHO has classified this disease as a major public health concern. Recently the incidence of dengue fever has grown dramatically around the world. Around 2.5 billion people i.e. 2/5th of world population are at risk from dengue. Now it has become one of the endemic diseases in more than 112 countries.

Even though dengue fever has become one of the growing global health problem, where there is no proper preventive and control measure have been taken effectively. In the absence of specific treatment and vaccine for dengue fever, only a vector control is an important measure to control of dengue infection. And also there is a need to develop a vaccination on comparison with other communicable disease, which has become challenge for researchers, and there is a need to educate the community in regard of prevention and control with view to reduce the burden on society and Health Care Delivery System (HCDS).

## PURPOSE OF THE STUDY:

- To evaluate the knowledge of residents of urban slum about dengue fever and its prevention.
- To give knowledge to residents of urban slum about dengue fever and its prevention.

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- To reduce complication of the dengue fever by its prevention.

#### **STATEMENT OF THE PROBLEM: -**

“A Pre experimental study to assess the effectiveness of self-instructed module (SIM) on knowledge regarding prevention of dengue fever among residents of selected urban slum area in Kanpur U.P.”

#### **OBJECTIVES: -**

- To develop self-instructed module on prevention of dengue fever.
- To assess knowledge of the residents of the urban slum regarding prevention of dengue fever, measured by structured knowledge questionnaire.
- To evaluate the effectiveness of self-instructed module on prevention of dengue fever.
- To find out the association between post-test knowledge scores of residents and demographic variables such as age, sex, religion, education, occupation, type of family, family income, source of health information, habits.

#### **ASSUMPTIONS: -**

1. Residents of urban slum may have inadequate knowledge regarding prevention of dengue fever.
2. SIM (self-instructed module) is one of the effective methods of imparting knowledge of residents of urban slum regarding prevention of dengue fever.

#### **HYPOTHESIS: -**

Following hypothesis will be tested at 0.05 level of significance

H<sub>1</sub>: There is significant difference between pre-test and post-test knowledge of residents of urban slum regarding prevention of dengue fever as evident from structured knowledge questionnaire at 0.05 level of significance.

#### **SUMMARY: -**

This chapter comprises of the background of the study, its need. The statement of the study was defined with objectives and hypothesis. Researcher assumption and delimitation for the study were stated. Operational definitions are defining some of the peculiar terms used in the study. And finally the implication of the research work with nursing conceptual framework was drawn of Roy adaptation.

H<sub>2</sub>: There is significant association between post-test knowledge score with selected demographic variables after the administration of SIM, as evident from structured knowledge questionnaire at 0.05 level of significance in terms of demographic variables.

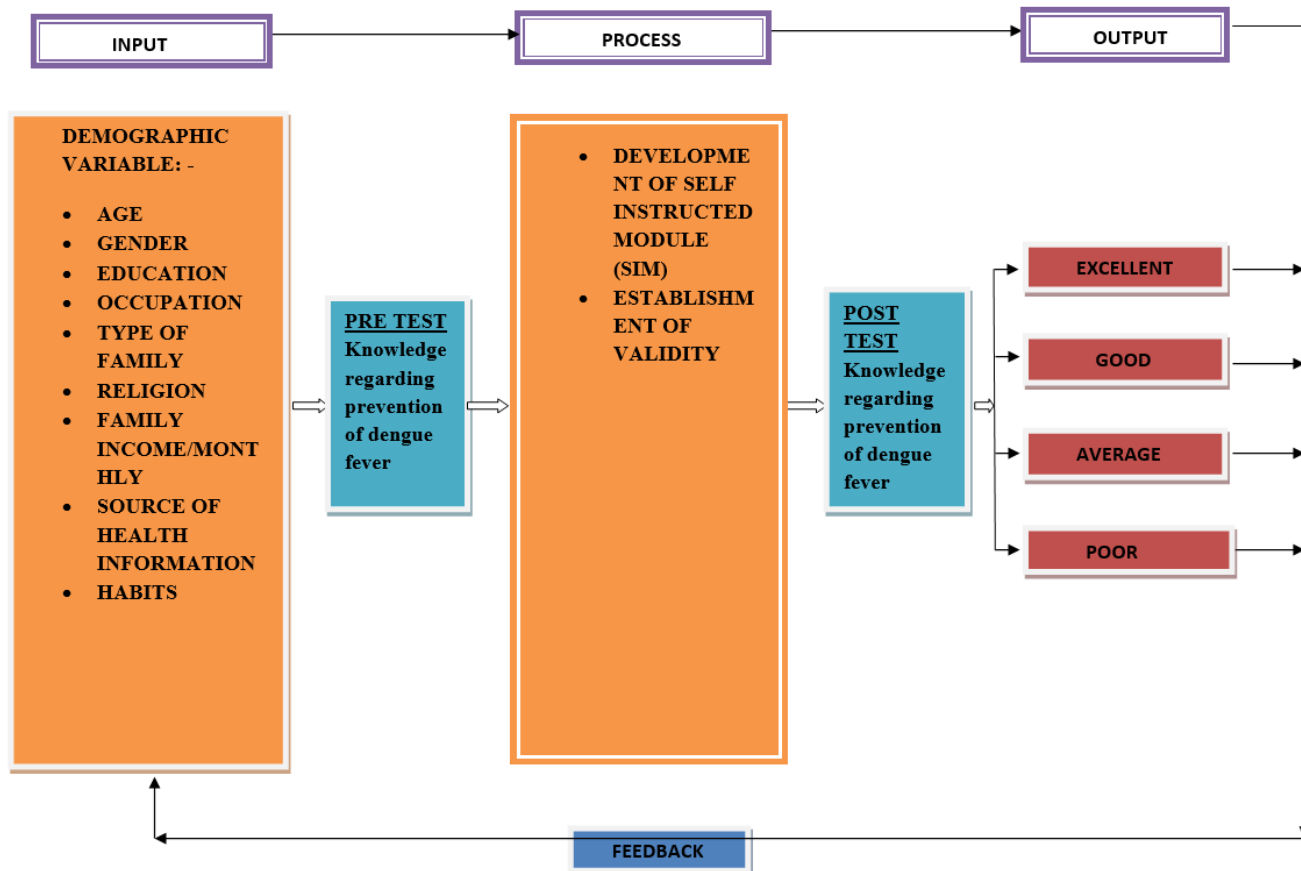
#### **DELIMITATION:**

##### **Study is delimited for:**

- Residents of selected area of urban slum Kanpur.
- Residents of more than 15 years of age.
- Sample size is limited to 60 samples.
- Study period is limited to only 4 to 6 weeks.

#### **OPERATIONAL DEFINITION: -**

1. **Effectiveness:** In this study effectiveness refers to, a significant gain in knowledge i.e. The mean post test scores higher than the mean pre-test score.
2. **Self-instructed module:** In this study self-instructed module refers to systematically planned self-instructed module method regarding prevention of dengue fever.
3. **Knowledge:** In this study knowledge refers to, gaining information on prevention of dengue fever among urban slum residents.
4. **Dengue fever:** In this study Dengue fever is a vector born disease caused by infectious Aedes aegypti mosquito bite.
5. **Residents of urban slum:** In this study resident of urban slum refers to people who are living in the urban slum area and willing to participate in the study.
6. **Urban slum:** In this study urban slum refers to, selected urban area for the purpose of study where the people are economically poor and following unhygienic practices in their daily living activity.



**Figure 1 Modified Conceptual Framework of Callista Roy**

## REVIEW OF LITERATURE

Literature review is considered as a systematic and critical review of most important scholarly literature on a particular topic. The term refers an extensive, exhaustive and systematic examination of publications relevant to research study. The review helped in gaining information on trends and development in this area (Polit and Hungler).

Research has presented reviewed of literature under following domains

1. Literature related to incidence and prevalence of dengue fever
2. Literature related to general knowledge regarding dengue fever

### 1. Literature related to incidence and prevalence of dengue fever

A record base study conducted on clinical manifestation and trend of dengue cases admitted in tertiary care hospital, Udupi district Karnataka. Required data from all the laboratories confirmed cases from 2002 to 2008 were collected from medical records department. Result reveals that study included 466 patients. Majority will be males, 301(64.6%) and in the age group of 15-44 years, 267(57.5%). Maximum number of cases were seen in 2007, 219(47%) and in the month of September, 89(19.1%). The common presentation was fever 462(99.1%), followed by myalgia 301(64.6%), vomiting 222(47.6%), headache 222(47.6%), and abdominal pain 175(37.6%). The most common hemorrhagic manifestation 84(67.2%), 419(8.8%) with dengue hemorrhagic fever and 34(7.3%) were with dengue shock syndrome. Deaths reported were 11. Study concluded that community awareness and early diagnosis, management and vector control measures need to be strengthened during peri monsoon period in order to curb the increasing number of dengue fever.

A survey of 25 multiple choice questions was mailed to 2000 PCPs in Singapore. Responses were analysed by physician age group (21-40,41-60,and >61) and practice setting (government subsidised polyclinic or private practice). Of the 3 questions assessing dengue knowledge, 89.9% chose 2 or 3 of the preferred responses. Half of the respondents utilised dengue diagnostic tests at least 50% of the time, and 75% used serology when doing so. Older respondents and those from private practices used diagnostic tests more often than their counterparts, and both groups favoured non serology tests. About 85% of surveyed PCPs monitored confirmed or suspected cases daily, and one-third referred patients to a hospital always or often.

## 2. Literature related to general knowledge regarding dengue fever

A study was conducted in Haripuram urban slum, Coimbatore regarding impact of education on parents on prevention of dengue fever in selected urban slum. By random sampling technique 40 samples were taken for research study, result shows that majority of respondents (82.5%) had inadequate knowledge regarding prevention of dengue fever in pretest; after education programme majority of respondents had moderate and adequate knowledge regarding prevention of dengue fever. Study reveals that compare with pretest knowledge (27.7%) the post-test knowledge is high (53.6%).

A cross sectional study was conducted among different socio-economic group in Karachi Pakistan with an objective to assess the knowledge, attitude and practice of selected adult population regarding dengue fever, with a sample size of 440 adults ages of 18 years and above with (244 males and 156 female) population. The result reveals that only 35% of samples had adequate knowledge about dengue fever and also reveals that high socio-economic group people had better knowledge than the low socio-economic group people.<sup>16</sup>

A hospital-based study conducted on knowledge and practice of dengue fever among general population attending hospital OPD. Total 500 populations were interviewed. The results revealed that 82.4% had known that dengue fever is transmitted by mosquito and 54% associated with flies/ person to person transmission. Regarding the knowledge about breeding 78.8% respondents knew about breeding places of mosquitoes, in that 42.4% explained coolers as a most probable site of mosquitoes breeding and 24.2% explained regarding coolers and discarded tires. The study concluded that knowledge regarding dengue is good in general population; practice of checking breeding places is quite poor.

### METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure of gathering valid and reliable data for an investigation. Research methodology provides a brief description of methods adopted by investigator in the study. The research methodology includes research approach, research design, the setting, the population, the criteria for sample selection, the method of sample selection, development and description of tool, validity, reliability, pre-test, pilot study, and procedure for data collection and plan for data analysis (Kothari C R 1990).

### RESEARCH APPROACH:

The selection of research approach is a basic procedure for conduction of research study. In view of the nature of problem selected to study and the objectives to be achieved, evaluative research is considered the most appropriate research approach for the present study.

**According to Polit and Hungler (1999)** evaluative research is applied form of research that involves finding out how well a programmed, practice, procedure or policy is working. It involves the collection and analysis of information relating to functioning of a programme or procedure with the aim of assessing its effectiveness.

### RESEARCH DESIGN:

The term research design refers to the plan of a scientific investigation. Research design helps the researcher in selection of subjects, identification of variables their control & manipulation, observation to be made & type of statistical analysis to interpret the data.

The research design selected for the present study is Pre-Experimental with one group pre-test post-test design.

### Pre-Experimental Design

In this the pre-test was carried for assessing the knowledge of residents of urban slum regarding the prevention of dengue fever, SIM was given, post test was conducted after a lapse of week following pre-test. The design does not include control group. **(Nancy Burns and Susan K Groove 1998)**

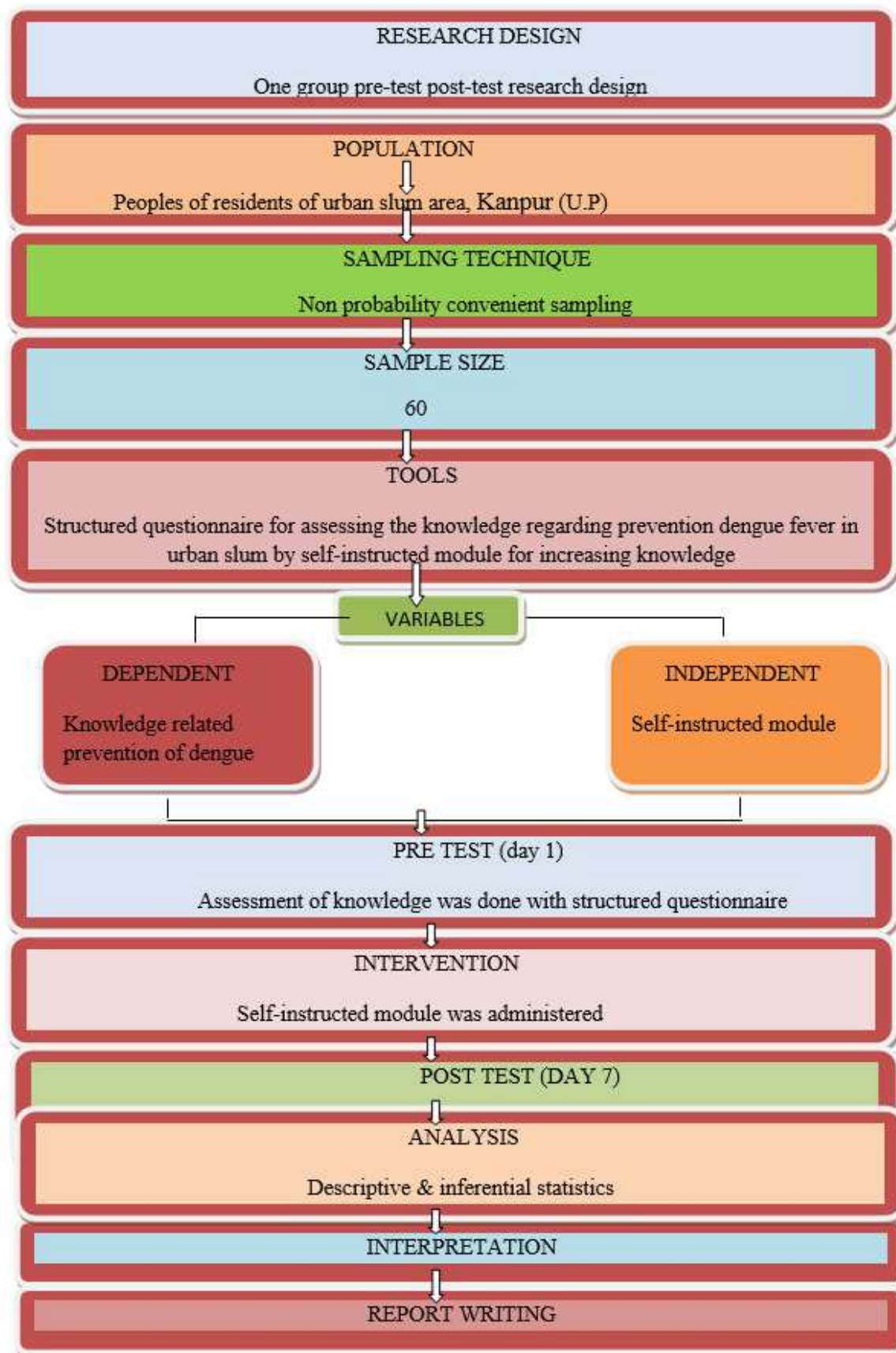
**Table-1 PRE EXPERIMENTAL WITH ONE GROUP PRE TEST AND POST TEST DESIGN.**

PRE TEST	TREATMENT	POST TEST
Administration of knowledge questionnaire.	Self-instructional module [SIM]	Administration of same knowledge questionnaire.
O <sub>1</sub>	X	O <sub>2</sub>

The symbols described as under:

O<sub>1</sub>/O<sub>2</sub> – Observation one and observation two (Pre-test and Post-test)

X – SIM



**Figure 2 Schematic representation of research methodology**

**VARIABLES UNDER STUDY:**

➤ **INDEPEENT VARIABLE**

The variable which was manipulated by researcher. In the present study the independent variables were: Self-instructional module [SIM]

### ➤ **DEPENDENT VARIABLE**

It is the variable that the researcher is interested in understanding, explaining or predicting. In the present study the independent variable was:

Knowledge of residents of urban slum regarding prevention of dengue fever.

### ➤ **EXTRANEOUS VARIABLES**

In the present study the extraneous variables were:

Such as age, sex, religion, education, occupation, type of family, family income, source of health information, habits.

### **SETTING OF THE STUDY: -**

Settings are the physical locations and condition in which the data collection takes place in study [POLIT AND HUNGLER, 1999].

The study was conducted in the urban slum area, Kanpur, Uttar Pradesh.

The selection of setting was done on the basis of:

- Feasibility of conducting the study
- Availability of samples

### **THE POPULATION: -**

Population is the entire aggregation of cases that met a designed set of criteria. [POLIT AND HUNGLER, 1999]

Target population for the study was residents of urban slum area, Kanpur, receiving self-instructional module during the period of study.

### **SAMPLE SIZE AND SAMPLING TECHNIQUE:-**

Polit & Hungler(1999) state that the sample consist of the subject of population selected to participate in research study. Sampling refers to the process of selecting a portion of population to represent entire population.

The sample of study comprises of 60 residents of urban slum area Kanpur [U.P.] and underwent self-instructional module, fulfilling the sample criteria. Convenient sampling technique was adopted to select the sample of this study.

### **CRITERIA FOR SELECTION OF SAMPLE: -**

#### ***Inclusion criteria***

- People of urban slum.
- People of urban slum both male and female are including.
- People of urban slum who are able to understand, read & write Hindi.
- Residents of urban slum in the age group of 15-30 & above.
- Urban slum people who are willing to participate in study.
- Urban slum people receiving self-instructional modules.

#### ***Exclusion criteria***

- People of urban slum who are not willing to participate in the study.

### **PILOT STUDY:**

Pilot study is the small version of trial run of the major study. It is conducted similar to the proposed study, using similar subjects, the similar setting, the same treatment, the same data collection and the same analysis technique.

The purpose of pilot study was:

- To find out the feasibility of conducting the final study
- To evaluate the tool constructed.
- To finalize the plan for analysis.

The Pilot study was conducted in residents of urban slum area of Kanpur, U.P. from **1.02.2024 to 7.02.2024** to find the feasibility of the study. 6 peoples were selected from residents of urban slum using convenient Sampling technique based on the inclusive criteria. The subjects for the pilot study possessed using the same characteristics as that of the sample for the final study, but were not included in the main study. Prior to the study permission was obtained from the concerned authority. The selected subjects were informed of the purpose

of the study and consent was obtained. Assessment of pre-test knowledge was done by using structured questionnaire after which SIM was administered. Post-test was conducted using the same structured questionnaire on the seventh day of pre-test. The time taken to complete one questionnaire was 30-40 minutes. The collected data were analysed using descriptive and inferential statistics.

### PROCEDURE OF DATA COLLECTION

Before collecting the data, permission was obtained from the concerned authority. Keeping in mind the ethical aspect of research, the data was collected after obtaining the informed consent of the sample. The samples were assured anonymity and confidentiality of information provided by them. Pre-test was conducted from **20 Feb 2015 to 1 march 2015** followed by administration of SIM. The duration of the session was 30 minutes. Post-test was conducted from **11<sup>th</sup> to 20<sup>th</sup> march 2015** to evaluate the effectiveness of self-instructional module.

### PLAN FOR DATA ANALYSIS:

Data analysis is the systematic organization and synthesis of research data and testing of research by using those data. The plan for data analysis includes descriptive statistics i.e. frequency, percentage, mean and standard deviation whereas for inferential statistics. It includes the Z test and chi square test.

#### Descriptive Statistics:

- Frequency and percentage distribution of demographic variables.
- Mean and standard deviation to assess the knowledge of people of residents of urban slum in both pre and post-test.
- Distribution of scores on the knowledge of peoples of residents of urban slum to be interpreted by summarizing in to these categories such as poor, average, good and excellent.

### DATA ANALYSIS AND INTERPRETATION

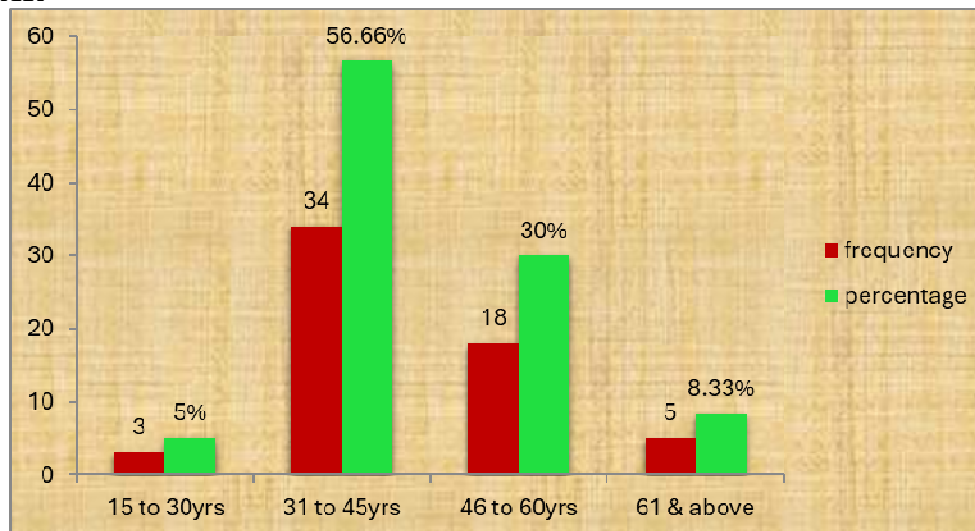
Analysis is defined as categorizing, ordering, manipulating, and summarizing of data and reducing in to intelligible and interpretable, so that the research problem can be studied and tested including relationship between variables.

In this present study data collected from 60 samples by using self-structured questionnaire by convenient sampling technique. Descriptive and inferential statistics will be used to find out for analysis of data and the significant of difference between the pre and post-test knowledge, chi-square test to determine the association between the post- test knowledge and practice score with selected demographic variables.

**TABLE-4 Distribution of subject according to Age. N=60**

S. No	Demographic Variable	Sample Characteristics	Frequency	Percentage
1.	Age	a. 15-30yrs	3	5%
		b. 31-45yrs	34	56.66%
		c. 46-60yrs	18	30%
		d. 61&above	5	8.33%

### AGE IN YEAR



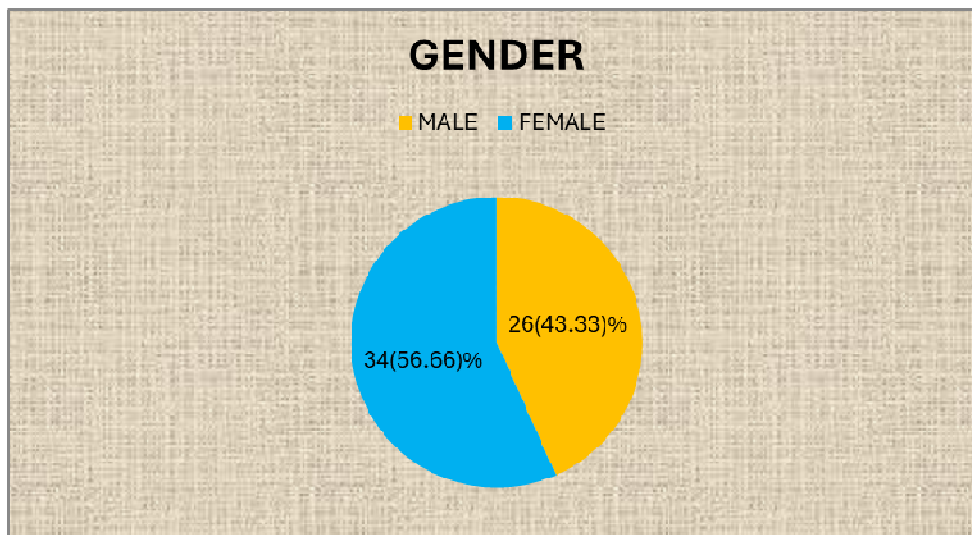
**Figure 3: Column diagram showing the distribution of the sample according to their age.**

Among 60 samples only 3 (5%) were between 15-30 age group, 34(56.66%) from age group 31-45, 18(30%) were between 46-60yrs of age and only 5(8.33%).

**TABLE-5 Distribution of subject according to gender. N=60**

S. No	Demographic Variable	Sample Characteristics	Frequency	Percentage
2.	Gender	a. Male	26	43.33%
		b. Female	34	56.66%

**GENDER**



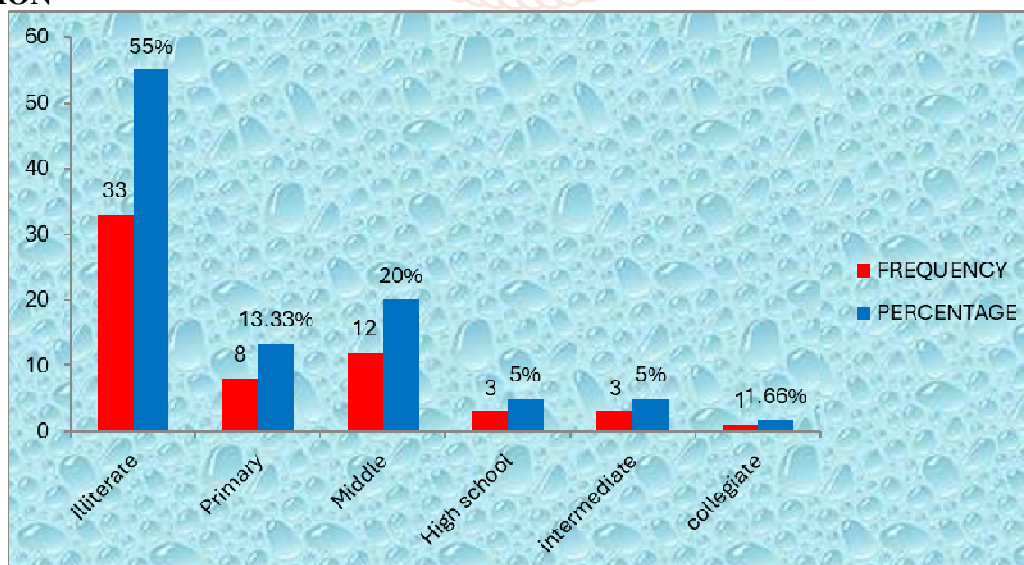
**Figure 4: pie diagram showing the distribution of the sample according to their gender.**

The majority of subjects ie. 34(56.6%) were females and 26(43%) were males

**TABLE-6 Distribution of subject according to education. N=60**

S. N	Demographic variable	Sample characteristics	Frequency	Percentage
3.	Education	a. Illiterate	33	55%
		b. Primary	8	13.33%
		c. Middle	12	20%
		d. High school	3	5%
		e. Intermediate	3	5%
		f. Collegiate	1	1.66%

**EDUCATION**



**Figure 5: cylinder diagram showing the distribution of the sample according to their education.**

The majority of samples were illiterate 33(55%), 8(13.33%) were primary, both high school and intermediate were 3(5%), middle 12(20%), only 1(1.66%) from collegiate.

## DISCUSSION

This chapter deals with the summary of study according to the result obtained from statistical analysis based on the data of the study, the reviewed literature and hypothesis which was selected for the study. The findings of the study, conclusion & discussion have been listed below along with the limitations of the study have been enumerated, and recommendations for future research in the field have also been presented

### Major Findings of the Study:

The major findings of the study are.

#### findings related to demographic variables

- Maximum number of residents of urban slum was between 31-45 yrs of age (56.66%)
- More than half of the participants were female (56.66%)
- Maximum participants from Hindu (81.66%)
- Maximum number of participants from illiterate (55%)
- Majority of samples are Housewife (31.66%)
- Majority of samples from nuclear family (90%)
- Majority of samples have 5000 & below family income monthly (28.33%)
- Participants got majority of health information from health worker (58.33%)
- 50% Of participants have no bad habits (50%)

## SUMMARY, CONCLUSION, IMPLICATIONS, DELIMITATIONS AND RECOMMENDATION

### Summary:

The aim of this study was to assess the knowledge that helps to improve the knowledge of residents of urban slum regarding preventing dengue fever.

### Implication:

The finding of the study shows the following implications in various fields of nursing.

### Limitations:

- Residents of selected area of urban slum Kanpur.
- Residents of more than 15 years of age.
- Sample size is limited to 60 samples.
- Study period is limited to only 4 to 6 weeks.

### Recommendations:

- A similar study may be replicated on large sample.
- A descriptive study on knowledge regarding prevention of dengue in selected urban slum can be taken up.
- An quasi-experimental study to assess the knowledge and practice of residents of urban

slum regarding prevention of dengue fever can be taken up.

- A comparative study to assess the knowledge and attitude of staff ANM on prevention of dengue fever in selected urban slum can be taken up.
- An experimental study to assess the effectiveness of PPT on knowledge among adolescents toward preventing dengue fever can be taken up.
- An experimental study to assess the knowledge and attitude of community health nurse on prevention of dengue fever in selected urban slum can be taken up.

### Conclusion:

The main purpose of the study was to assess the effectiveness of self-instructed module regarding dengue fever and its prevention.

Before the administration of self-instructed module no one was in excellent category but after the administration of SIM most of the residents of urban slum were in a excellent category, so i concluded that SIM ensured the increase in knowledge of the residents which was beneficial for them.

Finding of this study in relation to other earlier conducted studies also showed that other teaching strategies like video assisted teaching programme, pamphlets, computer assisted learning etc are helpful in increasing the knowledge of the residents.

### Summary:

This chapter deals with the summary, major findings of the study, conclusion, discussion, nursing implication, limitations and recommendations of the study. The overall experience of conducting this was a satisfying one. This study was a new learning experience for the researcher. The result of the study shows that there is a greater need for residence of urban slum to update their knowledge on dengue fever and its prevention.

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