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A Study to Assess the Effectiveness of Structured Teaching Program Regarding Prevention of Anemia among Primi–Mother in a Selected Community Area at Bangalore

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ABSTRACT

Back ground of the study

Health is the condition of being sound in body, mind or spirit, especially freedom from physical disease or pain. It is greatly affected by the surrounding environment, the impact of environment on health has been realized since this time immemorial. People have been taking various steps to modify their environment to promote healthy living but certain health problems are still dominant and constitute major public health problems especially communicable disease.[2]

Among the many health problems in India, communicable diseases are the major health problem which are transmitted to man by direct and indirect contact with the causative agent. the diseases which are indirectly transmitted by mosquito are dengue, malaria, filaria and Chikungunya. Vector-borne diseases are carried out by arthropod or living carrier that transports an infectious agent to a susceptible individual, the transmission by a vector may be mechanical or biological. Mosquito-borne diseases mainly spreads by bite of mosquito. Malaria, filariasis and dengue fever are three common diseases transmitted by mosquito and they are seen commonly. Even though the vector is too small, the extent of effect is seen a threat to the human life. Thus, the investigator felt the need to study to assess the effectiveness of SIM on integrated vector management programme among community area.

OBJECTIVES OF THE STUDY:

The objective of the study is to:

1. To assess the knowledge regarding among Integrated Vector Management Programme among community health workers
2. To evaluate the effectiveness of SIM on knowledge regarding Integrated Vector Management Programme among community health workers
3. To find out the association between pre- test knowledge scores regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

METHODS

The research approach used was evaluative approach. The research design selected for the study was pre experimental one group pretest post-test research design. The setting was selected community Bengaluru. The sample included 60 community health workers and the sampling technique used was non probability convenient sampling. A structured knowledge questionnaire was used to assess the knowledge level regarding integrated vector management. SIM was administered after collecting the data. The pilot study was conducted with six clients to check the reliability of the tool.

RESULT

The collected data were analyzed by using descriptive and inferential statistics. The finding of the study showed that the mean pretest knowledge score was 6.66 and was less than 23.51.then the t test computed value between the pre-test and post test score was statistically significant at<0.05 level (t=26.9,df=59).The findings also denoted a significant correlation between post-test knowledge and selected demographic variables such as age of community health workers ,religion, education, occupation, monthly income, type of family. This study showed that in pre- test,48(80%) of the community health workers had in adequate knowledge and 12(30.00%) community health workers had moderate level knowledge. After the administration of the SIM there was a significant improvement in the level of knowledge, that is 24 (40%) of community health workers had moderate knowledge,36(60%) community health workers had

adequate knowledge and none of them have inadequate level of knowledge regarding the integrated vector management, which indicated that SIM was effective.

KEYWORDS: Self-instructional module; community health workers, SIM; integrated vector management; PHC

INTRODUCTION

Integrated Vector Management Programme (IVM) is a rational decision-making process for the optimal use of resources for vector control. The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control. The ultimate goal is to prevent the transmission of vector-borne diseases such as malaria, dengue, Japanese encephalitis, leishmaniasis, schistosomiasis and Chagas disease. Driving forces behind a growing interest in IVM include the need to overcome challenges experienced with conventional single-intervention approaches to vector control as well as recent opportunities for promoting multi-sectoral approaches to human health[1].

Health is the condition of being sound in body, mind or spirit, especially freedom from physical disease or pain. It is greatly affected by the surrounding environment, the impact of environment on health has been realized since this times immemorial. People have been taking various steps to modify their environment to promote healthy living but certain health problems are still dominant and constitute major public health problems especially communicable disease.[2]

Among the many health problems in India, communicable diseases are the major health problem which are transmitted to man by direct and indirect contact with the causative agent . the diseases which are indirectly transmitted by mosquito are dengue, malaria, filaria and Chikungunya. Vector-borne diseases are carried out by arthropod or living carrier that transports an infectious agent to a susceptible individual, the transmission by a vector may be mechanical or biological. Mosquito-borne diseases mainly spreads by bite of mosquito. Malaria, filariasis and dengue fever are three common diseases transmitted by mosquito and they are seen commonly. Even though the vector is too small, the extent of effect is seen a threat to

the human life. [3]

Much of the ill health in India is due to poor environmental health in term of unprotected water, air pollution,soil pollution,poor housing, vectors around us, high death and morbidity rate are due to poor environmental sanitation, which needs improvement in the battle of prevention of diseases and promotion of community health.

Housing condition represents a major part of the environment, where the people live. According to family survey (2001) carried out by Indian Government, found that only 19% of rural population live in Pucca house, while remaining are living in semi-pucca, kacha house with mud walls and thatched roofs, un hygienic conditions of housing and Rugs in open space of houses act as reservoir of collection of water which can cause breeding mosquitoes causing life threatening diseases such as chickungunya ,dengue, filaria and Malaria.[5]

Disease produced by arthropods constitute major health problem in rural and urban. Arthropods comprise varied living thing in the surrounding man. It is estimated that about 300-500 million cases of malaria occur each year world wide, the problem of malaria can be divided into rural, urban and tribal malaria, Rural malaria contribute to 47.4% , tribal belt to 42% and urban malaria to 10.6%.[4] `So it's important to give awareness to the health workers and the public about the vector control programmes

Need for the study

Vector-borne diseases are carried out by arthropod or living carrier that transports an infectious agent to a susceptible individual, the transmission by a vector may be mechanical or biological. Mosquito-borne diseases mainly spreads by bite of mosquito. Malaria, filariasis and dengue fever are three common diseases transmitted by mosquito and they are seen commonly. Even though the vector is too small, the extent of effect is seen a threat to the human life. [4]

According to WHO Malaria is a public health problem in more than 109 countries. Worldwide prevalence of the disease is estimated to be in the order of 300-500million clinical cases each year. Mortality due to malaria is estimated to be 1.5 to 2.7million deaths each year. In India about 27% population lives in malaria high

transmission area and 58% of population in low transmission areas. The most affected states are north-eastern states, Chattisgarh, Jharkand, Madhya Pradhesh, Maharastra, Gujarat, Rajasthan, West Bengal and Karnataka.[1]The share of Mangalore in the reported cases of urban malaria in Karnataka stood at 64% .[5]

A study was conducted in Mangalore to enlist it among hyper endemic zone in the country for Malaria and vector borne diseases. It stood 6th in high endemic zone with above 5.7% of its population affected by malaria.From 1990 to 2007 nearly one lakh people were affected with malaria.[6]

The 20-21st century dengue pandemic is the direct result of contemporary demographic and life style trends, the population explosion and urbanization. 3.61 billion people are living in high risk areas, 36 million dengue fever cases are reported every year. More than 21,000 deaths are reported due to dengue. Dengue is widely prevalent in India. About 450million population are at risk. During 2006 there were about 12,317 cases and about 184 deaths from dengue.[7]

In world about 60 million people were infected with filaria and about 31million people have clinical manifestation of the disease.[9] In India presently over 2.5million people are exposed to the risk of filariasis with about 2 lakhs carriers and 1.25 lakhs cases of filarial disease manifestations.[8]

A study was done on Maintenance of eco health in fighting malaria without DDT (insecticide) in Mexico. Through community involvement in control strategies, improved surveillance, treatment and the use of new household spraying techniques with this Mexico has dramatically reduced malaria transmission. In 2001 there were just 4,996 cases of malaria down from 15,121 in 1998. Significantly this decrease came out with help of ecohealth.[5] As per researchers' assessment there is lack of studies conduct in India on basis of eco-health approach to control of vector borne diseases. [9]

OBJECTIVES

Statement of the problem

"A Study to assess the effectiveness of SIM on Integrated Vector Management

Programme among community health workers in a selected community area at Bengaluru."

Objectives of the study

The objectives of the study are to:

- To assess the knowledge regarding among Integrated Vector Management Programme among community health workers
- To evaluate the effectiveness of SIM on knowledge regarding Integrated Vector Management Programme among community health workers
- To find out the association between pre test knowledge scores regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

Hypothesis

H1. There will be statistically significant difference between mean pre-test and post test knowledge regarding Integrated Vector Management Programme among community health workers

H2. There will be significant association between the pre test knowledge score regarding regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

Operational definitions

In this study it refers to

Effectiveness: In this study it refers to desired gain in knowledge scores as determined by significant difference in pre-test and post-test scores on the structured knowledge questionnaire.

SIM (Self Instructional Module): In this study it refers to organized written information regarding Integrated Vector Management Programme developed by investigator and validated by experts.

Integrated Vector Management **Programme(IVM):** IVM is a rational decision-making process for the optimal use of resources for *vector control*. The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-*vector control*.

Community Health Workers: Community health worker (CHW) are members of a community who are chosen by community members or organizations to provide basic health and medical care to their community capable of providing preventive, promotional and rehabilitation care to these communities.

Assumptions

The study is based on the following assumptions

- The community workers will have some knowledge regarding Integrated Vector Management Programme.
- SIM will improve the knowledge of community workers regarding Integrated Vector Management Programme.

Delimitations

This study is delimited to:

- The study is limited to community health workers in a selected community area
- The study is limited to knowledge regarding Integrated Vector Management Programme.

CONCEPTUAL FRAMEWORK

Concepts are building blocks of theory. Concepts are words or terms that symbolize aspect of reality. The conceptual framework is related to objectives because the problem leads directly to the objectives. Conceptual framework is a theoretical approach to the study of problem that is scientifically based and emphasizes the selection, arrangement and classification of its concepts. A conceptual framework helps to explain the relationship between concepts, selected from several theories, from previous research results or from the researchers own experience.

- Conceptualization refers to the process of developing and refining abstract. A conceptual model provides for logical thinking, for systematic observation and interpreting the observed data. The model also gives direction for relevant questions on phenomena and point out solution to practical problems. To describe the relationship of concepts in this, general theory by ‘Ludwig Von Bertalanffy’ has been utilized.

- General system theory serves as a model for viewing people as interacting with the environment. A system consists of set of interacting components within a boundary that filters the type and rate of exchange with the environment. A system consists of bothstructural and functional components. A structure refers to the arrangement of the facts at a given time. Function is the process of continuous change in the system as matter; energy and information are exchanged with the environment.
- All living systems are open in that there is continual exchange of matter, energy and information with the environment from which the system have varying degrees of interaction with the system receive input and gives back output in the form of matter, energy and information. The universe consists of hierarchy of systems (supra system, system and subsystem), and each system may be viewed as having one or more supra systems and subsystem.
- The system uses the input, through self-regulation to maintain the system's equilibrium or homeostasis. Some types of input are used immediately in their original state, where as others require complex transformation (process) for use. Matter, energy and information are continuously processed through the system and released as output. After processing input, the system returns output (matter, energy and information) to the environment in an altered state, affecting the environment.
- The feedback information of environment response to the system's output is used by the system in adjustment, correction and accommodation to interaction with the environment. Feedback may be positive negative or neutral.
- Through dynamic interaction with the environment, the system exchanges information in different forms such as verbal and nonverbal communication, visualization, taste, smell and touch.
- The present study aims at determinine

  "**A study to assess the effectiveness of SIM on Integrated Vector Management Programme among community health workers in a selected community area at Bengaluru**."

  The frame of present study is based on system model.

This model consists of three phases, input, process and output.

Input: It refers to the learner or target group with their characteristics, level of knowledge and competence, learning needs and interest. In this study input includes, staff nurses and their variables like age, religion, monthly income, educational status, occupational status, type of family etc

Process: It refers to the different operational procedures in the overall programme implementation and includes the factors that facilitate or block the implementation of various stages of programme development. In the present study, process refers to the assessment of knowledge of community health workers regarding integrated vector management by SIM, its administration and taking pre-test and post- test scores.

Output: it refers to the ultimate results that are expected following the programme implementation. Change is a feature of the process that is observable and measurable as output, which should be different from that which is entered into the system input. In this study, the output measures the gain in knowledge by comparing the mean post test scores withmean pre-test scores.

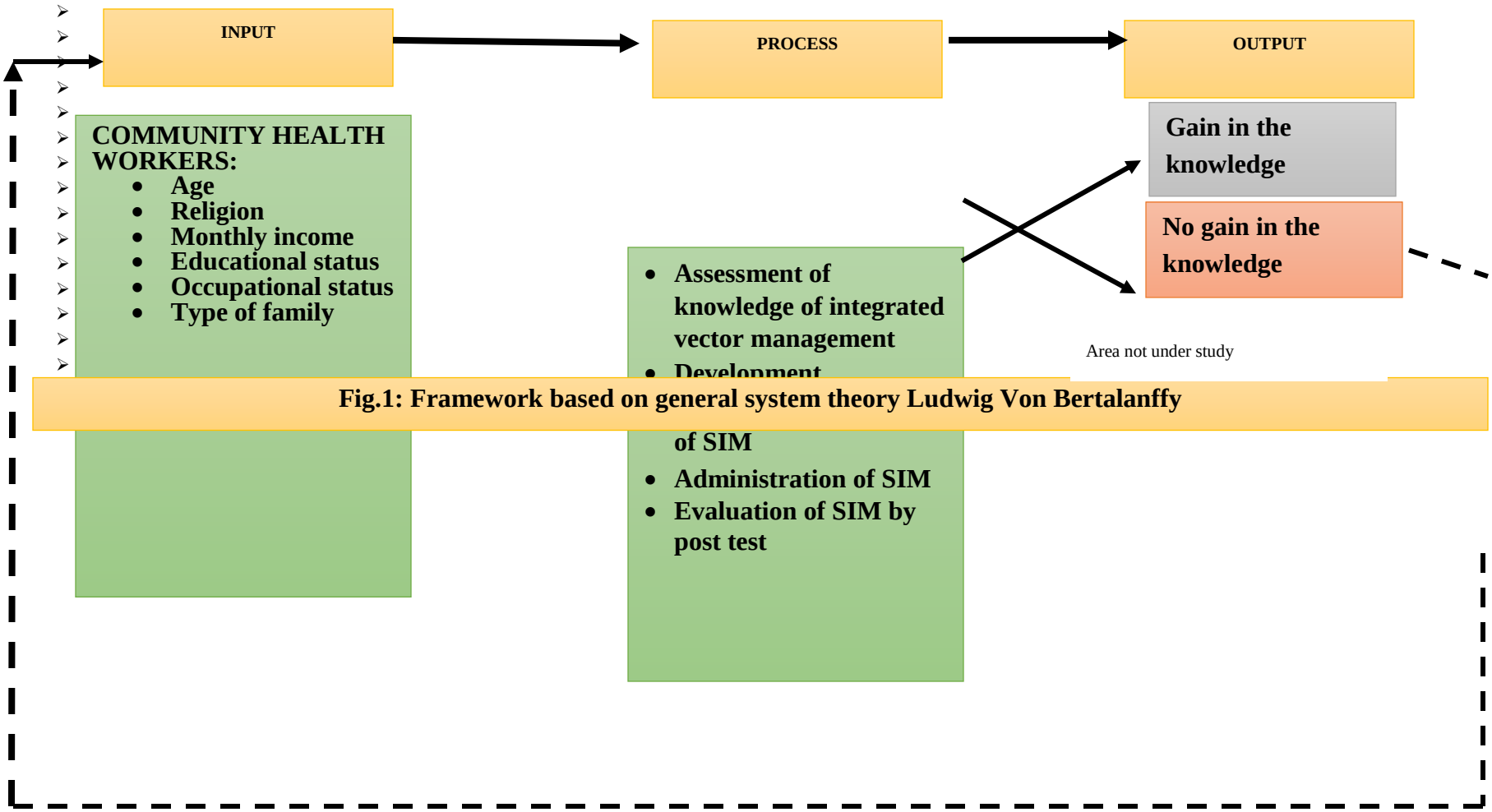


Fig.1: Framework based on general system theory Ludwig Von Bertalanffy

Summary

This chapter has dealt with the objectives of the study, operational definitions, assumptions, hypothesis, and conceptual frame work adopted for this study, delimitations, and scope of the study. The next chapter explains the review of literature undertaken to lay a strong foundation for this study.

RESEARCH METHODOLOGY

Research methodology deals with systematic steps involved in solving the research problem.itt describes various steps that are generally adopted by the researcher in studying the research problem, along with the logic behind them.

Research methodology includes research design, approach, setting, population, sample, sampling technique, selection and description of the tool, pilot study, and method of data collection and plan for data analysis.

Research Approach

Research approach is a systematic, controlled empirical and critical investigation of natural phenomena guided by theory and hypothesis about presumed relations among the phenomena. [(32)] The research approach used for this study was an evaluative approach.

Evaluative research is an applied form of research that deals with the question how well the programme is meeting the objectives. Its goal is to asses or evaluates the success of the programme. The traditional strategy for the conduct of evaluative research consists of four broad phases

- Determining the objectives of theprogramme
- Developing a means of measuring the attainment of thoseobjectives
- Collecting thedata
- Interpreting the data in terms of theobjectives

An evaluation can use in an experimental design, quasi-experimental design or non- experimental design

Evaluative approach was considered to be the most appropriate in assessing knowledge gained in respect to the programme objectives after administration of SIM. Hence considering the nature of the problem selected for the study and the objectives to be accomplished, evaluative approach was considered to be appropriate for the study.

Research Design

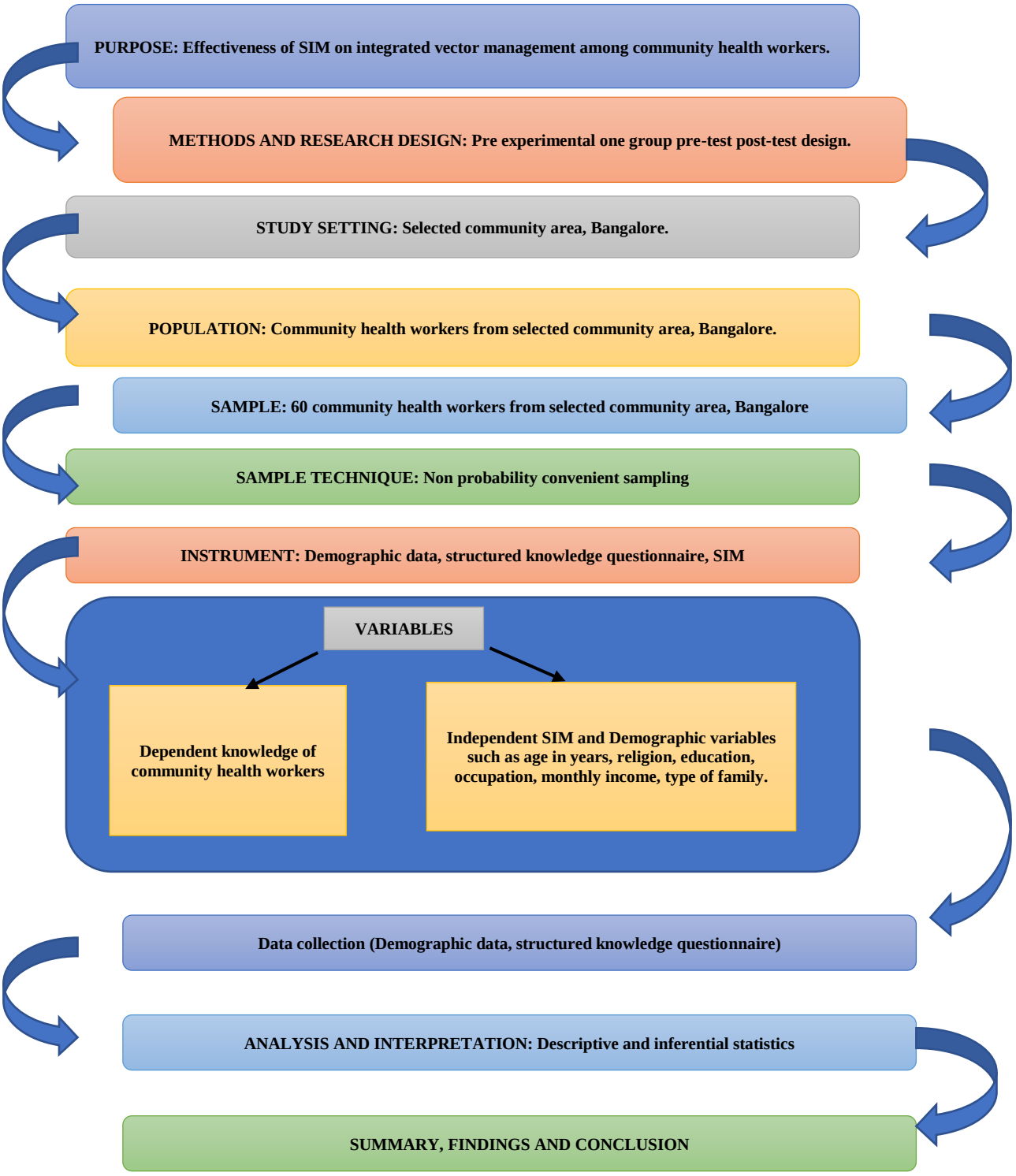
The research design is the overall plan for obtaining answers to the question being studied and for handling some of the difficulties encountered during the research process.

Research design provides backbone structure of the research study. It determines how the study will be organized and the data will be collected and when intervention if any, are to be implemented.

One group pre-test post-test pre experimental design judges the effects of the treatment by the

differences between the pre-test and post-test scores without comparing with a control group.

In this study one group pretest and posttest pre experimental design was used to assess the effectiveness of SIM on knowledge regarding integrated vector management among community health workers in selected community areas, Bangalore.



In figure 2 shows that before SIM, pre-test was given to assess the existing knowledge of community health workers regarding integrated vector management, by using a structured knowledge questionnaire respectively. Post-test was done one week later following the SIM. This was done with the intention of assessing the retention of the knowledge gained and improvement of the practice. The design is systematically represented above.

Setting

Setting is a physical location in which data collection takes place in a study. The present study was conducted in selected community area in Bangalore.

Variable

Research variables are concepts at various levels of abstraction that are measured, manipulated and controlled in the study.

Independent variable: The variables, which can be purposely manipulated or changed by the researcher.

In this study, the SIM on integrated vector management of community health workers is the independent variable.

Dependent variable: Change occurring as a result of manipulation of independent variable.

In the present study, the dependent variable is the knowledge of community health workers regarding integrated vector management.

Population

Population can be defined as the entire aggregate of cases that meet a designed set of criteria.

Population can also be defined as the entire group of members, objects or events which have at least one characteristic in common and must be defined specifically and unambiguously.

The population selected for this study comprised of community health workers from selected community area, Bangalore.

Sampling Technique

Sampling is the process of selecting a group of people, events or portion of the population represents the entire population of community health workers from selected community area, Bangalore were selected by using the convenient sampling technique from the selected community.

Sample and Sample Size

A sample is a subset or portion that has been selected to represent the population of interest. In the present study sample comprised of 60 community health workers from selected community area, Bangalore.

Sampling Criteria

Inclusion criteria

The study includes community health workers who:

- are available at the time of data collection at selected community areas.
- can communicate freely in English.
- are willing to participate in the study.

Exclusion criteria

The study excludes community health workers who are:

- participated in pilot study
- health professionals
- mentally challenged
- attended any training programme regarding integrated vector management of community health workers.

Development of the tool

Data collection tools are the procedures or instruments used by the researcher to observe or measure key variables in the research problem. Structured knowledge questionnaire was used to assess the knowledge of community health workers regarding integrated vector management. SIM was also used. The following steps were carried out in the preparation of the tool.

- Literaturereview
- Preparation of blueprint
- Formulation of conceptualframework
- Preparation of SIM andtool
- Discussion withexpert
- Content validity

Literature review

Various text books, journals and websites where reviewed by the researcher to collect the maximum information as per the topic of interest of the research. The information collected was grouped to form the draft of the teaching programme.

Preparation of blue print

A blue print of the item was prepared by the researcher which includes content areas, number of questions in each area and weight age in percentage for each content area.

Formulation of conceptual framework

After reviewing the literature related concepts were amalgamated by using general system theory by Ludwig Von Bertalanffy general system model

Development of SIM.

A SIM was formulated and administered by the researcher on knowledge of community health

workers regarding integrated vector management in selected community area at Bangalore. The sample used for pilot study was excluded in the main study. The following steps were adopted to develop the SIM:

A) Preparation of SIM.

B) Content validity of SIM.

C) Preparation of final draft of SIM

D) Translation of SIM

A) Preparation of SIM:

A first draft of SIM was developed by reviewing related literature, various text books, Journals and website were considered along with the opinion of experts. The main objectives were kept in mind while preparing the SIM.

B) Content validity of SIM:

Experts in the field of medicine and nursing were suggested to validate the SIM based on criteria checklist and to give suggestions on the relevancy and adequacy of contents. Modifications were done as per the suggestions and advices given by theexperts.

C) Preparation of final draft of SIM:

The final draft of SIM was based on suggestions of the experts and consultation with the guide.

D) Translation of SIM:

The final drafts of SIM prepared after consultation with guide and the same was given for translated to Kannada.

Description of the tool

The tool was organized in two sections. They are

Section –A: demographic data.

Section A consist of demographic variables of community health workers such as age, religion, monthly income, educational status, occupational status, type of family.

Section- B: Knowledge items regarding integrated vector management. It is divided in to 2 parts

Part -1 Knowledge on causes of integrated vector management

Part -2 Knowledge on prevention of integrated vector management

TOTAL-30 items

Discussion with expert's Necessary guidance and suggestions were obtained from the subject experts and guide modification was made accordingly.

Validity

Validity refers to the degree at which an instrument measures what it is intended to measure.

Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study. The content validity of the tool was obtained on the basis of opinion from, physician and five experts from the field of community health nursing for establishing content validity and from one statistician. According to their suggestions, the items were modified and necessary corrections weremade.

Pilot study

Pilot study is a small-scale version or trial run of the major study. The function of this pilot study was to obtain information for improving the project or for assessing its feasibility. After obtaining permission from the concerned authority a pilot study was conducted during February 2020. Six community health workers were selected from Narayanapura. On the first day of pilot study, the investigator approached community health workers and get individual consent. During pretest, structured knowledge questionnaire was administered to assess the demographic variables and knowledge regarding integrated vector management. After pretest, SIM on integrated vector management was implemented. Post test was conducted by using the same structured knowledge questionnaire. After pilot study no modification were done.

Reliability of the tool

Reliability denotes the degree of consistency of the tool. After validation the tools were subjected to test for its reliability. The structured knowledge questionnaire and SIM was administered to six community health workers from community area. The sample used for checking reliability was excluded in the main study. The reliability was established using split- half method. The reliability score obtained was r=0.88, which showed that the tool was reliable for conducting the study.

Scoring key

Coding was done for section A. For section B, one mark was awarded for correct answers and zero mark for wrong answers in all parts. The maximum score of the tool was 30. The scores were allotted under knowledge aspect to interpret the level of knowledge and were distributed as follows:

Adequate	:	23-30 (75 -100 %)
Moderate	:	15- 22 (50 -74 %)
Inadequate	:	01 - 14 (1 -49 %)

Data collection procedure

After obtaining written permission from the concerned authority of PHC, Narayanapura. The researcher started the study from February 2020 at Narayanapura. The researcher introduced herself and explained the nature and purpose of the study to the community health workers.

Oral consent was obtained to participate in the study and confidentiality of their responses wasassured. As the part of the study, a pretest was conducted to the group of community health workers in Narayanapura, Bangalore using structured knowledge questionnaire. After pretest, SIM on

knowledge regarding integrated vector management was administered. Doubts were clarified after the teaching session. Post test was conducted with the same structured questionnaire in the same manner as pretest wasconducted.

Plan for data analysis

Plan for data analysis

The data were analyzed in terms of objectives of the study using descriptive and inferential statistics. The plan for data analysis was as follows;

- Data were organized in a mastersheet.
- Frequency and percentage distribution of demographicvariables.
- Range of scores, mean score, standard deviation and mean percentage score for knowledge score.
- Paired 't' test for comparison of pretest and post-test knowledgescores.
- Chi square to find the association between post-test knowledge scores of community health nursing with their selected demographic variables

RESULTS

This chapter deals with the computation of certain measures along with searching for patterns of relationship that exist among data groups. Thus, in the process of analysis, relationships or differences supporting or conflicting with original or new hypotheses should be subjected to statistical tests to indicate any conclusions. The data was collected from 60 community health workers. The collected information was organized, tabulated, analyzed and interpreted by using descriptive and inferential statistics and presented under the following three sections**.**

Objectives of the study

- To assess the knowledge regarding among Integrated Vector Management Programme among community health workers
- To evaluate the effectiveness of SIM on knowledge regarding Integrated Vector Management Programme among community health workers
- To find out the association between pre-test knowledge scores regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

Research hypotheses

H1. There will be statistically significant difference between mean pre-test and post-test knowledge regarding Integrated Vector Management Programme among community health workers

H2. There will be significant association between the pre-test knowledge score regarding regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

Presentation of The Data:

To begin with, the data was entered in a master sheet for tabulation and statistical processing. The analysis of the data is organized and presented under following three sections:

Section I: Distribution of socio demographic variables

Section II: Determination of knowledge regarding integrated vector management.

Section III: Findings related to the association between socio-demographic variables and the knowledge levels of community health workers regarding integrated vector management.

Section I: Distribution of socio-demographic variables

Distribution of socio demographic variable such as age, religion, educational status, occupational status, monthly income, type of family.

Table.1

Frequency and percentage distribution of community health workers according to their age in years

N=60

Sl.no:	**Age in years**	**Frequency(f)**	**Percentage (%)**
1.	25-30	21	35.00
2.	31-35	19	31.67
3.	36-40	15	25.00
4.	41-45	5	8.33
	Total	**60**	**100.00**

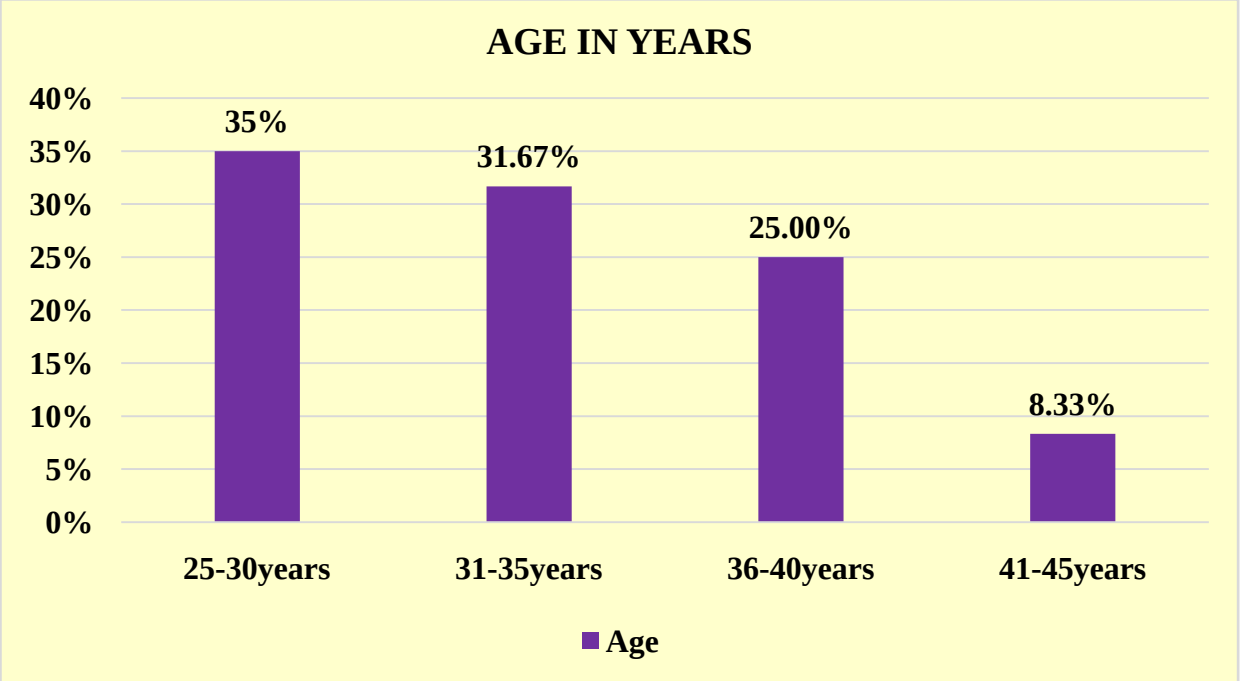


Fig.3: Percentage distribution of community health workers according to their age in years

The data presented in the table 1 and figure 3 reveals the distribution of age in years of community health workers. The results shows that 21 (35%) of community health workers were between the age group of 25-30 years, 19(31.67%) were between the age group of 31-35 years, 15(25%) were between the age of 36-40 years and 5(8.33%)were between the age of41-45 years. Hence it can be interpreted that majority of the community health workers 21(35%) were between the age of 25-30years.

Table.2

Frequency and percentage distribution of community health workers according to their religion

N=60

Sl. No:	**Religion**	**Frequency(f)**	**Percentage(%)**
1.	Hindus	38	63.33
2.	Muslims	16	26.67
3.	Christians	6	10.00
Total		**60**	**100.00**

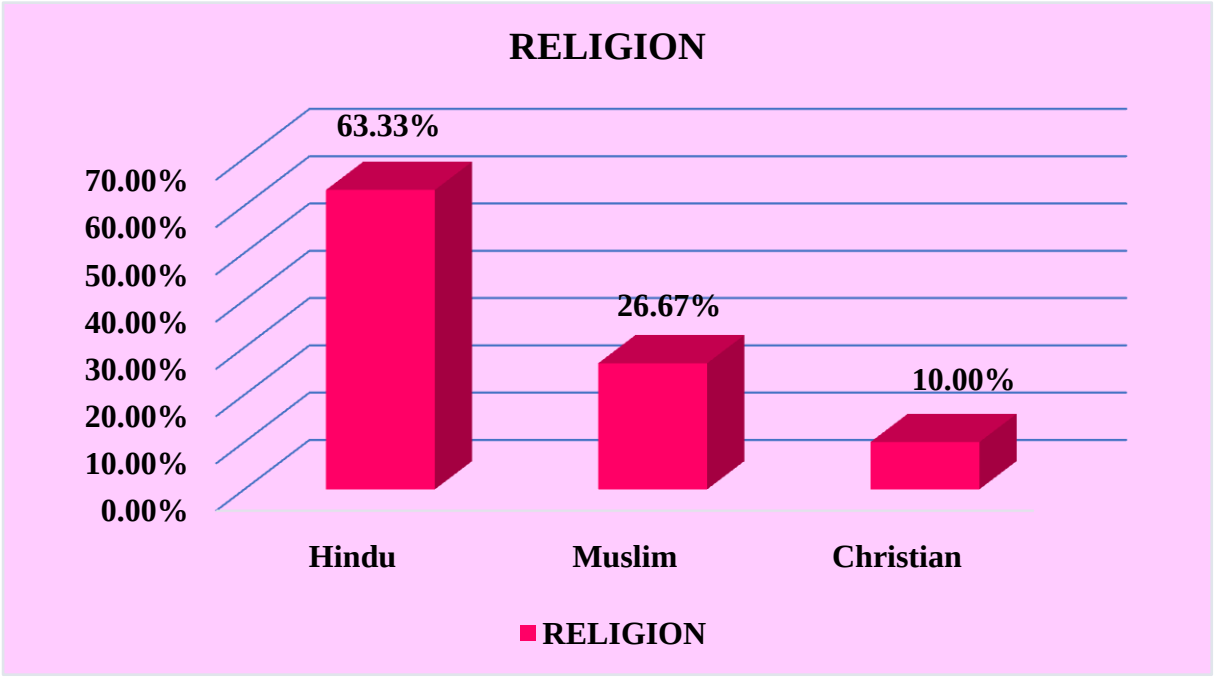


Fig.4: Percentage distribution of community health workers according to theirreligion

The data presented in table 2 and figure 4 explains the percentage distribution of community health workers according to their religion. The data shows that 38(63.33 %) of community health workers were Hindus, 16(26.67%) were Muslims, 6(10.00%) of the community health workers were Christians respectively. Hence it can be interpreted that majority of the communityhealtorkers38(63.33%)wereH

ble.3

Frequency and percentage distribution of community health workers according to their educational status

N=60

Sl No:	Educational status	Frequency(f)	Percentage(%)
1.	Formal education	22	36.67
2.	Primary education	18	30.00
3.	Secondary level	15	25.00
4.	Higher Secondary education	02	03.33
5.	Graduate	03	05.00
Total		**60**	**100.00**

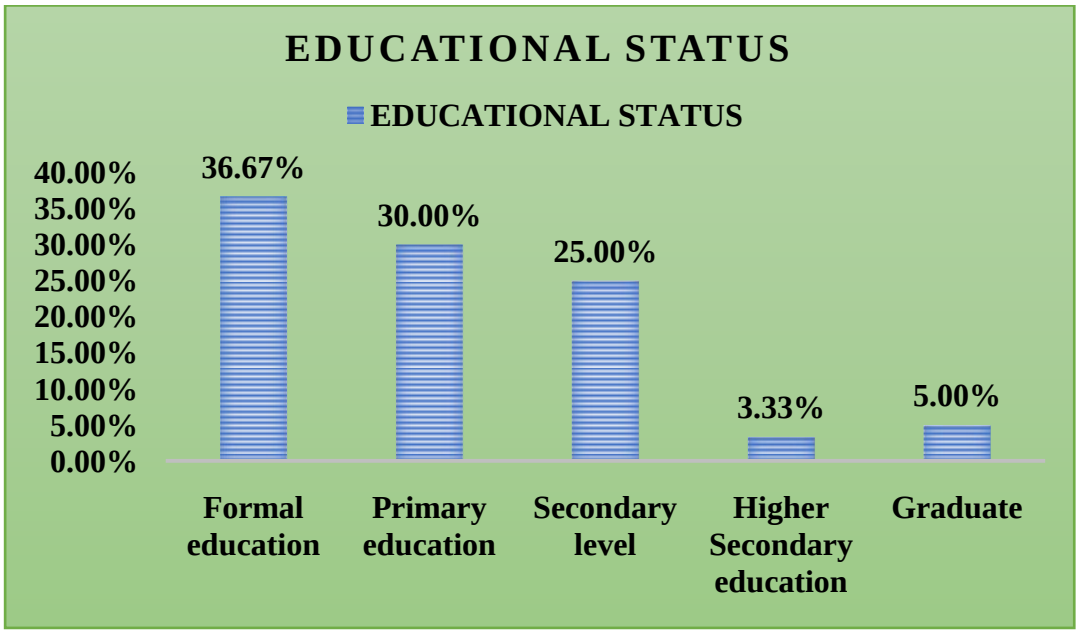


Fig.5: Percentage distribution of community health workers according to their educational status.

The data presented in table 3 and figure 5 reveals the distribution of community health workers according to their educational status. It shows that 22 (36.67%) community health workers had formal education, 18 (30.00%) had primary education, 15(25.00%) had secondary level education, 2 (3.33%) had higher secondary level education, 3 (5.00) community health workers were graduates respectively. Hence it can be interpreted the most of the community

health workers 22(36.67%) had formal education.

Table.4

Frequency and percentage distribution of community health workers according to their occupation

Sl.No	Occupation	Frequency(f)	Percentage(%)
1.	Asha workers	25	41.67
2.	Health visitors	18	30.00
3.	Anganwadi workers	15	25.00
4.	ANMS	02	03.33
Total		**60**	**100.00**

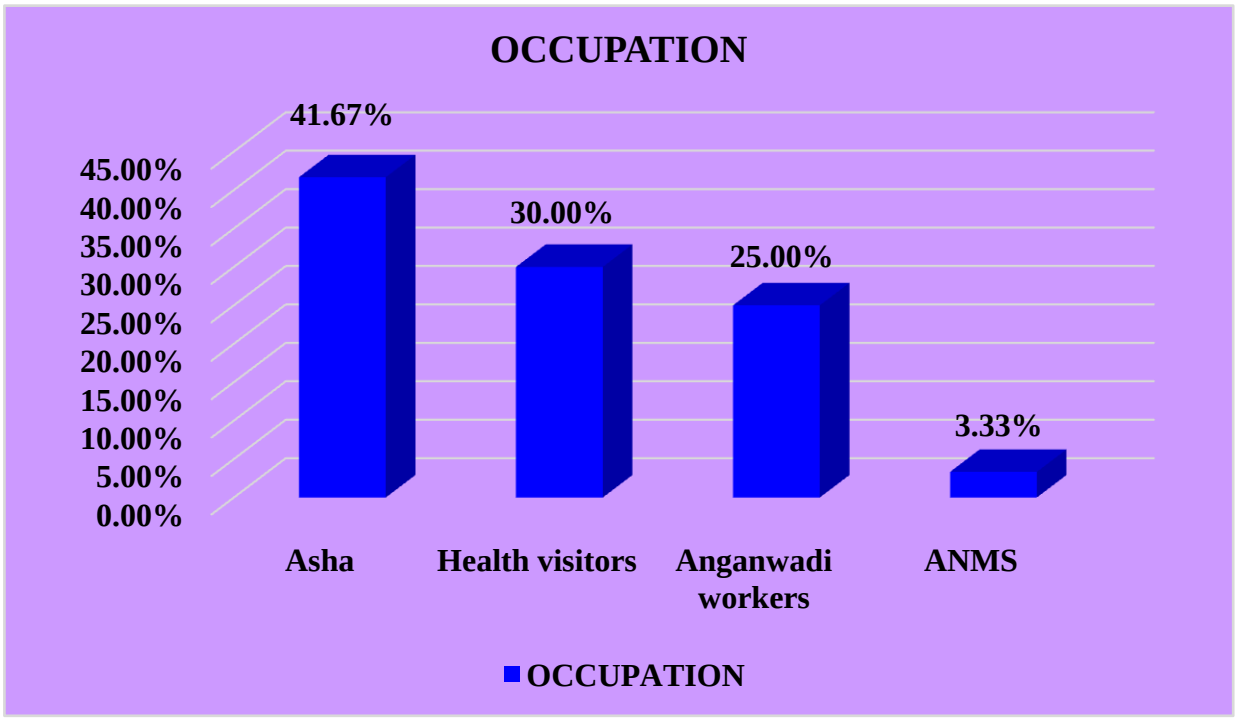


Fig.6: Percentage distribution of the community health workers according to their occupation

The above table 4 and figure 6 indicates the frequency and percentage distribution of community health workers according to their occupation. Considering occupation 25(41.67%) community health workers were Asha workers, 18(30.00%) were Health

visitors,15(25.00%)were Anganwadi workers and only 2(3.33%) were ANMS respectively. Hence it can be interpreted that the majority of the community health workers 25(41.67%)were Ashaworkers.

Table.5

Frequency and percentage distribution of community health workers according to their family monthly income.

N=60

Sl.No	**Monthly income**	**Frequency (f)**	**Percentage (%)**
1.	≤Rs.6000	04	06.66
2.	Rs.6001-Rs.8000	13	21.67
3.	Rs.8001- Rs. 10,000	30	50.00
4.	≥Rs.10,001	13	21.67
Total		**60**	**100.00**

Fig.7: Percentage distribution of community health workers according to the monthly income of the family (in Rs)

The data presented in the table 5 and figure7 depicts the frequency and percentage distribution of community health workers according to the monthly income of the family. It was analyzed that 4(6.66%)of the community health workers had a family income up to 6000 per month,13 (21.67%) community health workers having family income between Rs 6001-8000, 30(50.00%) community health workers having the monthly income between,Rs.8,001 – Rs.10,000 per month,13(21.67%) community health workers having family income 10,001 and above respectively.

Hence it can be interpreted that majority of the community health workers 30(50.00%) had monthly income of Rs. 80001-Rs.10,000 per month.

Table.6

Frequency and percentage distribution of community health workers according to the type of family.

N=60

Sl. No	Type of family	Frequency (f)	Percentage(%)
1.	Nuclear family	13	21.67
2.	Joint family	36	60.00
3.	Extended family	10	16.67
4.	Single parent family	01	01.66
	TOTAL	**60**	**100**

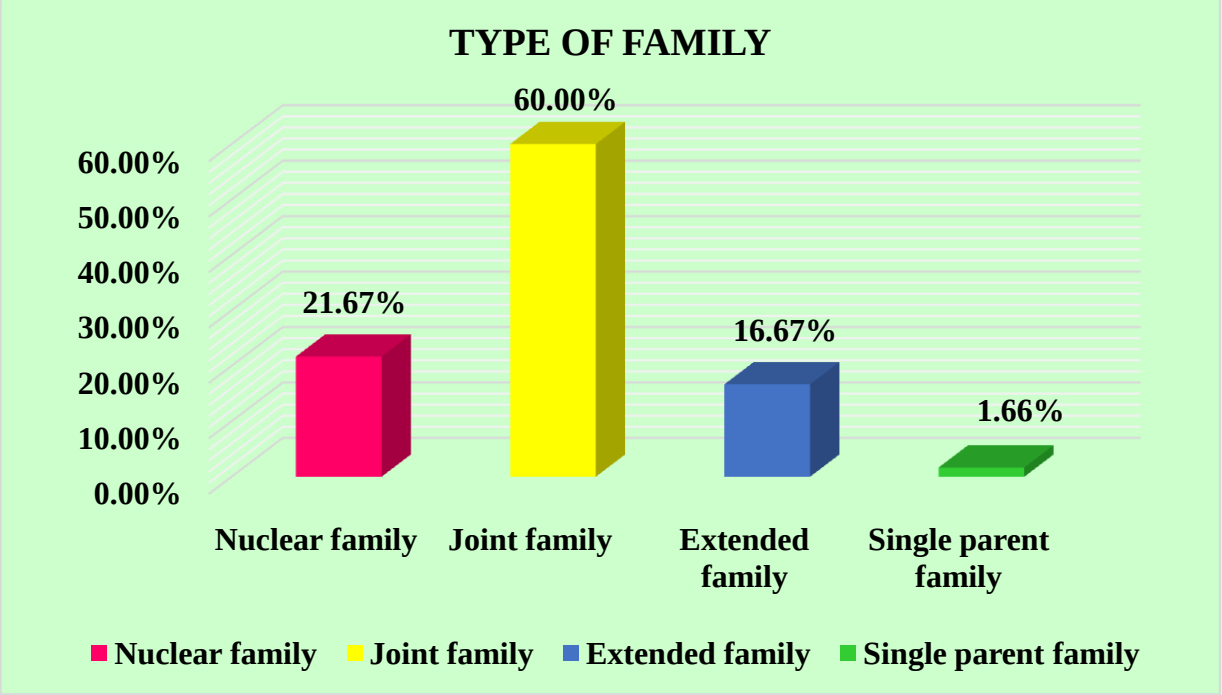


Fig.8: Percentage distribution of community health workers according to the type of family.

The above table6 and figure 8 shows the frequency and percentage distribution of community health workers according to the type of family. With regard to type of family ,13(21.67%)

community health workers belongs to nuclear family, 36(60.00%) community health workers belongs to joint family ,10(16.67%) community health workers belongs to extended family and only one(1.66%) community health workers belongs to single parent familyrespectively.

Hence it can be interpreted that majority of community health workers 36(60.00%) belonged to nuclear family.

Section II: Assessment of pretest knowledge scores of community health nursing regarding Integrated vector management

Table.7: Frequency and percentage distribution of pre-test knowledge of community health workers regarding Integrated vector management

N=60

Knowledge level	No of community health workers (%)		Score
	frequency (f)	Percentage (%)	
Inadequate	48	80%	<49%
Moderate	12	20%	50%-74%
Adequate	0	0	>75%
TOTAL	**60**	**100**	

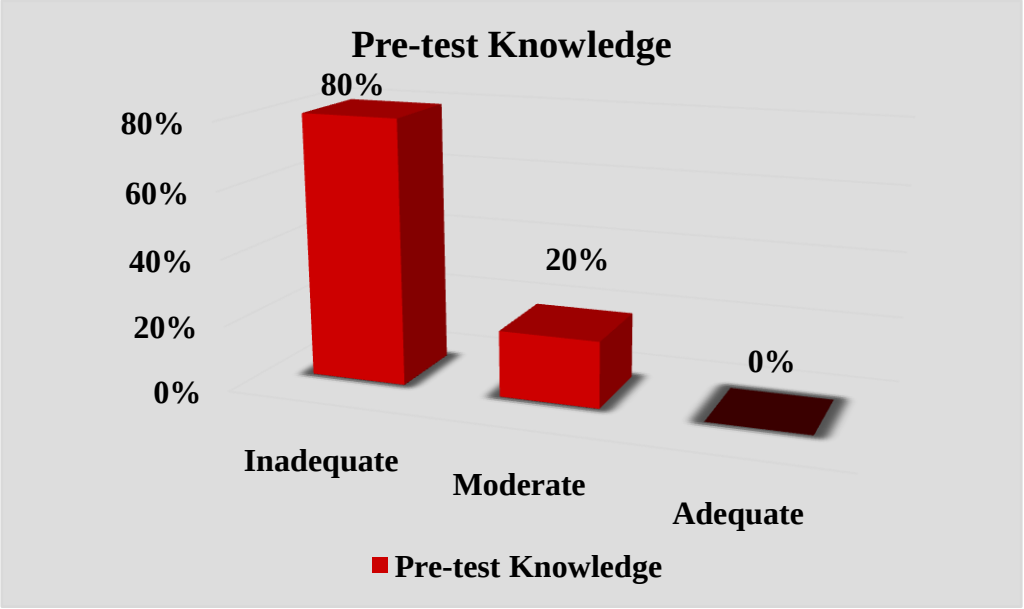


Fig.9: Percentage distribution of pre-test knowledge scores of community health workers regarding integrated vector management.

The above table 7 and figure 9 shows the distribution of pretest knowledge scores regarding integrated vector management.It revealed that in pre-test, level of knowledge regarding integrated vector management inmajority of the community health workers 48(80%) had inadequate knowledge and 12(20%)community health workers had moderate knowledge regarding integrated vector management.

Table.8

Distribution of Range, Mean, Standard deviation and Mean percentage score of pretest knowledge scores regarding integrated vector management.

N=60

SL. NO	**Aspects wise knowledge assessment**	**Max Statement**	**Score**	**Mean**	**SD**	**Mean%**
1	Knowledge on integrated vector management	7	7	2.18	1.03	31.14
2	Prevention of integrated vector disease	23	23	4.48	2.65	19.48
	Overall	**30**	**30**	**6.66**	**3.23**	**22.2**

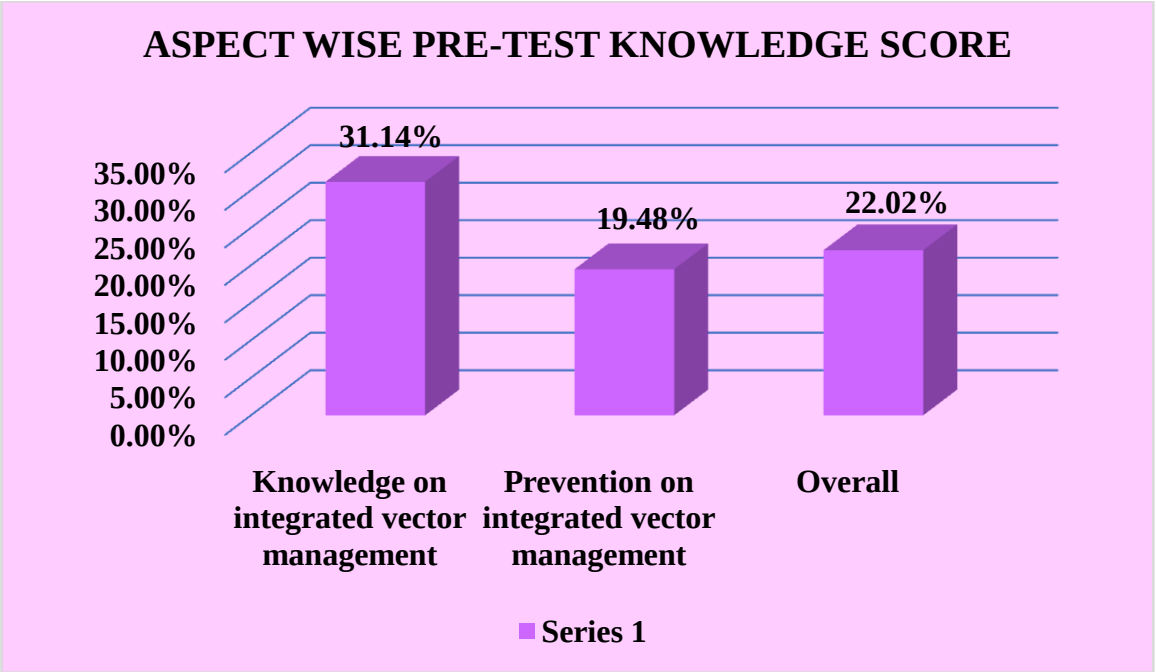


Fig.10: Mean percentage score distribution of pretest knowledge scores.

The above table 8 and figure 10, shows the range, mean, standard deviation and mean percentage score of the pre-test knowledge regarding integrated vector management among community health workers. On determining knowledge regarding integrated vector management, with the maximum score of 7, the mean score was 2.18 with SD of 1.03 and the mean percentage was 31.14.

On assessing the knowledge regarding integrated vector management, with the maximum score of 23, the mean score was 4.48 with SD of 2.65 and the mean percentage was 19.48.

On an overall, pre-test knowledge regarding integrated vector management, with the maximum score 30, the mean was 6.66 with SD 3.23 and mean percentage of 22.2. The data showed that there was no sufficient knowledge in most of the aspects.

Section III: Assessment of post-test knowledge scores regarding the integrated vector management on community health workers

Table.9: Frequency and percentage distribution of post-test knowledge scores regarding integrated vector management on community health workers.

N=60

Knowledge level	No. of urban community health workers		Score (%)
	Frequency(f)	Percentage (%)	
Inadequate	0	0.00	<49%
Moderate	24	40%	50%-74%
Adequate	36	60%	>75%
Total	**60**	**100.00**	

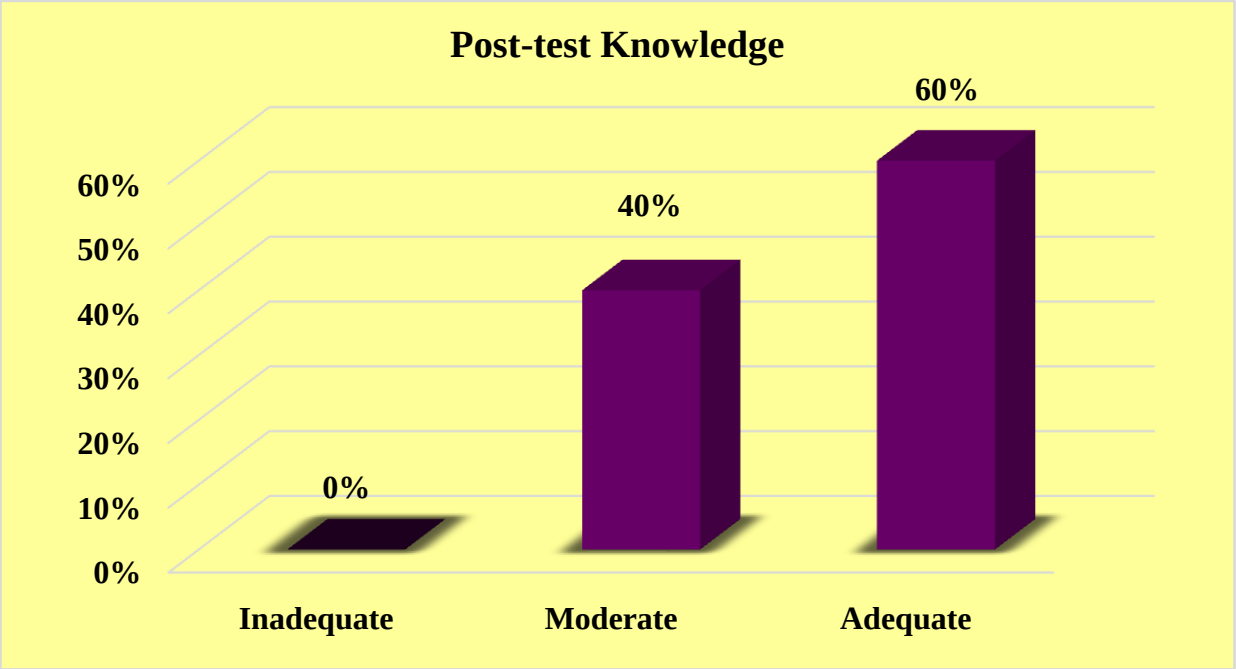


Fig.11: Percentage distribution of post-test knowledge scores regarding integrated vector management among community health workers

The above table 9 and figure 11 represents distribution of post-test knowledge regarding integrated vector management among community health workers

It revealed that in post-test, majority of the community health workers 24 (40%) had moderate level of knowledge and 36(60%) had adequate level of knowledge regarding integrated vector management. None of them had inadequate knowledge regarding integrated vector management.

Table.10

Distribution of Range, Mean, Standard deviation and Mean percentage scores of post-test knowledge regarding integrated vector management among community health workers.

N = 60

Sl. No	**Aspects wise knowledge**	**Max Statement**	**Score**	**Mean**	**SD**	**Mean%**
1	Knowledge on integrated vector management	7	7	6.15	0.84	87.85
2	Prevention of integrated vector disease	23	23	17.25	2.56	75
	Overall	**30**	**30**	**23.51**	**3.02**	**78.4**

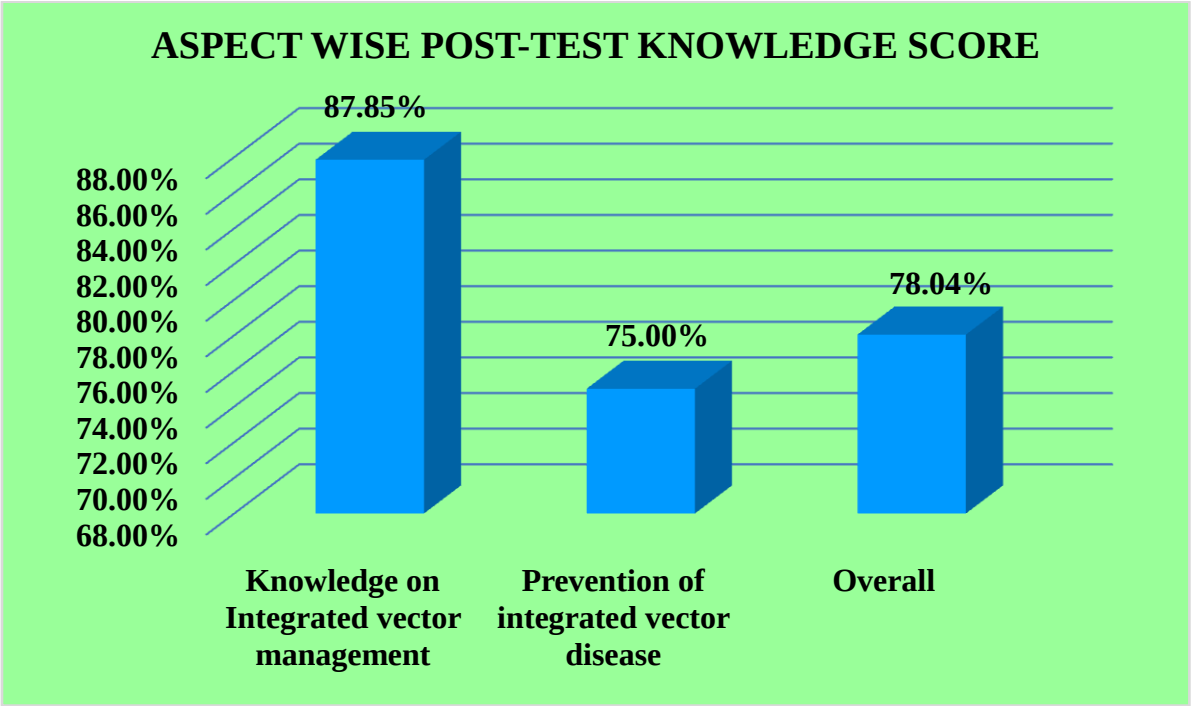


Fig.12: Mean percentage score distribution of post-test knowledge scores regarding the integrated vector management.

The tables 10 and figure 12 shows the range, mean, standard deviation and mean percentage score of post-test knowledge regarding the integrated vector management on community health workers

On assessing the knowledge regarding integrated vector management, with the maximum score of 7, the mean score was 6.15 with SD of 0.84 and the mean percentage was 87.85.

In context with knowledge on knowledge regarding prevention of integrated vector disease, with the maximum score of 23, the mean score was 17.25 with SD of 2.56 and the mean percentage was 75

On an overall, pre-test knowledge regarding prevention of integrated vector disease, with the maximum score of 30, mean was 23.51 with a standard deviation of 3.02 and mean percentage of 78.36

Section IV: Assessment of the knowledge scores of SIM on knowledge regarding integrated vector management among community health workers

Table.11: Pre and post-test knowledge scores regarding integrated vector management among community health workers

N=60

Knowledge level	Pre test		Post test		Score
	f	%	f	%	
Inadequate	48	80.0	0	0.00	<49%
Moderate	12	20.0	24	40.00	50%-74%
Adequate	0	0.00	36	60.00	>75%
Total	**60**	**100**	**60**	**100**	

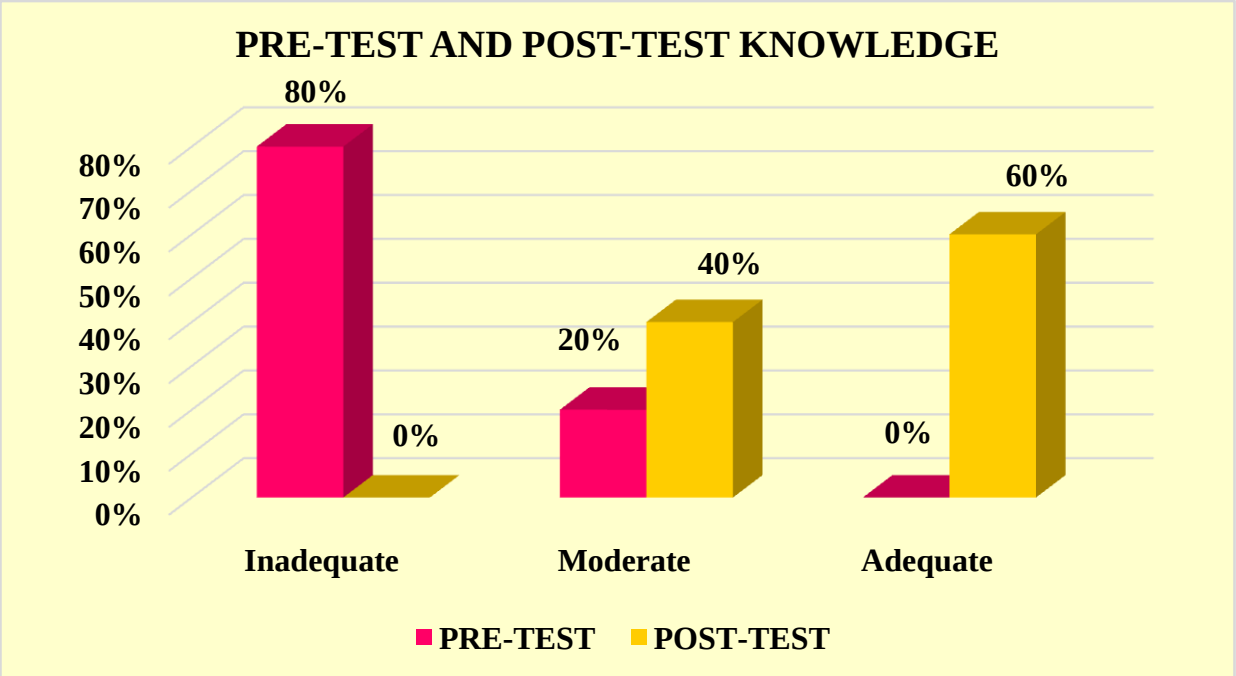


Fig.13: Distribution of pretest and post-test knowledge scores regarding integrated vector management.

The data presents in the table 11 and figure 13 describes the pretest and post-test knowledge scores regarding integrated vector management among community health workers. The majority 42(80.00%) of the community health workers had inadequate knowledge, 12(20.00%) had moderate knowledge and none of them had adequate level of knowledge in the pre test phase. After post test majority 24(40%) of community health workers had moderate knowledge, 36(60%) community health workers had adequate knowledge and none of them have inadequate level of knowledge regarding the integrated vector management.

Hence it can be interpreted that there was a marked gain in the knowledge regarding integrated vector management among community health workers, after the administration of SIM.

Table.12

Aspect wise standard deviation and mean percentage of pre and post-test knowledge scores regarding integrated vector management among community health workers.

N=60

Sl.**no**	**Aspects wise knowledge**	**Knowledge of community health workers**					
		Pre test			**Post test**		
		Mean	**SD**	**Mean%**	**Mean**	**SD**	**Mean%**
1	Knowledge on integrated vector management	2.18	1.03	31.14	6.15	0.84	87.85
2	Prevention of integrated vector disease	4.48	2.65	19.48	17.25	2.56	75.00
Overall		**6.66**	**3.23**	**22.2**	**23.51**	**3.02**	**78.36**

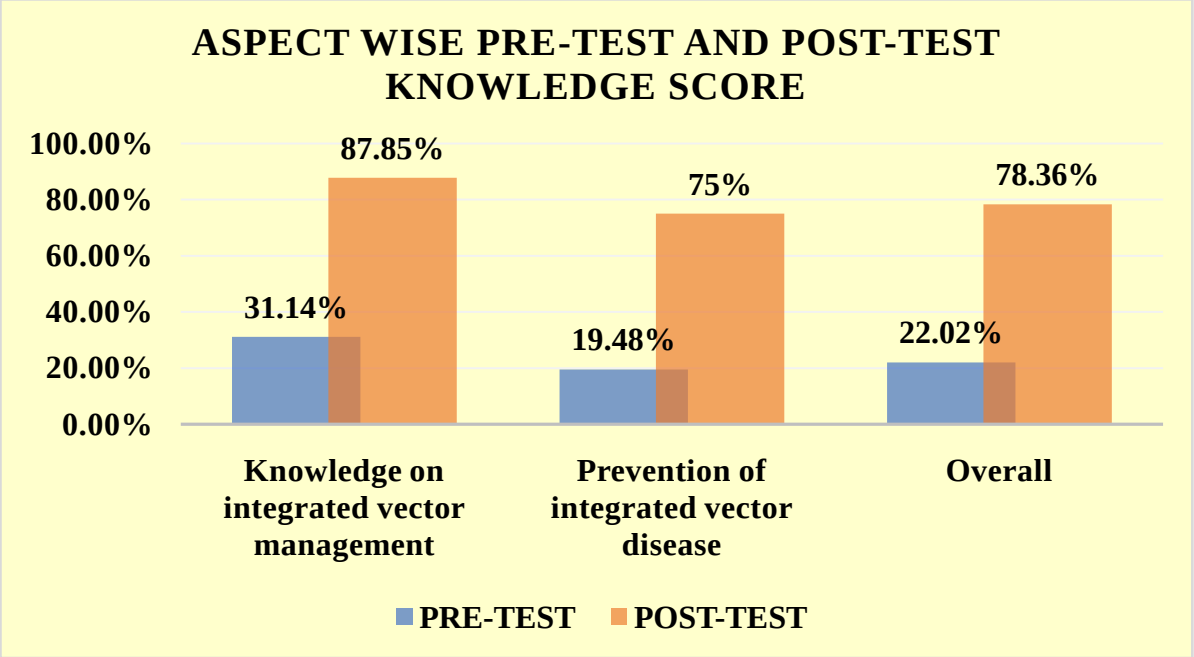


Fig.14: Distribution of aspect wise mean% of pre-test and post-test knowledge scores among community health workers.

The above table 12 and figure 14 shows mean, standard deviation and mean percentage score in pre-test and post-test and the gain in knowledge regarding integrated vector management among community health workers.

In point of view to the knowledge regarding integrated vector management among community health workers, the mean score was found to be 2.18 in pre test, 6.15 in post test, with standard deviation of 1.03 in pre test and 0.84 in post test, the mean percentage score was 31.14 % in pre test, 87.85% in post test.

With respect to the knowledge about knowledge regarding integrated vector management, the mean score was found to be 4.48 in pre test, 17.25 in post test, with standard deviation of 2.65 in pre test, 2.56 in post test and mean percentage score was 19.48% in pre test, 75 % in post test.

On identifying the overall knowledge regarding integrated vector management, the mean score was found to be 6.66 in pre test, 23.51 in post test, with standard deviation of 3.23 in pretest and 3.02 in post test, the mean percentage score was 22.2% in pre test, 78.36% in post test.

Table.13

Pre and post-test knowledge scores regarding integrated vector management among community health workers using paired 't' test.

N=60

Knowledge	**Max score**	**Pre test**		**Post test**		**Paired t value P < 0.05**
		Mean	**SD**	**Mean**	**SD**	
Knowledge on integrated vector management	7	2.18	1.03	6.15	0.84	22.9* 59 df
Prevention of integrated vector disease	23	4.48	2.65	17.25	2.56	23.6* 59 df
Overall	**30**	**6.66**	**3.23**	**23.51**	**3.02**	**26.9* 59 df**

**NOTE: ***significance at 0.05 level for 59df tab value 1.67 (i.e., P<0.05)

The above table 13 represents the comparison of the mean, standard deviation of pre test and post test knowledge and paired't' test value integrated vector management among community health workers.

On determining the knowledge regarding integrated vector management, out of maximum score of 7, the mean score was 2.18 in pre test and 6.15 in post test, with SD of 1.03 in pre test and 0.84 in post test and the paired 't' test value was 22.9 at the level of P< 0.05.

In perspective of knowledge regarding prevention of integrated vector disease, out of maximum score of 23, the mean score was 4.48 in pre test and 17.25 in post test, with SD of 2.65 in pre test and 2.56 in post test and the paired't' test value was 23.6 at the level of P<0.05.

On an overall, gain in knowledge regarding prevention of integrated vector disease, out of maximum score of 30, the mean score was 6.66 in pre test, 23.51 in post test, with SD of 3.23 in pre test, 3.02 in post test, and the paired 't' test value was 26.9 at the level of $P<0.05$.

The paired t' test was carried to examine the difference in the knowledge level, it was found invariably significant at $p<0.05$ level. Hence the research hypothesis H_1 was accepted and it is evident that the SIM is significantly effective in improving the knowledge of community health workers regarding integrated vector management.

Hypothesis testing

On identifying the effectiveness of SIM on knowledge regarding integrated vector management among community health workers, the following research hypothesis was formulated.

HypothesisH_1: There will be a significant difference between the pre test and post testknowledge scores regarding integrated vector management among community health workers.

The results of significance presented in table 4.3 shows difference between the mean pre test and post test knowledge regarding integrated vector management among community health workers.

Section-V: Association between demographic variables with post-test knowledge regarding integrated vector management among community health workers.

Table.14: Determination of association between post-test knowledge scores and the selected demographic variables of community health workers such as age in years, religion, education, occupation, monthly income, and type of family.

N=60

SL.NO	DEMOGRAPHIC VARIABLES	f	%	CHI-SQUARE
1	Age in years			Df 3 0.911$^{N.S}$ (Table value 7.82)
	a) 30-35	21	35%	
	b) 36-40	19	31.66%	
	c) 41-45	15	25%	
	d) 46-50	5	8.33%	
2	Religion			Df 2 2.73$^{N.S}$ (Table value 95.991)
	a) Hindus	38	63.33%	
	b) Muslims	16	26.66%	
	c) Christians	6	10%	
3	Educational status			Df 4 6.67$^{N.S}$ (Table value 9.488)
	a) Formal education	22	36.66%	
	b) Primary education	18	30%	
	c) Secondary education	15	25%	
	d) Higher secondary education	02	3.33%	
	e) Graduate	03	5%	
4	Occupation			Df 3 1.62$^{N.S}$(Table value 7.82)
	a) Asha workers	28	46.67%	
	b) Health visitors	18	30%	
	c) Anganwadi workers	15	25%	
	d) ANMS	02	3.33%	
5	Monthly income of the family			Df 3 2.29$^{N.S}$ (Table value 7.82)
	a) Rs.6000	28	6.67%	
	b) Rs. 6001-8000	18	21.67%	
	c) Rs.8001-10000	15	50%	
	d) Rs.10000 and above	02	21.66%	
6	Type of family			Df 3 3.13$^{N.S}$ (Table value 7.815)
	➢ Nuclear family	8	13.33	
	➢ Joint family	19	31.66	
	➢ Extended family	8	13.33	
	➢ Single parent family	01	1.66	

N.S- Not Significant atp>0.05 S- Significant cant at P< 0.05level

The data presented in the table determines the association between knowledge regarding integrated vector management among community health workers with selected demographic variables such as age in years, religion and type of family. It was analyzed by chi- square test, which revealed that there was no significant association between knowledge and the selected demographic variable age, religion, educational status, occupation, monthly income, type of family. The obtained $\chi 2$valueswere0.911,2.73,6.67,1.62,2.29,7.12,3.13,2.04and2respectively.Itis less than the table value 7.815, 5.991, 9.488, 7.815, 5.991, 3.84, respectively so it is not significant.

Hypothesis testing

In order to identify the association between demographic variable and knowledge regarding integrated vector management among community health workers, the following hypothesis was formulated

Hypothesis H_2: There will be a significant association between knowledge regarding integrated vector management among community health workers with their selected demographicvariables.

Demographic variables like age in years, religion were found to be non-significant in association with knowledge of community health workers at 0.05 level. Age in years, religion, education, type of family, occupation, and monthly income of the family were found to be no statistically significant in association with level of knowledge among community health workers at 0.05 levels. It was evident that there is no statistically significant association between knowledge regarding integrated vector management among community health workers with their selected demographic variables. Hence research hypothesis H_2 was accepted.

DISCUSSION

The present study was undertaken to evaluate the effectiveness of SIM on knowledge regarding integrated vector management among community health workers in selected community area, Bangalore. In order to achieve the objectives of the study, non-probability convenient sampling technique was

used to select the sample and the data was collected from 60 community health workers from community area. This chapter deals with the findings of the study obtained from statistical analysis based on the data of the study, the reviewed literature, hypotheses which were selected for the study and discussed them in relation to similar studies conducted by otherresearchers.

The findings have been organized and discussed according to the objectives:

- Assess the level of knowledge of community health workers regarding integrated vector management.
- Evaluate effectiveness of self-instructional module on knowledge regarding integrated vector management
- Determine the association between the pre-test knowledge of community health workers regarding prevention of integrated vector disease with their selected socio demographic variables.

Distribution of demographic variables of parents of under five children.

- With regard to the age 21(35%) of community health workers belongs to the age group of 21-23 years, 19(31.67%) of them belongs to the age of 24-27 years and 15(25%) belongs to 28-31 years and 5(8.33%) were between the age of 32-35 yearsrespectively.
- In reference to the religion, majority of the community health workers 38(63.33%) were Hindus whereas 16(26.67%) were Muslims and 6(10%) were Christiansrespectively.
- With respect to educational status, 22(36.67%) community health workers had formal education, 18(30%) had primary education, 15(25%) had secondary level education and 3(5%) weregraduates.
- In reference to the occupation, 25(41.67%) community health workers were Asha workers, 18(30.00%) were Health visitors, 15(25%) were Anganwadi workers and 2(3.33%) were ANM’s.
- In reference to the type of family, 13(21.67%) community health workers belongs to nuclear family, 36(60%) community health workers belongs to joint family, 10(16.67) parents belong to extended family and only 1(1.66%) community health workers belongs to single

parent family

- With respect to monthly income of family, 4 (6.66%) community health workers had an income upto Rs 6000, 13(21.67%) community health workers had an income between Rs.6001-8000, 30(50%) had an income between Rs.8001-10000 and 13(21.67%) had an income of 10001 and aboverespectively.

The first objective of the study was to assess the knowledge regarding among Integrated Vector Management Programme among community health workers.

Assessment of pre-test knowledge regarding prevention of integrated vector disease among community health workers

The overall, pre-test knowledge regarding integrated vector management, out of maximum score of 30 mean was 6.66 with a standard deviation of 3.23 and mean percentage of 22.2. the knowledge level distribution showed that majority of the community health workers 42 (80.00%) had inadequate knowledge and 12(20.00%) subjects had moderate knowledge regarding integrated vector management.

The findings indicated that there was inadequate level of knowledge among community health workers which could be due to lack of exposure to information on integrated vector management, so it was necessary for the investigator to improve the knowledge of community health workers by giving SIM on integrated vector management would enable them to gain knowledge.

The finding of the study was conducted on population-based awareness and practices regarding factors associated with lymphatic filarisis in Kerala.A total of 7596 persons participated for study. Even though area was endemic for filarisis only 24% of the people were aware that filarisis is a problem in that area , around 65% knew the fact that the spread of diseases is by mosquito bite. The study concluded that only those who knew about filarisis, its mode of spread and prevention were taking necessary preventive measures. Thus study recommended for health education campaigns to play vital role in creating awareness among the general public.

Assessment of post-test knowledge regarding prevention of integrated vector disease

In post-test, the overall gain in knowledge about integrated vector management was out of maximum score of 30 mean was 23.51 with a standard deviation of 3.02 and mean percentage of 78.37%. The knowledge level distribution showed that majority of the respondents 24(40%) had moderate knowledge and 36(60%) had adequate knowledge regarding the integrated vector management.

The findings indicated that there was increase in level of knowledge among community health workers regarding integrated vector management, which could be due to exposure to sufficient information through SIM.

The finding of the study was supported by a study was conducted to analyze the relationship between local perceptions of malaria and practices for prevention. The goal was to improve the effectiveness of prevention and management of malaria. Individual interviews and focus groups using a semi-structured guide were carried out with mothers. Findings showed that practices used for treatment and prevention were directly related to perceptions about malaria. Due to poverty, inadequate health service delivery and ignorance, people do not always seek medical attention and express doubts about the efficacy of modern care. Malaria prevention are directly related to causes described by the population. Unable to use modern preventive techniques[25]

The second objective was to evaluate the effectiveness of SIM on knowledge regarding Integrated Vector Management Programme among community health workers

The overall mean percentage score for knowledge obtained by the subjects in the post-test (78.37%) was higher than in the pre-test (22.2) and the improvement mean percentage score was 56.17%. There was significant difference between the pre-test and post-test knowledge score with paired ‘t’ test value of 26.9. Thus, it was found to be highly significant at the level of $P<0.05$, so it is inferred that there is a significant increase in the knowledge community health workers regarding integrated vector management after SIM.

Hence the hypothesis (H1) which stated that there will be a significant difference between pre-test and post-test knowledge scores regarding integrated vector management community health workers was accepted.

The third objective was to find out the association between pre-test knowledge scores regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

The analysis to determine the association between selected demographic variables and the post test knowledge scores regarding the integrated vector management among community health workers had revealed that there was no statistically significant association between age in years, religion, educational status, occupation, monthly income of family at the level of $P<0.05$. Hence the hypothesis (H2) stated that there will be a significant association between knowledge regarding the integrated vector management with selected demographic variables was not accepted.

CONCLUSION

The present study was undertaken to evaluate the effectiveness of SIM on knowledge regarding integrated vector management among community health workers in selected community area, Bangalore. In order to achieve the objectives of the study, non-probability convenient sampling technique was used to select the sample and the data was collected from 60 community health workers from community area. This chapter deals with the findings of the study obtained from statistical analysis based on the data of the study, the reviewed literature, hypotheses which were selected for the study and discussed them in relation to similar studies conducted by otherresearchers.

Hence, the developed teaching programme regarding integrated vector management instructionally effective, appropriate and feasible and can be used in different aspects, to motivate and help the persons to update the knowledge integrated vector management.

NURSING IMPLICATIONS

The findings of the present study had implication in the field of nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE

Nurses are the significant members of health team, who perform an important role in prevention, promotion and maintenance of health. They should be involved in planning the care for patients and providing health education to family also. In today's contemporary world the professional nurses utilize research findings in an attempt to improve the evidence-based nursing practice. Nursing is a practicing profession so; the investigator generally integrates findings into practice. Health care delivery system at present gives more emphasis on prevention rather than curativeaspects.

The findings imply the need for community health nurse to keep abreast with the knowledge by undergoing continuing education and in-service education and training to upgrade skills and learning and be well versed with newer advancements in diagnosis and use of self- monitoring instruments and management skills. The community health nurse can play an important role in educating the general information, importance of diet and integrated vector management among community health workers. The study finding signifies the importance of formulating and implementing SIM by nursing personnel mainly at the community settings. Since there is a gross inadequacy in knowledge and practices regarding integrated vector management, they are able to make significant contribution to the community health workers in achieving good health.

NURSING EDUCATION

Education is a key component in improving the knowledge of an individual. Nurse educator can teach the community health workers to acquire adequate knowledge regarding integrated vector management and can encourage adopting healthy methods to prevent it.

The study had proved that improving knowledge of community health workers regarding integrated vector managementcan change their practice. To impart the

knowledge to the community the Nursing personnel need to be equipped with adequate knowledge regarding integrated vector management. Nursing personnel working in various health setting should be given in service education to to update the knowledge and abilities in identifying the learning needs of the clients with obesity regarding integrated vector managementand planning for appropriate intervention.

NURSING ADMINISTRATION

Nursing administrators are the key to plan, organize and conduct in-service education programme to nursing personnel. Necessary administrative support should be provided for the preparation of educational materials and designing education programmes on integrated vector management. Nurse administrators should arrange an outreach health education programme for community health workers to update their knowledge. The Nurse administrator should plan for the budget and utilize the resources for training of staff, health education of patients and providing regular education, Training and follow up for community health workers.

NURSING RESEARCH

There is need for extended and intensive nursing research in the area of education for community health workers especially on integrated vector management. Research should be conducted on preparation of innovative methods of teaching, development of good and effective teaching material and setting up of multi media centers for teaching. Dissemination of findings through conference and professional journals will make application of research findings to be effective. This study will serve as a valuable reference material for futureinvestigators. The nurse researcher can inculcate evidence-based practice by a strong base research.

Limitations

- The sample size was 60 community health workers. Hence it cannot be generalized to largerpopulation.
- The research design was limited to pre experimental one group pre-testpost-test.

Recommendations

In the light of the findings of the present study the researcher puts forward the following Recommendations for conducting further research.

- A similar study can be undertaken with a larger number of samples to generalize thefindings.
- A comparative study can be conducted with an experimental research approach having a control group.
- A similar study can repeat with randomization ofSample
- A study can be made to compare the effectiveness of the planned teaching programme with other methods ofteaching.

SUMMARY

The present study was "effectiveness of SIM on integrated vector management among community health workers in selected community area, Bengaluru". There is a substantial increase in the level of knowledge among community health workers regarding integrated vector management, after intervention of SIM regarding integrated vector management. Hence SIM proved to be effective in increasing the knowledge of community health workers regarding the integrated vector management.

Objectivesof the study were to:

- To assess the knowledge regarding among Integrated Vector Management Programme among community health workers
- To evaluate the effectiveness of SIM on knowledge regarding Integrated Vector Management Programme among community health workers
- To find out the association between pre-test knowledge scores regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

The study was based on the assumptions that:

- The community workers will have some knowledge regarding Integrated Vector Management Programme.
- SIM will improve the knowledge of community workers regarding Integrated Vector Management Programme.

The hypotheses formulated were:

H1. There will be statistically significant difference between mean pre-test and post-test

knowledge regarding Integrated Vector Management Programme among community health workers.

H2. There will be significant association between the pre-test knowledge score regarding Integrated Vector Management Programme among community health workers and selected demographic variables.

The literature review included a Medline search for published and unpublished research, a manual search of recent literature, a citation review of relevant primary and review articles. This literature information enabled the investigator to study the extent of the selected problem, to develop conceptual framework, data analysis and interpretation.

The conceptual framework of the study was based on general system model by Ludwig Von Bertanlaffy year1968 and it provided the comprehensive framework for achieving the objectives of the study. A quantitative study was conducted using pre- experimental one group pre-test and post-test research design, among community health workers, who were selected by Non-Probability Convenient Sampling technique. Data collection instruments included a structured knowledge questionnaire to assess the knowledge of community health workers regarding integrated vector management. The tool consisted of 30 items divided two sub sections such as knowledge on integrated vector management, prevention of integrated vector disease. The content validity was obtained from five experts from the field of community health Nursing, one Biostatistician, and one expert from physician.

After obtaining permission from the concerned authority of selected community area Narayanapura; pilot study was conducted among 6 community health workers. The reliability of the tool was established using split- half method and was found to be r=0.88, it revealed the feasibility and reliability of the tool to conduct the study.

The formal permission was obtained from concerned authority of area, Bangalore the main study was conducted with the sample size of 60 community health workers. Descriptive and inferential statistics were used to analyze the collected data.

The major findings of the study revealed that

1. With regard to the age 21(35%) of community health workers belongs to the group of 21-23 years, 19(31.67%) of them belongs to the age of 24-27 years and 15(25%) belongs to 28-31 years and 5(8.33%) were between the age of 32-35 years respectively.
2. In reference to the religion, majority of the community health workers 38(63.33%) were Hindus whereas 16(26.67%) were Muslims and 6(10%) were Christians respectively.

3. With respect to educational status, 22(36.67%) community health workers had formal education, 18(30%) had primary education, 15(25%) had secondary level education and 3(5%) weregraduates.
4. In reference to the occupation, 25(41.67%) community health workerswere Asha workers, 18(30.00%) were Health visitors, 15(25%) were Anganwadi workers and 2(3.33%) were ANMS.
5. In reference to the type of family, 13(21.67%) community health workers belongs to nuclear family, 36(60%) community health workers belongs to joint family, 10(16.67) community health workers belong to extended family and only 1(1.66%) community health workers belongs to single parentfamily.
6. Mean percentage score obtained for overall knowledge in the pre-test was 22.2 and 78.37 in post-test. This proved that there is significant difference between the mean pre-test and post-testknowledge.
7. The association of demographic variables with post-test knowledge level by using chi-square test revealed that there was no statistically significant association with the age in year, religion, educational status, occupation, monthly income of the family, type of familyat $P < 0.05$ level. This proved that there is a no significant association between knowledge with their selected demographicvariables.

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SECTION A
SOCIO DEMOGRAPHIC DATA

INSTRUCTIONS

Kindly go through each item and give your responses against the box provided against each item. Please make sure that you answer all the items.

1. Age in years
   a. 30-35yrs ( )
   b. 36-40yrs ( )
   c. 41-45yrs ( )

d. 46-50 yrs ( )

2. Religion
   a. Hindu ( )
   b. Muslim ( )
   c. Christian ( )
   d. Others ( )

3. Educational status
   a. Formal education ( )
   b. Primary education ( )
   c. Secondary education ( )
   d. Higher secondary education ( )
   e. Graduate ( )

4. Occupation
   a. Asha workers ( )
   b. Health visitors ( )
   c. Anganwadi workers ( )
   d. ANMS ( )

5. Monthly income of the family
   a. Rs.6000 ( )
   b. Rs. 6001-8000 ( )
   c. Rs. 8001-10000 ( )
   d. Above 10001 and above ( )

6. Type of family
   a. Nuclear family ( )
   b. Joint family ( )
   c. Extended family ( )
   d. Single parent family ( )

SECTION B

STRUCTURED KNOWLEDGE QUESTIONNAIRE

I. Structured knowledge questionnaire on Integrated vector management

1. Vector is a
   a. Mammals, birds and insects ( )
   b. Wild animals ( )
   c. Domestic animals ( )

2. Vectors will transmit
   a. Prevent pathogens ( )
   b. Disease pathogens ( )
   c. Protect pathogens ( )

3. The most frequent type vector control is
   a. Mosquito ( )
   b. Flies ( )
   c. Ticks ( )

4. Vectors can carry infective pathogens like
   a. Bacteria ( )
   b. Virus ( )
   c. Above all ( )

5. What are the vector borne disease?
   a. Dengue fever ( )
   b. Hypertension ( )
   c. Above all ( )

6. Most common vector borne disease is
   a. Humps ( )
   b. Macules ( )
   c. Malaria ( )

7. Vectors control is a limit or eradicate

a. Mammals, birds, insects ( )
b. Limit mammals, birds, insects ( )
c. Protects mammals, birds, insects ( )

II. Structured knowledge questionnaire on prevention of Vector control diseases

8. Human illness caused by parasites, virus, bacteria are called
   a. Viral borne disease ( )
   b. Vector borne disease ( )
   c. Vehicle borne disease ( )

9. What disease do mosquitoes carry in India
   a. Malaria, Dengue fever ( )
   b. Chikungunya, Japanese encephalitis ( )
   c. Above all ( )

10. What are water borne diseases in india
   a. Cholera, diarrhea ( )
   b. Hypertension, diabetes( )
   c. Cancer, HIV( )

11. Water borne disease caused by
   a. Eating contaminated food ( )
   b. Drinking contaminated water ( )
   c. None of the above ( )

12. How can vector borne disease can be prevented
   a. Good environment ( )
   b. Good personal hygiene( )
   c. Above all ( )

13. In India most prominent disease is spread by
   a. Mosquitoes ( )
   b. Dogs( )
   c. Rodents ( )

14. What mosquitoes are dangerous

a. Male mosquito bite ( )
b. Female mosquito bite ( )
c. Both ( )

15. How to avoid mosquito bite

a. Remove standing water ( )
b. Use insect repellent ( )
c. Above all ( )

16. Malaria kills over

a. 1.2 million people annually ( )
b. 1.3 million people annually ( )
c. 1.4 million people annually ( )

17. Poor waste disposal in adequate housing leads to

a. Vector borne diseases ( )
b. Tuberculosis ( )
c. Ebola ( )

18. Integrated vector borne management are designed to achieve the greatest

a. Disease prevention benefits ( )
b. Disease control benefits ( )
c. Disease minimize benefits ( )

19. Environmental management strategies can reduce

a. Vector breeding grands ( )
b. Vector spreading grands ( )
c. None of the above ( )

20. Integrated vector management first focus on

a. National disease transmission ( )

b. Local pattern of disease transmission ( )
c. International disease transmission ( )

21. Integrated vector management use chemical methods of vector control such as
    a. Residual sprays ( )
    b. Use of chemical larvicides ( )
    c. Above all ( )

22. Integrated vector management main strategy
    a. Development of adequate human resources ( )
    b. Development of infrastructure ( )
    c. Above all ( )

23. Integrated vector management mainly focus on
    a. Cites ( )
    b. Neglected tropical disease ( )
    c. Villages ( )

24. Integrated vector management ultimate goal is to
    a. Prevent transmission ( )
    b. Promote health ( )
    c. Rehabilitation ( )

25. Vector control can benefit to prevent
    a. Single disease ( )
    b. More than one disease ( )
    c. None of the above ( )

26. Eradicate the mammals, birds, insects are called
    a. Vector control ( )
    b. Vector prevention ( )
    c. Vector promotion ( )

27. The mission of vector control services is to

a. Health promotion ( )
b. Prevent human disease ( )
c. Specific protection ( )

28. Biological control defined as to reduce other
    a. Living organism( )
    b. Dead organism( )
    c. Both( )

29. Biological, physical, chemical fumigation can be classified as
    a. Pet control methods ( )
    b. Pest control methods( )
    c. None the above ( )

30. Integrated vector management is the linkage between
    a) Health and environment ( )
    b) Health and disease ( )
    c) Health and illness ( )

SCORE KEY

Question Number	Answer	Question Number	Answer
1	A	16	A
2	B	17	A
3	A	18	B
4	C	19	A
5	A	20	B
6	C	21	C
7	A	22	A
8	B	23	B
9	C	24	A
10	A	25	B
11	B	26	A
12	A	27	B
13	A	28	A
14	B	29	B
15	C	30	A

It is important and right of every individual to know about integrated vector management and prevention of integrated vector disease.

Prepared by:

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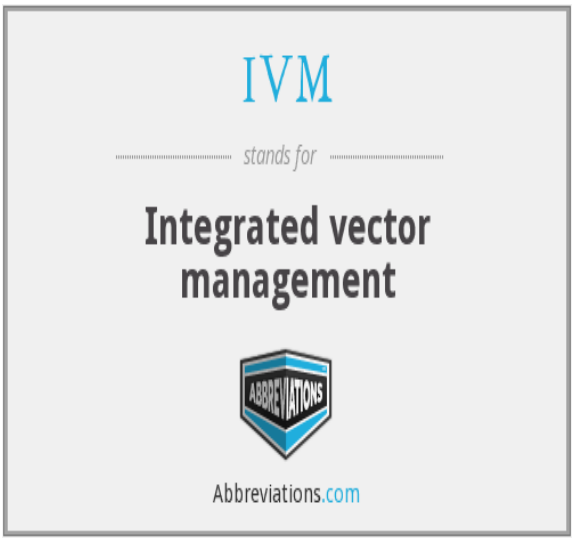
SELF INSTRUCTION MODULE

Introduction



Integrated Vector Management (IVM) The concept. IVM is a rational decision-making process for the optimal use of resources for vector control. The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control.

Definition

Integrated vector management (IVM) is defined as "a rational decision-making process for the optimal use of resources for vector control" and includes five key elements: 1) evidence-based decision-making, 2) integrated approaches 3), collaboration within the health sector and with other sectors, 4) advocacy, social mobilization, and legislation, and 5) capacity-building. In 2004, the WHO adopted IVM globally for the control of all vector-borne diseases.

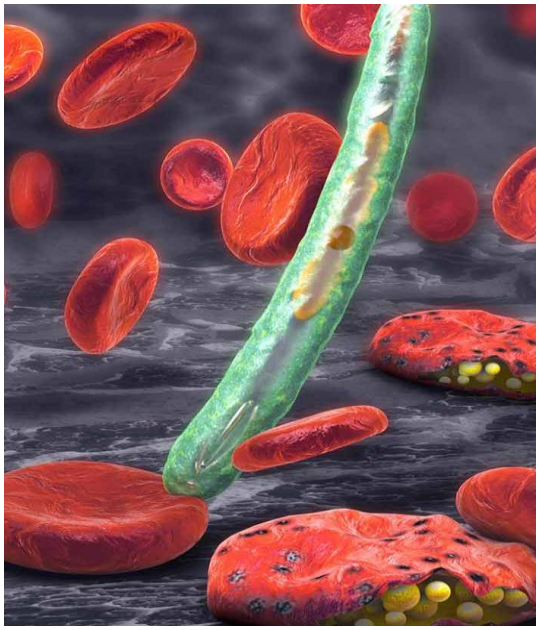
Causes

Additional reasons for the slow uptake of integrated vector control, as of late, include a lack of capacity building, poorly defined roles for advocacy and legislative activities, and a general lack of intersectoral linkage within the health sector.

Clinical manifestation of integrated vector

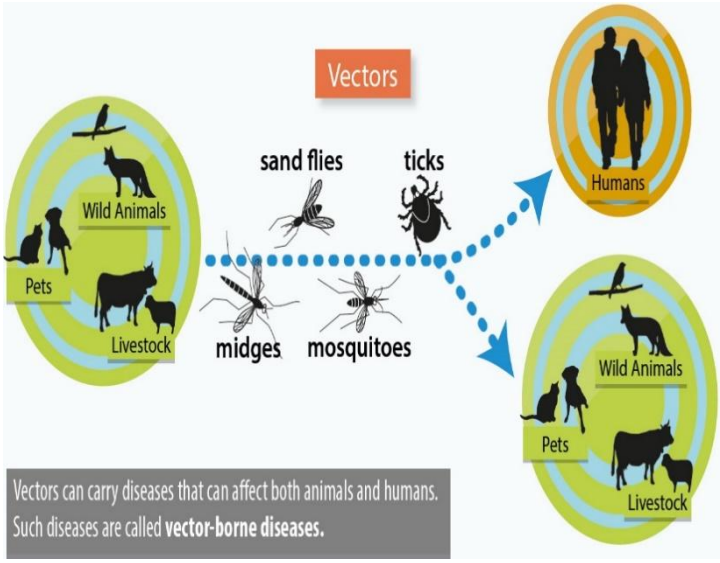
management.

The arsenal for insecticide-based contemporary malaria vector control is unnervingly limited to a small number of insecticide classes. Furthermore, extensive exposure of malaria vectors to insecticides eventually selects for resistance to them. This necessitates thorough appreciation of available chemical classes, their mode of action, and resistance mechanisms to facilitate utilization of chemical control either in isolation or as part of an IVM approach



Diagnostic evaluation of integrated vector management

A functioning system for monitoring and evaluation is vital to the success of an IVM strategy. Monitoring and evaluation have several purposes: to guide the planning and implementation of the strategy, to assess its effectiveness, to identify how the strategy should be improved and to account for the resources used. Hence, monitoring and evaluation represent a feedback mechanism.



Management of integrated vector management

Purpose

The existence of standards for professions and careers in vector control and public health entomology is an indication that a career structure with opportunities for advancement exists in the

areas of control and research. A career structure is an important incentive for people to seek training and is necessary to keep graduates in their profession.

Methods

For this indicator, surveys or interviews should be conducted in relevant government units and tertiary institutions. The response should be verified by reference to documents outlining the standards. Interpretation The existence of standards for positions in vector control shows that the country intends to establish a career structure in public health entomology. A suitable career structure is necessary, because training has only limited benefit if the graduates have no subsequent opportunities and are transferred to other areas of work. This indicator, in the form of a yes-or-no answer, simplifies the reality, as it does not show whether steps have been taken to set standards or whether the created professions are legally protected. For this purpose, countries could consider the indicators in the answers to the following questions:

• Is a task force in place to set professional standards on vector control and public health entomology?

• Are professions in vector control legally protected?

• Are new positions created for vector control specialists and public health entomologists?

• Are managerial or directorship positions in vector-borne disease control programmes open to vector control specialists and public health.

Prevention of integrated vector disease

The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control. The ultimate goal is to prevent the transmission of vector-borne diseases such as malaria, dengue, Japanese encephalitis, leishmaniasis, schistosomiasis and Chagas disease.

Summary

The present study was "effectiveness of SIM on integrated vector management among community health workers in selected community area, Bengaluru". There is a substantial increase in the level of knowledge among community health workers regarding integrated vector management, after intervention of SIM regarding integrated vector management. Hence SIM proved to be effective in increasing the knowledge of community health workers regarding the integrated vector management.