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## **A Study to Assess The Knowledge, Attitude and Practice Regarding Prevention of Water-Borne Diseases Among Mothers of Toddler Residing at Selected Rural Areas in Bengaluru with View to Develop an Information Booklet**

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### **ABSTRACT**

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Water is a universal healer. It is synonymous with life. A basic necessity, water is nature's most generous gift to man. It is one of man's most important assets; water is an essential factor in economic, social and cultural development of a community. It is not only a refreshing drink and an effective cleansing agent but also a vital medicine. Adequate supply of fresh and clean drinking water is a basic need for all human beings on the earth, yet it has been observed that millions of people worldwide are deprived of this. Industrial growth, urbanization and the increasing use of synthetic organic substances have serious and adverse impacts on freshwater bodies. Many areas of groundwater and surface water are now contaminated with heavy metals, POPs (persistent organic pollutants), and nutrients that have an adverse effect on health.

The children consist about 20% of our total population are prone to get infections from different sources like food, water, flies, fomites and polluted environment. All aspects of child care are looked after by the mother only. So mother have prime role in the prevention of water borne diseases. Poor health risk of infection is responsible for high infant and child mortality rate. In our country 1/10 of infant does not reach his first birthday. 15/100 children die before they complete their 5years of age. Acute diarrheal disease and enteric fever are the common causes of death during infancy and childhood. These deaths are most commonly caused by dehydration, high fever etc., It can be managed by approximate-rehydration measures at home level.

## Statement of the Problem

A study to assess the knowledge, attitude and practice regarding prevention of Water-Borne diseases among mothers of toddlers residing at selected rural areas in Bengaluru with a view to develop an information booklet

## OBJECTIVES

- Assess the level of knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore.
- To find out the relation between knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore.
- To find out the association between knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore

## HYPOTHESIS

The hypothesis will have tested at 0.05 level of significance

**H1:** There will be significant relationship between the level of knowledge and attitude regarding prevention of water borne disease among mothers of toddlers residing in selected rural area of Bangalore.

**H2:** There will be significant association between the level of knowledge and attitude regarding prevention of water borne disease among mothers of toddlers residing in selected rural area of Bangalore.

## Results

It shows the comparison of pre-test and post-test aspects wise knowledge scores on -prevention of water borne diseases. It is evident from the t-value computed for definition and causes of water borne diseases, purification of water, Diagnosis and Rx, which are respectively 9.41, 5.69, 0.91, 10.96, 4.51 they are higher than the table value 2.01 at p 0.05 level of significance. Hence there was a significant gain in the pre-test and post-test aspect wise knowledge scores regarding prevention of water borne diseases among mothers of toddlers.

Hence the intervention i.e., the structured teaching programme regarding prevention of water

borne diseases which was adopted by the researcher is found to be effective in increasing the aspects wise knowledge of mothers of toddlers on prevention of water borne diseases. Therefore the hypothesis1 starting that there will be significant differences between the pre-test and post-test knowledge scores of mothers of toddlers exposed to structured teaching programme regarding prevention of water borne diseases is accepted.

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## **INTRODUCTION**

*“Heath is not everything but everything else is nothing without health”*

*-Ruth Carlisle*

Water is a universal healer. It is synonymous with life. A basic necessity, water is nature’s most generous gift to man. It is one of man’s most important assets; water is an essential factor in economic, social and cultural development of a community. It is not only a refreshing drink and an effective cleansing agent but also a vital medicine. Adequate supply of fresh and clean drinking water is a basic need for all human beings on the earth, yet it has been observed that millions of people worldwide are deprived of this. Industrial growth, urbanization and the increasing use of synthetic organic substances have serious and adverse impacts on freshwater bodies. Many areas of groundwater and surface water are now contaminated with heavy metals, POPs (persistent organic pollutants), and nutrients that have an adverse effect on health.<sup>1</sup>

The most common and wide spread health risk associated with drinking water is its contamination, either directly or indirectly by human or animal excreta. Drinking contaminated water or using it in food preparation may cause infection. The pathogenic agents include bacteria, viruses and protozoa which may cause diseases that may in severity from mild gastro enteritis to severe and sometimes diarrhea, dysentery, hepatitis or typhoid fever. Water-borne infections are among the most emerging and re-emerging infectious diseases throughout the world. Waterborne diseases are an ever-present threat to the health of nearly one billion people worldwide.<sup>2</sup>

Today, 37.7 million Indians are affected by waterborne diseases annually; 1.5 million children are estimated to die of diarrhea alone. Water-borne diseases are caused by ingestion of contaminated water from pathogens contained in human or animal excreta. SSA’s population suffers markedly from water-borne infections due to lack of safe and sanitary water supply and

disposal. Water-borne diseases include cholera, typhoid, shigellosis, polio, meningitis, hepatitis A and E. Human beings and animals can act as hosts to the bacterial, viral, or protozoa organisms that cause these diseases. Millions of people have little access to sanitary waste disposal or to clean water for personal hygiene. An estimated 3 billion people lack a sanitary toilet, for example. Over 1.2 billion people are at risk because they lack access to safe freshwater.<sup>3</sup>

Worldwide every year between 5,00,000 to 8,00,000 children under the age of five die due to diarrhea. The deaths occur due to malnutrition resulting from a loss of vital body fluids and salts in the motions. In India over 6 lakh children die every year from diarrhea, making it the second largest killer disease among children between the age of 6 months and 3 years. In order to prevent the spread of water borne diseases, people should take precautions. The city water supply should be properly checked including pipelines to ensure safe drinking water and necessary steps should be taken. At home, water should be boiled or filtered, to ensure that it is free from infection. Water contamination is a growing hazard in many developing countries owing to human activity. Without ample and safe drinking water, we cannot provide health care to the community.<sup>4</sup>

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## **NEED FOR THE STUDY**

*“Education is the deliberate and systematic influence exerted by the mature person upon the immature person through instruction, discipline and the harmonious development of all the power of the human being”*

*-Redden and Ryan*

The children consist about 20% of our total population are prone to get infections from different sources like food, water, flies, fomites and polluted environment. All aspects of child care are looked after by the mother only. So mother have prime role in the prevention of water borne diseases. Poor health risk of infection is responsible for high infant and child mortality rate. In our country 1/10 of infant does not reach his first birthday. 15/100 children die before they complete their 5years of age. Acute diarrheal disease and enteric fever are the common causes of death during infancy and childhood. These deaths are most commonly caused by dehydration, high fever etc., It can be managed by approximate-rehydration measures at home level.<sup>5</sup>

Water for child survival and development study reported that 65% mother had poor knowledge regarding hygiene and cleanliness. Only 8.5% mothers had some knowledge of hygiene and cleanliness. This states that absence of proper knowledge of mother regarding hygiene and safe drinking water is very important denominator in the incidence of water borne diseases. Mothers' education is directly proportional to knowledge regarding safe hygienic consumption of food and water and this is inversely related to the genesis of different water borne diseases.<sup>6</sup>

A on the knowledge, attitude and practices on water handling, sanitation and defecation practice among rural house study hold of rural south India, Vellore. The study showed that water was stored in wide mouthed containers, water supply was less in the main village, people did not associate unsafe water with occurrence of diarrhea, 30 had toilets but only 25 used them, 72 defecated in fields without any associated stigma, and only children under 15 years practiced hand washing after defecation and before meals. It concluded that traditional practices may pose a problem for preventing water borne diseases.<sup>7</sup>

Water borne diseases are dirty water diseases. Mainly attributed to water that has been contaminated by human, animals and chemical wastes. Worldwide it has shown that waterborne diseases are responsible for over 12 million deaths a year. Contaminated water is the cause of many life threatening diseases such as diarrhea, cholera, typhoid fever, hepatitis B and dysentery. Diarrhea is the second biggest child killer disease in the world. In India diarrhea is the major health problem among children under five years of age. During 2005 about 1.07 million cases of diarrhea were reported with 2,040 deaths. Cholera is also one among water borne diseases which causes death among under-five children. It is both epidemic and endemic caused by *Vibrio Cholerae* mainly due to lack of environmental Sanitation, poor personal hygiene and contaminated water Supply. Worldwide 1, 31,943 cases and 2,272 deaths were reported from 52 countries in 2005. Similarly in Karnataka 214 cases and one death was reported due to cholera.<sup>8</sup>

Enteric fever or typhoid fever is endemic in India and mainly caused by *Salmonella Typhi* due to faecal contamination of water, poor sanitation facilities and waste disposal mechanism.

Reported data due to typhoid for the year 2005 shows 6, 35,580 cases with 417 deaths.<sup>9</sup>

A study was conducted on attitude and practice regarding diarrhea in rural community Chandigarh. The total population of 8000 was surveyed and 120 mothers of underfive children were randomly selected. Mother of underfive children were interviewed regarding episode of diarrhea in past two weeks and about the treatment given to their children. The study also assessed the knowledge of mother regarding prevention and preparation of oral rehydration solution (ORS) and management of diarrhea. The prevalence rate of diarrhea among 181 under five Children was observed to be 23.2%. Majority (88.1%) of children had treated for diarrhea, where as only 54.8% of children were given ORS, 86.7% of the mothers were aware of ORS but only 18.7% could tell about the correct method of ORS preparation. The study recommended that mother should be educated regarding prevention and management of diarrhea and preparation of ORS.<sup>10</sup>

From the available literature review it is evident that water borne infections are a significant concern which contributes to increasing mortality and morbidity rate in developing countries. As a responsibility of nurses, it is important to help the mother and community to bring awareness of domestic methods of water purification and prevent from water borne diseases. So the researcher found it relevant to assess the knowledge, attitude and practice of mothers of toddlers regarding prevention of water borne diseases in a selected rural community at Bangalore

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## CONCEPTUAL FRAMEWORK

Conceptual framework is a complex whole of interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. A conceptual model provides for logical thinking; for systematic observation and interpretation of observed data. The model also gives direction for relevant questions on phenomena and points out solution to practical problems as well as serves as a springboard for the generation of hypothesis to be used.

The conceptual framework of this study is based on the General System Theory proposed by modified Ludwig von Bertalanffy in 1968. It serves as a model for viewing people as interacting

with the environment. According to this theory a system consists of a set of interacting components or units within a boundary that consists of the input and the output, to and from the system within the environment.

According to this theory, a system can be open or closed. All living system is open, in which, there is continuous exchange of matter, energy and information. Open Systems have varying degrees of interaction with environment from which the system receives input and output in from of matter, energy or information. The system returns output to the environment in an altered stage affecting the environment. The feedback is the environmental response of the system. The system may be positive, negative or neutral.

### **The main concepts of general systems theory include**

1. Input
2. Throughput
3. Output
4. Feedback

The concepts are as follows:

#### **Input**

- The input refers to any information, energy or material that enters in to the system through is boundary. Input refers to the sources needed by the system
- In the study input refers to the existing knowledge, practice and attitude of water-borne diseases and prevention of water-borne diseases among mothers of toddlers and their demographic variable. It is assumed that the mothers of toddlers have some knowledge for prevention of water-borne diseases and these demographic variables would have some influence on preexisting knowledge, practice and attitude. The plan was to assess the knowledge, practice and attitude of mothers of toddlers in Bettalsur, Bangalore by administration of structured knowledge questionnaire and observational practice checklist. In the present study, input refers to:

1. Development of tool
2. Development of the module on prevention of water-borne diseases
3. Information booklet

**Throughput**

- Throughput is the process that occurs at some point between the input and putput process, which enables the input to be transferred as output in such a way that, it can be really used by the system. In this study throughput refers to conducting pilot study, conducting pre-test, administration of structured teaching programme, conducting post-test, analysis and interpretation and distributing information booklet.

**Output**

After the input and the process the system returns output to the environment in an altered state. The end result of product of the system. Output varies widely depending on the type and purpose of the system affecting the environment, here the output refers to the knowledge and practice and attitude gain by the mothers of toddlers after structured teaching programme and it is measured by post-test. The knowledge and practices and attitude of mothers of toddlers may be at inadequate, moderately and adequate levels.

**Feedback**

Feedback is the environment responses of the system. Feedback emphasizes on input and throughput. It is necessary to strengthen if the result is inadequate and moderately adequate even after the administration of the structured teaching programme of which this part of feedback is not included in the present study.



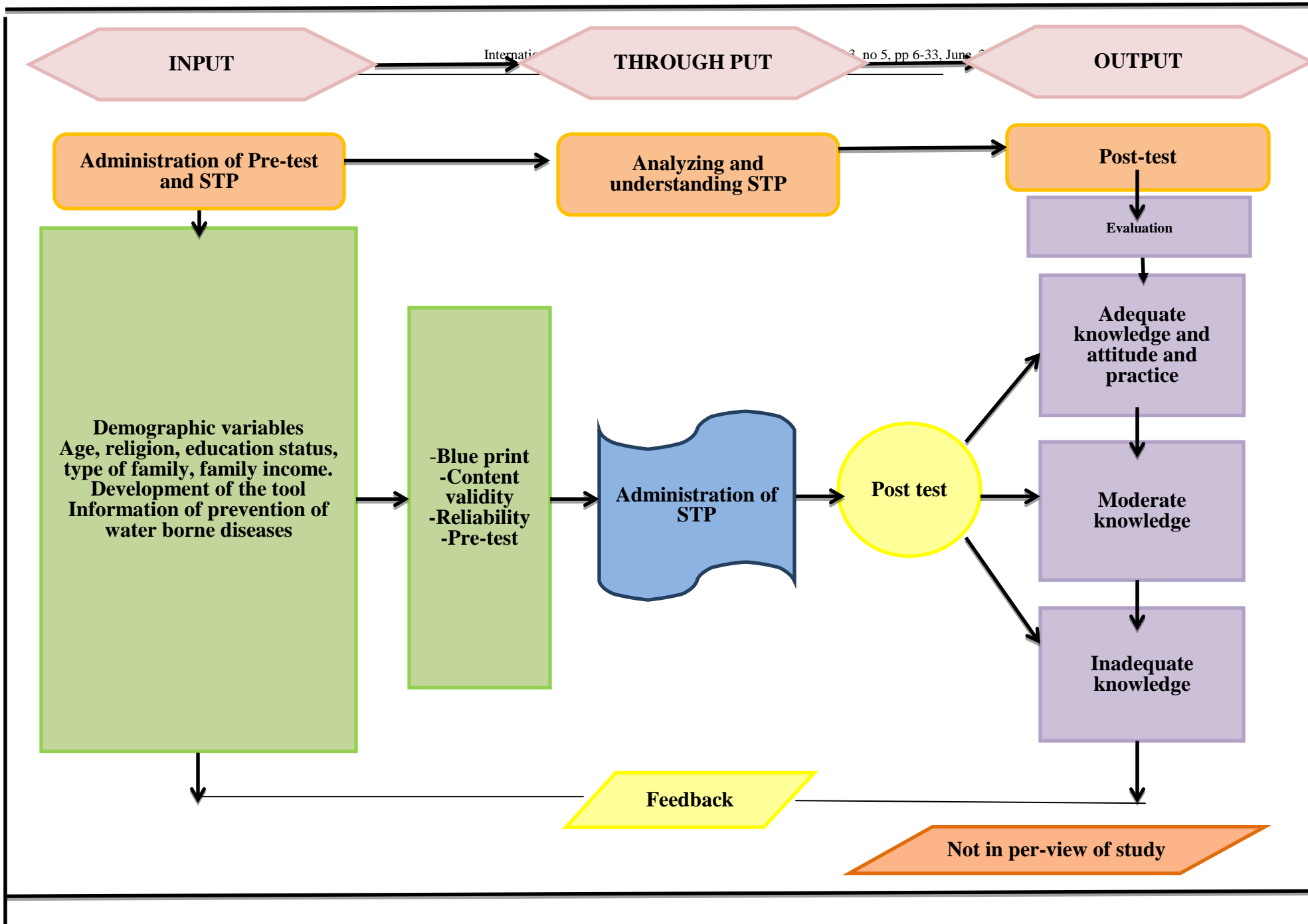


Fig.1. Conceptual frame work based on moderate Ludwig Von Bertalanffy general system model

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## **RESEARCH METHODOLOGY**

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In this we study the various steps that are generally adopted by a researcher in studying their research problem along with the logic behind them. A research methodology is a blue print for conducting a study. Its purpose is to maximize control over factors that can interfere with the validity of the research findings

This chapter deals with the method adopted for the present study, which includes research approach, research design, variables of the study, setting of the study, population, sample, sampling technique, sampling criteria, instruments used for the study, tool validation and reliability development and description of lesson plan, preparation of power point slides, pilot study, data collection procedure and plan for data analysis.

### **Research approach**

The selection of research approach is the basic entity for the research. The research approach helps the researcher to determine the way to deal with the research question and to draw conclusion by applying various measures. There are two basic approaches to research, viz., quantitative approach and qualitative approach. In this present study, by viewing the nature of the problem and objectives, the researcher adopted a quantitative approach because it involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a firm and rigid fashion.

### **Research design**

The research design is defined as “a researcher’s overall plans for obtaining answers to the research question or testing the hypothesis”. Research designs help the researcher in selection of subjects, identification of variables, their manipulation and control, observation to be made and different types of statistical analysis, that are to be used to interpret the data. The selection of design depends upon the purpose or the objectives as well as the hypothesis framed for the study.

The research design selected for the present study was one group pre-test and post-test pre-experimental design. This study attempted to assess the effectiveness of structured teaching programme (STP) on knowledge and practice attitude on prevention of water-borne diseases among mothers of toddlers at selected areas of Bangalore. It was classified as pre experimental, as there was no control group and randomization. This design

was selected because it seemed most appropriate to ascertain the effectiveness of structured teaching programme in terms of change of knowledge scores and practice and attitude scores of the mothers of toddlers if exposed to structured teaching programme on prevention of water borne diseases.

**Fig.2: Representation of research design**

<b>GROUP OF STAFF NURSES (N=60)</b>	<b>PRETEST</b>	<b>INTERVENTION</b>	<b>POST TEST</b>
E	01	X	02

**KEYS;**

E -Experimental group

01 -Pretest on knowledge and practice and attitude of mothers of toddlers on prevention of water borne diseases

X - Structured teaching programme on prevention of water borne diseases

O2 – Post-test on knowledge and practice and attitude of mothers of toddlers on prevention of water borne diseases.

**Variables under study**

A variable is a phenomenon or characteristic or attitude that changes. Variables are measurable characteristics of a concept and consist of a logical group of attributes. Two types of variables are identified in this study. They are independent and dependent variable.

**Independent variables**

It is a variable that is believed to influence the development variables in the study. In experimental research design, independent variable influences the dependent variables. The independent variable influences the dependent variables. The independent variable of the present study is structured teaching programme on knowledge and practice and attitude of mothers of toddlers on prevention of water borne disease.

### **Dependent variable**

Dependent variables is the outcome variables of interest which is hypothesized to depend on another variables. In the present study, the dependent variable is the knowledge and practice and attitude of the mothers of toddlers on prevention of water borne diseases.

### **Setting of the study**

The setting is the location where the study is conducted. The present research study setting was Bettalsur, Bangalore. The setting is selected because of availability of samples, feasibility of conducting the study and ethical clearance.

### **Population**

The target population is the entire population in which the researcher is interested and to which he or she would like to generalize the results of a study. The target population of the study comprises of mothers of toddlers residing at Bettalsur, Bangalore.

### **Sample and sampling technique**

Sample consists of a subset of a population selected to participate in a research study. In the present study, the sample consisted of 60 mothers of toddlers residing at Bettalsur, Bangalore who was selected by purposive sampling technique through non probability sampling approach.

### **Sampling criteria**

Sampling criteria specifies the characteristics that the sample in the population must possess to be included in the study or excluded from the study

#### ➤ **Inclusion criteria**

Mothers who are:

1. Willing to participate in the study
2. Present at the time of data collection
3. In the age group 22-30years
4. Able to read and write English

#### ➤ **Exclusion Criteria**

1. Mothers who are not available at the time of data collection
2. No willing to participate
3. Children

### **Selection and development of tool**

Tool was prepared based on the objectives of the study. A structured knowledge questionnaire was selected to assess the knowledge of mothers of toddlers on prevention of water borne disease and an observational checklist to assess the mothers of toddler on level of practice and attitude regarding water borne diseases and prevention of water borne diseases. It was considered to be the most appropriate instrument to elicit the response from mothers of toddlers who are able to understand and read English.

The following steps carried out in preparing the tools are

- Literature review
- Preparation of blue print
- Experts opinion from dependent of community health nursing

### **Description of the tools:**

**Section A:** Demographic data consisted of 5 items which included age, religion, type of family, family income, education, on prevention of water borne diseases.

**Section B:** A structured knowledge questionnaire was prepared consisting of 30 items on knowledge and practice and attitude regarding water borne disease and prevention of water borne disease.

**Section C:** A structured observational practice and attitude checklist to evaluate the risk assessment and prevention of water borne disease. It contains 12 items. This checklist was used by investigator is to determine the practice and attitude level of mothers of toddlers with regard to prevention of water borne disease.

### **Scoring key and interpretation of the instruments**

The structured knowledge questionnaire regarding prevention of water borne diseases had two parts i.e. the stem and options. The options include both correct and incorrect response. The score for the correct responses was “1” (one) and score for the incorrect response was “0” (zero).

The scores of structured knowledge questionnaire on knowledge regarding prevention of water borne diseases will be interpreted as follows

Inadequate knowledge = <50%

Moderately adequate knowledge = 50-75%

Adequate knowledge = >75%-100%

The observational practice and attitude checklist on prevention of water borne disease had 12 items. Responses were scored as “1” for correct response (Yes) and “0” for the incorrect

responses (No).

### **Level of practice**

The score of structured observational practice and attitude checklist on prevention of water borne disease will be interpreted as follows.

Inadequate practice= <50%

Moderately adequate practice = 50-75%

Adequate practice = 75%-100%

### **Validity of the tool**

Validity refers to whether a measuring instrument accurately measures what it is supposed to measure. The content validity of the tool was done by nine experts in the field of community Health nursing, medical professionals, statistics and critical care unit experts. During validation suggestions regarding rearrangements, modifications and changes in total number of questionnaire and observational checklist were recommended. These recommendations and suggestions of experts were incorporated in the tool and the tool was finalized for the study.

### **Reliability of the tool**

The tool after validation was subjected to test for its reliability. The structured teaching programme was administered to 6 mothers of toddler of Sampegahalli, Bangalore. The reliability was established by using Karl Pearson's test retest method and it was found to be  $r=0.82$ , hence questionnaire and practice and attitude checklist were found to be reliable.

### **Design and production of the structured teaching programme (STP)**

The design of the STP was based on the lesson plan. Internal validity was obtained from the guide and experts from the institution. The suggestions and recommendations were incorporated. The slides were then formed into its final shape as per the investigator's ideas. The content was distributed under the following learning areas:

1. Definition and meaning
2. Causes of water borne diseases
3. Purification of water
4. Diagnosis and Treatment

### **Pilot study**

The pilot study is a trial run for the main study to test the reliability, practicability, appropriateness and feasibility of the tool used in the study. A pilot study was conducted in the month of Feb 2020 at Sampegahalli, Bangalore. A formal consent was obtained from the

concerned authority of the Ph.C. 6 mothers of toddlers who fulfilled the inclusion criteria were selected by using purposive sampling technique. Consent from participants was taken after explaining the purpose of the study. 1. Pretest was conducted by using structured knowledge questionnaire and observational practice and attitude checklist. 2. To assess knowledge and practice and attitude respectively; followed by administration of STP on prevention of water borne diseases with the duration of 30min and then post-test was conducted after 7 days of the administration of Structured teaching programme regarding prevention of water borne disease. On an average each sample took 30-40 min to answer the questionnaire. Therefore the tool was found to be comprehensive, feasible and acceptable to conduct study. The structured teaching programme was effective for the mothers of toddlers. Pilot study samples were excluded from the main study subjects.

### **Procedure for data collection**

A formal permission was obtained from the authorities of Bettaluru, Bangalore and the main study was conducted in the month of Feb 2020. The method adopted for data collection was:

- Selection of the mothers of Toddlers
- Self-administered questionnaire method assess knowledge regarding prevention of water borne diseases
- Observational checklist to determine the level of practice and attitude regarding prevention of water borne diseases. The investigators established rapport with the subjects and assured confidentiality of the responses. Pre-test was conducted by using self-administered structured questionnaire and observational checklist. On the same day structured teaching programme (STP) with 45min duration was administered to the subjects. The post-test was conducted by using same self-administered structured questionnaire and observational checklist after 7 days of administration of structured teaching programme (STP)

### **Plan for data analysis**

The data collection were analyzed by using descriptive and inferential statistics

#### **Descriptive statistics**

- a) Frequency and percentage distribution, to analyze the socio-demographic variable
- b) Mean and standard deviation, to analyze the pre-test and post-test level of knowledge and practice and attitude regarding prevention of water borne disease

**Inferential statistics**

- a) Paired “t” test to assess the effectiveness of Structured teaching programme regarding knowledge and practice and attitude on prevention of water borne disease
- b) “Chi-square Test” to find out the association of pre-test knowledge scores and practice and attitude scores with their selected demographic variables of the mothers of toddlers in selected areas of Bangalore.

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**RESULTS**

This chapter deals with the analysis and interpretation of the data gathered to assess the effectiveness of structured teaching programme on knowledge attitude and practice of mothers of toddlers on prevention of water borne diseases in selected rural area, Bangalore. Analysis is the process of categorizing, organizing, manipulating, and summarizing the data to obtain answers to the research questions. The purpose of analysis is to reduce the data into intelligible and interpretable form so that research problems can be studied and tested.

The data collected from 60 mothers of toddlers were summarized, compared and tested based on objectives. To begin with, the data was entered in a master sheet, for tabulation and statistical processing. First descriptive statistics were computed. These included the mean, mean percentage and standard deviation. Next the inferential statistical analysis VIZ. paired “t” test and chi squares were undertaken as described below to meet the objectives of the study.

**PART-1: Demographic variables of mothers of toddlers****PART-II: Analysis of knowledge status of mothers of toddlers on prevention of water borne disease****Section 2: knowledge and practice and attitude status of mothers of toddlers on prevention of water borne diseases in pre-test**

- 2a. Aspect wise assessment of pre-test knowledge scores of mothers of toddlers on prevention of water borne disease
- 2b. Overall assessment of pre-test knowledge level of mothers of toddlers on prevention of water borne disease
- 2c. Aspect wise assessment of pre-test and attitude practice level of mothers of toddlers on prevention of water borne disease



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### **Section 3: Knowledge attitude and practice status of mothers of toddlers on prevention of water borne disease**

- 3a. Aspect wise assessment of posttest knowledge scores of mothers of toddlers on prevention of water borne disease
- 3b. Overall assessment of posttest knowledge level of mothers of toddlers on prevention of water borne disease
- 3c. Posttest attitude and practice level of mothers of toddlers on prevention of water borne disease.

### **Section 4: Analysis of effectiveness of computed assisted teaching in terms of**

- 4a. Comparison of pre-test and post-test knowledge level of mothers of toddlers on prevention of water borne disease
- 4b. Aspect wise comparison of pre-test and posttest knowledge scores of mothers of toddlers on prevention of water borne disease
- 4c. Comparison of pre-test and posttest practice level of mothers of toddlers on prevention of water borne disease
- 4d. Effectiveness of structured teaching programme regarding knowledge and practice regarding prevention of water borne disease among mothers of toddlers.

## **PART III: Testing of hypothesis**

**Section 5:** Association of pre-test knowledge scores and practice scores with selected demographic variables of staff nurses

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## **CONCLUSION**

Conclusion of the study findings, the implications and recommendations and limitations for “A study to assess the knowledge, attitude and practice regarding prevention of Water-Borne diseases among mothers of toddlers residing at selected rural areas in Bengalure with a view to develop an information booklet”. The major goal of nursing is to enhance knowledge and practices through education that can change the mothers of toddlers, their knowledge and attitude practice.

## **Conclusion**

The present study assessed the knowledge attitude and practice of mothers of toddlers on prevention of water borne diseases through structured teaching programme and found that majority (63.3%) of the mothers of toddlers had moderately adequate knowledge and (30%) had adequate knowledge in pretest. In posttest 95% of mothers of toddlers had adequate knowledge. It shows that there is a significant improvement in knowledge of mothers of toddlers after structured teaching programme (STP). Thus structured teaching programme is effective improving the knowledge of mothers of toddlers regarding prevention of water borne diseases. The structured teaching programme (STP) has enhanced the knowledge of mothers of toddlers, which is essential for appropriate care of her family and children.

Hence the structured teaching programme is instructionally effective appropriate and feasible. It should be used in the different settings to improve their knowledge.

## **Nursing Implications**

The investigator observed that following implications drawn from the study are of vital concern for nursing education, nursing practice, nursing administration and nursing research which provide way towards better improvement in knowledge and attitude and practice of mothers of toddlers on prevention of water borne diseases implementing structured teaching programme as an effective teaching strategy.

## **Nursing education**

One of the leading functions of nursing is imparting education with newer knowledge. Nurse educator should make appropriate use of their knowledge to improve the standards of nursing as a profession. Nurse educator should make use of the structured teaching programme which is prepared for use as a teaching tool. This too reduces their hours and teaching will be effective. Teaching with assistance of planned according to the needs must be provided with educational program that can increase their knowledge in using various methods of teaching for the better understanding to the public. The nurse educators should plan in-service educational programme for the mothers on assessment and prevention of water borne diseases

## **Nursing Practice**

With noticeable increase in chronic diseases, cholera, Amoebiasis aging population, nurses are required to be in position of providing ask adequate information. Their capacity to be enhanced through continuing education with support of the nursing educators. Additionally, protocols to guide prevention of water born diseases need to developed and disseminated for use during care. The primary role of nurses is that of patient advocate because nurses tend to

have a holistic approach to care. Nurse educators or clinical instructors can use structured teaching program as a strategy during in-service program to educate mothers in the community. Nurse practitioner monitors the health and lifestyle of her patients as a preventive approach and working as an advocate for her patients, explaining complex terms, answering questions and explaining various treatment options. Staff nurses at the hospital must be taught on the latest technological advancement in the profession and given enough opportunity to get used to it, in order to increase their efficiency in providing care.

### **Nursing administration**

The nurse administration should take interest in providing information through educational programs on prevention of water borne diseases. Planning, organization of such programmes requires efficient team work, planning for manpower, money material and methods to conduct successful educational programs, both at hospital and community level. The nurse educators should plan organized and provides materials for the effective Structured teaching program regarding prevention of water borne diseases and should provide appropriate nursing education with the help of various methods of teaching.

### **Nursing Research**

Nursing research plays an important role in the field of nursing. Nursing research improves clinical expertise and personnel knowledge, helps to implement changes to provide excellence in nursing care and helps to locate additional resources. Therefore nurses must be vigilant and should adopt skills based on new scientific base. Nurse researchers should conduct research to screen the students in college or in community set up to detect whether they are risk of developing water borne diseases. Nurse researcher should conduct educational programme to educate the community regarding risk assessment and prevention of water borne diseases. Nurse researcher must be motivated for extensive and intensive research to make nurse educators aware of the health, academic and other risk of water borne diseases.

### **Limitations**

- Study is limited to mothers of toddlers in selected area of community
- Lack of control group, made it difficult to limit the effect of extraneous variables from contaminating the post-test findings
- The study is limited for 30 days only

### **Recommendations**

- In service training and refresher courses about prevention of water borne diseases

should be designed for mothers. This should provide them with up-dated knowledge to understand prevention which can be translated into practice

- Further interventions studies should be initiated to examine the level of knowledge and practice in different settings
- A replication of the present study can be conducted with a large population and wider area for wider generalization
- A study can be conducted to evaluate the computer assisted teaching on prevention of water borne diseases
- A similar study can be replicated with a control group
- A comprehensive study can be conducted to compare the knowledge and practice of mothers of toddlers regarding risk assessment and prevention of water borne diseases

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## **SUMMARY**

This chapter deals with the study to assess the knowledge, attitude and practice regarding prevention of Water-Borne diseases among mothers of toddlers residing at selected rural areas in Bengaluru with a view to develop an information booklet.

### **OBJECTIVES OF THE STUDY:**

- Assess the level of knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore.
- To find out the relation between knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore.
- To find out the association between knowledge and attitude regarding prevention of water borne disease among the mothers of toddlers residing at selected rural area at Bangalore

### **HYPOTHESIS OF THE STUDY**

The hypothesis will tested at 0.05 level of significance

**H1:** There will be significant relationship between the level of knowledge and attitude regarding prevention of water borne disease among mothers of toddlers residing in selected rural area of Bangalore.

**H2:** There will be significant association between the level of knowledge and attitude regarding prevention of water borne disease among mothers of toddlers residing in selected

rural area of Bangalore

### **ASSUMPTIONS**

- Mothers of toddlers from rural area may have varying level of knowledge and practices regarding prevention of water borne diseases which can be measured by a structured knowledge and practice questionnaire.
- Mothers of toddlers will exhibit both positive and negative attitude towards prevention of water borne diseases that can be measured by an attitude scale.
- The information booklet may help the mothers of toddlers to enhance their level of knowledge and to develop a positive attitude towards prevention of water borne diseases.

The literature review included a professional experience. Medline search for published and unpublished research, a manual search of recent literature, a citation review of relevant and secondary articles, contact with investigators and clinical observation of case studies and guidance from experts in the field of community health nursing. These literature provided information which enabled the investigator to study the extent of the selected problem, to design the methodology, to develop conceptual framework, data analysis and for interpretation. The conceptual framework of this study is based on the general system theory proposed by modified Ludwig von Bertalanffy. It includes the input, throughput, output and the feed-back. Input refers to the sources needed by the system. In this study input refers to the existing knowledge and attitude practice of mothers of toddlers on prevention of water borne diseases and their demographic variables such as age, religion, type of family, family income, education.

Throughput refers to the process whereby system transforms, create and organizes. In this study throughput was administration of the structured teaching programme. Output refers to energy information and matter that is transferred to the environment as a result of throughput. The output in this study is referred to a predicted change in the knowledge level measured by the post test and a predicted difference in the practice of mothers of toddlers on prevention water borne diseases. Feedback is the environmental response of the system. Feedback emphasizes on input and throughput.

The researcher adopted pre experimental one group pre-test post-test study design to assess the effectiveness of structured teaching programme regarding knowledge and

attitude practice on prevention of water borne diseases among mothers of toddlers in selected areas of Bengaluru. Purposive sampling technique was adopted. The sample consisted 60 mothers of toddlers.

The tool developed and used for data collection was structured knowledge questionnaire consisting of section A, section B, section C. section A consisted of 12 items related to demographic variables. Section B consisted of 30 items related to knowledge on prevention of water borne diseases. Section c consisted of 12 items related to observational attitude practice checklist to evaluate the risk assessment and prevention of water borne diseases.

After obtaining the content validity form the experts, the pilot study was conducted in Somanahalli, Bengaluru. The reliability of the tool was established by using Karl Pearson's test retest method to ascertain the feasibility and reliability and was found to be reliable with  $r=0.82$ . The ethical aspect of researcher was maintained throughout the period by getting permission from the authorities as well as the subjects.

Main study was conducted in the month of November and August 2017 at Bettalsur, Bengaluru. The data collected was analyzed by descriptive and inferential statistical, and interpreted and discussed based on the objectives of the study, hypothesis, theoretical statistics, and interpreted and discussed based on the objectives of the study, hypothesis, theoretical framework and relevant studies from the literatures reviewed.

### **The majorities' findings of the study are summarized as follows**

#### **Findings related to sample characteristics:**

- Majority of the mothers of toddlers, about 36.7% (22) were of the age group between 25 to 27 years
- Majority of the mothers of toddlers belonged to the Christian religion 75% (45)
- In relation to the monthly income of the family 38.3% (23) between 5000-10000 rupees per month
- In educational status of the staff nurse 36.7% (22) had PUC

#### **The main findings regarding Pre-test and post-test knowledge and attitude practice scores of the mothers of toddlers**

- With regard to the pre-test knowledge, majority of the mothers of toddlers 63.3% (38) were having moderate knowledge level, remaining all 30% (18) were having adequate knowledge level. Few of the mothers of toddlers had inadequate knowledge level of risk assessment and prevention of water borne diseases
- With regard to the pre-test practice scores, it indicates that the subjects 81.7% (49)

had adequate competence

- With regard to the post-test knowledge, after the administration of structured teaching programme, majority of the mothers of toddlers 95% (57) were having adequate knowledge level, remaining 5% (03) were having moderately adequate knowledge level on risk assessment and prevention of water borne diseases
- With regard to the post test attitude practices scores, the subjects 100% (60) have gained adequate competency i.e. learners are ready to enter an advanced level after the structured teaching programme

### **Findings regarding effectiveness of structured teaching programme on prevention of water borne diseases**

There was statistically differences between the pre-test and post-test knowledge scores among mothers of toddlers regarding knowledge on prevention of water borne diseases. The computed “t” test value is higher than the table value 2.0010 at 0.05 level of significance. Therefore the structured teaching programme regarding knowledge on prevention of water borne diseases was effective. Hence the hypothesis 1 was accepted.

The t values for attitude practice on prevention of water borne diseases is  $t=10.56$  at  $p<0.05$  level, and these values are more than the table values. Here there was statistically significant difference between the pre-test and the post-test attitude practice scores on prevention of water borne diseases. Therefore the structured teaching programme on attitude practice regarding prevention of water borne diseases was effective. Hence the hypothesis II was accepted.

### **Findings related to determine the association between pretest knowledge and attitude practice scores on prevention of water borne diseases with selected demographic variables of mothers of toddlers.**

There will be significant differences between pre-test level of knowledge on risk assessment and prevention of water borne diseases and selected demographic variables of mothers of toddlers with present area of experience. Hence the hypothesis II was accepted. There will be significant association between pre-test level of attitude practice on prevention of water borne diseases and selected demographic variables of mothers of toddlers with age. Hence the hypothesis II was accepted.

The study finding can be summarized as:

- Before structured teaching programme the existing knowledge level of mothers of toddlers on prevention of water borne diseases
- The structured teaching programme was found effective as there was and as statistically

significant increase from pre-test to post-test knowledge scores and attitude practice scores of mothers of toddlers on prevention of water borne diseases after the administration of structured teaching programme

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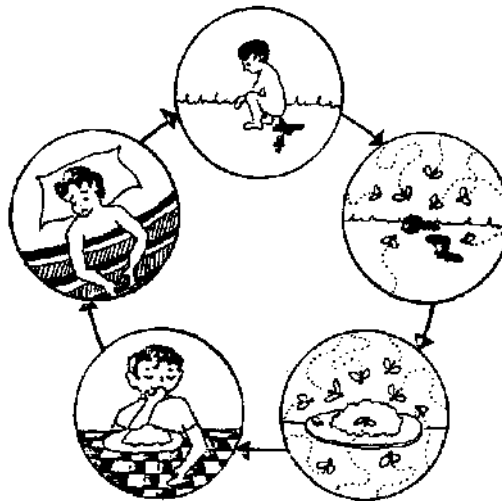
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## **INFORMATION BOOKLET**

### **Definition and meaning**

Water borne diseases are conditions caused by pathogenic microorganisms that are transmitted in water, Disease can be spread while bathing, washing or drinking water, or by eating food exposed to infected water



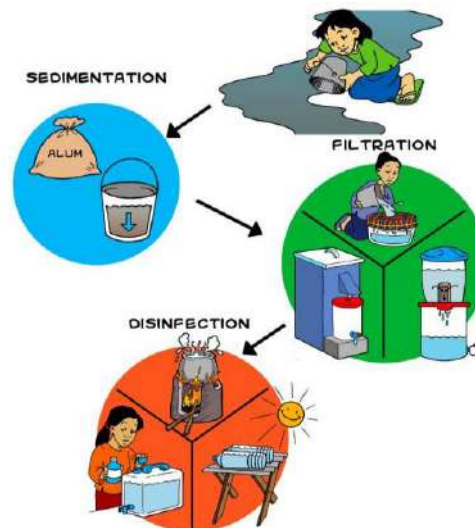
### **Causes of water borne diseases**

Water borne diseases are caused by drinking contaminated or dirty water. Contaminated water can cause many types of diarrheal diseases, including cholera and other serious illnesses such as Guinea worm disease, typhoid and Dysentery.



### Purification of water

If water is contaminated and you don't have bottled water, there are various water purification methods that are used today. Some of the common purifying methods were Distillation, Ion exchange, carbon adsorption, filtration, and so on.



### Treatment of water borne diseases

Water borne diseases like Amoebiasis can be treated using antibiotics, Shigella is treated by replacing lost fluids from diarrhea particularly if your general health is good and Shigella infection is mild, cholera is treated by rehydration, I.V fluids and also by antibiotics.

### Conclusion

It is concluded that structured teaching programme is effective in improving the knowledge of mothers of toddlers regarding prevention of water borne diseases. The structured teaching programme (STP) has enhanced the knowledge of mothers of toddlers, which is essential for appropriate care of her family and children.

### Summary

The structured teaching programme regarding prevention of water borne diseases which was adopted by the researcher is found to be effective in increasing the aspects wise knowledge of mothers of toddlers on prevention of water borne diseases.