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A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON PREVENTION OF WORM INFESTATION AMONG MOTHERS OF UNDERFIVE CHILDREN IN SELECTED SLUM AREA AT BANAGLORE"

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INTRODUCTION:

Children are inheritance from the God. Every child has right to grow up in the healthy home, school and community. The future development of our children and of their world depends on their enjoyment of the health. [1] India is one of the developing countries. In most of the developing countries worm infestation is the major health problem. In Indian society, it is a common cause of malnutrition, especially in rural areas where there is practice of open field defecation. Helminthes or worms live as parasites in the human body bare a fundamental cause of human disease associated with health and nutrition problems beyond gastro intestinal tract disturbances. [2]

India is a larger country with various forms of diversities. Current Indian population is 1.25 billion, of this 25% are children. Lack of knowledge on hygiene and malnutrition in general public has contributed largely to the failure of achievement of "health for all by 2000 A.D". Even though under five mortality has come down to 93, morbidity is on the rise mainly due to malnutrition which is the major cause for under 5 mortality (UNICEF, 2002). [3]

Worm infestation is a major public health problem. It has been estimated that more than 25% of the world's population are infected with worms, with the major incidence occurring in developing countries. It is one of the main health concerns especially among children. Approximately two billion people are infected with soil-transmitted helminthes worldwide. Over 270 million preschool-age children and over 600 million school-age children live in areas where these parasites are intensively transmitted, and are in need of treatment and preventive interventions. [4]

Even today 50% of total children of our country suffer from malnutrition with diarrhea, intestinal worm infection from poor sanitation or lack of hygienic practices. The problem of helminthic infestation in children is wide spread in all tropical and subtropical area due to prevalent method of defecation and disposal of excreta. The World Bank claims that worm infestation impair learning and thus helminthic control is one of the most effective strategies to improve health in developing countries.[5]

Most helminthes infections, if left untreated, result in multi-year, chronic inflammatory disorders that cause both concurrent and delayed-onset pathology to the afflicted human host, it is now appreciated that chronic helminthes infections are also linked to more insidious persistent health conditions such as anaemia, growth stunting, and protein calorie under nutrition, fatigue, and poor cognitive development.[6]

Worm infestation can be prevented by practices such as safe disposal of excreta, washing hands after defection, wearing slippers and food hygiene, washing vegetables and fruits properly before using. These can be implemented

through effective education of mothers because the mother is only the person who provides the proper education to their children. World health organization (WHO), estimated that about 1400 million people worldwide are infected with at least one type of intestinal worm.[7]

The under five children health must be promoted and protected to become a good citizen. The mothers plays a major role in promoting the health of an under five child. 3 The mother is the first person to rear and supervise her child growth pattern from birth. The mother acts as a police man to maintain and monitor her child growth and development, nutrition and health pattern. Many studies proved that educational programmes increases the knowledge of mothers regarding worm infestation. Providing educational information is the best method to prevent worm infestation, so the researcher selected the topic on worm infestation. [8]

NEED FOR THE STUDY

Worm infestation is a major public health problem. It has been estimated that more than 25% of the world's population are infected with worms, with the major incidence occurring in developing countries. Worm infestation can be prevented by practices such as safe disposal of excreta, washing hands after defection, wearing slippers and food hygiene, washing vegetables and fruits properly before using. These can be implemented through effective education of mothers because the mother is only the person who provides the proper education to their children. [12]

India is a larger country with various forms of diversities. Current Indian population is 1.25 billion; of this 25% are children. Lack of knowledge on hygiene and malnutrition in general public has contributed largely to the failure of achievement of "health for all by 2000 A.D". Even though under- five mortality has come down to 93, morbidity is on the rise mainly due to malnutrition which is the major cause for under 5 mortality.[13]

Worm infestation is common from 1-5 years of age when the child begins to lead a more independent life. The magnitude of parasitic infestation among children constitutes a major health problem in many parts of the world. It is estimated that 85% of the total incidence is due 5 to ineffective disposal of human excreta. Intestinal parasitic infection (IPI) constitutes a global health problem. These parasites are estimated to affect approximately 3.5 billion persons worldwide and cause morbidity in 450 million, many of these 1 being children in developing countries.[14]

In world's population 24% or more than 1.5 billion people are infected with soil transmitted helminthic infections worldwide. Preschool-age children over 267 million and school-age children over 568 million live in areas where these parasites are intensively transmitted and are in need of interventions. In 2018, over 676 million school-aged children were treated with anti-helminthic medicines in endemic countries, corresponding to 53% of all children at risk.[15]

In India, 225million preschool (3-6years) and school age (6-12 years) children are estimated to be at risk of worm infestations. India accounts for 65% of soil-transmitted helminthic (parasitic worms) cases at South East Asia and 27% of cases world-wide. In recent years, India has implemented national deworming programme, through which almost 250 million children are dewormed in February and August (twice a year).[16]

In Dakshina Kannada district ascariasis superseded all other helminthes with an incidence of 48.33% worm infestation is the most common problem in children due to its close association with health practices and sanitary conditions. Mothers are in the unique position of influencing their children growth and development. The practices that cultivate the childhood will follow up to tomb. So the mothers have to learn and practice and make the child too to follow hygienic habits. So, education to mother of under- five children plays a crucial role for the betterment of tomorrow. Keeping this in mind the research team has decided to conduct this study to create awareness among the mothers of under- five children regarding helminthic infestations.[17]

In world's population 24% or more than 1.5 billion people are infected with soiltransmitted helminth infections worldwide. Preschool-age children over 267 million and school-age children over 568 million live in areas where these parasites are intensively transmitted and are in need of interventions. Global wise over 600 million persons are estimated to be infected by S. stercoralis.[18]

In India, 225 million preschool(3-6yrs) and schoolage (6-12 yrs) children are estimated to be at risk of worm infestations. India accounts for 65% of soil-transmitted helminth (parasitic worms) cases at South East Asia and 27%

of cases worldwide. In recent years, India has implemented national deworming programme, through which almost 250 million children are dewormed in February and August (twice a year).6, 7 The prevalence of anemia among the entire study population (350 children) and in those infected with worms was 56.6% and 56.9% respectively. With polyparasitism there was a relative increase in the frequency of anemia in females than males.[19]

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding prevention of worm infestation among mothers of under five children.

2. To evaluate the effectiveness of structured teaching programme on knowledge regarding prevention of worm infestations among mothers of under five children.

3. To find the association between pre test knowledge and socio demographic variables regarding prevention of worm infestations among mothers of under five children.

HYPOTHESES

H1: There will be significant difference between pre test and post test knowledge score regarding prevention worm infestation of among mothers of under five children.

H2: There will be significant association between levels of knowledge score on prevention worm infestation of among mothers of under five children with selected demographic variables.

CONCEPTUAL FRAMEWORK

The present study aimed at to evaluate the effectiveness of structured teaching programme on prevention of worm infestation among mothers of under five children in selected slum area at Bangalore The conceptual framework of this study was based on the General Systems Theory developed by Von Bertalanffy with input, process, output and feedback in 1968. According to systems theory a system is a group of elements, individuals and their environment. An individual is capable of taking energy and information as input from the environment and release them to the environment. This input, when processed, provides an output and continues to be so, as long as these four parts keep interacting. If there is change in any of the parts, there will be changes in all the parts. This system is cyclical in nature that interacts with one another in order to achieve the goal. Feedback within the system or from the environment provides the information, which helps the system to determine whether it meets its goal

In this study, these concepts can be explained as follows.

INPUT: In this study input refers to the. The influencing demographic factors are Age, type of family, pet animal in the house, Mode of defecation, do you dewormed the child, Source of water, any history of worm infestation in the family, previous received any health education and source information.

PROCESS: In this study, process refers to the development and administration of prevention of worm infestation among mothers of under five children. Following this knowledge will be assessed again by using the same structured knowledge questionnaire to know the gain.

OUTPUT: In the present study, output refers to the evaluation of the effectiveness of structured teaching programme on knowledge regarding prevention of worm infestation among mothers of under five children that may also be regarded as the product of the process.

FEEDBACK: Accordingly; the higher knowledge scores obtained by the school children in the post test indicate that the structured teaching programme were effective in increasing the knowledge. Lower scores indicate structured teaching programme were not effective in increasing their knowledge regarding worm infestation. Hence, alternative measures should be taken to improve their knowledge.

ENVIRONMENT: In the present study, the environment may be considered as selected slum areas who are mothers of under five children are staying in selected slum areas Bangalore.

METHODOLOGY:

Methodology is a systematic approach of exploring facts with the application of principles of reasoning to scientific and philosophical enquiry. It involves orderly procedures by which the researcher starts from an initial identification of a problem to its conclusion (Sharma, 1990). Methodology indicates the general pattern for organizing the

procedure for gathering valid and reliable data. It included research approach, research design, setting, sample size, sampling technique, criteria for sample selection, data collection tool, plan for data analysis and protection of human rights (Polit, 2005).

RESEARCH APPROACH:

The research approach adopted for this study is evaluative approach. Evaluative approach helps to explain the effect of independent variables on the dependent variables. This approach is considered most suitable for this study.

RESEARCH DESIGN:

The research design is the plan, structure, and strategy of investigations of answering the research question is the overall plan or blue print the researchers select to carry out their study. Quantitative research method is a formal, objective, systematic process in which numerical data are used to obtain information. Pre experimental one group pre test post design was used to assess the knowledge regarding prevention of worm infestation among mothers of under five children who are studying in selected colleges with pre test and post test with the structured knowledge questionnaire.

POPULATION:

The population is defined as the entire aggregation of cases that meet a designed set of criteria (Polit and Hungler1999).

The population selected for the study comprised of all mothers under five children who are staying in Konanakunte slum areas, and accessible population consists of under five children who are staying in Konanakunte slum areas, and who met the inclusion criteria.

SAMPLING:

Sampling technique: Sampling technique adopted for this study was Non probability convenient sampling technique is used for the study to select 60 mothers of under five children

Sample Size: In this study samples are 60 mothers of under five children in who were staying in Konanakunte slum area at Bangalore, those who are fulfilling the inclusion criteria.

SAMPLING CRITERIA:

Inclusion criteria

- Mothers of under five children staying in selected slum area
- Mothers of under five children who can understand Kannada & English.
- Mothers of under five children who are willing to participate in study.
- Mothers of under five children who are present at the time of data collection

Exclusion criteria

- Mothers of under five children who are not willing to participate in study.
- Mothers of under five children are who are not available at the time of data collection.

DATA COLLECTION TECHNIQUE:

Structured knowledge questionnaire regarding prevention of worm infestation among the mothers of under five children. and a good deal of information could be obtained.

DEVELOPMENT OF THE TOOL:

The structured questionnaire consisted of two parts:

SECTION A: 09 Questionnaire to collect demographic data among the mothers of under five children

SECTION B: 30 multiple choice questions to assess 37 the level of knowledge regarding awareness about prevention of worm infestation among the mothers of under five children, worm infestation, causes worm infestation, clinical manifestation, diagnosis, management and prevention of worm infestation.

Score interpretation:

The scoring pattern attributed to the 30 items about knowledge regarding prevention of worm infestation among the mothers of under five children. Each item has 4 answers as options among which one was the correct response, for each correct response one mark was given and for incorrect responses zero marks was given. The total score of knowledge was 30 marks

The scores were interpreted as follows

<50- Inadequate

50 to 75- Moderately adequate

>75- Adequate

DEVELOPMENT OF STRUCTURED TEACHING PROGRAMME:

The structured teaching programme was developed based on review of literature, review of journals, online views, experts' opinion, personal and clinical experience. The steps involved in the development of structured teaching programme were:

1. Review of literature and discussion with the experts.
2. Preparation of blue print
3. Preparation of the first draft of structured teaching programme
4. Development of criteria check list
5. Content validity of pstructured teaching programme
6. Pre-testing of structured teaching programme
7. Preparation of final draft of structured teaching programme.

CONTENT VALIDITY

Validity of the tool was ascertained in consultation with 6 experts in the field of Child health nursing and 1 statistician. The suggestions and recommendations given by the experts were accepted and necessary correction was done for modifying the tool.

RELIABILITY:

The reliability of the tool was established by testing the internal consistency. The internal consistency was assessed by using split half technique. The reliability obtained for knowledge regarding s prevention of worm infestation among the mothers of under five children was r=0.71. This indicates that the tool was reliable. Since the computed knowledge was high, the reliability of the tool for the study was established

PLAN FOR DATA ANALYSIS

Data was analyzed on the basis of objective and hypothesis by using descriptive and inferential statistics.

1. Descriptive statistics was used to analyze the frequency, percentage, mean and standard deviation of the following variables: Demographic variables. Knowledge questionnaire

2. Inferential statistics was used to determine the comparison, relationship and association

- Paired t was used to find out the significance of the pre test and post test score of knowledge regarding prevention of worm infestation among the mothers of under five children. C
- omparison between pre test and post test and Chi-square test was used to find the association between post test knowledge score with their demographic variables.

RESULTS:

PART I: DESCRIPTION OF BASELINE CHARACTERISTICS BY USING FREQUENCY AND PERCENTAGE DISTRIBUTION.

The study shows, out of 60 mothers of under five children 21(35%) of the mothers of under five children were in the age group of 31 to 35 year, 16(26.66%) were in the age group of 36 to 40 years and 15 (25%) were in the age group of 25 to 30 years and 8(13.33%) were age group 31 and above, 31(51.66%) of them were in the joint family,

29(48.33%) were from nuclear family, out of 60 mothers of under five children 44(73.33%) of the mothers of under five children were having pet in their house and 16(26.66%) were in not have any pets, 21(35%) were using open toilet, 21(35%) were having own toilet and 18(30.33%) were using public toilet, 38(63.33%) of the mothers were not deworm there children and 22(36.66%) were deworm their children, 28(46.66%) of the were using well water and 17(28.33%) were using river water and 15(25%) were using tap water, 31(51.33%) were having history of worm infestation in the family, 29(48.33%) were not have history of worm infestation in the family, 41(68.33%) were not having previous received any health education related to worm infestation, 19(31.66%) were previous received any health education related to worm infestation and 26(43.33%) get information from health professionals, 26(43.33%) were from mass media, 8(13.33%) were from friends and relatives and 00 were from news papers.

PART II: ASSESS THE PRE TEST LEVEL OF KNOWLEDGE REGARDING PREVENTION OF WORM INFESTATION AMONG MOTHERS OF UNDER FIVE CHILDREN.

Sl No	Level of Knowledge	Frequency	Percentage
1	Inadequate knowledge	50	83.33
2	Moderately adequate knowledge	10	16.66
3	Adequate knowledge	00	00
	Total	**60**	**100.0**

Table 1: Percentage distribution of pre-test knowledge scores

The above table shows the pre-test level of knowledge on prevention of worm infestation among mothers of under five children 50(83.33%) of mothers of under five children are having inadequate knowledge, 10(16.66%) of the having moderately adequate knowledge, and none of adequate knowledge about prevention of worm infestation among mothers of under five children.

PART III: ASSESS THE POST TEST LEVEL OF KNOWLEDGE REGARDING PREVENTION OF WORM INFESTATION AMONG MOTHERS OF UNDER FIVE CHILDREN

Sl No	Level of Knowledge	Frequency	Percentage
1	Inadequate knowledge	45	75
2	Moderately adequate knowledge	15	25
3	Adequate knowledge	00	00
	Total	**60**	**100.0**

Table 2: Percentage distribution of post-test knowledge scores

The above table shows the post-test level of knowledge on prevention of worm infestation among mothers of under five children 45(75%) of mothers of under five children are having adequate knowledge, 15(25%) of the having moderately adequate knowledge, and none of having inadequate knowledge about prevention of worm infestation among mothers of under five children.

PART IV: COMPARISON BETWEEN PRE-TEST AND POST- TEST KNOWLEDGE REGARDING PREVENTION OF WORM INFESTATION AMONG MOTHERS OF UNDER FIVE CHILDREN

Sl no	Level of knowledge	Pre test		Post test	
1	Adequate knowledge	00	00	45	75
2	Moderately adequate knowledge	10	16.66	15	25
3	In adequate knowledge	50	83.33	00	00
		60	**100**	**60**	**100**

Table: 3. Comparison between pre and post test knowledge of prevention of worm infestation among mothers of under five children.

In pre-test majority of the mothers of under five children 50 (83.33%) had inadequate level of knowledge, 10(16.66%) of them had moderate adequate knowledge and none of them had adequate level of knowledge regarding prevention of worm infestation among mothers of under five children. In post-test have showed improvement in their

knowledge, 45 (75%) of mothers of under five children possessed adequate level of knowledge and 15(25%) possessed moderate adequate knowledge and none of them had inadequate knowledge about prevention of worm infestation among mothers of under five children.

This showed that the structured teaching programme was highly effective in improving the knowledge of mothers of under five children on prevention of worm infestation. So here null hypothesis is rejected and research hypothesis is accepted knowledge gained by structured teaching programme not by chance.

PART V: EVALUATION OF THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON PREVENTION OF WORM INFESTATION AMONG MOTHERS OF UNDER FIVE CHILDREN.

Domain	Mean	SD	Mean%	paired 't' test
Pre test	7.52	1.76	38	
Post test	16.92	1.42	85	**4.154*** **

Table-04. Improvement of mean score of knowledge variables between pre and post test.

The obtained post-test mean value 16.92 was higher than the pre-test value 7.52. The SD between pre-test and post-test is 1.76 and 1.42 respectively. The obtained paired 't' value is 4.154 which was highly significant at 0.001 level.

It is inferred that mothers of under five children had significantly improved knowledge after administration of structured teaching programme on prevention of worm infestation. So it is proved that the structured teaching programme was highly effective in improving knowledge.

H1: There will be significant difference between pre test and post test knowledge score regarding prevention worm infestation of among mothers of under five children.

So here null hypothesis is rejected and research hypothesis is accepted knowledge gained by structured teaching programme not by chance.

COMPARISON OF PRE AND POST-TEST MEAN, SD AND MEAN PERCENTAGE KNOWLEDGE LEVEL AMONG MOTHERS OF UNDER FIVE CHILDREN REGARDING PREVENTION OF WORM INFESTATION

Subject	Max score	Pre-test			Post test			Difference in the mean percentage	
Level of knowledge		Mean	SD	Mean%	Mean	SD	Mean%		
	30	7.52	1.76	38	16.92	1.42	85	47	

Table 5: Comparison of pre and post-test mean, SD and mean percentage knowledge level among mothers of under five children regarding prevention of worm infestation.

Pre-test and Post-test results shows that the structured teaching programme is more effective on prevention of worm infestation among mothers of under five children. Mothers of under five children gained more knowledge on prevention of worm infestation.

PART VI: ASSOCIATION BETWEEN THE PRE TEST LEVELS OF KNOWLEDGE OF THE MOTHERS OF UNDER FIVE CHILDREN REGARDING PREVENTION OF WORM INFESTATION WITH SELECTED DEMOGRAPHIC VARIABLES.

The present study shows that Chi square value computed between the knowledge scores of mothers of under five children and the demographic variables is higher than tabled value ($p>0.05$). There is significant association between mode of defecation ($\chi2 = 6.123$), source of water ($\chi2 = 9.97$), pets are there in house ($\chi2 = 11.012$) and history of worm infestation in the family ($\chi2 = 10.216$) and there were no significant association between other variables like age in years, type of family, do you deworm the child, previous received any health education related to worm infestation and source of information.

H2: There will be significant association between levels of knowledge score on prevention worm infestation of among mothers of under five children with selected demographic variables

Chi-square values at the 5% level of P=0.05 with their demographic variables among the mothers of under five children, and was found to be associated with mode of defecation, source of water, pets are there in house and history of worm infestation in the family and the other variables were not statistically signified. However null hypothesis (H0) is rejected and research hypothesis (H2) was accepted.

The main findings of the study revealed that

- The pre-test level of knowledge on prevention of worm infestation among mothers of under five children 50(83.33%) of mothers of under five children are having inadequate knowledge, 10(16.66%) of the having moderately adequate knowledge, and none of adequate knowledge about prevention of worm infestation among mothers of under five children.
- The post-test level of knowledge on prevention of worm infestation among mothers of under five children 45(75%) of mothers of under five children are having adequate knowledge, 15(25%) of the having moderately adequate knowledge, and none of having inadequate knowledge about prevention of worm infestation among mothers of under five children.
- In pre-test majority of the mothers of under five children 50 (83.33%) had inadequate level of knowledge, 10(16.66%) of them had moderate adequate knowledge and none of them had adequate level of knowledge regarding prevention of worm infestation among mothers of under five children. In post-test have showed improvement in their knowledge, 45 (75%) of mothers of under five children possessed adequate level of knowledge and 15(25%) possessed moderate adequate knowledge and none of them had inadequate knowledge about prevention of worm infestation among mothers of under five children. This showed that the structured teaching programme was highly effective in improving the knowledge of mothers of under five children on prevention of worm infestation. So here null hypothesis is rejected and research hypothesis is accepted knowledge gained by structured teaching programme not by chance.
- The obtained post-test mean value 16.92 was higher than the pre-test value 7.52. The SD between pre-test and post-test 1.76 and 1.42 respectively. The obtained paired 't' value is 4.154 which was highly significant at 0.001 level. It is inferred that mothers of under five children had significantly improved knowledge after administration of structured teaching programme on prevention of worm infestation. So it is proved that the structured teaching programme was highly effective in improving knowledge.

  H1: There will be significant difference between pre test and post test knowledge score regarding prevention worm infestation of among mothers of under five children.

  So here null hypothesis is rejected and research hypothesis is accepted knowledge gained by structured teaching programme not by chance.
- Pre-test and Post-test results shows that the structured teaching programme is more effective on prevention of worm infestation among mothers of under five children. Mothers of under five children gained more knowledge on prevention of worm infestation.
- The Chi square value computed between the knowledge scores of mothers of under five children and the demographic variables is higher than tabled value ($p>0.05$). There is significant association between mode of defecation ($\chi2 = 6.123$), source of water ($\chi2 = 9.97$), pets are there in house ($\chi2 = 11.012$) and history of worm infestation in the family ($\chi2 = 10.216$) and there were no significant association between other variables like age in years, type of family, do you deworm the child, previous received any health education related to worm infestation and source of information.

  H2: There will be significant association between levels of knowledge score on prevention worm infestation of among mothers of under five children with selected demographic variables.
- Chi-square values at the 5% level of P=0.05 with their demographic variables among the mothers of under five children, and was found to be associated with mode of defecation, source of water, pets are there in house and history of worm infestation in the family and the other variables were not statistically signified. However null hypothesis (H0) is rejected and research hypothesis (H2) was accepted.

CONCLUSION

The following conclusions were drawn on the basis of the present study that there was statistically significant difference between the pre-test and post-test knowledge score. The result of the study proved that structured teaching programme on knowledge regarding prevention of worm infestation among mothers of under five children had significant effect in improving their knowledge on prevention of worm infestation. Hence the responsibility of the health personnel is to create awareness on prevention of worm infestation. The findings of the study have implications in various areas of nursing namely: Nursing Practice, Nursing Education, Nursing Research, Implication in Community and Public Education

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