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"A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF DIARRHEA AMONG MOTHERS OF UNDER FIVE CHILDREN IN SELECTED AREAS OF COMMUNITY, LUDHIANA, PUNJAB".

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Abstract
Under-five age group is one of the vulnerable age groups for developing the infectious diseases. Diarrheal disease is the second leading cause of death in children under five years old, and is responsible for killing around 760000 children every year. Therefore A Quasi-Experimental Study was Selected to Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding Prevention and Management of Diarrhea among mothers of under-five children in Selected Areas of Community, Ludhiana, Punjab. The objectives of the study were. (1) to assess the pre test knowledge score regarding prevention and management of Diarrhea among mother of under five children, to assess the post test knowledge score regarding prevention and management of Diarrhea among mother of under five children. (II) post test knowledge score; (III) to compare pre and post test knowledge score; (IV) to ascertain the relationship of pretest and posttest knowledge score with variables i.e. age, education, occupation, number of children, family monthly income and source of information. A total 60 mothers were selected with convenient sampling technique and divided 30 each in Control and Experimental groups. The conceptual framework for this study is based on Ludwig Von Bertalanffy's General System theory (1968). A structured questionnaire was used to assess Knowledge. Pilot study was conducted on 6 samples to compute feasibility. Data was analyzed by descriptive and inferential statistics & presented through tables and figures. Present study findings revealed that the posttest mean knowledge score of mothers in experimental group was higher (35.00) than posttest mean knowledge score of control group (21.93). It was thus concluded that the structured teaching program was effective in bringing about the changes in the knowledge of mothers of under five children. So, there is a need to conduct formal and informal health education programs in Community area, so that awareness can be created among mothers regarding prevention and management of diarrhea.
Key Words: *Effectiveness, Knowledge, Mothers, Diarrhea, Structured Teaching Program*

INTRODUCTION

Diarrhea is a common cause of infant deaths worldwide. It is the second leading cause of death in children under 5 years of age. The loss of fluids through diarrhea can cause dehydration, which if not managed promptly may result in death of the child. Diarrhea is both treatable and preventable**.**Every year there are about two billion cases of diarrheal disease worldwide. Diarrhea is a leading cause of child mortality and morbidity in the world. It mostly results from contaminated food and water sources. **(Sharma Rimple 2017)[1].**

In India approximately 2.5 million children were affected with diarrheal illness in every year. One of the major challenges in the gastrointestinal diseases is the recent increase in the number of probable etiological agents. The main causes of diarrhea are poor personal and food hygiene and lack of clean drinking water .In developing countries the scenario is worse due to infection, malnutrition, and illiteracy. One out of every five children who die of diarrhea worldwide is an Indian. Daily, around 1000 children die of diarrhea in India, which means 41 children lose their lives every hour.

As pathogens causing diarrheal diseases are mostly transmitted through the feco-oral route, hand washing is proposed as an-important prevention strategy. Epidemiological evidence shows that the important risk behaviors that encourage human contact with fecal matter include lack of hand washing after defecation, after handling feces, and before handling food. Hand washing aims to decontaminate the hands and prevent cross infection. **(Mathiazhakan Ushapriya 2016)**[2]

Need of the study

The study found that the mothers had inadequate knowledge and in-appropriate practices regarding the home based management of diarrhea. Age of mothers and source of information regarding diarrhea management can affect the knowledge of the mothers. The study recommends the appropriate strategies to provide knowledge and skills to manage diarrhea at home.(Pawanda Geeta, Batra Namita, Neeraj, Shashi, Amit 2015)[14]Low knowledge in mothers was found to be a hindering factor for the appropriate utilization of ORS in the community. Although awareness regarding spread of diarrhea and ORS was adequate in the community, knowledge regarding continuation of feeding and danger signs were deficient .Thus educating the mothers of under- five children regarding correct practices of home management of diarrhea is likely to further reduce diarrhea morbidity and mortality.(SaurabhSuman 2014)[15]

Problem statement:

"A Quasi Experimental Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge regarding Prevention and Management of Diarrhea among mothers of under five children in Selected Areas of Community, Ludhiana, Punjab".

Objectives of the study:-

1. To assess the pretest knowledge score regarding prevention and management of diarrhea among mothers of under five children of control and experimental group.
2. To assess the posttest knowledge score regarding prevention and management diarrhea among mothers of under five children of control and experimental group.
3. To compare pretest and posttest knowledge score regarding prevention and management of diarrhea among mothers of under five children of control and experimental group.
4. To find out the relationship of pretest and posttest knowledge score regarding prevention and management of diarrhea among mothers of under five children of control and experimental group with variables such as age, number of children education, occupation and source of information.

Research Hypothesis:

H_1 -The posttest teaching knowledge score of mothers in experimental group will be significantly higher than knowledge score of mothers in control group regarding prevention and management of diarrhea as measured by structured questionnaire at $p<0.05$ level.

RESEARCH METHODOLOGY

***Research approach*:** A quantitative approach.

***Research Design*:**A Quasi experimental research study.

Two groups pretest and posttest design.

Experimental Group 0_1 x 0_2

Control Group 0_1 0_2

Research setting

The study was conducted in the Vijay Inder Nagar and Sherpur Area of Ludhiana.

Target Population

The target population included mothers of under five children those who were residing in the Selected Community Area, Ludhiana, Punjab.

Sample and Sampling Technique

The total sample size was 60. The purposive sampling technique was used. The mothers, who were willing to participate, were taken as a sample 30 mothers were taken as a control group and 30 were taken as an experimental group.

***Development and Description of the tool*:-**

The tool was consisted of three parts

Part 1: **C**onsisted of items for obtaining personal information

Part 2: Structured Questionnaire to assess the Knowledge of mothers

Total Items: 40

Maximum Score: 40

Minimum Score: 0

Part 3: Structured teaching program

Criterion Measures

Level	Score	%
Good	>28	>70%
Average	14-27	35-67.5%
Below average	<13	<32.5%

Content Validity

Content Validity was confirmed by expert's opinion regarding the relevance of items .The tool was given to 13 expert's from the field of pediatric nursing, obstetric and gynecologic nursing medical-surgical nursing, community health nursing, psychiatric nursing of MD Oswal College of Nursing, Ludhiana According to their valuable suggestions amendments were made in statements of questions and their alternatives. The final tool consisted of 40 items. Content validity of the tool was determined by expert's opinion on the relevance of items.

Reliability of Tool:

Reliability was computed by split half method and was calculated by Karl Pearson's coefficient of correlation and Spearman's Brown prophecy formula. Reliability of tool was 0.90. Hence the tool was reliable.

Data collection Procedure:

Prior to data collection formal permission was obtained from the Manager of Vijay Inder Nagar, Ludhiana. The importance and nature of study was explained to the mothers of under five children. Control group was tested first to prevent contamination. The time given for pretest and posttest was 45 minutes each. The control group was not exposed to the structured teaching. After completing the control group, the pretest was taken from experimental group. Structured teaching was administered to the experimental group with the help of lecture-cum-discussion method with charts, posters and flash cards. After seven days of structured teaching, posttest was taken from both the groups. The time spent in teaching was 40-45 minutes. Data collected from 19th March to 31" March 2018.

Organization of Data Analysis

The analysis of data was organized according to the objectives and presented under the following section.

Section I – Demographic characteristic of sample

Section II –Finding related to comparison of pre and posttest mean knowledge score of control and experimental group.

Section III –Findings related to the relationship of pre and posttest mean knowledge score of mothers in the control and experimental group with selected variables of the sample.

Frequency and Percentage Distribution of the Sample Characteristic

N=60

Characteristics	Control Group (n=30)		Experimental Group (n=30)		df	χ^2
	n	%	n	%		
1. Age (in Years)						
a) 18-22	1	3.33	0	0.00	2	8.42*
b) 23-27	7	23.33	5	16.67		
c) 28-32	9	30.00	20	66.67		
d) >32	13	43.33	5	16.67		
2. Education						
a) Illiterate	3	10.00	8	26.67	1	2.41^{NS}
b) Primary-Middle	8	26.67	9	30.00		
c) Matric -12th	11	36.67	3	10.00		
d) Graduate or above	8	26.67	10	33.33		
3.Occupation of Mother						
a) House-wife	20	66.67	21	70.00	1	2.22^{NS}
b) Laborer	0	0.00	4	13.33		
c) Service	10	33.33	5	16.67		
d) Business	0	0.00	0	0.00		
4. Number of children	13	43.33	12	40.00	2	1.61^{NS}
a) One	5	16.67	9	30.00		
b) Two	9	30.00	4	13.33		
c) Three	3	10.00	5	16.67		
d) More than three						
5. Family income/month (Rs.)	0	0.00	1	3.33	1	2.50^{NS}
a) <5000/-	15	50.00	20	66.67		
b) 5001-10000/-	6	20.00	3	10.00		
c) 10001-15000/-	9	30.00	6	20.00		
d) ≥15001/						
6. Source of information						
a) TV	20	66.67	23	76.67	1	0.74^{NS}
b) Newspaper	2	6.67	1	3.33		
c) Friends	7	23.33	3	10.00		
d) Health professionals	1	3.33	3	10.00		

NS=Non –Significant at P<0.05 level

*P<0.05 level

Table 1depicts that percentage distribution of sample characteristics .Matching of sample was done by applying chi-square test of association and distributed into various categories of age, no. of children, education, occupation and source of information.

According to age in control group maximum13(43.33%) number of the mothers belonged to age group >32, followed by 9(30%),who belonged to age group28-32, whereas in experimental group maximum 20(66.67%) mothersbelonged to age group of 28- 32, followed by 5(66.67%),5(66.67%)number of the mothers belonged to age group 23-27 and >32 years respectively. The relationship was found significant.

As per education mothers in control group maximum11(36.68%) mothers belonged to Matric -12th, followed by 8(26.67%),8(26.67%) who belong to primary –middle and graduate and above,whereas in experimental group maximum 10(33.33%) mothers belong to graduate and above, followed by 9(30%) Primary-Middle.The relationship was found statistically non-significant.

As per occupation in the control group maximum 20(66.67%), were house-wives, followed by 10(33.33%) who were in service whereas in experimental group maximum 21(70%), were house-wives, followed by 5(16.67%) who were in service, followed by 4(13.33%) who were laborers. The relationship was found statistically non-significant.

According to number of children in control group maximum 13(43.33%), mothers had only one child, followed by 9(30%)who had three children, whereas in experimental group maximum 12(40%), mothers had only one child, followed by 9(30%)who had two children. The relationship was found statistically non-significant.

According to family income maximum 15(50%) of mothers of control group had family income between 5001-10000, followed by 9(30%) who had family income>15000, whereas in experimental group maximum 20(66.67%) had family income between 5001-10000, followed by 6(20%) who had family income > 15001.The relationship was found statistically non-significant.

According to source of information in control group maximum 20(66.67%) had information regarding prevention and management of diarrhea from T.V, whereas in experimental group maximum 23(76.67%) had information regarding prevention and management of diarrhea from T.V. The relationship was found statistically non-significant.

Thus, it was concluded that in control group majority of the mothers were in the age group of 28-32 years. In experimental group majority of mothers were in age group of >32 years, were graduate and above having one child, family income between10001-15000. In Control group, Maximum were Matric-12th.Maximum mothers in both control and experimental group had information from TV.

SECTION: II

Objectives:

1. To assess the pretest knowledge regarding prevention and management of diarrhea of control and experimental group.
2. To assess the posttest knowledge regarding prevention and management of diarrhea of control and experimental group.
3. To compare pretest and posttest knowledge regarding prevention and management of diarrhea of control and experimental group.

Table: 2(a)

Frequency and Percentage Distribution of Mothers of under five children According to Pretest Mean Knowledge score regarding Prevention and Management of Diarrhea in Control Group and Experimental group.

N=60

		Mothers of under five children			
		Control Group		Experimental Group	
		Pretest		Pretest	
Levels of Knowledge	**Score**	**n**	**%**	**n**	**%**
Good	**>28 - 40**	**2**	**6.67**	**1**	**3.33**
Average	**14-27**	**28**	**93.33**	**25**	**83.33**
Below Average	**<13**	**0**	**0.00**	**4**	**13.33**

Maximum Score = 40
Minimum Score = 0

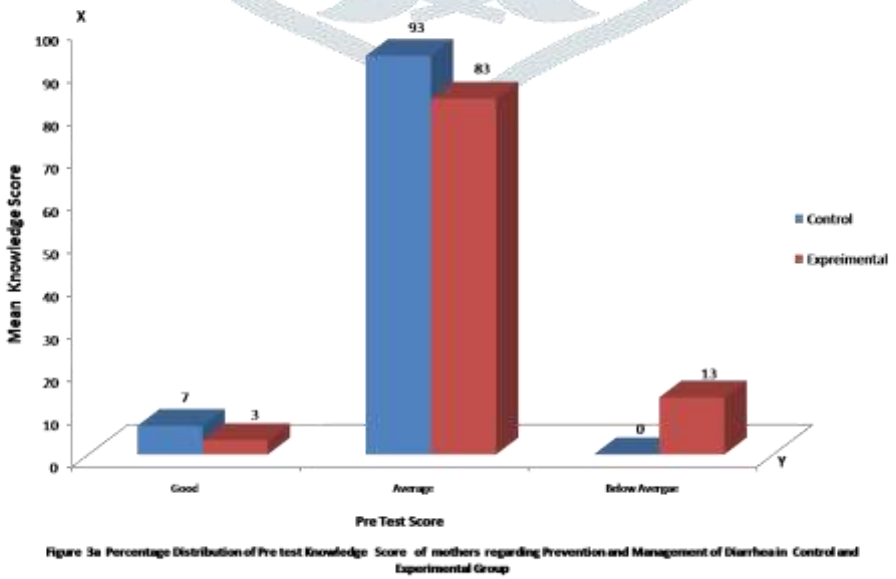

Figure 3a Percentage Distribution of Pre test Knowledge Score of mothers regarding Prevention and Management of Diarrhea in Control and Experimental Group

Table 2(a) and Figure 3a: depicts that in control group maximum (93.33%) mothers had average pretest knowledge score followed by good (6.67%). Majority of mothers had average pretest knowledge. Whereas in experimental group maximum (83.33%) mothers had average pretest knowledge, followed by below average (13.33%) and good (3.33%) respectively.

Table: 2(b)

Frequency and Percentage Distribution of Mother' s of under five children According to Posttest Mean Knowledge score regarding Prevention and Management of Diarrhea in Experimental Group

N=60

		Mothers of under five children			
		Control Group		Experimental Group	
		Posttest		Posttest	
Levels of Knowledge	**Score**	**n**	**%**	**n**	**%**
Good	>28 - 40	2	6.67	30	100
Average	14-27	28	93.33	0	0.00
Below Average	<13	0	0.00	0	0.00

Maximum Score = 40
Minimum Score = 0

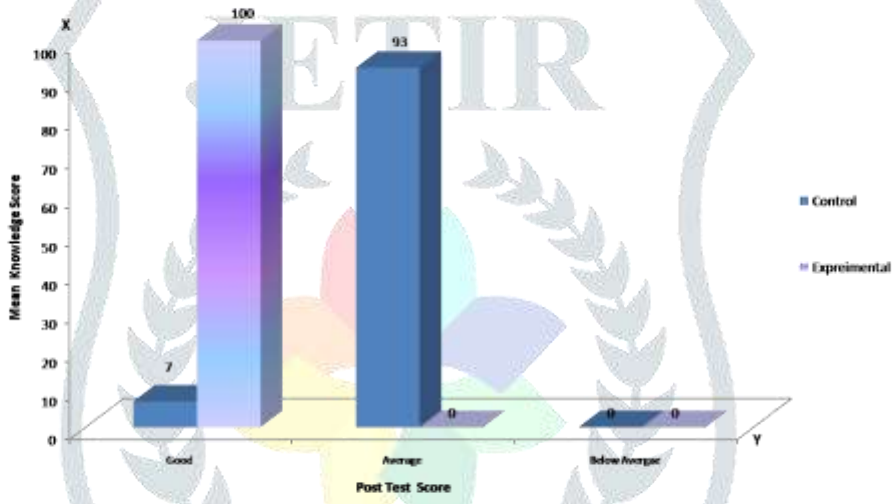

Figure 3b Percentage Distribution of Posttest Knowledge Score of mothers regarding Prevention and Management of Diarrhea in Control and Experimental Group

Table 2(b) and Figure 3b: depicts that in control group posttest maximum mothers (93.33%) had average knowledge score followed by good (6.67%).Whereas in posttest maximum (100%) mothers had good knowledge score after structured teaching in posttest, maximum having good knowledge.

Hence it was concluded structured teaching was effective and helped to increase the knowledge regarding prevention and management of diarrhea among mothers in experimental group.

Table:3

Comparison of Mean of Pretest and Posttest Knowledge Score of Mothers of under five children Regarding Prevention and Management of Diarrhea in Control Group and Experimental Group

N=60

Mothers of under five children						
Knowledge Score						
		Pretest		Posttest		
Group	**n**	**Mean**	**SD**	**Mean**	**SD**	Paired t-value
Control	30	22.77	3.70	21.93	3.72	1.74
Experimental	30	19.70	4.96	35.00	2.15	16.22*
Unpaired t -value		2.72*		16.65*		

Maximum Score = 40 NS =Non –Significant at p<0.05 level

Minimum Score = 0 *Significant at p<0.05 level

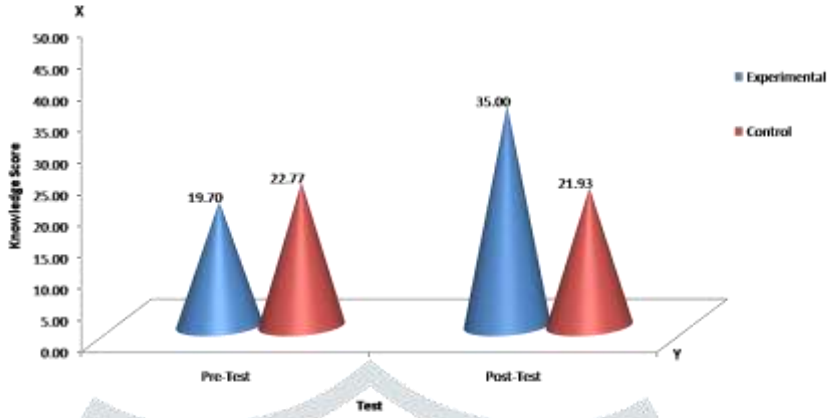

Figure 4 Comparison of Pretest and Posttest Mean Knowledge Score of mothers regarding Prevention and Management of Diarrhea in Control and Experimental Group

Table 3 and Figure 4 depict the Comparison of Mean Pretest and Posttest Knowledge Score of mothers regarding Prevention and Management of Diarrhea among Control and Experimental Group. In control group pretest mean knowledge score was 22.77 and posttest mean knowledge score was 21.93. The difference between pretest and posttest knowledge score of control group was statistically non-significant.

In experimental group pretest mean knowledge score was 19.70 and posttest mean knowledge score was 35.00. The difference between pretest and posttest mean knowledge score of experimental group was statistically significant at p<0.05 level.

Hence, research hypothesis was accepted. So it was concluded that structured teaching had a significant impact on knowledge of mothers of under five children of experimental group regarding prevention and management of diarrhea.

Conclusion

On the basis of the results of data analysis the following conclusions were made.

The difference between pretest knowledge score of control and experimental group was statistically non-significant but the difference between posttest knowledge score of both groups was statistically significant at p <0.05 level. Thus structured teaching programme was significantly effective in increasing the knowledge level of experimental group regarding prevention and management of diarrhea among mothers. There was statistically significant effect of age on knowledge among mothers regarding prevention and management of diarrhea. There was no statistically significant effect of education, occupation, number of children and family income on knowledge among mothers regarding prevention and management of diarrhea.

Limitations

The size of sample was small 60 i.e.30 in control and 30 in experimental group. Hence it was difficult to make broad generalization.

Implications

The finding of present study indicated that mothers had knowledge regarding prevention and management of diarrhea in under-five children. The study findings have certain important implications for nursing profession i.e. nursing education, nursing administration, nursing practices, nursing research and general awareness.

1. *Nursing Education*

Education is the key for development of excellent nursing practice. Nurses must be life-long learners and they should be given opportunity for continuing education. Community health nursing curriculum for all level of nursing students should lay stress on prevention and management of diarrhea in under-five children.

2. *Nursing Administration*

The need of well - organized teaching programme is felt to promote the knowledge of mothers regarding on prevention and management of diarrhea in under-five children. The nursing administrator should also conduct programme to educate the mothers, by firstly educating the health workers on various health issues.

3. Nursing Service

Nursing professional should render services according to changing needs of society. The high incidence of under-five mortality and morbidity rates associated with diarrhea, stress the need for health professionals to take active part in providing health education to mothers .Health education is needed as long term continuous process for future well- being of under five children.

4. *Nursing Research*

The information contained in the study can be a source of data for future researchers. It can be helpful in conducting research with large sample size in different settings.

5. ***General Awareness***

Public in general and mothers of under-five children specifically must be aware of the causes and risk factors of diarrhea and must know how to prevent them. This will help to reduce the under-five morbidity and mortality. Mass media like television, newspaper can also help in spreading this information.

Recommendations

Based on the findings of the study, following recommendations are offered.

1. Similar studies can be conducted in different setting like hospital and different target population like staff nurses, anganwadi workers.
2. A comparative study can be conducted to assess the knowledge of mothers in rural and urban community.
3. Exploratory study can be done to assess the knowledge of mothers regarding prevention and management of diarrhea in under-five children.
4. A true experimental study can be done to standardize structured teaching programme used in present study.

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