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3.2.1c Research Utilization of Self Study Conducted by PG Student

A Study to Assess Effectiveness of an Interventional Programme on Knowledge Regarding Use of Amruthum Nutrimix Among Mothers of Under Five Children in Selected Urban Anganwadis of Kollam, Kerala

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Abstract: The amruthum nutrimix is a health supplement provided by ICDS to satisfy nutritional requirements of the children of Kerala between the age group of 6 months to 3 years. Under nutrition in children is a wide spread health problem in our country. ICDS address the problem of malnutrition has been unsuccessful even after three decades of implementation. Amruthum nutrimix given to underfive children is not utilized due to tedious mode of preparation and unlikable taste. During the period of community health nursing posting, the researcher visited an anganwadi in Pallithottam where majority of the student children will come to anganwadi at morning with pre processed food packets like bingo, lays and kurkure though each student was the benefactor of amruthum nutrimix. Many parents do not have enough knowledge concerning the nutritive value of it. They use them as poultry feed or wasting the product without knowing its utility. So researcher felt the need to provide awareness regarding the proper use amruthum nutrimix. Quantitative research approach, pre experimental one group pretest posttest design was used in research. The results of the study showed that, the mean pretest score of experimental group is 6.15 ± 1.90 and posttest score of experimental group is 12.73 ± 2.01 . And calculated 't' value 23.87 is greater than table value at 0.05 level of significance. There was no significant association between levels of knowledge and demographic variables such as age of mother, religion, occupation, education, type of family and annual income. Since the tabulated values were more than calculated value at 0.05 level of significance. The study concluded that, the calculated 't' value 23.87 is greater than table value at 0.05 level of significance. So there is a significant difference in posttest knowledge scores before and after intervention. This shows that the interventional programme is effective in improving knowledge regarding use of amruthum nutrimix among mothers of under five children in selected urban anganwadis. There was no significant association between levels of knowledge and demographic variables such as age of mother, religion, occupation, education, type of family and annual income. Since the tabulated values were more than calculated value at 0.05 level of significance.

INTRODUCTION

The word "Nutrition" is derived from the word 'nourish' which means that the food consumed by us and all the reactions involved in it for better health. Moreover, nutrition is a major factor for assessing the health status of an individual, family and community. [1-2] According to world health organization the number of people in the world suffering from hunger is 815 million. In Asia it is 520 million. [3] According to Global Hunger Index report of 2017, India was seen in the top hundred ranking, indicating a high time for address this issue. [4] According to World Hunger Index statistics, the severity of hunger and malnutrition in Kerala is the second lowest in India and is considered to be serious. 19% of children are underweight and 28.6% are undernourished. [5] The Integrated Child Development Services [ICDS] scheme is a government initiative started by Government of India in 1975 with the aim of all round development of underfive children. [6] Supplementary nutrition is one of the services provided under ICDS which is formulated to bridge the gap between recommended dietary allowance and average daily intake. [7] The Amruthum Nutrimix is a health supplement provided by ICDS to satisfy nutritional requirements of the children of Kerala between the age group of 6 months to 3 years. ICDS address the problem of malnutrition has been unsuccessful even after three decades of implementation. Amruthum Nutrimix given to underfive children is not

utilized due to tedious mode of preparation and unlikable taste. [1]

The objectives were the study to assess the knowledge regarding use of Amruthum Nutrimix among mothers of under five children in selected urban anganwadis of Kollam, to assess the effectiveness of interventional programme on knowledge regarding use of Amruthum Nutrimix among mothers of under five children and to find the association between pretest knowledge score and selected demographic variables.

A study was published in National Journal of Nutrition on innovative products using Amruthum Nutrimix and its popularization among mothers done by Subhasree *et al.* [8] This study showed that the mix can be incorporated or made into a variety of dishes rather than give it's as just as porridge. They made various dishes with Amruthum Nutrimix. Among 20 preparations, vegetable roll, mixture and pakkavada had the highest scores [4.96] for appearance. Vegetable roll was the most preferred dish with highest scores for colour [5.00], flavor [5.00], texture [4.93] and taste [5.00]. The six best products selected by ANOVA were vegetable roll [4.97], mixture [4.9], onion vada [4.89], Amruthum kheer [4.87], ela-ada [4.85] and sweet ball [4.87]. The developed products obtained higher mean scores than the scores obtained for plain Amruthum mix [3.8 out of 5.76% acceptability] as reported by CPCRI, Kerala. The products prepared were displayed and popularized during the nutrition education session. A recipe book indicating the proportion of ingredients, method of preparation, yield and serving size was provided to all the participants. The mean pretest [30] and posttest

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scores [44] ($P < 0.05$) revealed that the awareness programme conducted was very effective in improving knowledge of the participants about Amruthum Nutrimix and its nutritional significance in children.

Statement of the Problem

A study to assess effectiveness of an interventional programme on knowledge regarding use of Amruthum Nutrimix among mothers of under five children in selected urban anganwadis of Kollam, Kerala.

Objectives

1. To assess the knowledge regarding use of Amruthum Nutrimix among mothers of under five children in selected urban anganwadis of Kollam.
2. To assess the effectiveness of interventional programme on knowledge regarding use of Amruthum Nutrimix among mothers of under five children.
3. To find the association between pretest knowledge score and selected demographic variables.

Hypotheses

All hypotheses will be tested at 0.05 level of significance.

H₁: There is significant difference between mean pretest and posttest knowledge score of the mothers of under five children.

H₂: There is significant association between pretest knowledge score and selected demographic variables.

METHODOLOGY

Research Approach: Quantitative research approach.

Research Design: Pre experimental one group pretest posttest design.

Variables

1. **Independent Variable:** Interventional programme on use of Amruthum Nutrimix from anganwadis.
2. **Dependent variable:** Knowledge of mothers of under five children, who are the beneficiaries of anganwadis
3. **Demographic variable:** Age of the mother, religion, occupation, education, type of family, annual income.

Setting of the Study: Urban Anganwadis coming under Community health centre, Pallihottam.

Population: Mothers of under five children who are the beneficiaries of anganwadi.

Sample: 100 mothers of under five children who are the beneficiaries of anganwadi

Sampling Technique: Convenient sampling was used.

Inclusion Criteria: Mothers who can read Malayalam.

Exclusion Criteria: Mothers who are mentally challenged, Mothers who are critically ill, Mothers who attended any health education programme on use of Amruthum Nutrimix delivered through anganwadis

Tool

The following tools were used for the present study.

1. Section A: A demographic proforma used to collect the baseline information regarding the samples.
2. Section B: Structured knowledge questionnaire. Section B consists of 3 parts.
 - a. Part A: Composition of Amruthum Nutrimix.
 - b. Part B: Nutritional value of Amruthum Nutrimix
 - c. Part C: Benefits of Amruthum Nutrimix.
3. Section C: Interventional programme
 - a. Part A: Structured teaching programme
 - b. Part B: Self instructional module
 - c. Part C: Cooking demonstration

RESULTS

Section A

This section deals with the frequency and percentage distribution of sample characteristics of mothers of under five children in selected urban anganwadis according to age of mother, religion, occupation, education, type of family and annual income.

Table 1 shows that:

1. Majority [72%] of the sample belong to the category of 22 to 25 years of age group. 14% of the sample belongs to the category of 18 to 21 years of age group. And again 14 % belongs to the 26 to 29 years of age group.
2. The highest percentage of the sample [90%] belongs to Christian religion. 5% of sample belongs to Hindu religion and 5 % of sample belong to Muslim religion.
3. A high percentage of the sample [76%] are unemployed women. About 11% of women work in private firms, 10% of women are self employed and only 4% of the total sample occupy job in government sector.
4. Regarding the educational status of women, 50% of women have higher secondary education, 35% of women are graduates, 10% have only high school education and 5% of total sample are women with post graduation
5. Majority of the women [71%] are from joint family. Some belong to nuclear family [20%] and 9% of women belong to extended family
6. Considering the annual income of the sample. It was found that 55% of the women are in 5000-10000 range of annual income category, 20% of women are belong to 10001-20000 range of annual income, 15% are belong to 20001 to 40000 range of annual income and 10% are belong to above 40000.

Data in the Table 2 shows that in pretest majority [58%] belongs to poor level of knowledge and remaining 42% are having average level of knowledge. In posttest majority [75%] are having good level of knowledge, remaining 18% have very good level of knowledge and 7 % are having average level of knowledge.

Section B

Effectiveness of interventional programme on knowledge regarding use of Amruthum Nutrimix among the mothers of under five children in anganwadi.

Table 1: Frequency and Percentage Distribution of Samples According to Demographic Variables of Sample (N=100)

S. No	Demographic Variables	Frequency	Percentage
1	Age of Mother		
	18 - 21 years	14	14%
	22- 21 years	72	72%
2	Religion		
	Hindu	5	5%
	Christian	90	90%
3	Occupation		
	Government employee	4	4%
	Private employee	11	11%
4	Education		
	Up to high school level	10	10%
	Higher secondary level	50	50%
5	Type of family		
	Nuclear family	20	20%
	Joint family	71	71%
6	Annual income		
	5000-10000	55	55%
	10001-20000	20	20%
	20001-40000	15	15%
	Above 40001	10	10%

Table 2: Comparison of Pretest and Posttest Knowledge Scores (N=100)

Level of Knowledge	Pretest		Post test	
	Frequency	Percentage [%]	Frequency	Percentage [%]
Very good			18	18%
Good			75	75%
Average	42	42%	7	7%
Poor	58	58%	-	-

Table 3: Mean, Standard Deviation, t Value of Pretest and Posttest Knowledge Scores of Samples

	Mean	Standard Deviation	t value
Pretest	6.15	1.90	23.87*
Posttest	12.73	2.01	

*t value [120] = 1.98*Significant at 0.05 level of significance

According to the data shown in Table 3, the calculated paired t value is greater than table value [120] at 0.05 level of significance; hence research hypothesis H_1 was accepted. So there is a significant difference pretest and posttest knowledge scores after intervention.

Section C

Association between pre test level of knowledge and selected demographic variables.

The data presented in the Table 4 shows that there was no significant association between levels of knowledge and demographic variables such as age of mother, religion, occupation, education, type of family and annual income. Since the tabulated values were more than calculated value at 0.05 level of significance. Hence for these variables the research hypothesis H_2 is rejected.

DISCUSSION

The major findings of the study was discusses in relation to similar studies conducted by other researchers. The study intended to find the effectiveness of an interventional programme on knowledge regarding use of Amruthum nutrimix among mothers of under five children in selected urban anganwadis of Kollam, Kerala. The findings of the study are discussed in reference to the objectives and hypothesis stated.

Effectiveness of Interventional Programme on Knowledge Regarding Use of Amruthum Nutrimix among the Mothers of Under Five Children in Selected Anganwadis

The findings of the present study showed a significant difference between pretest and posttest knowledge score

Table 4: Association between Knowledge Scores with Selected Demographic Variables Like Age of Mother, Religion, Occupation, Type of Family, Annual Income and Education

S. No	Demographic Variables	Knowledge Level		df	Table Value	Chi-Square	Significance
		Poor	Average				
1	Age of Mother						
	18 - 21 years	9	5	2	5.99	0.64	NS
	22 - 25 years	43	29				
26 - 29 years	7	7					
2	Religion						
	Hindu	2	3	2	5.99	0.78	NS
	Christian	54	36				
Muslim	3	2					
3	Occupation						
	Government employee	1	3	3	7.83	2.02	NS
	Private employee	7	4				
	Self employee	5	5				
Unemployed	43	32					
4	Education						
	School level	6	4	3	7.83	1.36	NS
	Higher secondary school	28	22				
	Graduates	18	17				
Post graduates	4	1					
5	Type of Family						
	Nuclear family	10	10	2	5.99	3.17	NS
	Joint family	44	27				
Extended family	3	6					
6	Annual Income						
	5000-10000	31	24	3	7.87	3.56	NS
	10001-20000	8	12				
	20001-40000	10	5				
Above 40000	7	3					

[NS- Non significant, S- Significant]

of selected sample after intervention. This result indicates and strongly suggests that interventional programme is effective in improving knowledge of among mothers of under five children in selected urban anganwadis.

Study was conducted on innovative products using amruthum nutrimix and its popularization among mothers. The study was conducted in a semi urban anganwadi centre located in Kottayam District, Kerala. The sample consisted of 22 young women, who are the mothers of the children in the anganwadi. This study shows that the mix can be incorporated or made into a variety of dishes rather than giving it's as just as porridge. They made various dishes with amruthum nutrimix. Among 20 preparations, vegetable roll, mixture and pakkavada had the highest scores [4.96] for appearance. Vegetable roll was the most preferred dish with highest scores for colour [5.00], flavor [5.00], texture [4.93] and taste [5.00]. The six best products selected by ANOVA were vegetable roll [4.97], mixture [4.9], onion vada [4.89], Amruthum kheer [4.87], ela-ada [4.85] and sweet ball [4.87]. The developed products obtained higher mean scores than the scores obtained for plain Amruthum mix [3.8 out of 5.76% acceptability] as reported by CPCRI, Kerala. The products prepared were displayed and popularized during the nutrition education session. A recipe book indicating the proportion of ingredients, method of preparation, yield and serving size was provided to all the participants. The mean pretest [30] and posttest scores [44] ($P < 0.05$) revealed that the

awareness programme conducted was very effective in improving knowledge of the participants about Amruthum Nutrimix and its nutritional significance in children. [8]

The findings of the present study compared with study on innovative products using amruthum nutrimix and its popularization among mothers. Quantitative research approach was used for both studies. Pre experimental one group pretest posttest design was used in both studies. The sample size of the present study was 100 and the similar study was 22. Convenient sampling technique was used for the present study and the comparing study was purposive sampling. Mothers of under five children were the samples of both study. The tool used in both study were structured knowledge questionnaire. Intervention consisting of structured teaching program, self instructional module and cooking demonstration in the present study, but in similar study it was nutrition education session, cooking demonstration and recipe book. The present study used to assess the effectiveness of interventional program and the association between pretest knowledge score and selected demographic variable. The similar study used to assess the impact of nutrition education and sensory evaluation of prepared dishes. Then using ANOVA to select the best products from prepared dishes.

The result of the present study showed that, the mean pretest score of experimental group is [6.15±1.90] and

posttest score of experimental group is $[12.73 \pm 2.01]$. Calculated 't' value $[23.87]$ is greater than table value at 0.05 level of significance. In similar study the mean pretest $[30]$ and posttest scores $[44]$ ($P < 0.05$) revealed that the awareness programme conducted was very effective in improving knowledge of the participants about Amruthum Nutrimix and its nutritional significance in children. The settings of both studies were in the urban anganwadis. The study results along with the supportive study shows that the interventional programme is effective in improving the knowledge of mothers of under five children in selected urban anganwadis.

Association between Pre Test Level of Knowledge and Selected Demographic Variables

Association of knowledge score with selected demographic variables includes age of mother, religion, occupation, education, type of family and annual income were computed by Chi-square test shows that there is no association between knowledge among mothers of under five children in selected anganwadis and selected demographic variables at ($p < 0.05$) level of significance.

Study was conducted to analyze effectiveness of structured teaching programme on malnutrition and the preparation of Hydrabadi and Davanagere Mix recipe among mothers of under five children in selected anganwadi centre of Hattikeri P. H. C., Ankola (U.K.), Karnataka. The study was conducted to assess the pre test score of mothers on malnutrition and the preparation of Hydrabadi and Davanagere mix recipe, evaluate the effectiveness of structured teaching programme and to find out association between pre test and post test knowledge score demographic variables. Sample size was 20. Mothers of under five children were the samples. Self structured questionnaire was used as the tool. The result denotes that statistically significant effectiveness of structured teaching program was found. There was no significant association was found with selected demographical and knowledge score.^[7]

The findings of the present study compared with a study to assess the effectiveness of structured teaching programme on malnutrition and the preparation of Hydrabadi and Davanagere mix recipe among mothers of under five children in selected anganwadi centre of Hattikeri P. H. C., Ankola, Karnataka. Quantitative research approach is used for both studies. Pre experimental one group pretest posttest design was used in both study. The sample size of the present study was 100 and the similar study was 20. Convenient sampling technique was used for the present study and the comparing study was purposive sampling. Mothers of under five children were the samples of both study.

The setting of both study were in anganwadis. The tool used in the both study were structured knowledge questionnaire. Intervention consisting of structured teaching program, self instructional module and cooking demonstration in the present study, but in the similar study was the structured teaching program. The present study used to assess the pretest level of knowledge of mothers,

effectiveness of interventional program and the association between pretest knowledge score and selected demographic variable.

The similar study also used to assess the pre test score of mothers on malnutrition and the preparation of Hydrabadi and Davanagere mix recipe, evaluate the effectiveness of structured teaching programme and to find out association between pre test and post test knowledge score with demographic variables. Statistically significant effectiveness of intervention was found in both study. There was no significant association was found with selected demographic variables and knowledge scores in both study.

NURSING IMPLICATIONS

The present study has various implications in the field of nursing practice, nursing education, nursing research and nursing administration.

Implications for Nursing Practice

1. Community Health Nurses, have an important role in improving the general health and wellbeing and the quality of life of underfive children in the community.
2. For the prevention of protein energy malnutrition, Community Health Nurse should take efforts to improve the nutritional status of underfive children by encouraging the mothers to prepare dishes with Amruthum Nutrimix and give them to their children.

Implications for Nursing Education

1. The Community Health Nursing professionals are expected to impart their knowledge regarding the use of Amruthum Nutrimix to the community people through audio visual education.
2. Community Health Nurse educator should make the student nurses to apply their knowledge regarding malnutrition and their prevention by giving awareness programmes to the mother's of under five children.
3. Community Health Nurse educator should teach the mothers of anganwadi children to prepare traditional type of protein rich food instead of pre processed foods in order to prevent the threats of malnutrition
4. Along with the education to the students, nurse educator should take initiative in imparting knowledge to newly appointed staff nurses in community settings.
5. Undertake malnutrition assessment of Anganwadi children in community nursing curriculum for nursing students

Implications for Nursing Research

1. There is a great scope for the nurses to conduct research to assess the knowledge among under five mothers regarding malnutrition and the intervention that help to improve the health status of children.
2. Based on the result of the study nurse researchers can undertake similar studies in another setting.
3. Disseminate the research findings through presentation and publishing will add to the body of knowledge and help in nursing practice.

4. Inform the finding of the study to the government authorities like ICDS Office, Department of Social Justice and Welfare and CPCRI.
5. The Social Justice Department of Kerala can take as this study as a major project and implement at in all Anganwadis in Kerala to reduce under five malnutrition and popularize Amruthum Nutrimix widely.

Implications for Nursing Administration

1. The nurse administrator can take the initiative in imparting information about the result of the study by individual and group teaching in the community settings.
2. Administrative authority shall make arrangements for organizing programmes related to prevention of malnutrition.
3. Nurse administrator in the community settings should be aware of the dietary management to prevent the malnutrition and can suggest their subordinates to communicate it to the community.

Limitations

1. Focus on knowledge assessment only.
2. Study confined to the urban settings.

Recommendations

Keeping in view of present research findings, the following recommendations have been made.

1. A study can be conducted to find out knowledge and practice regarding Amruthum Nutrimix among the mothers of under five children in anganwadi.
2. A correlative study can be conducted to find out the correlation between knowledge regarding Amruthum Nutrimix among the mothers of under five children and their practice.
3. A study can be done using true experimental research design.
4. Based on the results of this study nurse researcher can undertake similar studies among mothers of under five children in rural anganwadis.

CONCLUSION

The present study was aimed to find the effectiveness of an interventional programme on knowledge regarding use of Amruthum Nutrimix among mothers of under five children in selected urban anganwadis of Kollam. The result of the study showed that, the mean pretest score of experimental group is $[6.15 \pm 1.90]$ and posttest score of experimental group is $[12.73 \pm 2.01]$. And calculated 't' value $[23.87]$ is greater than table value at 0.05 level of significance. Hence H_1 was accepted. So there is a significant difference in posttest knowledge scores before and after intervention. This shows that the interventional programme is effective

in improving knowledge regarding use of Amruthum Nutrimix among mothers of under five children in selected urban anganwadis. Association of knowledge with selected demographic variables such as age of mother, religion, occupation, education, type of family and annual income were computed by Chi-square test. As calculated, Chi-square values are less than table value at 0.05 level of significance. So there is no association between knowledge among mothers of under five children in selected anganwadis and selected demographic variables.

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