



“TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON KNOWLEDGE OF MOTHERS REGARDING PREVENTIVE MEASURES OF MICRONUTRIENT DEFICIENCY AMONG UNDER FIVE CHILDREN IN SELECTED RURAL AREA KANPUR UTTAR PRADESH”

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ABSTRACT

Micronutrient are vital for healthy growth and development during childhood. Malnutrition among children is one of the most important causes of morbidity and mortality in the world, particularly in developing countries. Malnutrition and micronutrient deficiencies during the weaning period are reported from many developing countries. These deficiencies can be prevented by complementary feeding i.e., the addition of energy through non-human milk and semisolid or solid foods to children diet as described by WHO. More than 3.5 million children under five dies unnecessarily each year in Asia due to the underlying cause of under nutrition, and millions more are permanently disabled by the physical and mental effects of a poor dietary intake in the earliest months of life .The aim of study was a study to assess the effectiveness of video assisted teaching (VAT) on knowledge of mothers regarding preventive measures of micronutrient deficiency among under five children residing in selected rural community in Kanpur, Uttar Pradesh. For this purpose, a quasi-experimental design was used in this study. The sample consist 100 (50 control, 50 experimental). No probability convenience sampling technique was used to collect data. Data was collected using structured interview questionnaire after collection the data, the data was analysed by using inferential statistic such as chi square and paired t test to determine knowledge of mother regarding preventive measure of micronutrient deficiency among under five children In this study, At pre-test % subjects showed inadequate knowledge level while 34% showed moderate adequate knowledge level. After post-test 3% showed adequate knowledge level, 50% moderate adequate and 47% inadequate knowledge level. Hence proportion of inadequate knowledge level was decreased at post-test. The significant change was observed in knowledge level at post-test ($p=0.010$). No significant association of post-test knowledge level was found with age ($p=0.6$), type of family ($p=0.229$), religion ($p=0.0$), education ($p=0.431$), employment status ($p=0.9$), history of nutritional deficiency in children ($p=0.5$), family income ($p=0.5$) and Previous information regarding micronutrient deficiency under five children ($p=0.990$) However no. of children showed significant association with post-test knowledge level ($p=0.046$) the maximum adequate knowledge was found in parents with one children.

Key Words: *Effectiveness, Video Assisted Teaching (VAT), Micronutrient Deficiency (MD), Mothers of under 5 children.*

INTRODUCTION

Micronutrients play an important role in the proper growth and development of the human body and its deficiency affects the health. India had made tremendous progress in all front since independence including food production. Several programmes or schemes such as integrated child development services (ICDS) schemes, Mid-day Meal programme, National iron plus initiative (NIPI), National Iodine deficiency disorders control programme (NIDDCP) and national prophylaxis programme against nutritional Blindness due to vitamin A deficiency have also been launched over the years to improve the nutritional and health status of the children. ⁽¹⁾

Children are future of society and mothers are guardian of that future. First and foremost, health, safety and nutrition for the young child is written on behalf of young children everywhere. Ultimately, it is the children who benefit from having parents who understand and know how to protect and promote their safety and well-being by knowing regarding nutrition. Nutrition is the provision, to cells and organisms, of the materials necessary (in the form of food) to support life. Many common healthy diets. Nutrients are organic & inorganic complexes contained in food. There are six major classes of nutrients those are mainly carbohydrates, fats, minerals, protein, vitamins, and water. These nutrients classes can be categorized as either macronutrients (needed in relatively large amounts) or micronutrients (needed in smaller quantities). ⁽²⁾

The macronutrients are minerals and vitamins. The macronutrients (excluding water) provide structural material (amino acids from which proteins are built, and lipids from which cell membranes and some signalling molecules are built), energy. Vitamin, minerals, fiber, is also required, for other reasons. A third class of dietary material, fiber, is also required, for both mechanical and biochemical reasons, although the exact reason remain unclear. ⁽²⁾ Micronutrient deficiencies form an important global health issue, with malnutrition affecting key development outcomes including poor physical and mental development in children. The WHO estimate that more than 2 billion people suffer from micronutrient deficiency globally ⁽⁸⁾. Prevalence of anaemia among children below 3 years of age through the third national family health survey covering all 29 states in India is about 78 percent. ⁽⁹⁾

NEED FOR THE STUDY

According to WHO, as estimate 250 million preschool children are Vitamin A deficient and it is likely that in Vitamin A deficient areas a substantial proportion of pregnant women is Vitamin A deficient. An estimated 2,50,000 to 5,00,000 Vitamin A deficiency children become blind every year, half of them dying within 12 months of losing their sight. about 43.8 percentage under five children in five Indian states have significant zinc deficiency. India is the home to the largest child population in the world. Children are regarded as a future hope of the nation and to nurture and strive to the valuing and essentials. Micronutrients are important for enhance the child development, essential micronutrient are iron, iodine, Vitamin A, folic acid, play an important role for health and development of population. Every day more than 6,000 children below the age of 5 dying in India due to lack of vitamin A, iron, iodine and folic acid. About 57% of pre-scholars and their mother have some clinical Vitamin A deficiency. ⁽¹²⁾ In rural population mothers of under-five children's having insufficient and awareness regarding micronutrient deficiency. By the help of this study the awareness regarding micronutrient deficiency among under five children is going to be increase mothers of under five children in selected areas, video assisted teaching intervention can help increase knowledge of micronutrient

deficiency under five children. Because peoples are more inclined to watch a short video rather than read a long text. So, it is one the very effective method for mother of under five children.

Problem Statement

A study to assess the effectiveness of video assisted teaching (VAT) on knowledge of mothers regarding preventive measures of micronutrient deficiency among under five children residing in selected rural community in Kanpur, Uttar Pradesh

Objectives

- 1 To assess the level of knowledge of mother regarding preventive measures of micronutrient deficiency among under five children.
- 2 To evaluate the effectiveness of video assisted teaching developed on preventive measures of micronutrient deficiency among under five children.
- 3 To determine the association between knowledge of mother in experimental group of selected demographic variable.

Research Hypothesis

Hypothesis is this statement of the relationship between two of more variables²⁷. In this study researcher hypothesis are –

H₁- There is a significant difference between mean Pre-test and mean Post-test knowledge scores of mothers regarding preventive measures of micronutrient deficiency among under five children

H₂- There is a significant association between level of knowledge of experimental and control group mothers regarding preventive measures of micronutrient deficiency among under five children with the selected demographic variables.

RESEARCH METHEDODOLOGY

Research design: quasi-experimental design with non-randomized control group design.

Sample and sample size: 100 mothers of under 5 children(50 control group and 50 experimental group)

Sampling technique: Non probability convenience sampling technique.

DEVELOPMENT OF THE TOOL

Section A: Socio demographic variables.

Section B: structured interview schedule on micronutrient deficiency under 5 children. **Section A:** it deals with demographic which was used to collect the characteristics of the samples with the instruction to participate to indicate their response carefully against the statement in the brackets by writing the correct alphabet of the answer in the given box. It contains 9 items such as age, no. of children, type of family, religion, employment status, history of micronutrient deficiency, income, previous knowledge. **Section B:** A structured interview schedule with 30 items was constructed to assess the knowledge of mother regarding preventive measures of micronutrient deficiency under 5 children.

The questionnaire consists of 30 multiple choice question. A score value of 1 was allotted to each correct response and for wrong response zero was awarded. Thus, there were 30 maximum obtainable scores. The level of the knowledge was categorised based on the percentage of scores obtained.

$$\text{Percentage\%} = \frac{\text{obtained scores}}{\text{Total scores}} \times 100$$

Table no. 1: scoring key for the knowledge on preventive measures on micronutrient deficiency under 5 children.

S. No	Range	Level of Knowledge
1-10	inadequate knowledge	
11-20	moderately adequate knowledge	
21-30	adequate knowledge 21-30	

RESULT

Section A: frequency and percentage distribution among mothers of under 5 children with their selected demographic variables.

Section B: analysing the pre-test and post-test knowledge score regarding preventive measures on micronutrient deficiency under 5 children among mothers of under 5 children.

Section C: analysing the effectiveness of video assisted teaching (VAT) regarding preventive measures on micronutrient deficiency under 5 children among mothers of under 5 children.

Section D: analysing the association between knowledge of mother in experimental group of selected demographic variables.

Section A: Frequency and percentage distribution among mothers of under 5 children with their selected demographic variables. Frequency and percentage distribution among mothers of under 5 children with their selected demographic variables.

Table – 2: Frequency and Percentage wise distribution according to age of mother

N=100

Age	Control Group (n=50)		Experimental Group (n=50)		Total (N=100)	
	No.	%	No.	%	No.	%
12 - 25 year	9	18.0%	7	14.0%	16	16.0%
26 - 30 year	11	22.0%	14	28.0%	25	25.0%
31 - 35 year	15	30.0%	14	28.0%	29	29.0%

The above mention bar diagram shows percentage wise distribution according to the age of mother. In control group, majority of the mothers between to the age group of 31-35 year (30%) and >35 years (30%). 18% mothers between to the age group of 12-25 year and other 22% mothers between to the age of 26-30 year. In experimental group, majority of the mothers between to the age group of >35 year (30%) 28% mothers between to the age group of 26-30 year and 31-35 year and other 14% mothers between to the age group of 12-25 year. Overall, majority of the mothers between to the age group of >35 year (30%), 29% mothers between to the age group of 31-35 year, 25% between to 26-30 yr and other 16% mothers between to the age group 12-25 year.

Table – 3: Frequency and Percentage wise Distribution According to Number of Children

No of Children	N =100					
	Control Group (n=50)		Experimental Group (n=50)		Total (N=100)	
	No.	%	No.	%	No.	%
One	6	12.0%	9	18.0%	15	15.0%
Two	23	46.0%	24	48.0%	47	47.0%
Three	16	32.0%	9	18.0%	25	25.0%
Above three	5	10.0%	8	16.0%	13	13.0%

The above bar diagram shows the percentage wise distribution of mother according to the number of children. In control group, majority of the mothers had two children (46%) followed by the three children (32%) while 12% had one children and 10% above three. In experimental group, majority of the subjects had two children (48%) followed by the three and one children (18%) while 16% had above three. Overall, majority of the mother had two children (47%) followed by the three (25%) and one children (15%) while 13% had above three.

Table – 4: Frequency And Percentage Wise Distribution According to Type of Family

Type of family	N =100					
	Control Group (n=50)		Experimental Group (n=50)		Total	
	No.	%	No.	%	No.	%
Nuclear	21	42.0%	13	26.0%	34	34.0%
Joint	29	58.0%	37	74.0%	66	66.0%

The above bar diagram shows the percentage wise distribution of mother according to the type of mother. In control group, 42% belongs to nuclear family and rest 58% belongs to the joint family while in experimental group 26% belongs to nuclear family and rest 74% belongs to the joint family. Overall 34% belongs to nuclear family and rest 66% belongs to the joint family

Table – 5: frequency and percentage wise distribution according to religion

N=100

Religion	Control Group (n=50)		Experimental Group (n=50)		Total	
	No.	%	No.	%	No.	%
Hindu	21	42.0%	35	78.0%	56	56.0%
Muslim	17	34.0%	9	18.0%	26	26.0%
Christian	3	6.0%	2	4.0%	5	5.0%
Other	9	18.0%	4	8.0%	13	13.0%

The above bar diagram shows the percentage wise distribution of mother according to religion. In control group, the proportion of Hindu was 42%, Muslim 34%, Christian 6% and Others was 18%. respectively while in Experimental group, the proportion of Hindu was 70%, Muslim 18%, Christian 5% and Others was 8% respectively. Overall, the proportion of Hindu was 56%, Muslim 26%, Christian 5% and Others was 13% respectively.

Table – 6: frequency and percentage Distribution of mothers according to Educational Qualification

Educational (n=50)	Control Group (n=50)		Experimental Group (n=50)		Total qualification (n=50)		Group
	No.	%	No.	%	No.	%	
Illiterate	5	10.0%	15	30.0%	20	20.0%	
Primary	14	28.0%	16	32.0%	30	30.0%	
Intermediate	24	48.0%	12	24.0%	36	36.0%	
Other	7	14.0%	7	14.0%	14	14.0%	

The above bar diagram shows the percentage wise distribution of mother according to educational qualification. In control group, the proportion of illiterate mother was 10%, primary 28%, intermediate 48% and others was 14%, respectively while in Experimental group, the proportion of illiterate was 30%, primary 32%, intermediate 24% and others was 14% respectively. Overall the proportion of illiterate was 20%, primary 30%, intermediate 36% and others was 14% respectively.

Table-7: frequency and percentage Distribution of mothers according to Employment Status

N =100

Employment Status	Control n=50		Group Experimental Group n=50		Total	
	No.	%	No.	%	No.	%
	Govt Employee	7	14.0%	4	8.0%	11
Housewife	35	70.0%	40	80.0%	75	75.0%
Pvt worker	3	6.0%	0	0.0%	3	3.0%
Self employed	5	10.0%	6	12.0%	11	11.0%

The above bar diagram shows the percentage wise distribution of mother according to employment status. In control group, the proportion of government employee was 14%, housewife 70%, private worker 6% and selfemployed was 10% respectively while in Experimental group, the proportion of government employee was 8%, housewife 80%, private worker 0% and selfemployed was 12% respectively. Overall, the proportion of government employee was 11%, housewife 75%, private worker 3% and self-employed was 11% respectively

Table – 8: frequency and percentage Distribution of mothers according to Any history of nutritional deficiency in children

Any history nutritional deficiency children	Control n=50		Group Experimental Group n=50		Total N= 100	
	No.	%	No.	%	No.	%
	No	31	62%	40	80.0%	71
Yes	19	38.0%	10	20.0%	29	29.0%

The above bar diagram shows the percentage wise distribution of mother according to any history of nutritional deficiency in children. The history of nutritional deficiency in children was present in 3% cases of control group, 20% cases of experimental group and 29% cases overall.

Table – 9: frequency and percentage Distribution of mothers according to Family Income

N= 100

Family income	Control n=50		Group		Experimental Group n=50		Total	
	No.	%	No.	%	No.	%	No.	%
Rs 10000 – 20000	7	14.0%	8	16.0%	15	15.0%		
Rs 20000 - 30000	25	50.0%	16	32.0%				.0%
Rs 30000 - 40000	15	30.0%	19	38.0%	34	34.0%		
Above Rs 40000	3	6.0%	7	14.0%	10	10.0%		

The above bar diagram shows the percentage wise distribution of mother according to family income. In control group, the proportion of income ranges 10000-20000 Rs, 20000-30000 Rs, 30000-40000 Rs and above 40000 Rs was 14% : 50% : 30% and 6% respectively while in Experimental group, the proportion of income ranges 10000-20000 Rs, 20000-30000 Rs, 30000-40000 Rs and above 40000 Rs was 16% : 32% : 38% and 14% respectively.

Overall the proportion of income ranges 10000-20000 Rs, 20000-30000 Rs, 30000-40000 Rs and above 40000 Rs was 15% : 41% : 34% and 10% respectively

Table – 10: frequency and percentage Distribution of mothers according to Previous information regarding micronutrient deficiency

N=100

Previous information regarding micronutrient deficiency under five children	Control Group n=50		Experimental Group n=50		Total	
	No.	%	No.	%	No.	%
No	32	14.0%	40	80.0%	22	22.0%
Yes	18	36.0%	10	20.0%	28	28.0%

The above bar diagram shows the percentage wise distribution of mother according to Previous information regarding micronutrient deficiency. The Previous information regarding micronutrient deficiency under five children was found in 36% cases of control group, 20% cases of experimental group and 28% cases overall.

SECTION B

ANALYSING THE PRE-TEST AND POST TEST KNOWLEDGE SCORE

Analysing the pre-test and post-test knowledge score regarding preventive measures on micronutrient deficiency under 5 children among mothers of under 5 children.

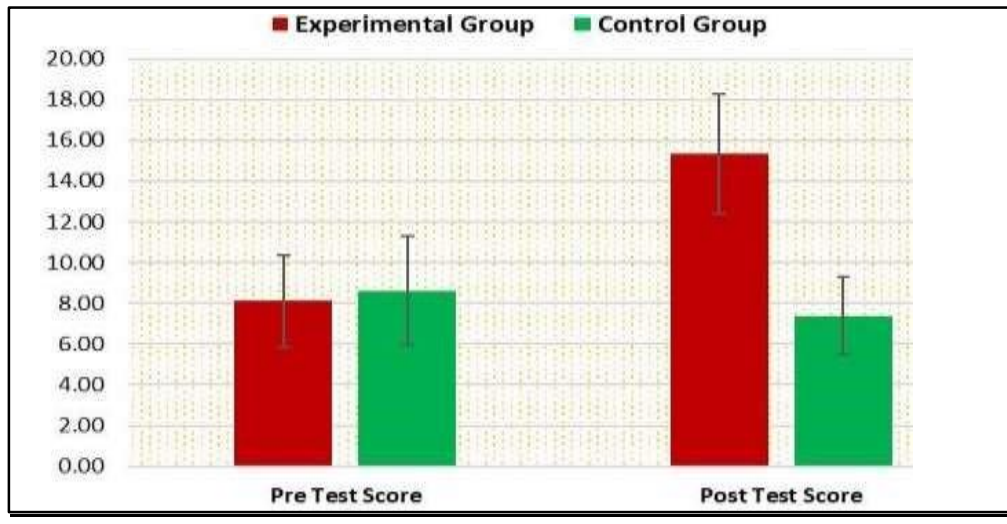


Figure 1 bar diagram show control group and experimental group Comparison of Pre and Post Test Knowledge Score

The mean pre test score of experimental groups was 8.12 ± 2.26 while in control group it was 8.00 ± 2.00 . No significant difference was found in mean pre-test score between the groups ($p=0.313$)

The mean post test score of experimental groups was 15.34 ± 2.92 while in control group it was 7.38 ± 1.90 . The significant difference was found in mean post test score between the groups ($p < 0.05$). The mean post-test knowledge score of experimental groups was more than the control group.

Further the significant increase was found in mean knowledge score in experimental group ($p < 0.05$) while significant decrease was found in mean knowledge score in control group ($p < 0.05$)

The mean pre to post test score difference of experimental group was 7.22 ± 2.92 while in control group it was -1.24 ± 2.00 . The significant difference was found in mean pre to post-test difference between the groups ($p < 0.05$)

Table – 11: Comparison & Distribution of Pre to Post Test Knowledge Level in experimental and control group of mother under five children

N = 100

Knowledge Level	Experimental Group				Control Group			
	Pre-Test n=50		Post Test n=50		Pre-Test n=50		Post Test n=50	
	No.	% No.	No.	%	No.	%	No.	%
Adequate ($\geq 67\%$)	0	0.0	4	8.0	4	8.0	18	36.0
Moderate	4	8.0	20	40.0	20	40.0	18	36.0
Inadequate ($< 67\%$)	34	68.0	40	80.0	26	52.0	18	36.0

Inadequate (<33%)	16	16.0	06	06.0	25	25%	33	33%
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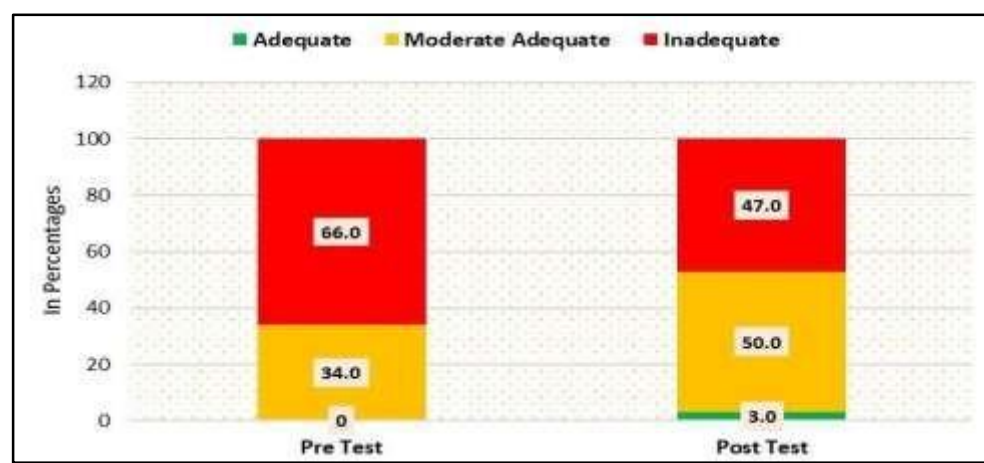


Fig. 2 : bar diagram show Comparison & Distribution of Pre to Post Test Knowledge Level

At pre-test 16% mothers showed inadequate knowledge level while 34% showed moderate adequate knowledge level. After post-test 3% showed adequate knowledge level, 50% moderate adequate and 47% inadequate knowledge level. Hence proportion of inadequate knowledge level was decreased at post-test. The significant change was observed in knowledge level at post-test ($p=0.05$).

SECTION C

EFFECTIVENESS OF VIDEO ASSISTED TEACHING

Analysing the effectiveness of video assisted teaching (VAT) regarding preventive measures on micronutrient deficiency under 5 children among mothers of under 5 children in both experimental and control group.

TABLE 12: Effectiveness of video assisted teaching

N= 100

Group	Experimental Group		Control Group		unpaired t test	
	Mean	SD	Mean	SD	t-value	P-value
Pre Test Score	8.12	2.26	8.	2.	-1.01	0.313
Post Test Score	15.34	2.92	7.38	1.90	16.15	<0.05
05Pre vs Post	t=17.51, p<0.001		t=3.39, p=0.001			
Change	7.22	2.92	-1.24	2.	15.36	<0.05

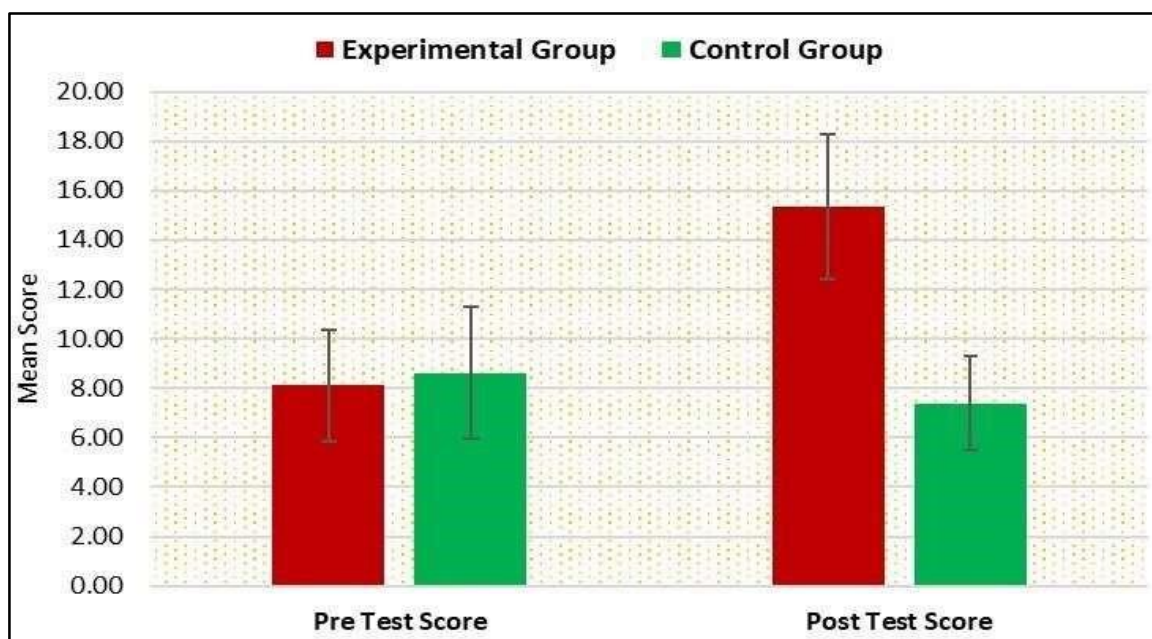


Fig.3 bar diagram show the Effectiveness of video assisted teaching between control and experimental group.

The mean and standard deviation pre-test score of experimental group was 8.12 ± 2.26 while in control group it was 8.00 ± 2.00 . No significant difference was found in mean pretest score between the groups ($p=0.313$)

The mean and standard deviation post test score of experimental groups was 15.34 ± 2.92 while in control group it was 7.38 ± 1.90 . The significant difference was found in mean post test score between the groups ($p < 0.05$). The mean post-test knowledge score of experimental group was more than the control group.

Further the significant increase was found in mean knowledge score in experimental group ($p < 0.05$) while significant decrease was found in mean knowledge score in control group ($p < 0.05$)

The mean pre to post test score difference of experimental group was 7.22 ± 2.92 while in control group it was -1.24 ± 2.00 . The significant difference was found in mean pre to post-test difference between the groups ($p < 0.05$)

SECTION D

Analysing the association between knowledge of mother in experimental group of selected demographic variable.

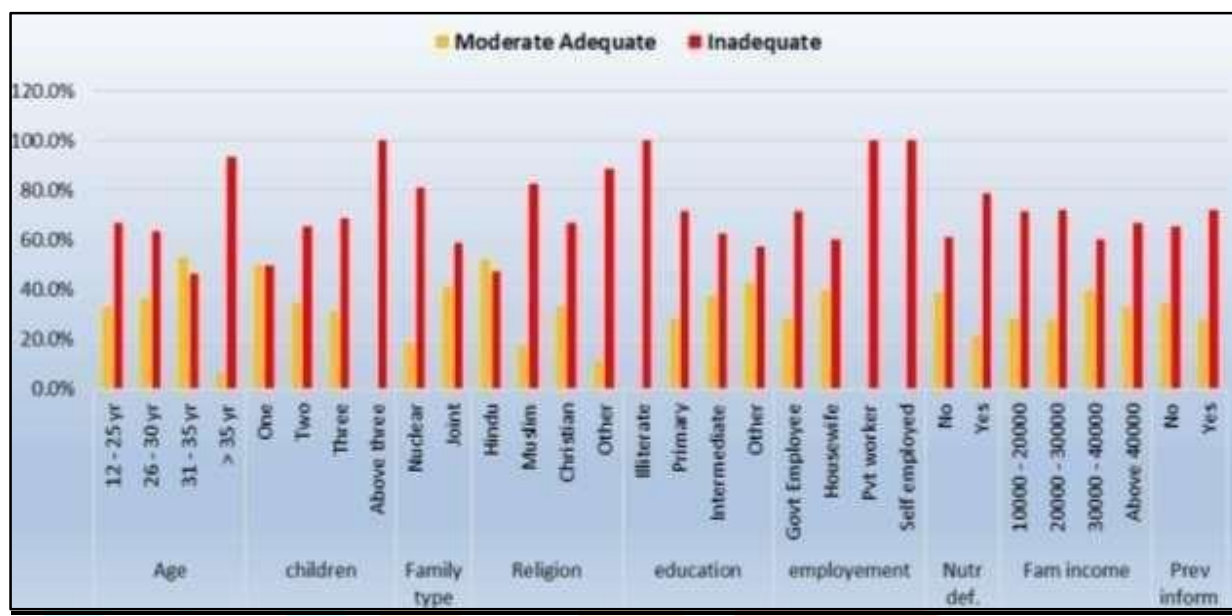


Figure 4 Association of Demographic Variables with Pre-Test Knowledge Level

No significant association of pre test knowledge level was found with age ($\chi^2=7.67$), number of children ($\chi^2=3.33$), type of family ($\chi^2=2.79$), religion ($\chi^2=7.43$), education ($\chi^2=3.14$), employment status ($\chi^2=4.83$), history of nutritional deficiency in children ($\chi^2=1.69$), family income ($\chi^2=0.67$) and Previous information regarding micronutrient deficiency under five children ($\chi^2=0.23$)

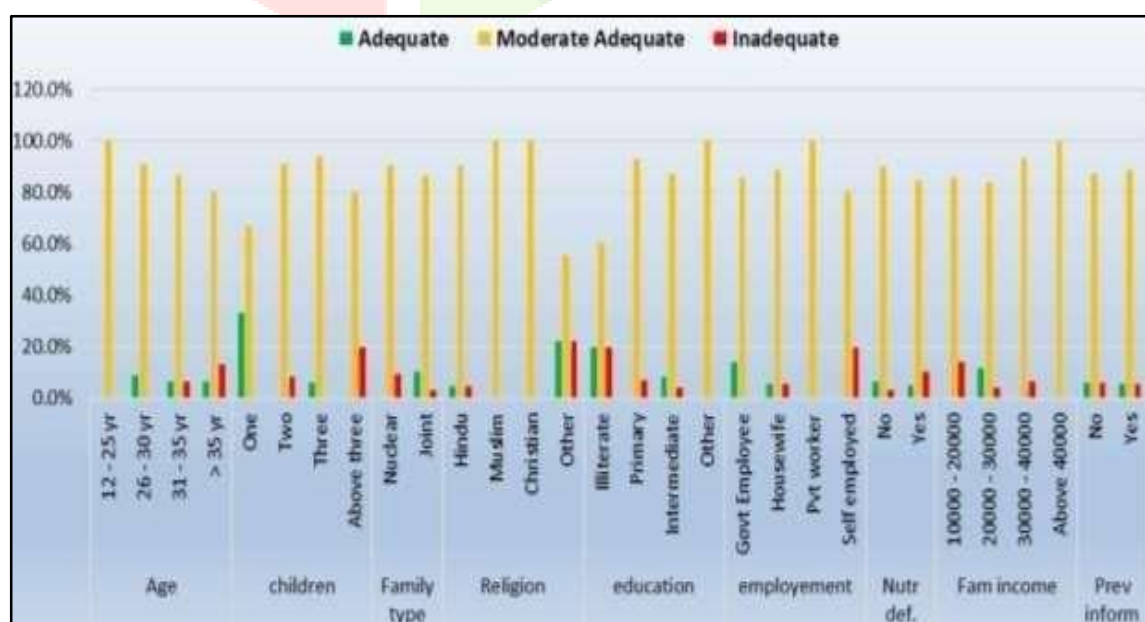


Figure 5 Association of Demographic Variables with Post Test Knowledge Level

No significant association of pre-test knowledge level was found with age ($x^2=3.36$), type of family ($x^2=12.82$), religion ($x^2=11.82$), education ($x^2=5.93$), employment status ($x^2=3.2$), history of nutritional deficiency in children ($x^2=1.12$), family income (4.31) and Previous information regarding micronutrient deficiency under five children ($x^2=0.02$). However, no. of children showed significant association with post-test knowledge level ($x^2=12.82$) the maximum adequate knowledge was found in parents with one children.

NURSING IMPLICATION

The findings of the research to others is a usable link in the research process. The accumulation of new scientific knowledge is essential to guide nursing practice, nursing education and nursing administration. The findings have the following implications in different areas.

NURSING PRACTICE

The findings emphasis the need for implementing awareness in Community nurse can give the knowledge to improve the micronutrient deficiency under 5 children. Nurse can provide health education to the mothers so that they prevent micronutrient deficiency under 5 children.

NURSING EDUCATION

The present study emphasis on the magnification of knowledge of mothers by using Video assisted teaching may be conducted for other mothers to enhance their knowledge score on preventive measure on micronutrient deficiency under 5 children.

NURSING ADMINISTRATION

Nurse as an administrator can plan, organize and conduct in-service education programmes to enhance the knowledge of mothers regarding preventive measures of micronutrient deficiency under 5 children. Nurse administrator can impart hospital staff education to improve the knowledge on preventive measures of micronutrient deficiency under 5 children. Nurse administrator can give health education to the parents and evaluate through the feedback.

NURSING RESEARCH

Main goal of the research is to improve the knowledge of mothers through the implementation of evidence based practice. This research further work as reference scholar to conduct the study in every medical condition.

RECOMMENDATION

- A similar study can be conduct among large sample.
- The study can be done to evaluate the knowledge and attitude regarding preventive measures on micronutrient deficiency under 5 children
- Cooperative study can be conducted to assess the knowledge regarding micronutrient deficiency under 5 children in health worker in rural areas.

SUMMARY

In this study, Overall, majority of the subjects belong to the age group >35 yr (30%). 29% mothers belong to the age group 31-35 yr., 25% belong to 26-30 yr and rest 16% mothers belong to the age group 12-25 yr. Overall, majority of the mothers had two children (47%) followed by the three (25%) and one children (15%) while 13% had above three. Overall 34% belong to nuclear family and rest % belong to the joint family Overall the proportion of Hindu, Muslim, Christian and Others was 56% : 26% : 5% and 13% respectively. Overall the proportion of illiterate, primary, intermediate and others was 20% : 30% : 36% and 14% respectively. Overall the proportion of govt employee, housewife, pvt worker and self employed was 11% : 75% : 3% and 11% respectively The distribution of mothers according to history of nutritional deficiency in children is shown in table – 7. The history of nutritional deficiency in children was present in 3% cases of control group, 20% cases of experimental group and 29% cases overall.

Overall the proportion of income ranges 10000-20000, 20000-30000, 30000-40000 and above

40000 was 15% : % : 34% and 10% respectively The distribution of mothers according to Previous information regarding micronutrient deficiency under five children is shown in table – 9. The Previous information regarding micronutrient deficiency under five children was found in 36% cases of control group, 20% cases of experimental group and 28% cases overall. The mean pre test score of experimental group was 8.12 ± 2.26 while in control group it was $8. \pm 2.$. No significant difference was found in mean pre test score between the groups ($p=0.313$) The mean post test score of experimental group was 15.34 ± 2.92 while in control group it was 7.38 ± 1.90 . The significant difference was found in mean post test score between the groups ($p<0.001$). The mean post test knowledge score of experimental group was more than the control group. Further the significant increase was found in mean knowledge score in experimental group ($p<0.001$) while significant decrease was found in mean knowledge score in control group ($p<0.001$)

At pre test 0 % mothers showed inadequate knowledge level while 34% showed moderate adequate knowledge level. After post test 3% showed adequate knowledge level, 50% moderate adequate and 47% inadequate knowledge level. Hence proportion of inadequate knowledge level was decreased at post test. The significant change was observed in knowledge level at post test ($p=0.010$). No significant association of post test knowledge level was found with age ($p=0.6$), type of family ($p=0.229$), religion ($p=0.0$), education ($p=0.431$), employment status ($p=0.9$), history of nutritional deficiency in children ($p=0.5$), family income ($p=0.5$) and Previous information regarding micronutrient deficiency under five children ($p=0.990$) However no. of children showed significant association with post test knowledge level ($p=0.046$) the maximum adequate knowledge was found in parents with one children.

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