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A STUDY TO ASSESS THE KNOWLEDGE ON IDENTIFICATION AND MANAGEMENT OF SELECTED MICRONUTRIENTS DEFICIENCY IN CHILDREN AMONG MOTHERS OF UNDER FIVE CHILDREN RESIDING AT RURAL AREAS OF MANDYA DISTRICT WITH A VIEW TO DEVELOP SELF INSTRUCTIONAL MODULE

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ABSTRACT
The research design consisted of an evaluative approach with Non -experimental design. The population selected for the study was 90 mothers of under five children by convenient sampling technique residing rural areas of Mandya District. The reliability co-efficient was found to be acceptable. The analysis of the data was based on the objectives and hypothesis. The descriptive and inferential statistics were mean, frequency, mean percentage and standard deviation with tabular presentation of the data. showed that majority of the mothers 35.6% of them were in age group of 20-25 years and 81.1% of them were Hindus, 35.6% of them had the qualification of secondary education , 32.2% of the are laborer,44.4% of their family income lies between Rs 3001-6000, and 63.3% are from joint family,41.2% are got information from information aids & mass media

Key words: *-VAD, Vitamin A deficiency, IDA: Iron deficiency Anemia.*

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INTRODUCTION

Micronutrient deficiencies are determining and aggravating factors for health status and quality of life. Three nutritional problems that have serious consequences are deficiencies of iron, vitamin A and iodine. It is estimated that in today's world, iron deficiency anemia affects the children. Blindness due to vitamin A deficiency affects children under 5 years of age. Iodine deficiency disorders affect million people.[1]

Nutrition the word nutrition is derived from the word 'Nutricus' which means to suckle at the breast. Nutrition is defined as combination of Dynamic process by which the consumed food is utilized for nourishment and structural and functional efficiency of every cell of the Body. It is the science of food and its relationship to health, Nutrition needs of a newborn, infant, child and adolescent are different from that of adult, the different stages of growth demands an understanding of the changing nutritional requirement, in the pediatric population, the needs for growth are superimposed on the high maintenance needs due to higher metabolic and nutrient turnover role, There are essentially seven classes of nutrients, Carbohydrate, protein, fat, minerals,

vitamins and water. Nutrients are classified in to macronutrients and micronutrients. Macronutrients which constitute carbohydrate, fat, and proteins are required in large quantities and are the building block of the body. Micronutrients consist of vitamins and minerals and though required in very small quantities play an essential role in metabolic pathway and immunity, Micronutrient deficiencies such as nutritional anemia (especially iron deficiency) which is very common in Indian children and vitamin deficiencies like rickets, scurvy and vitamin deficiencies are some of the common conditions which require prompt attention.[2]

Micronutrient deficiencies result from inadequate dietary intake, poor absorption of nutrients, excessive losses, increased requirement or a combination of these factors; iron deficiency anemia impairs cognitive performance, behavior and physical growth of infants and children's. The immune status and increase the risk of morbidity. Vit A deficiency is the most important cause of preventable blindness in young children, vit a deficiency generally manifests as xerophthalmia. Iodine is an essential micronutrient for normal growth and development in humans, iodine deficiency causes goiter, impaired brain development in the foetus and infant and retarded physical and physical and psychomotor development in the child.[3]

Iron Deficiency Anemia is the most common cause of nutritional anemia in the world. Children in the 6 to 24-months of age are at high risk of Iron Deficiency Anemia among boys and girls appears to be more due to growth spurt, and in girls it remains as such during their reproductive life. The few available studies generally show impaired motor, cognitive, and language development as well as poorer learning performance among children.[4]

OBJECTIVES OF THE STUDY

1. To assess the level of knowledge regarding identification of selected micronutrients deficiency in a children among mothers of under five children.
2. To assess the level of knowledge regarding management of selected micronutrients deficiency in children among mothers of under five children.
3. To find out the association between the level of knowledge with selected socio demographic variables.

HYPOTHESIS:

H1-There is a significant association between the knowledge of mothers of under five children regarding selected micronutrients deficiency in children with selected socio demographic variables.

RESULTS

Organization and presenting data

The data collected were edited, tabulated, analyzed, interpreted and findings obtained were presented in the forms of tables and diagrams represented under following two parts and five sections.

PART-I

Section A: Demographic variables of mother.

Section B: Assess the level of knowledge of mothers regarding micronutrient deficiencies and management.

PART-II

Section C: association between the level of knowledge with selected socio demographic variables.

PART-I

Section A: Description of adults based on demographic variables.

Table–1 Distribution of mothers according to age N=90

S.No	Demographic variables	Frequency (f)	Percentage (%)
1.	**Age (years)**		
	20 – 25 years	32	35.6
	25 – 30 Years	30	33.3
	30 – 35 years	28	31.1

Age wise distribution, shows that the maximum number 32(35.6 %) of the subjects were between the age group of 20-25 years, 30(33.3%) of them were between 25-30 years, and 28(31.1 %) of them were between 30-35 years of age group.

Table–2 Distribution of mothers according to religion N=90

S. No	Demographic variables	Frequency (f)	Percentage (%)
	Religion		
	Hindu	73	81.1
	Muslim	16	17.8
	Christian	1	1.1.
	Others	-	-

With regard to the religion, maximum number 73(81.1 %) of mothers were Hindu, 16(17.8 %) were Muslims, and 1(1.1 %) subjects were belonging to Christians and no subjects were belonging to other religion group.

Table–3 Distribution of mothers according to education N=90

S. No	Demographic variables	Frequency (f)	Percentage (%)
	Education		
	No formal education	16	17.8
	Primary school	28	31.1
	Secondary school/P.U.C	32	35.6
	Graduation/ post-graduation	14	15.5

Related to education status, maximum number 32(35.6 %) had secondary education 28(31.1%) had primary school education, 16(17.8%) were not having formal education, 14(15.5%) are graduates.

Table–4 distribution of mothers according to occupation. N=90

S. No	Demographic variable	Frequency(f)	Percentage(%)
	Occupation		
	Laborer	29	32.2
	Pvt. Employee	21	23.3
	Govt. Employee	5	5.6
	Self-employee	10	11.1
	Unemployed	25	27.8

In relation to occupation, the maximum number 29(32.2%) were laborer, 25(27.8%) were unemployed, 21(23.3%) were employed in private set up, 10(11.1%) were self-employed, and 5(5.6%) were government employs.

Table–5 Distribution of mothers according to family income N=90

S. No	Demographic variable	Frequency(f)	Percentage(%)
	Family income (Rs/month)		
	Less than or equal to3000	20	22.2
	3001-6000	40	44.4
	6001-9000	19	21.2
	Greater than or equal to 9001	11	12.2

Family income shows that, the maximum number 40(44.4%) of the subjects were having the family income 3001-6000 and 20(22.2%) of them have income less than are equal to 3000 and 19(21.2%)of their income is between 6001-9000 and 11(12.2%) of them are having income above 9000.

Table–6 Distribution of mothers according to Type of family N=90

S. No	Demographic variable	Frequency(f)	Percentage(%)
	Type of family		
	Joint	57	63.3
	Nuclear	33	36.7

With regard to type of family, the maximum number 57(63.3%) are from joint family and 33(36.7%) are from nuclear family.

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Table–7 Distribution of mothers according to Source of information about health services N=90

S.No	Demographic variable	Frequency(f)	Percentage(%)
	Source of information about health services		
	Health personnel	16	17.8
	Informational aids/ mass media	37	41.2
	Family & friends	8	8.8
	None	29	32.2

Regarding source of information about rehabilitative services 37(41.1%) were got information from information aids and 29(32.2%) subjects were not having information 16(17.8%) got information from health personnel 8(8%) were got information from family and friends.

Section-B: Distribution of mothers according to level of knowledge regarding micronutrient deficiencies and management.

Table- :8 Frequency & Percentage distribution of level of knowledge among mothers. N=**90**

Sno	Level of knowledge	Number	%
1	Inadequate knowledge	24	26.7
2	Moderately adequate knowledge	63	70.0
3	Adequate knowledge	3	3.3
4	Over all	90	100

The above table depicts that among 90 mothers, the maximum number 63(70%) of them were having moderately adequate knowledge, 24(26.7%) of them had inadequate knowledge and 3(3.3%) of them is having adequate knowledge level.

PART-II

Section C: Association of knowledge with selected demographic variable.

Table: 9-Association between Age and the Knowledge of mothers. N=90

Age (in years)	Knowledge <median	%	≥Median	%	DF	χ2	Result
20-25	8	157	24	61.5	2	21.69	S
25-30	20	39.2	10	25.6			
30-35	23	451	5	12.8			

The table-9 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 21.69, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between the educational status and knowledge of mothers.

Table: 10-Association between religion and the Knowledge of mothers. N=90

Religion	Knowledge <median	%	≥Median	%	DF	χ2	Result
Hindu	41	80.4	32	82.1	2	0.773	NS
Muslim	9	17.6	7	17.9			
Christen	1	2.0	0	0.0			
Other	-	-	-	-			

The table-10 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 0.773, which is less than table value with p-value < 0.05. Hence accept null hypothesis i.e. there is no significant association between the religion and knowledge of mothers

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Table: 11-Association between Educational status and the Knowledge of mothers. N=90

Educational status	Knowledge				DF	χ2	Result
	<median	%	≥Median	%			
No formal education	16	31.4	0	0	3	39.36	S
Primary school	22	43.1	6	15.4			
Secondary school/PUC	13	25.5	19	48.7			
Graduation/post-graduation	0	0	14	35.9			

The table-11 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 39.36, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between the educational status and knowledge mothers.

Table: 12-Association between Occupation and the Knowledge of mothers. N=90

Occupation	Knowledge				DF	χ2	Result
	<median	%	≥Median	%			
Laborer	25	49.0	4	10.3	4	17.67	S
Pvt. Employee	8	15.7	13	33.3			
Govt. Employee	1	2.0	4	10.3			
Self-employee	6	11.8	4	10.3			
Unemployed	11	21.6	14	35.9			

The table-12 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 17.67, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between the occupation and knowledge of mothers.

Table: 13-Association between monthly income and the Knowledge of mothers. N=90

Monthly income	Knowledge				DF	χ2	Result
	<median	%	≥Median	%			
≤3000	20	39.2	0	0	3	26.28	S
3001-6000	20	39.2	20	51.3			
6001-9000	10	19.6	9	23.1			
≥9001	1	2.0	10	25.6			

The table-13 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 26.28, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between the monthly income and knowledge of mothers.

Table: 14-Association between Type of family and the Knowledge of mothers. N=90

Type of the family	Knowledge				DF	χ2	Result
	<median	%	≥Media	%			
Joint	37	72.5	20	51.3	1	4.30	S
Nuclear	14	27.5	19	48.7			

The table-14 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 4.30, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between type of the family and knowledge of mothers.

Table: 15-Association between Source of information and the Knowledge of mothers. N=90

Source of information	Knowledge				DF	χ2	Result
	<median	%	≥Median	%			
Health personnel	10	19.6	6	15.4	3	18.71	S
Information aids	13	25.5	24	61.5			
Family & friends	3	5.9	5	12.8			
None	25	49.0	4	10.3			

The table-15 describes the outcomes of chi-square test. A total of 51 mothers were below median and 39 mothers were above median. Calculated χ^2 Value was found to be 18.71, which is more than table value with p-value < 0.05. Hence accept hypothesis i.e. there is a significant association between the source of information and knowledge of mothers.

Table:16- Abstract of chi-square results of socio demographic characteristics and knowledge of mothers regarding identification and management of micronutrient deficiency.

S . no.	Characteristics	Chi-Square value	Df	Result	'p'value
1	**Age**	**21.69**	2	S	p<0.05
2	**Religion**	**0.773**	2	NS	p>0.05
3	**Education**	**39.36**	3	S	p<0.05
4	**Occupation**	**17.67**	4	S	p<0.05
5	**Monthly in come**	**26.28**	3	S	p<0.05
6	**Type of the family**	**4.30**	1	S	p<0.05
7	**Source of information**	**18.71**	**3**	S	p<0.05

Note: **S-Significant at 5% level (p<0.05)** and NS- Not significant at 5% level (p>0.05)

The table 16 depicts the association between knowledge and demographic variables among the mothers regarding micronutrients deficiency and management. Chi- square test was computed to find the association between the level of knowledge and the demographic variables of mothers.

The chi-square result shows statistically significant association form age, educational status, occupation, family income, type of family, source of information, with the level of knowledge at p<0.05 level among the mothers.

There is no statistical significant association between religion and the level of knowledge of mothers regarding micronutrient deficiencies and management.

Hence the hypothesis stated **H_1** "There is a significant association between the knowledge of mothers of under five children regarding selected micronutrients deficiency in children with selected socio demographic variables." is accepted.

IMPLICATIONS

The findings of the study have implication for the nursing profession. The implications have been written under the following heading: - Nursing service, Nursing administration, Nursing education, and Nursing research. The present study emphasized the knowledge aspect of mothers on micronutrient deficiency.

1. Nursing Service

From this study nurse would be able to understand the importance of micronutrients, identification and management micronutrient deficiency in children.

Since the nurses are the first source of knowledge regarding health for mothers under five children. She has to educate the mothers regarding micronutrient deficiency; this will help full mothers to gain knowledge on identification and management of micronutrient deficiency.

2. Nursing Administration

- Nursing administrator should take an initiative in creating health policy making and developing protocols in providing education to the patients during they are in the hospital and involve patients in the promotions of their health.
- Nurse administrators should review the institutions policies and practices related to education of mothers. They should get guidelines and practice on micronutrient deficiency.

- ❖ The nurse administrator should plan for the budget and utilize the resource for training of staff, health education of patients and providing regular education, training for inpatients.
- ❖ The nursing administration should arrange continuing education programme for nursing personnel regarding micronutrient deficiency.

3. Nursing Education

- ❖ Nursing personnel's should be given in-service education to update their knowledge on micronutrient deficiency. So that they would be able to impart appropriate knowledge to the mothers.
- ❖ Nursing education should emphasize on preparing prospective nurses to impart health education by methods of educational technology.

4. Nursing Research

- ❖ Research should be conducted on preparation of better practices of nursing care and development of good and effective policies to provide quality care to the mothers regarding micronutrient deficiency.
- ❖ There is need to have research based evidence to prove the cost effectives on knowledge on identification and management of micronutrient deficiency.

LIMITATIONS:

The limitations of the present study were

1. The study was confined to small number of subjects about 90 mothers and was conducted on sample.
2. A structured knowledge questionnaire was prepared for data collection, which restricts the amount of information that can be obtained from the respondents.
3. No attempt was made to do follow up of mothers of under five children.

RECOMMENDATIONS

Based on the findings of the study it is recommended that: -

- A replication of present study can be conducted with a large population.
- A similar study can be replicated with a non-probability convenient sampling in selecting the participants.
- A study can be done regarding knowledge on management of selected micronutrients deficiency in children e on breast milk expression and its storage among postnatal mothers..
- A Similar study can be conducted using other strategies like SIM, booklets, pamphlets and information guide sheets.

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