

Research Article

A Study to Assess the Knowledge on Micronutrient Deficiencies Among Mothers with Under Five Children in Maraimalai Nagar

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ABSTRACT

Micronutrient deficiencies are a significant cause of malnutrition and associated ill health throughout the world. This is particularly true in the developing world, where nearly 20% of the population suffers from iodine deficiency, about 25% of children have subclinical vitamin A deficiency, and more than 40% of children are anemic. The objective of the study was to assess the knowledge on micronutrient deficiencies among mothers with under five children in Maraimalai Nagar. Quantitative approach and descriptive survey design was adopted for the present study. A total of 50 samples were selected using non probability purposive sampling technique at Maraimalai Nagar. The tool used for the study comprised of two sections. Section A- Demographic data (which includes age, education, occupation, monthly income, type of family, religion, source of information on micro nutrient deficiency) and Section B- a structured questionnaire developed by the investigator which included 30 question to assess the knowledge on micronutrient deficiency. The data was collected from the 50 samples and the analysis was done by using descriptive and inferential statistics. The major study findings shows that, among 50 mothers selected for the study 25 (50%) mothers have inadequate knowledge and 25 (50%) mothers have moderately adequate knowledge. None of them have adequate knowledge. Considering the association between the level of knowledge and the demographic variables, there is significant association between the knowledge and source of information at P = 0.004 level.

keywords: Micronutrient, Deficiency, Malnutrition, Anemia, Knowledge.

INTRODUCTION

Iron deficiency is the most pervasive nutritional problem in the world. Between 4 and 5 billion people suffer from iron deficiency and an estimated 2 billion are anemic. Young children are most vulnerable. 40 to 50 per cent of children under five in developing countries are iron deficient¹. Iron deficiency mainly affects children and women of reproductive age. More than half of all children living in developing countries between 6 months and 2 years of age are deficient in iron, and about 40% of young women have iron deficiency anemia². Iodine is an essential trace element; the thyroid hormones thyroxin and tri iodotyronine contain iodine. In areas where there is little iodine in the diet, typically remote inland areas where no marine foods are eaten, iodine deficiency cretinism, which results in developmental delays and other health problems. India is the most outstanding, with 500 million suffering from deficiency, two million from cretinism³. Vitamin deficiency remains a serious public health problem in developing countries, despite the gain of the past few decades to identify and supplement at- risk population. Estimating the extent and severity of Vitamin A deficiency and its related disorders in vulnerable populations is a critical step in the effort to mobilize resources for prevention and treatment. Preschool aged children and women during pregnancy or lactation tend to suffer the most widespread and severe effects of deficiencies in

vitamin A and other micronutrients⁴. Worldwide, the three most common forms of Micronutrient deficiency are Iron, Vitamin A and Iodine deficiency. Together, these affect at least one third of the world's population, the majority of who are in developing countries. Of the three, iron deficiency is the most prevalent. It is estimated that just over 2 billion people are anemic, just under 2 billion have inadequate iodine nutrition and 254 million preschool-aged children are vitamin A deficient⁵. Micronutrients contribute to good health and are necessary for proper growth and development. Dietary diversity helps individuals receive a nutritionally-balanced intake of necessary vitamins and minerals. Yet, many poor households around the world face food insecurity resulting in micronutrient deficiencies that lead to serious health consequences. Considering the above facts, the authors assessed the knowledge on micronutrient deficiencies among the mothers with underfive children⁶.

MATERIALS AND METHODS

Quantitative approach and descriptive survey design was adopted for the present study. The variables studied are study variable and demographic variables. The study variables include knowledge on micronutrient deficiencies, whereas the demographic variables includes age, educational status, occupation, monthly income, type of

Table 1: Frequency and percentage distribution of mothers with under five children: N = 50

Demographic variables		Mothers with under five children:	
		Number	%
Age	<18	6	12
	18-25	26	52
	26-35	18	36
Educational status	Non Formal Education	7	14
	Primary level	11	22
	HSS	25	50
	Degree	7	14
Occupation	House wife	24	48
	Private	5	10
	Employee		
	Government	12	24
Monthly Income	Others	9	18
	> Rs10000	18	36
	Rs10001-20000	12	24
	Rs 20001-50000	17	34
Type Family	>Rs 50000	3	6
	Extended	15	30
	Joint	5	10
Religion	Nuclear	30	60
	Hindus	41	82
	Muslims	5	10
Source of Information	Christians	4	8
	TV & Radio	18	36
	News Paper	12	24
	Health care Professionals	20	40

Table 2: Assessment the level of knowledge on micro nutrient deficiency among mothers with under five children: N = 50

Level of knowledge	Mothers with under five children	Percentage
In adequate	25	50%
Moderate adequate	25	50%
Adequate	0	0.0
Total	50	100%

family, religion and source of information. The study was conducted in Maraimalai Nagar, Kancheepuram district, Kattankulathur block, Tamil Nadu, with a total population of 16,874. The accessible population includes mothers with under five children living in Maraimalainagar. Sample consisted of mothers with under five children in Maraimalai Nagar who fulfilled the inclusion criteria. The sample size for the present study was 50. Non-probability Purposive sampling technique was adopted to select the samples for the study. The study includes (i). All mother who are having under-five children in selected rural area in maraimalai nagar (ii) All mothers who are willing to participate. (iii) Who are able to understand tamil and

exclusion criteria include mothers of under-five children who are not available during data collections.

The tool used for the data collection was a structured questionnaire developed by the investigator which consists of 2 sections:

Section A: Structured questionnaire to elicit the demographic data on micronutrient deficiency among mothers with under five children.

Section B: Self structured questionnaire to assess the knowledge on micronutrient deficiency among mother with under five children.

The content of the tools were established on the basis of opinion of nursing experts. Suggestions were incorporated in the tool. The reliability of the tool was done by test retest method. The r value was 0.8 which indicated a positive correlation to proceed for the main study. The study was approved by the dissertation committee of SRM College of Nursing, SRM University, Kattankulathur, Kancheepuram District. Permission was obtained from the Dean, SRM College of Nursing and informed consent was obtained from each participant for the study before starting data collection. Assurance was given to the subjects that anonymity of each individual would be maintained and they are free to withdraw from the study at any time. The investigator explained the objectives and methods of data collection. Data collection was done within the given period of 1 week in Maraimalai Nagar. The data collection was done during the day time. Self-introduction about the researcher and details about the study was explained to the samples and their consent was obtained. The knowledge on micronutrient deficiencies was assessed among the mothers with under five children in Maraimalai Nagar using the tool. The confidentiality about the data and finding were assured to the participants. The participants took 30 minutes to complete the tool and their co-operation was imperative.

RESULTS

Section a: analysis of demographic variables among mothers with under five children:

The Table I above represents the frequency and percentage distribution of mothers with under five children: Table 1 depicts the demographic profile regarding age of the mothers with under five children were in the age group of 18 – 25 of 52%, regarding educational status of the mothers with under five children were HSS of 50%, the mothers with under five children were house wives of 48%, mothers with under five children having monthly income of less than Rs.10000.00 of 36%, mothers with under five children were nuclear family of 60%, mothers with under five children were Hindus of 82% and mothers with under five children of health care professionals of 40%.

Section b: assessment of knowledge on micronutrient deficiency among mothers with under five children

Section c: association between the level of knowledge of mothers with under five children

The above table reveals that there is significant association between the level of knowledge and with the demographic variable of source of information. There is no association with respect to other variables.

Table 3: Association of between the levels of knowledge of mothers with under five children: N = 50

Level of knowledge		Frequency	Frequency	Chi square
Age	<18	4	2	X ² = 0.820
	18-25	12	14	P = 0.663
	26-35	9	9	NS
Education	NFE	3	4	X ² = 0.416
	Primary	6	5	P = 0.937
	HSS	12	13	NS
	Degree	4	5	
Occupation	HW	13	11	X ² = 0.477
	Private employee	2	3	P = 0.924
	Government employee	6	6	NS
	Others	4	5	
Monthly Income	< Rs 10000	8	7	X ² = 4.844
	Rs 10000-20000	9	3	P = 0.184
	Rs 20001-50000	6	11	NS
	Rs 50000	1	2	
Type of family	Extended	8	7	X ² = 0.266
	Joint	2	3	P = 0.876
	Nuclear	15	15	NS
Religion	Hindus	21	20	X ² = 1.224
	Muslims	3	2	P = 0.542
	Christians	1	3	NS
Source of information	TV & Radio	12	6	X ² = 11.333
	News papers	5	7	P = 0.004
	Health care Professionals	8	12	Significant

DISCUSSION

Worldwide, the three most common forms of Micronutrient deficiency are Iron, Vitamin A and Iodine deficiency. Together, these affect at least one third of the world's population, the majority of who are in developing countries. Of the three, iron deficiency is the most prevalent. It is estimated that just over 2 billion people are anemic, just under 2 billion have inadequate iodine nutrition and 254 million preschool-aged children are vitamin A deficient. The outcome of the study revealed that moderately adequate 25 (50%) samples had moderate knowledge on micronutrient deficiency of mothers with under five children. A similar study was conducted on prevalence of malnutrition status among Chinese children under 5 year-old in different type rural areas. The paper based on anthropometry data collected in 'National Nutrition Survey. And 'China National Nutrition and Health Survey is applied age - and sex - specific height and weight reference recommended by WHO/NCHS and analyzed data. The prevalence of stunting among children under 5 year-old in four classes rural areas were 12.4%, 15.4%, 11.5% and 29.3% respectively, the prevalence of underweight were 7.4%, 8.7%, 5.4% and 14.4%. The prevalence of moderate stunting in Chinese rural areas 20.5% in 1992, 12.0% in 2002, the prevalence of severe stunting 14.5%, 5.2%, At the end the study was concluded that the prevalence of moderate underweight and severe underweight 47.7% and 72.3% respectively⁷. A similar study was conducted at Pediatric department. Children's with age 6 to 60 months, admitted in the ward were assessed for nutritional status and stunting according to the WHO classification of malnutrition. After clinical

examination. Investigations were done to confirm the clinical diagnosis of iron deficiency anemia and rickets. The collected data was analyzed by Statistical Program. A total of 150 children were enrolled in this study of all, 63 (44%) Children's were severely stunted, 44 (29%) had moderate stunting, 27 (18%) had mild stunting while only 16 (10.7%) had normal stature. Severely malnourished were 119(79%) children, 30 (20%) Children's had moderate malnutrition. 42% severely malnourished children also had severe stunting. Anemia was the most common micronutrient deficiency seen in 117 (78%) patients, out of these 88% had iron deficiency anemia, Rickets was found in 54(36%). Vitamin A deficiency was present in 21 (14%) cases. Other miscellaneous micronutrient deficiencies were zinc and B-complex deficiency in 42 (28%). At the end the study was concluded that malnutrition and associated micronutrient deficiencies were frequently founded in children⁸.

CONCLUSION

The present study was conducted to assess the mothers had (50%) poor knowledge and (50%) moderate knowledge on under five children of micronutrient deficiency problems and its prevention. A significant number of mothers were unaware of the prevention and management of under five children of nutritional problems. The knowledge level of the mothers can be empowered with essential health information which again emphasizes the need to strengthen IEC activities on Micronutrient deficiencies.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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