IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e- ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 7, Issue 4 Ver. X (Jul.-Aug. 2018), PP 84-89
www.iosrjournals.org

"A Study To Assess The Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention of Iodine Deficiency Disorder Among Mother's Under Five Children At Selected Anganwadi Center, Tirupati."

*Mrs. P. Poornima, **Prof .Dr.A.Padmaja
**M.Sc (Nursing), Final year, college of nursing ,SVIMS ,Tirupati.*
***M.A(PSY).,M.Sc(N)., Ph.D.,Professor&Vice-Principal,*
Child Health Nursing, SVIMS, Tirupathi.
corresponding author: Mrs. P. Poornima

Abstract
Background: *Iodine deficiency has multiple adverse effects in humans, termed as iodine deficiency disorders[IDD]due to inadequate thyroid hormone production .Iodine deficiency gives rise to goiter in adults as well as cretinism in children, which results in developmental delay and other health problems .According to WHO ,nearly 2 billion people had insufficient iodine intake. Thus iodine deficiency as the single greatest preventable cause of mental retardation ,and it is an important public health problem.* ***Objectives:*** *1. To assess the knowledge regarding prevention of iodine deficiency among mother's of under five children at selected anganwadi center, Tirupati..2. To assess the effectiveness of structured teaching programme on prevention of iodine deficiency disorder among mother's of under five children.3. To associate the knowledge on structured teaching programme with selected demographic variables.4. To associate the knowledge on practice on structured teaching programme with selected demographic variables.* ***Method:*** *A quasi experimental single group pre-test and post-test design was adopted to assess the effectiveness of structured teaching programme on prevention of Iodine deficiency disorder among mother's of under five children, at selected anganwadi center, Tirupati.A total of 50 mother's of under five children were selected by Convenient sampling technique.* ***Results:*** *The effectiveness of knowledge on iodine deficiency disorder, knowledge on practice scores in pre test, mean of knowledge was 2.46 and standard deviation was 1.705,mean of practice was 4.56 and standard deviation was 1.929.In post- test mean of knowledge was 8.18 and standard deviation was 1.257,mean of practice was 1.90 and standard deviation was 0.707. Both the level of Knowledge and practices were significant at p<0.01 level.* ***Conclusion:*** *This study was successful in presenting a better understanding of the issues associated with introduction of prevention of Iodine deficiency disorder among mother's of under five children.*

Keywords: *Iodine deficiency ,knowledge, Practice, Prevention.*

Date of Submission: 20-08-2018 Date of acceptance: 03-09-2018

I. Introduction

Nutrition is known as the science of food and its interaction with an organism to promote and maintain health. Food is the source of energy needed for growth and maintenance of human body and reproduction. Optimum nutrition means that a person is receiving and utilizing essential nutrients in proper proportions as required by the body while also providing a reserve[energy generated by nutrients].Nutritional status is the condition of the body as it relates to consumption and utilization of food. Good nutritional status refers to the intake of a well-balanced diet, which supplies all the essential nutrients to meet the body requirements. Malnutrition refers to the physical effects on the human body of a dietary intake in quantity and quality. Under nutrition refers to low food intake.

Micronutrient deficiencies are a major impediment to the health, nutritional status ,growth and development of a significant proportion of the population. Deficiencies of three micronutrients namely iodine, vitamin A, iron are widespread affecting more than a third of India population. A few grams of iodine, barley a teaspoonful, represents the cumulative requirement of an average person over an entire life time. Yet, if the minute amount is not available regularly, it can cause children to be born with severe brain damage, or give rise to deafness and dwarfism and can lead to high rates of infant mortality, still births and miscarriages. Although the life requirement of iodine is merely a teaspoon or 150 mcg per day but still the deficiency of iodine is widespread.[1]

II. Need For The Study

Iodine deficiency has been identified all over the world. It causes significant health problems in 130 countries and affects 71million people suffering from goiter and other IDDs. It is estimated that in India alone, more than 6.1 crore people are suffering from endemic goiter and 88 lakh people from mental/motor handicaps.

The deficiency of iodine is not only related with enlargement of goiter but the till health effects of iodine deficiency extended far beyond those of goiter. If a pregnant women is starved of iodine the fetus cannot produce enough thyroxine, and hence fetal growth is retarded, hypothyroid fetus often perish in womb, and many infants die within 2 weeks of birth. Hypothyroid children are intellectually subnormal with impaired school performance and lowered IQ and may also suffer from physical impairment. They lack aptitudes of normal children of similar age and are often incapable of completing school.[2]

III. Review Of Literature

- **Lisa Granweidner -Home et.al.,(2017)** conducted a study on Knowledge about iodine in pregnant and lactating women. The aim of the study was to assess knowledge about iodine and predictors of iodine knowledge scores among pregnant and lactating women. The study also examined whether iodine knowledge scores were associated with iodine status. Across-sectional study was performed on 804 pregnant women and 175 lactating women from 18 to 44 years of age in 2016 in the oslo area, Norway .Knowledge about iodine was collected through a self-administered, paper-based questionnaire. Iodine concentrations in urine and breast milk were measured using an inductively coupled plasma mass spectrometer.74% of the pregnant women and 55% of the lactating women achieved none to low iodine knowledge scores. This study revealed a lack of knowledge about the importance of iodine in pregnant and lactating women, as well as about the most important dietary sources. Public education initiatives are required to increase the awareness about iodine in these population groups.[3]
- **Ahmed Elnadif Ahmed Elmanssury et.al.,(2017)** conducted a study on knowledge and attitude of population towards iodized salt .The study was conducted as a community based descriptive cross-sectional study to determine the knowledge and attitude of the population towards iodized salt in shendi locality,River Nile state ,Sudan,during the period of 2013.In this study,636 households were included.Questionniare and observations were used as a tools for data collection.The house-holds were selected through a multistage cluster-sampling technique,636 respondents were selected through systemic random sampling.Thus the study concluded that the households has poor knowledge, negative attitude, and poor practice about iodized salt. Hence, health authority should have to develop health education programmes to increase the awareness of households about the significance of iodized salt.[4]

- **Divya Shettigar et.al.,(2013)** conducted a study on Assessment of knowledge of mothers of underfive children on nutritional problems.This cross sectional descriptive study was conducted to assess mothers of under-five children residing at rural community area.Mothers were selected through Non probability convenient sampling.The data was collected using a pretested questionniare.Mothers had poor knowledge on underfive nutrional problems and its prevention.The study was concluded that a significant number of mothers were unaware of the prevention and management of underfive nutrional problems.So,frequent health education campaigns should be conducted in the field of child nutrion.

Iodine deficiency is a major public health problem,particularly young chidren and pregnant women.The most serious effect of iodine deficiency is mental retardation.It is one of the world's major preventable cognitive impairments posing threat to the social and economic development of the country.The awareness about iodine deficiency disorders needs reinforcement,at present the community is a passive participant in the Iodine deficiency disorders control programme.Education should take place at all levels include health workers.An nation which effort to promote iodized salt to provide women of child bearing age with advice on dietary source of iodine should also be implemented by community workers.Universal use of iodized salt is a simple inexpensive method of preventing Iodine Deficiency Disorders.[5]

IV. Operational Definitions

Structured Teaching Programme:

It is a systematically organized teaching programme to provide informationonmeaning, incidence, causes, clinicalmanifestations, complicatios, diagnostic findings, medical and surgical management, home care management & preventive measures of Iodine Deficiency Diseases among mothers of under five children.

Iodine Deficiency Diseases:
Iodine deficiency is a lack of iodine in the diet. which can lead to inadequate production of thyroid hormone[Hypothyroidism].It may result in a goiter.sometimes as an endemic goiter as well as cretinism due to untreatened congenital hypothyroidism.

Hypothesis:
There is a significant differences in knowledge of under five mothers regarding prevention of Iodine Deficiency Diseases before and after structured teaching programme. There is a significant differences in knowledge of under five mothers regarding prevention of Iodine Deficiency Diseases before and after structured teaching programme.

Assumptions:
- Mothers may have inadequate knowledge regarding prevention of iodine deficiency diseases.
- The knowledge may differ from mother to mother.

V. Methodology

Research design

The research design selected for the present study was a quasi-experimental single group pre-test and post-test research design. The study was conducted in Anganwadi center, Indira Nagar, Tirupati. The population of this study includes all Mother's of under five children. Sample size consisted of 50 mother's of under five children with Convenient sampling technique was adopted.

I**nclusive criteria:**
- Mothers who are available at the time of data collection.
- Mothers who can understand Telugu.
- Mothers who are curious and having sound mind.
- Mothers who are not having previous medical knowledge.

VI. Data Analysis

After giving a score for each students, both pre-test and post-test results were tabulated. Descriptive and inferential statistics were used for the analysis of the pre-test and post-test.

VII. Results And Conclusion

Table 1:(Annexure-1) Distribution of Demographic variables among mother's of under five children:

The data presented in table-1 Shows that Out of 50 under five mothers, majority 21(42.0) were aged 20-25 years and 5(10.0) were at the age group of 20 years. Related to education of the mother, majority 23(46.0) were having primary education, and 4(8.0) had no formal education and collegiate education. Related to education of father ,majority 24(48.0) were having secondary education, and 3(6.0) had no formal education. Pertaining to occupation of the mother,majority37(74.0) were homemakers,and2(4.0) were any other. In accordance with occupation of father ,majority27(54.0) were doing business, and 3(6.0) were labor. Related to family income per anum,majority24(48.0) were having income of Rs30001-50000 rupees and 3(6.0) were had above Rs70001.Regarding the religion, majority of the mothers27(54.0) were Hindus, 15(30.0) were Christians and 8(16.0) were muslims. Regarding the number of children, majority 28(56.0) were one children, and none of them had three and four children. Related to type of family, majority 27(54.0) were nuclear family, and none of them were single parent family. Regarding type of housing, majority 50(100.0) were pucca house, and none of them have katcha house and pucca house with asbestos. Related to place of residence ,majority50(100.0) were urban, and none of them are from rural and semi urban. Regarding goiter disorder in the family history, majority33(66.0) were not having, and 17(34.0) were having goiter disorder. Regarding source of information, majority 20(40.0) were received from family members, and 8(16.0) were from mass media.

Table 2:(Annexure-II): Distribution of level of knowledge regarding iodine deficiency disorder among mothers of under five children. Represents mother's of under five children level of knowledge on iodine deficiency disorder .Out of 50 mother's of under five children, in pre-test 18(36%) had inadequate knowledge,18(36%) had moderate knowledge and 14(28%) had adequate knowledge. In post-test 15(30%) had inadequate knowledge,25(50%) had moderate knowledge and 10(20%) had adequate knowledge.

Table3:(Annexure-III):Distribution of level of knowledge on practice scores regarding prevention of iodine deficiency disorder among mothers of under five children.
Reveals that in pre test 14(28%) had inadequate on practices,18(36%) had moderate on practices and 18(36%) had adequate on practices. Out of 50 post-test mothers 10(20%) had inadequate on practices,27(54%) had moderate on practices and 13(26%) had adequate on practices.

Table 4(Annexure-IV) :The effectiveness of structured teaching programme on knowledge and knowledge on practices regarding prevention of iodine deficiency disorder among mothers of under five children.
Both the level of Knowledge and knowledge on practice were significant at P<0.0level.

VIII. Conclusion

Nursing implications:

In order to improve the efficiency of mothers of under five children to promote optimum child development, there is a need of structured teaching programme. The findings of the study have implications in nursing service, nursing education, nursing administration and nursing research.

Nursing services:

Health education and structured teaching programme are the essential part of nursing service. The results of the study would help the nurses to enlighten their knowledge on importance of health education and structured teaching programme.
Provide family centerd nursing care and involve the parents in the health programmes in hospitals and community settings.

- In paediatric wards, outpatient departments, Well baby clinics, Primary health centers, sub-centers, Anganwadi centers and schools health education is planned and implemented using various teaching audio visual aids like charts, flip cards, pamphlets and black board.

Nursing education:

- The nursing curriculum should emphasize on implementing health information to community using different teaching methods.
- Nursing students should be trained in planning, implementing incidental and planned health education programme regarding prevention of iodine deficiency disorder.
- Mothers should taught regarding prevention of iodine deficiency disorder to reduce incidence of iodine deficiency disorder.

Nursing administration:

- ❖ Nursing administrator's should take an initiative to formulate policies that would include all nursing staff to be actively involved in health education programmes in pediatric hospitals, out-patient departments, Primary health centers, Sub-centers, Anganwadi centers and schools.
- ❖ The Nurse administrator should plan, organize and conduct structured teaching programme regarding iodine deficiency disorders and its prevention in mother's of under five children.
- ❖ The administrator can plan awareness programmes regarding prevention of iodine deficiency disorders.

Nursing research:

- ✓ Nursing research on newer method of teaching focusing on interest, quality and cost effectiveness.
- ✓ The findings of the study serves as a basis for professional and student nurses to conduct for the studies on prevention of iodine deficiency disorder.

Suggestions:

Based on the study findings, the following suggestions are proposed.

- A study could be conducted using post-test after one month, six months and one year to see the relation of knowledge.
- The study could be conducted with large samples.
- The study could be replicated in different settings, such as community to strengthen the findings.
- A comparative study could be done in rural and urban settings.
- A descriptive study to assess the knowledge and knowledge on practices regarding prevention of iodine deficiency disorder among mothers of under five children could be undertaken.

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Table 1:(Annexure-1) Distribution of Demographic variables among mother's of under five children:

n=50

Demographic variables		Frequency	Percentage%
Age	Less than 20 years	9	18.0
	20 -25 Years	21	42.0
	26-30 years	15	30.0
	Above 30 years	5	10.0
	Total	50	100.0
Education of Mother	No Formal Education	4	8.0
	Primary Education	23	46.0
	Secondary Education	19	38.0
	Collegiate Education	4	8.0
	Total	50	100.0
Education of Father	No Formal Education	3	6.0
	Primary Education	13	26.0
	Secondary Education	24	48.0
	Collegiate Education	10	20.0
	Total	50	100.0
Occupation of Mother	Home maker	37	74.0
	Labor	4	8.0
	Employee	7	14.0
	Anyother	2	4.0
	Total	50	100.0
Occupation of Father	Labors	3	6.0
	Business	27	54.0
	Employee	15	30.0
	Anyother	5	10.0
	Total	50	100.0
Family Income per anum in rupees	Less than 30000	5	10.0
	30001 – 50000	24	48.0
	50001 -70000	18	36.0
	Above 70001	3	6.0
	Total	50	100.0

Demographic variables		Frequency	Percentage%
Religion	Hindu	27	54.0
	Christian	15	30.0
	Muslim	8	16.0
	Total	50	100.0
NoOFchildren	One Children	28	56.0
	Two Children's	22	44.0
	Three Children's	0	.0
	Four and above	0	.0
	Total	50	100.0
Typeoffamily	Single Parent Family	0	.0
	Nuclear Family	27	54.0
	Joint Family	22	44.0
	Extended Family	1	2.0
	Total	50	100.0
TypeofHousing	Pucca house	50	100.0
	Katcha House	0	.0
	Pucca house with asbestos	0	.0
	Total	50	100.0
PlaceofResidence	Urban	50	100.0
	Rural	0	.0
	semi Urban	0	.0
	Total	50	100.0
FamilyHistory	Yes	17	34.0
	No	33	66.0
	Total	50	100.0

Source Of information	Mass media	8	16.0
	Family members	20	40.0
	Health care team	12	24.0
	Peer group	10	20.0
	Total	50	100.0

Table 2:(Annexure-II): Distribution of level of knowledge regarding iodine deficiency disorder among mothers of under five children.

n=50

Variables	PRE TEST						POST TEST					
	Inadequate		Moderate		Adequate		Inadequate		Moderate		Adequate	
	N	%	n	%	n	%	n	%	n	%	n	%
Knowledge	18	36.0	18	36.0	14	28.0	15	30.0	25	50.0	10	20.0

Table3:(Annexure-III):Distribution of level of knowledge on practice scores regarding prevention of iodine deficiency disorder among mothers of under five children.

n=50

Variables	PRE TEST						POST TEST					
	Inadequate		Moderate		Adequate		Inadequate		Moderate		Adequate	
	N	%	N	%	n	%	n	%	n	%	N	%
Practice	14	28.0	18	36	18	36.0	10	20.0	27	54.0	13	26.0

Table 4(Annexure-IV) :The effectiveness of structured teaching programme on knowledge and knowledge on practices regarding prevention of iodine deficiency disorder among mothers of under five children.

n=50

	Pre-test			Post-test			t-value	P-value	Sig.
Score	Mean	N	SD	Mean	N	SD			
Knowledge	2.46	50	1.705	8.18	50	1.257	20.429	0.00	**
Practice	4.56	50	1.929	1.90	50	0.707	8.893	0.00	**

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