

Knowledge, Attitude and Practices of Adults on Iodine Nutrition and Iodine Deficiency Disorders

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Abstract : Iodine deficiency is a major public health problem worldwide and it affects all the age groups. Aim of this study is to assess the Knowledge, Attitude and Practices of adults on Iodine Nutrition and Iodine Deficiency Disorders and to ascertain the current consumption rate of Iodine in the villages of Sedarapet Primary Health centre, Puducherry.

Methods: A Cross Sectional Study with Descriptive approach was conducted over 12 months of time . 145 households were selected using simple random sampling technique. A Structured Interview questionnaire was used as tool to collect the data on knowledge and attitude of participants and practices were assessed using a checklist. Estimation of Iodine in the salt was done using Rapid test kits.

Results: The study reveals that 115 (79 .3. %) have inadequate knowledge and about the cooking practices 21(17.2%) were using Rock salt, 17(11.7%) were using Non Iodized salt purchased from the shops 15 (10.3%) from Street vendors. 49 (33.8%) Never checked for the iodated salt 82(56.6%) did not know the emblem of iodated salt 63 (43.5%) of them stored the salt in the same plastic bag in which the salt was bought from shop and 6(4.1%) never used iodized salt for cooking. The following symptoms were identified among the study participants Palpitations 46 (31.7%), Poor concentration 43(29.7%) Fatigue: 63(43.4%) Weak muscles 51(35.2%)Agitation/anxiety: 26(17.9%) Depression: 30 (20.75%)Unusual hair loss: 53(36.6%)Unexplained weight gain: 21(14.5%)Persistent pain or swelling at the front of the neck 12(8.3%)Hoarseness: 12(8.3%) and Difficulty in tolerating heat: 19 (13.1%).

Conclusion : The study has revealed that still people have inadequate knowledge and improper practices in relation to the iodine deficiency disorders and many suffer with the symptoms suggestive of IDD. A health education was given on Iodine Nutrition and Iodine deficiency disorders to those consume non iodized salt and poor quality iodized salt More fervent health education has to be given and frequent surveillance has to be done to minimize the incidences of people suffering from iodine deficiency disorders especially in the rural communities.

Key words : Iodine Deficiency Disorders, Knowledge, Attitude ,Practices ,Symptoms Referral , Health Education

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I. Introduction

Iodine deficiency is a major public health problem worldwide and it affects all the age groups. Iodine deficiency disorder (IDD) impact refers the ill-effects caused by Iodine deficiency in population which can be prevented by ensuring adequate intake of Iodine. Iodine deficiency poses a threat to health, well being and economic product of the community at large.

The surveys conducted by Central and State health Directors, ICMR, and Medical Institutes have clearly demonstrated that not even a single state/UT is free from IDDs and overall 82% are endemic districts in the country. It is estimated that about 167 million people are "at risk" of IDD, about 54.4 million people have a goiter, and more than 8.8 million people have IDD-related mental/motor handicaps.(1)

The World Health Organization and the Micronutrient Initiative state that to achieve sustainable elimination of Iodine deficiency, at least 90 per cent of households must be using salt and that the salt must have an Iodine content of 15 parts per million (PPM) or more. Therefore, World Vision recommends the testing of household salt to ensure that 1) the most vulnerable are utilizing salt and 2) the salt is iodized to appropriate levels. (2)

Goitre is still an important public health problem in Puducherry and as it is important for the mental development of children, the various operational factors need to be identified to strengthen the NIDDCP and improve the consumption of iodised salt. (3)

Aim of this study is to assess the Knowledge, Attitude and Practices of adults on Iodine Nutrition and Iodine Deficiency Disorders and to ascertain the current consumption rate of Iodine in the villages of Sedarapet Primary Health centre, Puducherry.

II. Problem Statement

A Study To Assess The Knowledge, Attitude And Practices On Iodine Nutrition And Iodine Deficiency Disorders Among The Adults Living In The Villages Of Sedarapet Primary Health Center Pondicherry.

III. Objectives of the Study

1. To assess the knowledge, attitude and practices on Iodine nutrition and Iodine deficiency disorders among the adults
2. To correlate knowledge and practice on Iodine deficiency disorders.
3. To associate the knowledge, attitude and practices on Iodine nutrition and Iodine deficiency disorders with selected socio demographic variables.

IV. Methodology

Descriptive Cross Sectional Study was carried out for the period of 12 months in rural areas served under Sedarapet Primary Health Centre, which is situated 25 kms from Pondicherry Institute of Medical Sciences, Puducherry, South India. This area has a population of 12,630. Systematic random sampling technique was used to select 145 adults who met the inclusion criteria.

4.1 Instrument and Tool

A Structured Interview questionnaire used as tool to collect the data. The tool has following sections

Section A- Demographic profile of the subjects (10 questions)

Section B- A closed Structured Interview questionnaire to assess the Knowledge on Iodine nutrition and Iodine deficiency disorders. (14 questions)

Section C- Likert 5 point rating scale to assess the attitude. (7 questions)

Section D- Structured Interview questionnaire (6 questions) used to assess the practices along with estimation of Iodine in the salt using Rapid test kits.

- During the Interview clients with the History and Signs and symptoms of Iodine deficiency disorders were identified and referred to the PHC for further assessment and management.
- Health education given on Iodine Nutrition and Iodine deficiency disorders to those consume non iodized salt and poor quality iodized salt. (<15ppm).

4.2 Data Collection Method

The purpose of the study explained to the subjects and written informed consent obtained. Knowledge, attitude and practices on Iodine nutrition and Iodine deficiency disorders assessed using closed Structured Interview questionnaire. The participants educated on the need and importance of Iodine nutrition for Prevention of IDD.

4.3 Data Analysis Procedure

Descriptive statistics

Mean and standard deviation used to describe the data.

Inferential Statistic

Chi-square analysis and independent “t” test used to tests of significance.

4.4 Ethical Considerations

Research and the Ethical committee clearance obtained. The Directorate of Health services, Deputy Director public health and Medical officer Sedarapet PHC were informed and consent obtained for the study. Verbal consent obtained from the village leaders. A written informed consent obtained from the study participants. After receiving their consent, the study conducted.

V. Results

The total number of study participants was 145. Around 34.5% belong to the age group of 31-40 years, 86.9% were females, 87.6% were married 37.2% had high school education 59.3% were housewives 47.6% had an income of Rs 5001-10000, 99.3% were Hindus, 75.2% belong to nuclear family 93.8% were non vegetarians 38.6% did not have heard any information about IDD.

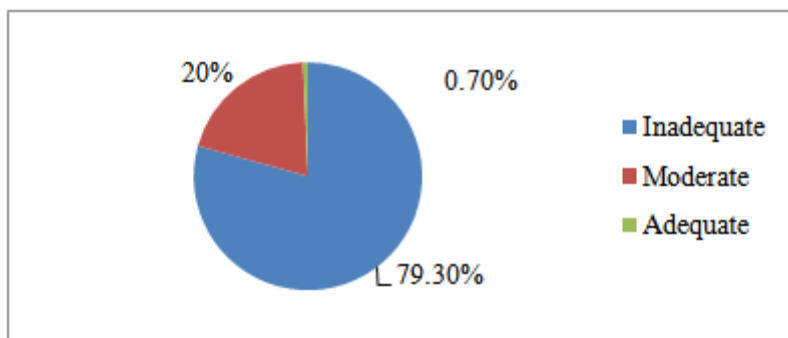


Figure 1: Level of Knowledge

Fig : 1 Shows that 115 (79.3%) have inadequate knowledge about Iodine Deficiency Disorders

Table 1: Level of attitude n=145

Level of Attitude	Frequency	Percentage (%)
Unfavourable	11	7.6
Moderately favourable	126	86.9
Favourable	8	5.5

Table 1 reveals that 86.9 % have moderately favourable attitude about Iodine Deficiency Disorders.

Table 2: Assessment of Practice n=145

Sl. No	Practice	Frequency (n)	Percentage (%)
1.	type of salt use for cooking		
	a. Powdered Iodized salt	101	69.7
	b. Powdered Non iodized salt	10	6.9
	c. Rock salt Iodized salt	9	6.2
	d. Rock salt non Iodized salt	21	17.2
2	usually purchase salt at		
	a. grocery shop	112	77.3
	b. Street vendors	17	11.7
	c. Directly from the salt manufacturers	4	2.8
	d. Unprocessed salt from local markets	12	8.3
3	identify iodated salt by		
	a. Iodated salt emblem	15	10.3
	b. Brand name	44	30.3
	c. Print on the packet	37	25.5
4	What is the emblem you look for on iodized salt packet?		
	a. Green square	23	15.9
	b. Smiling sun	30	20.7
	c. Black lines (Bar code)	10	6.9
5	What kind of container do you use to store salt (iodised) in the kitchen?		
	a. Plastic bag in which the salt was bought from shop	63	43.5
	b. Container with holes at the top	14	9.7
	c. Container without a lid	2	1.4
6	Frequency of Iodised salt used for cooking:		
	a. All the time	78	53.8
	b. Frequently	44	30.3
	c. Rarely	17	11.7
	d. Never	6	4.1

Thyroid Assessment reveals the following symptoms among the study participants. Palpitations 46 (31.7%), Poor concentration 43(29.7%), Fatigue 63(43.4%), Weak muscles 51(35.2%), Agitation/anxiety 26 (17.9%), Depression 30 (20.75%), Unusual hair loss 53(36.6%), Unexplained weight gain 21(14.5%), Persistent pain or swelling at the front of the neck 12(8.3%), Hoarseness 12(8.3%) and Difficulty tolerating heat 19 (13.1%).

Table: 3 Association between Knowledge and socio-demographic variables (n=145)

Variables	Total	Knowledge			Fisher's Exact Test	p value
		Inadequate	Moderate	Adequate		
Age(in years)						
a. 21-30	35 (24.1)	23	11	1	9.838	.073
b. 31-40	50 (34.5)	39	11	0		
c. 41-50	39(26.9)	33	6	0		
d. 51-60	21(14.5)	20	1	0		
Gender						
a. Male	19 (13.1)	16	3	0	.791	.796
b. Female	126(86.9)	99	26	1		
Marital status						
a. Single	11(7.6)	9	2	0	6.189	.875
b. Married	127(87.6)	99	27	1		
c. Widow/Widower	5 (3.4)	5	0	0		
d. Separated/ divorced	2(1.4)	2	0	0		
Educational Qualification						
a. Primary or less	37(25.5)	35	2	0	27.670	.000***
b. High school	54(37.2)	45	9	0		
c. Higher Secondary	15(10.3)	8	7	0		
d. Graduates &above	18(12.4)	8	9	1		
e. No formal education	21(14.5)	19	2	0		
Occupation						
a. Daily wages	16(11.0)	13	3	0	4.378	.996
b. Business	19(13.1)	15	4	0		
c. Regular Income	19(13.1)	16	3	0		
e. House wife	86(59.3)	67	18	1		
f. Others	5(3.4)	4	1	0		
Monthly family income (in Rs.)						
a. ≤5000	46(31.7)	38	8	0	11.683	.310
b. 5001-10,000	69(47.6)	55	13	1		
c. 10,001-15,000	23(15.9)	19	4	0		
d. ≥ 15, 000	7(4.8)	3	4	0		
Religion						
a. Hindu	144 (99.3)	114	29	1	3.620	1.000
c. Muslim	1(.7)	1	0	0		
Type of family						
a. Nuclear family	109(75.2)	91	18	0	10.685	.036*
b. Joint family	33(22.8)	23	9	1		
c. Extended	3(2.1)	1	2	0		
Dietary habit						
a. Vegetarian	9(6.2)	7	2	0	1.328	1.000
b. Non-vegetarian	136(93.8)	108	27	1		
Previous source of information						
a. Mass media	41(28.3)	34	7	0	7.198	.627
b. Relatives & Friends	17(11.7)	13	4	0		
c. Health personnel	22(15.2)	15	6	1		
d. Any other	9(6.2)	8	1	0		
e. Not heard so far	56(38.6)	45	11	0		

*Significant*** Highly significant

Table 2 shows that educational status and type of family has statistically significant association with the knowledge.

Table: 4 Association between Attitude and socio-demographic variables (n=145).

Variables	Total	Attitude			Fisher's Exact Test	p value
		Un favorable	Moderately favorable	Favorable		
Age(in years)						
a. 21-30	35 (24.1)	1	32	2	5.068	.522
b. 31-40	50 (34.5)	3	45	2		
c. 41-50	39(26.9)	6	30	3		
d. 51-60	21(14.5)	1	19	1		
Gender						
a. Male	19 (13.1)	2	15	2	2.069	.324
b. Female	126(86.9)	9	111	6		
Marital status						
a. Single	11(7.6)	1	10	0	3.906	.649
b. Married	127(87.6)	10	110	7		

c. Widow/Widower	5 (3.4)	0	4	1		
d. Separated/ divorced	2(1.4)	0	2	0		
Educational Qualification						
a. Primary or less	37(25.5)	1	35	1	9.087	.229
b. High school	54(37.2)	6	45	3		
c. Higher Secondary	15(10.3)	2	12	1		
d. Graduates &above	18(12.4)	0	15	3		
e. No formal education	21(14.5)	2	19	0		
Occupation						
a. Daily wages	16(11.0)	1	14	1	6.821	.433
b. Business	19(13.1)	2	14	3		
c. Regular Income	19(13.1)	1	18	0		
e. House wife	86(59.3)	6	76	4		
f. Others	5(3.4)	1	4	0		
Monthly family income (inRs.)						
a. ≤5000	46(31.7)	2	43	1	15.770	.031*
b. 5001-10,000	69(47.6)	9	58	2		
c. 10,001-15,000	23(15.9)	0	20	3		
d. ≥ 15, 000	7(4.8)	1	4	2		
Religion						
a. Hindu	144 (99.3)	11	125	8	2.236	1.000
b. Christian						
c. Muslim	1(.7)	0	1	0		
Type of family						
a. Nuclear family	109(75.2)	5	99	5	8.075	.071
b. Joint family	33(22.8)	6	24	3		
c. Extended	3(2.1)	0	3	0		
Dietary habit						
a. Vegetarian	9(6.2)	1	8	0	.632	.728
b. Non-vegetarian	136(93.8)	10	118	8		
Previous source of information						
a. Mass media	41(28.3)	2	37	2	4.129	.844
b. Relatives & Friends	17(11.7)	1	16	0		
c. Health personnel	22(15.2)	3	17	2		
d. Any other	9(6.2)	1	8	0		
e. Not heard so far	56(38.6)	4	48	4		

*Significant (p < 0.05)

Table 3 shows that the family income has significant association with the attitude.

Table 5. Correlation between knowledge and attitude on Iodine Nutrition and Deficiency Disorder among adults

	Knowledge and attitude
Pearson r Sig 2 tailed	0.807

VI. Discussion

The study reveals that 115 (79 .3%) have inadequate knowledge related to iodine nutrition and iodine deficiency disorders and about the cooking practices 21(17.2%) were using Rock salt non Iodized salt purchased from the 17(11.7%) from Street vendors.15 (10.3%) 49 (33.8%) Never checked for the iodated salt 82(56.6%) did not know the emblem of iodated salt 63 (43.5%) of them stored the salt in the same plastic bag in which the salt was bought from shop and 6(4.1%) never used iodized salt for cooking .

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VII. Conclusion

The study has revealed that still people have inadequate knowledge and improper practices in relation to the iodine deficiency disorders and many suffer with the symptoms suggestive of IDD. More fervent health education has to be given to minimize the incidences of people suffering from iodine deficiency disorders especially in the rural communities.

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