

## Assessment of Knowledge & Practices Regarding Use of Iodised Salt among Housewives of Osmanabad District

<sup>a</sup>Meena N. Sakhalkar, <sup>b</sup>Nuzhat Sultana M.B.

<sup>a</sup>Asst Prof. & HOD Dept. of Home Science S.M.D.M.M. Kallam, India

<sup>b</sup>Reader & Asso. Prof., Home Science Dept. Mrs. K.S.K. College Beed, India

### Abstract

A study was conducted to assess the knowledge and practices regarding IDD and its preventive measure 'iodised salt' among house wives of rural area in Osmanabad district of Maharashtra. Pre-designed, pre-tested schedule was used to collect relevant information and salt samples collected from respondents' kitchen were tested with the help of rapid test kit (RTK) to estimate iodine content. The majority of respondents (65.5) belonged to nuclear family. Out of 200 housewives surveyed 77 % were literate. Only 46.5% population consumed branded iodised salt regularly. Crystalline salt was preferred for rice, curry, dal and chutney; according to respondents crystal salt gives taste than powdered salt. So 44% respondents used both crystal and powdered salt. No one respondent had knowledge about IDD and its consequences and a killer weapon 'iodised salt'. 79% respondents were unaware about storage and handling of iodised salt.

**KEYWORDS:** IDD, iodised salt, storage and handling practice of iodised salt, rural housewives, iodine content in salt.

### Introduction:

Iodine is an essential micronutrient necessary for normal growth and mental development. Significance of iodine as an essential trace element lies in its role in thyroxin production; a hormone produced by the thyroid gland. It occurs in the human body in only small amount i.e.15-20 mg and the essential requirement for normal growth is only 100-150µg/day (Hetzel, 1989).

A healthy adult body contains 15-20 mg of iodine of which 70-80% is in the thyroid gland, which weighs only 15-25 gm. Although the amount of iodine in the thyroid; is closely related to iodine intake. The content may be reduced to only 1 mg or less in the iodine deficiently enlarged thyroid (goitre) (Hetzel, 1994).

Iodine deficiency is one of the nutritional problems in our country and it is the world's single most significant cause of preventable brain damage and mental retardation.

The chemical and sub-clinical manifestations of iodine deficiency are collectively included in the term IDD (Lancet, 1983). The WHO has, therefore, adopted the term IDD for the entire spectrum of disorders arising out of iodine deficiency.

In 1999, WHO estimated that of its 191 Member States, 130 had a significant IDD problem. A total of approximate 740 million people were affected by goitre- 13% of the world's total population (WHO, 1999). Given that goitre represents the tip of the IDD iceberg (Hetzel, 1983), it is likely that a much greater proportion of the

population suffers from IDD and in particular, from some degree of mental retardation.

The magnitude of IDD in India includes 167 million suffering from neurological disorders, 54 million suffering from goitre and 11 millions are cretins. In India, not a single state is free from the problem of IDD (ICMR, 1989). It is now known that one out of every five people in India lives in identified iodine deficient areas and is at a risk of being affected by IDD.

Iodine deficiency disorders (IDD), all caused by a lack of iodine in the diet, can range from goitre, mental retardation, abortion, still birth, neonatal and other type of hypothyroidism, physical sub normality to varying degrees of cretinism. The majority of these disorders are permanent and incurable. However, each one of them is completely preventable. Iodated salt consumed daily, offers complete protection against all IDD, at an annual cost per person i.e. less than the price of a cup of tea: a small price for rich benefits (ICCIDD, 1990)

Around 43% of the population does not consume adequate amount of iodine which make them vulnerable to physical and mental disorder (Kapil, 2001)

### **Importance of Iodised Salt:**

Common salt is most suited for iodine supplementations in view of the fact that it is cheap. Consumed daily in fairly regular quantities by the rich and poor alike and iodisation of salt is a low-tech and low-cost process. It involves blending of salt with Potassium Iodate. Iodised salt looks and tastes exactly like ordinary salt.

Cretinism is permanent and incurable like many other IDD with the exception of certain types of goitre, it cannot be cured but it can be easily prevented before it occurs. The regular consumption of iodated salt provides protection to present and future generations against the tragic consequences of IDD (Salt commissioner, 1987).

A national demographic health survey stated that only 53% of the country's household consume enough amount of iodine although 94% of the population used iodised salt (Sharma, 2008). Therefore the present study was conducted with the specific objective to assess the knowledge and practices regarding use of iodised salt and to estimate the iodine content in salt being used.

### **Methodology:**

The study was a cross-sectional community based field survey with salt testing demonstration for iodine content in salt with rapid test kit. Rural areas of Osmanabad district were selected randomly through stratified random sampling. Total 200 house wives were selected. Demographic profile and information regarding their storage and handling practices of salt, knowledge about IDD and iodised salt was collected through pre-tested, structured questionnaire.

To estimate iodine content in salt samples 1tbl sp (15gm) of salt from respondents' kitchen was collected and tested with RTK in front of housewife (sample) and noted iodine content.

Rapid test kit for iodated salt had following guidelines to decide iodine content in salt at household level:

After discharging a drop of test solution; the salt will turn light blue to dark violet depending on the iodine content of the salt i.e. no colour change suggests no iodine content in salt (0 ppm), light blue/purple colour on salt suggests 7 ppm iodine content in salt, blue/purple colour on salt suggests 15 ppm iodine content in salt and dark purple/violet colour confirms 30 ppm iodine content in salt.

### Findings:

The findings obtained from the present investigation are presented below –

### Demographic profile of respondent N=200

Type of family	No.	%
Joint	69	34.5
Nuclear	131	65.5
<b>Family income/month</b>		
Low-up to Rs. 7000	36	18
Medium-7001-15000	143	71.5
High-above 15001	21	10.5
<b>Age of respondent</b>		
18-30 years	40	20
31-40 years	59	29.5
41-50 years	54	27
Above 50 years	47	23.5
<b>Education</b>		
Illiterate	46	23
Literate	67	33.5
SSC	33	16.5
HSC	24	12
Degree	28	14
PG	02	01

It was found that 65.5 of the studied population were living in nuclear family. Though 33.5% of respondent were literate; only 14% respondent were graduate.

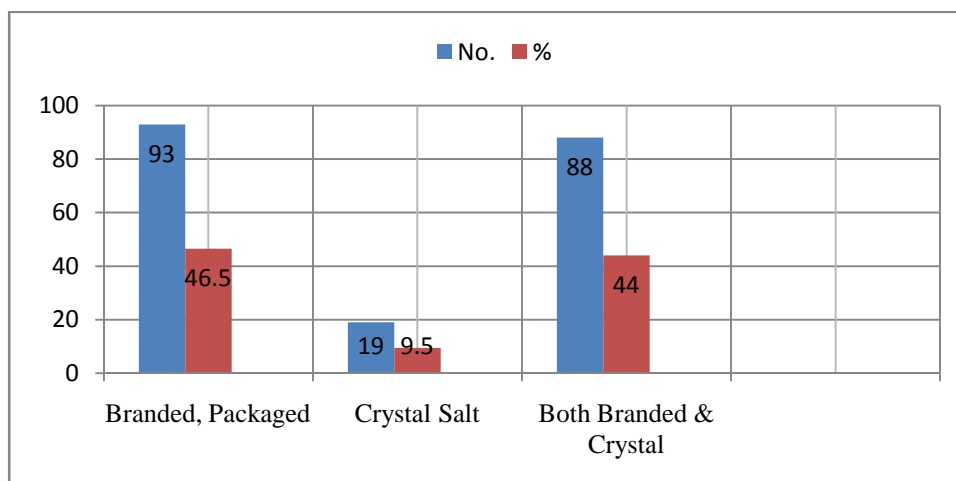
It was found that 71% of respondent had income Rs.7000-15000 per month and they constituted middle income group. 18% population was grouped under low income group i.e. up to Rs. 7000/month.

### Type of salt used by respondent:

Survey results revealed that only 46.5% of respondent were using branded, packed, iodised salt consciously. Brands of salt being used was recorded, it was found that respondents were using brand like: Nirma, Table top, Dandi, Annapurna, Ankur, Hira, White gold, Top line.

About 9.5% respondent using crystal salts which was used for their cattle in the field. They do not purchase separately for themselves; and they prefer taste of crystal salt only. 44% respondents were using both crystal and packaged salt. According to respondents crystal salt adds more taste to rice, vegetable curries, dal and chutneys than powdered salt so they preferred both salts in cooking. Satpathy et al (2004) revealed that 22% of the studied populations were consuming both crystalline and powdered salt whereas 7.9% of the respondents were not sure about the type of salt they were consuming.

**Type of Salt Used by Respondent: N=200**



**Graph 1:** Type of salt used by respondent

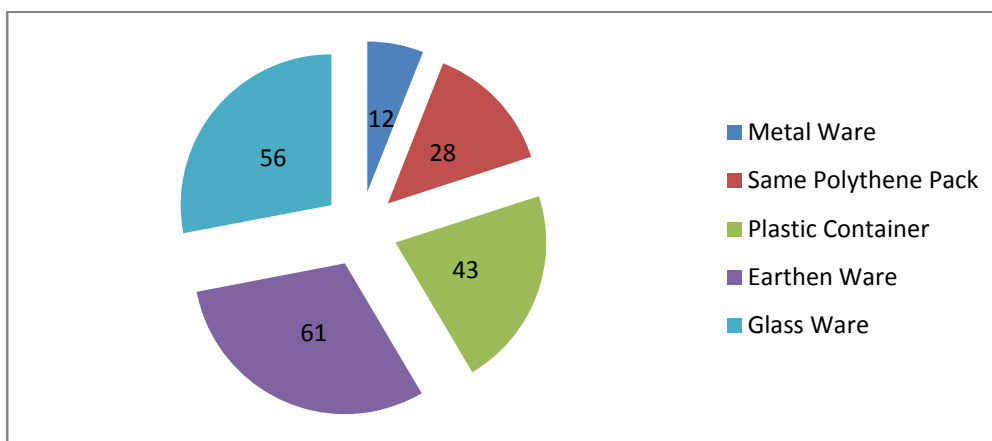
Existing knowledge about iodine, IDD, consequences of IDD were completely nil; and knowledge about iodised salt was inadequate. None of the respondents knew: what are iodine, sources and requirement of iodine and its importance for mental and physical health.

None of the respondent have knowledge of iodine deficiency disorders (IDD), its consequences like abortion, still birth, cretinism, mental retardation. Goitre (galgand) was heard by 69 (34.5%) respondents; but not exactly its effects on health, according to them it’s a cosmetic problem and not a health problem.

113 (56.5%) respondents heard the importance of iodised salt as shown in television advertisement; but they were doubtful about it that “a pinch of salt is so important for physical and mental development”, and they didn’t understand the perfect meaning of mental development.

No one respondent knew about the salt testing kit and were not aware of the colour change by the solution of the salt testing kit on iodised salt.

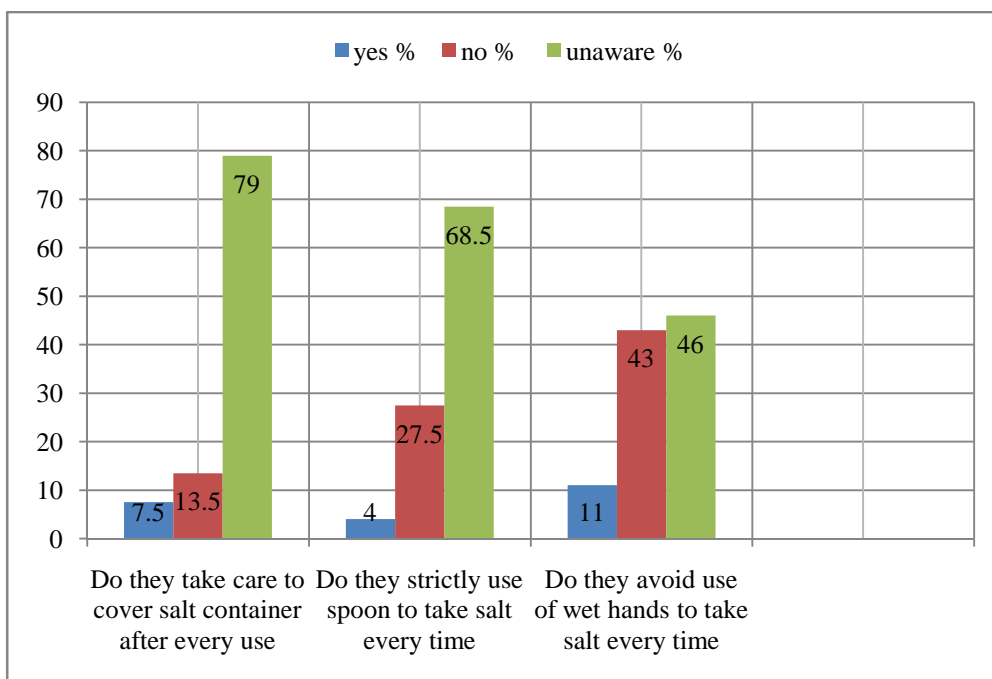
### Storage containers of salt used by respondents:



**Graph 2: Storage Containers Of salt Used by Respondents**

It was found that 30.5% respondent used earthen ware for salt storage; according to them it absorbs dampness or moisture of salt.

### Handling Practice of Salt:



**Graph 3: Handling practice of salt**

Survey results showed that 79% respondents were unaware about covering of salt container; and 46% respondent explained that they may use wet hands to take salt while cooking. Respondent did not have knowledge of iodine evaporation due to moisture. According to 68.5% respondent use of spoon to take salt while cooking was time consuming and they cannot decide the exact amount of salt needed for food preparation or specific recipe.

**Iodine content observed in salt samples collected from respondents home:  
N=200**

Type of container	0 ppm	7 ppm	15 ppm	30 ppm
Metal ware	03	07	02	nil
Same polythene pack	15	09	04	nil
Plastic container	03	19	15	06
Earthen ware	27	23	11	nil
Glass ware	03	27	22	04

Iodised salt should contain at least 30 ppm iodine at distribution level and 15 ppm iodine at household level (Delange and Hetzel, 2006).

Iodine is a volatile substance; improper storage and handling of iodized salt leads to loss of iodine from iodised salt.

**Conclusion:**

The existing knowledge regarding IDD of the respondents was very poor. Still 46.5% respondents were consuming iodised salt without knowing its benefits.

Existing knowledge regarding iodised salt: a killer weapon of IDD was highly inadequate. So there is a need to educate rural people through nutrition education or knowledge impartment campaign.

**References:**

- Delange, F. & Hetzel, B.S. (2006). The iodine deficiency disorders. [www.thyroidmanager.org](http://www.thyroidmanager.org)
- Kapil, Umesh.(2001). Progress made in elimination of iodine deficiency disorders and possible impact of lifting ban on sale of non iodised salt. [www.indiamedia.com](http://www.indiamedia.com)
- Hetzel Basil, (1991), Understanding Iodine Deficiency Disorders, in The Story of Iodine Deficiency, An International Challenge in Nutrition. Oxford University Press, Bombay, Calcutta, Madras.
- Sharma, M. (2008). Nationwide Survey. The Himalayan Times,21:206
- Satpathy, D.M. (2004). A study on goitre prevalence, knowledge and use of iodized salt in South Orissa. Indian journal of Nutrition and Dietetics, 41 (4):390.
- Evaluation of Universal Salt Iodisation in India (1999) Executive Summary: Salt Department, Ministry of Industry, Government of India.
- WHO, UNICEF, ICCIDD, (2001), Assessment of IDD and Monitoring their Elimination, A guide for programme managers.