

Research Paper :

A study on use of iodized salt and iodine intake in urban and rural areas of Kanpur

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ABSTRACT

A study was conducted to assess the iodine intake in urban and rural areas of Kanpur. No visible or palpable goitre was found in the studied population. Results of the survey revealed that 92.0 per cent of the urban respondents were consuming branded packaged salt while 18.0 per cent of the rural respondents were consuming crystalline salt. In urban areas, salt consumption per person per day ranged from 8.6 to 9.9 g, while in rural area it was found to range from 10.0 to 11.1 g per person per day. Iodine content in salt samples ranged between 15.9 ppm to 31.7 ppm. Iodine intake per person per day was found 247.7 µg. The salt consumption was found to be higher in rural respondents and iodine intake by the studied population was found to be more than the recommended value *i.e.* 150µg.

Key words : Iodized salt, Iodine intake, Goiter, Iodine deficiency disorders(IDD), Storage of salt

Iodine is an essential element in the chemical structure of thyroid hormones. The human body requires around 150 mg of iodine everyday, which works out to be a spoonful (5g) over a life span of 70 years. Iodine deficiency leads to a reduction in the secretion of thyroid hormones and it is the most common cause of preventable brain damage. WHO estimated that 2.2 billion people are at risk of IDD in 130 countries. The term "iodine deficiency disorders" (IDD) refers to all the effects of iodine deficiency in growth and development in human and animal population, which includes goiter, abortion, still birth, neonatal and other type of hypothyroidism, but the major consequences are fetal brain damage and varying degrees of cretinism. The magnitude of IDD in India includes 167 million suffering from neurological disorder, 54 million suffering from goiter and 11 millions are cretins. In India, not even a single state is free from the problem of IDD (ICMR, 1989). Around 43% of the population does not consume adequate amounts of iodine which make them vulnerable to physical and mental disorder (Kapil, 2001). 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 iodized salt (Sharma, 2008). Therefore, the present study was conducted with the specific objective to assess the iodine intake and to estimate the iodine content in salt being used and to correlate the effect of storage distance and storage vessel on the iodine content of salt.

METHODOLOGY

The study was a cross-sectional community based field survey and laboratory work. Urban and rural areas of Kanpur were selected randomly through stratified random sampling. Total 200 families were selected, 100 from urban area and 100 from rural area. Demographic profile and information regarding their practices of storage of salt was collected through pre-tested and structured questionnaire. To estimate iodine content in salt samples, 30 g (2 table spoon) of salt from respondent's kitchen was collected in self-sealing polythene bag and coding was done. The iodine estimation of salt samples was done in laboratory within two days after collection of samples through iodometric titration method (Tyabji, 1985). Amount of salt being consumed by the population was assessed by total amount of salt purchased divided by total number of family members. Goiter was assessed through standard palpation method.

FINDINGS AND DISCUSSION

The findings obtained from the present investigation are presented below:

Demographic profile:

It was found that 82.7% of the studied population were living in nuclear family. In urban area, 27.1% of the respondents were graduates and in rural area 6.9% of the population were illiterate. It was found that, in urban area, 46.0 per cent of the respondents had income Rs.