

Iodine content of salt in National Capital Territory of Delhi

U Kapil, S Bhasin, G Goindi, D Nayar

Department of Human Nutrition, All India Institute of Medical Sciences, New Delhi, India

Iodine deficiency disorders (IDD) constitute a major public health problem in India. The most commonly used method of prophylaxis against iodine deficiency is via fortification of salt with iodine. The Government of India has issued ban notification on sale of non iodated salt in Delhi since 1984. The present study was conducted to assess the iodine content of iodised salt consumed by beneficiaries in Delhi, with the aim to strengthen the IDD control programme activities implemented by the state government. A total of 763 salt samples, collected from an equal number of households constituted the study sample. It was found that 82.4% of the salt samples had an iodine content of 15 ppm and above. Eleven percent of the salt samples had iodine contents between 10 ppm and 15 ppm and 5% had less than 10 ppm of iodine. The results of the present study indicate that there is a need to continue monitoring the quality of iodised salt at different levels of distribution and consumption to ensure the success of the activities of the National Iodine Deficiency Disorder Control Programme (NIDDCP).

Introduction

Iodine deficiency disorders (IDD) constitute a major public health problem in India. It is now estimated that nearly 167 million people are exposed to the risk of IDD of which 54 million have goitre, 2.2 million are cretins and 6.6 million have mild neurological disorders¹.

The surveys conducted so far have revealed a high prevalence of endemic goitre in different states. The results of sample surveys conducted in 239 districts of 25 states and 4 union territories have identified 186 districts as endemic for IDD¹. Pandav, et al. have reported 55% goitre prevalence in Kalkaji and Chandni Chowk areas of Delhi².

Under the National Iodine Deficiency Disorder Control Programme, iodised salt containing 15 ppm of iodine is made available to the beneficiaries³. The government of India has issued ban notification on sale of edible non-iodated salt in Delhi since 1984¹. The present study was conducted to assess the iodine contents of iodised salt consumed by beneficiaries in Delhi with the aim to strengthen the procurement and distribution of iodised salt under national IDD control programme implemented by the state government.

Material and methods

Delhi Public School located in National Capital Region, in which students from all parts of Delhi were studying, was selected by purposive sampling, keeping in view of operational feasibility. All the students in sixth to tenth standard were briefed about the aim of the study in their respective classrooms. The students were requested to bring 15g of salt from their household in autoseal polythene packets. The identification data, name, age and place of residence of students were documented.

The salt samples collected were analysed using the standard iodometric titration method⁴. Ten percent of samples were sent to the Indian Council of Medical Research (ICMR) iodine testing laboratory for quality control.

Results and discussion

A total of 763 salt samples was collected from an equal number of households. It was found that all of the families consumed powdered salt. The results of iodine estimation of salt revealed that 82% of the salt samples had an iodine content of 15 ppm and above while 18% of the salt samples had less than 15 ppm of iodine. Detailed analysis showed 11% of salt samples had iodine content between 10 ppm and 15 ppm and 5% had less than 10 ppm of iodine. It was found that only 5 salt samples had nil iodine content (Table 1), which indicates successful implementation, distribution and consumption of iodised salt under NIDDCP programme activities.

Table 1. Iodine contents of salt (n = 763)

Nil		0-10		10-15		>15	
No	%	No	%	No	%	No	%
5	0.65	40	5.24	89	11.6	629	84.4

The iodine content of less than 15 ppm in 18% of the salt samples indicates that either an inadequate quantity of iodine was added during manufacture or iodine was lost during the channels of transportation, distribution and

storage at household level. The iodine contents of all the salt samples analysed at the Indian Council of Medical Research (ICMR) iodine testing laboratory for quality control, were within 10 % of the values obtained at the All India Institute of Medical Sciences.

The results of the present study indicate that there is a need to continue monitoring the quality of iodised salt at different levels of distribution and consumption to ensure the success of NIDDCP activities.

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德里 (Delhi) 食鹽的碘含量

摘要

碘缺乏疾病 (IDD) 構成了印度主要的公共衛生問題。預防碘缺乏最普通的方法是用強化碘鹽。自 1984 年以來，德里印度政府發佈了禁止銷售非碘化鹽的通知。目前研究是評估德里受益人消耗碘化物的碘含量，以達到州政府貫徹的，加強 IDD 管制計劃的目的。作者從相同數目的家庭收集 763 份樣本進行研究，結果發現 82.4% 的鹽樣本含碘高於或相當於 15 ppm。11% 的鹽樣本含碘在 10 - 15 ppm 之間，5% 的鹽樣本含碘少於 5 ppm，目前研究結果指出：需要繼續追蹤不同配給和消耗水平的碘化鹽質量，以保證碘缺乏疾病管制計劃 (NIDDCP) 活動的成功。

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