

Brief Communication

Revisiting Salt Iodization Standards in Nepal: Opportunity and Challenge

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ABSTRACT

Iodine deficiency disorder is still a major global public health issue, especially in areas with limited access to iodine-rich food sources. Nepal, a landlocked country in South Asia, has made significant progress in alleviating iodine deficiency disorders by implementing salt iodization initiatives. Maintaining continued success in the elimination of iodine deficiency disorders, it is necessary to reevaluate current iodization requirements as the country develops. This paper examines Nepal's present situation with regard to salt iodization, emphasizing the opportunities and challenges of reviewing salt iodization standards.

Keywords: Iodine deficiency disorder, Salt Iodization, Revising Standards



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INTRODUCTION

Millions of individuals worldwide are still impacted by iodine deficiency disorders (IDDs), which are most common in underdeveloped nations. With its varied topography and demographic difficulties, Nepal has made remarkable progress in preventing iodine deficiency by requiring salt iodization. However, with shifting dietary habits, economic growth, and new health issues, it's critical to evaluate and maybe revise current iodization standards. Therefore, this article aims to outline a need of an evaluation of the present state of salt iodization in Nepal, identification of obstacles, investigation of prospects for enhancement, and provision of evidence-based suggestions for the revision of iodization standards.

MATERIALS AND METHODS

The study used a thorough methodology that includes expert discussions, a review of the body of prior research, and an analysis of national health and nutrition statistics, policies and strategies. This meticulous methodology assures the scientific validity of the conclusions and suggestions made in the study.

RESULTS AND DISCUSSION

Historical Context:

A nationwide survey in 1965 revealed that 55% of Nepalese population above 13 years of old had goiter which was one of the highest prevalence in the world. After that survey, Government of Nepal started to distribute iodized salt in 1973[1, 2]. In 1979, Goiter and

Cretinism Eradication Project was launched by Ministry of Health and Population and distributed iodized oil and injection in goiter endemic areas to targeted population until 1998. According to Nepal Micronutrient Status Survey 1988, iodine deficiency disorders (IDDs) was significantly improved among women and children in Nepal. Then in 1998, Government of Nepal adopted universal salt iodization strategy to IDDs in the country. The program has contributed significantly to the reduction of iodine deficiency, with positive impacts on public health [3].

In addition to these, Nepal government endorsed iodized salt production, sale, and distribution Act 2055 BS (1999 AD) and started Iodized Salt Social Marketing Campaign (1999- 2014) to increase public awareness on the importance of iodized salt. Similarly, the government implemented first (1997-2002) and second five-year plan (2013-2017) to accelerate the optimal use of iodine by all Nepalese population [4]. Nevertheless, changes in lifestyle, migration patterns, and food consumption habits require a reassessment of iodization standards to ensure continued effectiveness and optimal use of iodine.

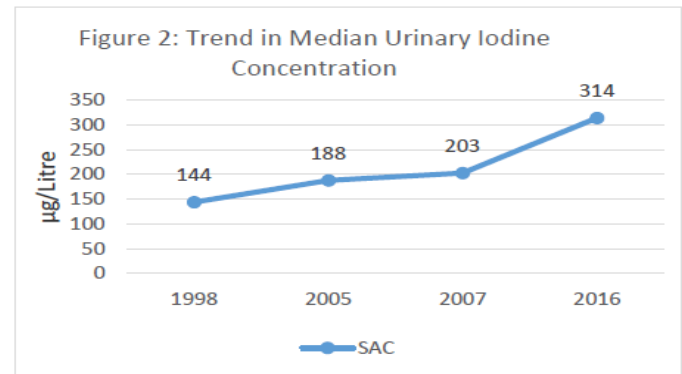
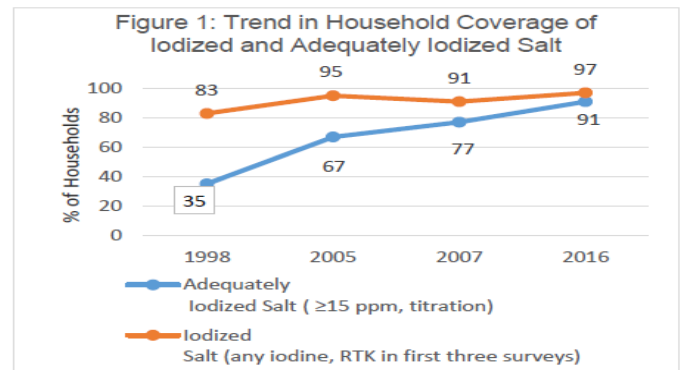
Current Status of Salt Iodization in Nepal:

Nepal National Micronutrient Status Survey (NNMSS) 2016 showed that 91 percent of Nepalese households consumed iodized salt with optimum iodine nutrition ≥ 15 ppm (Figure 1).

Similarly, Nepal Demographic and Health Survey (NDHS) 2022 depicted that 98 percent households in Nepal is currently using iodized salt [5]. According to NNMSS 2016, the Median Urine Iodine Concentration (mUIC) levels among school aged children (SAC) has risen from 144 $\mu\text{g/L}$ in 1998 to 314 $\mu\text{g/L}$ in 2016 (Figure 2). Nonetheless, the information additionally demonstrated, the iodine status in school age children has arrived at excess level (i.e., $\geq 300 \mu\text{g/L}$) with overabundance iodine intake among the school children [4]. The mean intake of iodized salt among individuals of Nepal is 9.9 grams per day [6, 7].

Emerging Opportunity and Challenges:

The present circumstance warrants making a prompt action to revise the current salt iodization standards to maintain mUIC among school-aged children in the range of 100 - 199 $\mu\text{g/L}$. The landscape analysis of Ministry of Health and Population (MoHP) Nepal with support from UNICEF and Iodine Worldwide Organization (IGN) in year 2021 also suggested to lessen the salt iodization standards for production points to 30 mg/kg (from current $>50 \text{ mg/kg}$) with process tolerance of $\pm 10 \text{ mg/kg}$ and for retail level in the range of 15-40 ppm as in present [8]. Study showed that iodine losses during transportation and storage of iodized salt is minimal, which results consumption of iodine is high. These evidences provide an opportunity to revise and reduce the salt iodization standard in Nepal. However, there are some challenges such as Median Urine Iodine Concentration (mUIC) levels among pregnant women in far western province is 133 $\mu\text{g/L}$ which is lower than minimum standard of urine iodine concentration [4]. The reduction in the current standard of salt iodization may create threats to bring iodine deficiency disorders among the vulnerable population such as pregnant women. Other challenge is that we don't have regular monitoring system of iodine consumption to ensure optimum iodine intake at the population level. The use of new technologies, improving regulatory frameworks and strengthening collaborations



between government bodies, iodized salt distributors and public health organizations can improve the effectiveness of salt iodization in Nepal.

CONCLUSIONS

In conclusion, the revisiting of salt iodization standards in Nepal presents both an opportunity and a challenge. Addressing iodine deficiency requires a comprehensive and adaptive approach that considers the evolving landscape of health, nutrition, and socioeconomic factors. By reassessing and potentially revising iodization standards, Nepal can ensure the continued success of its efforts to eliminate iodine deficiency disorders and promote the overall well-being of its population. Therefore, it is recommended for adjustments of salt iodization standard, improvements in monitoring and evaluation, and targeted interventions in high-risk populations.

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