Two Decades of Food Fortification in Nigeria: Situational Analysis

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Abstract

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Objective: Food fortification has been practiced in Nigeria since 1990; however there is a dearth of published literature that comprehensively reviews Nigeria's food fortification program. This paper aims to address this gap.

Design: A desk review of published and grey literature on food fortification in Nigeria compiled from web searches and institutional archives. Search dates spanned from 1990 to 2013.

Setting: Nigeria.

Subjects: The Nigerian population.

Results: Wheat flour is fortified with vitamins A, B1, B2, B3 and iron. Maize meal, margarine, cooking oil and sugar are fortified with vitamin A. Margarine is also fortified with vitamin D. Salt is fortified with iodine. Vitamin A fortification and salt iodization have been prioritized in Nigeria and have been the focus of impact-evaluation efforts. The salt-iodization program successfully increased iodine content in domestic salt sold in Nigeria from less than 40% to 90%, ten years after implementation. But there is a recent declining trend with only 52% of adequately iodized salt consumed by domestic consumers. Median urinary iodine has persistently been above 130 μg/L since 1999 while total goiter rate decreased from 20% in 1993 to 8% in 2004. Household consumption of vitamin A-fortified foods was less than 20%. The prevalence of vitamin A deficiency has not changed between the pre and post fortification periods.

Conclusion: These findings suggest that salt iodization increased household access to adequate iodine, maintained median urinary excretion at normal level and reduced total goiter rate. Vitamin A fortification had little impact on household access to vitamin A fortified food and the prevalence of vitamin A deficiency. Program challenges include loss of nutrients from inadequate fortification and exposure of fortified food to sunlight by retailers, gaps in regulatory monitoring and unclear quality control procedures by companies. These challenges may reverse achievements of the fortification program and prevent program goals from being accomplished. Addressing these challenges, evaluating the impact of fortification with other nutrients beyond iodine and vitamin A and conducting future research on food fortification will enhance the program and reduce micronutrient deficiencies in Nigeria.