Adequate Iodized Salt Supply: A key success factor to impact goiter prevalence rate in highly endemic areas in Ethiopia

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Abstract

Iodine deficiency is a public health problem in Ethiopia. Effective education to create the demand for iodized salt need to be supplemented by adequate supply of iodized salt to improve its utilization and impact on the total goiter rate.

Introduction

Micronutrient malnutrition affects a large proportion of the population of developing countries including Ethiopia. The most widespread and severe forms of micronutrient deficiencies in Ethiopia are vitamin A deficiency (VAD) and iodine deficiency (IDD). Iron deficiency anemia (IDA) is of relatively lower prevalence compared to vitamin A and iodine deficiencies; however, anemia remains a major public health problem mainly due to infections. The goal of the micronutrient and health (MICAH) program was to improve the micronutrient and health status of mothers and children through cost effective, community-based and sustainable interventions. The objectives of the program were (a) to reduce prevalence of micronutrient deficiencies through increased access to and intake of micronutrients, (b) to reduce the prevalence of diseases that aggravate or predispose to micronutrient malnutrition, and (c) to build the capacity for micronutrient programming.

This article covers the impact of the program on iodine deficiency in its intervention woredas.

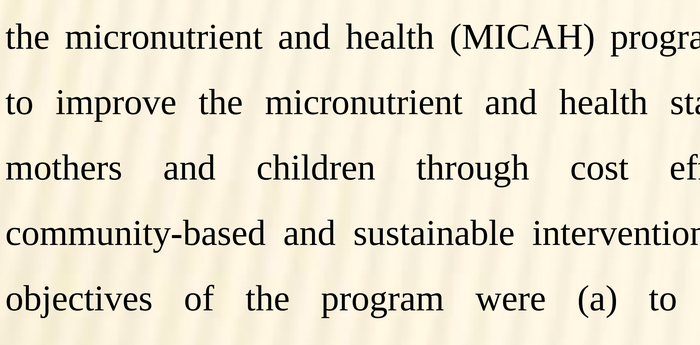

Figure 1: MICHA Program Intervention areas

The program was operational in four regions (Tigray, Amhara, Oromiya and SNNPRG), 11 zones, 21 woredas benefiting nearly 2 million people.

Objective

The purpose of this article is to inform participants on the key lessons learned from implementing interventions to impact iodine deficiency as part the World Vision Ethiopia micronutrient and health project which was operational for eight years .

Method

A quasi-experimental design was used to conduct a baseline, midterm and final evaluation. The study covered 8 intervention project woredas/district and two comparison sites. Three successive surveys were conducted to assess the impact of the interventions. 5,996 households including pregnant and lactating mothers were interviewed and participated in iodized salt testing and 2997 students clinically examined for goiter rating.

Results

At the end of the project, 39.8% of women of childbearing age identified the two major causes of goiter (iodine deficiency and food related) correctly (table 1). This proportion was higher than that in the baseline (7.9%) and comparison site at end line (11.4%) (p=0.000). Lower proportion of mothers (15.1%) reported that they lacked knowledge about the treatment of goiter, compared to 46.6% at baseline and 44.9% at comparison areas. Prevalence of palpable and visible goiter at the end of the project (30.9%) was lower compared to the baseline (42.4%) (p=000). This change would have been higher if there was continuous supply of iodized salt. This was shown with iodized salt testing done at the end of the survey where almost all households (97.7%) do not have iodized salt (table 3).

Table 1: Causes of Gioter

Cause of goiter	BLS (1997)	FUS (2000)	EOP		P_1-Value (EOP vs FUS)	P_2-Value (M vs NM)	P_3-Value (EOP vs BLS)
			MICAH	Non-MICAH			
	%	%	%	%			
Iodine deficiency	3.3	14.4	23.7	6.9	0.000	0.000	0.000
Food related	4.6	15.8	16.1	4.5			
Contamination of food & water	12.6	15.0	16.7	4.1			
Pregnancy	3.4	2.3	3.1	3.5			
Hereditary	4.6	2.9	4.7	4.7			
Others	3.7	4.3	4.3	7.3			
Don't know	67.9	45.3	31.4	69.1			
Total (N)	**4,115**	**4,871**	**4,465**	**495**			

Table 2. Prevalence of palpable and visible goiter

Prevalence of clinical Signs	BLS (1997)	FUS (2000)	EOP		P_1-Value (EOP vs FUS)	P_2-Value (M vs NM)	P_3-Value (EOP vs BLS)
			MICAH	Non-MICAH			
	%	%	%	%			
No	57.6	71.4	69.1	89.8	0.074	0.000	0.000
Yes (Palpable & Visible)	42.4	28.6	30.9	10.2			
Total	**3,003**	**2,707**	**2,396**	**601**			

Table 3. Households Iodized Salt Test

Indicators	BLS (1997)	FUS (2000)	EOP (2004)		P_1-Value (EOP vs FUS)	P_2-Value (M vs NM)	P_3-Value (EOP vs BLS)
			MICAH	Non-MICAH			
	%	%	%	%			
Iodine absent	51.9	70	97.7	93.5	0.000	0.000	0.000
Iodine present	48.1	30	1.2	5.2			
Iodine present in the 2nd trail	NA	NA	0.6	0.0			
No salt at home	NA	NA	0.5	1.3			
Total (N)	**106**	**80**	**3,409**	**689**			

Conclusions

Though effective education increased the knowledge lack of adequate supply of iodized salt affected iodized salt utilization and its impact on total goiter rate.

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