



## ABSTRACT

The three Northern regions of Ghana are reported to have the highest burden of both protein-energy and micronutrient malnutrition nation-wide. The main objective of this study was to assess the impact of earlier interventions aimed at reducing micronutrient deficiencies by 5% in selected communities in Northern Ghana. Questionnaires used in the baseline study were adjusted to cover adoption and utilization of intervention. Background information of the mothers, their socio-economic status, their households, child morbidity, infant feeding practices, mother's knowledge on micronutrient deficiency, presence of visible goiter and maternal and child anemia status were recorded. In general child anthropometry and the usage of iodated salt showed some significant impact while there was no impact observed for both maternal and child anemia status, maternal anthropometry and the presence of visible goiter. The community based milling and fortification of cereal flours is a good strategy to combat micronutrient malnutrition. However, the full benefit will be realized when all the appropriate strategies and proper monitoring programmes are put in place. When food is fortified with micronutrients and yet there is no potable water to prepare food, good hygienic practices are not observed, appropriate feeding practices are not followed, frequency of feeding is low, as well as quality and quantity of food are compromised, nutritional status will be negatively affected and this may lead to the same or a worse condition. **Keywords: Impact assessment, milling and fortification, poor communities, Ghana**

## INTRODUCTION

- ❖ The three Northern regions of Ghana are reported to have the highest burden of both PEM and micronutrient malnutrition nation-wide (GDHS,2008).
  - ❖ Typically, diets are based on cereals and tubers, with very little fruits and vegetables (WFP baseline report, 2008).
  - ❖ The long drought period affects availability of dark green leafy vegetables.
- Objectives:** The main objective of this study was to assess the impact of earlier interventions aimed at reducing iron deficiency in women and children by 5% in selected communities in Northern Ghana

## MATERIALS AND METHODS

Community-based training in milling and micronutrient fortification of cereal-based flours was used to address the problem. The intervention involved:

- ❖ Baseline studies conducted to establish the existing situation.
- ❖ Pilot studies were undertaken.
- ❖ Scale-up intervention and critical evaluation.
- ❖ Assessment of impact after one year of intervention.



### Baseline studies

- ❖ Nutritional status was assessed for 852 mother and children under 5years in 12 communities in Northern Ghana using WHO, 2010 standard procedure.
- ❖ The extent of anemia among the mothers and their children was determined with a hemocue.
- ❖ The prevalence of visible goitre among the women was assessed by palpating.
- ❖ A test of iodine concentration in household salt was determined using a spot-test kit.
- ❖ Ethical Clearance was sought from the Institutional review board of CSIR.

### Impact Assessment

- ❖ End-line study was conducted after one year of intervention.
- ❖ The same methodology, sample size and the same sampling procedure used for the baseline study was adopted for the impact assessment study.
- ❖ Findings from the base-line study were compared with the end-line study to track the impact.

## RESULTS AND DISCUSSION

Fig.1. Background Information of Mothers and Children

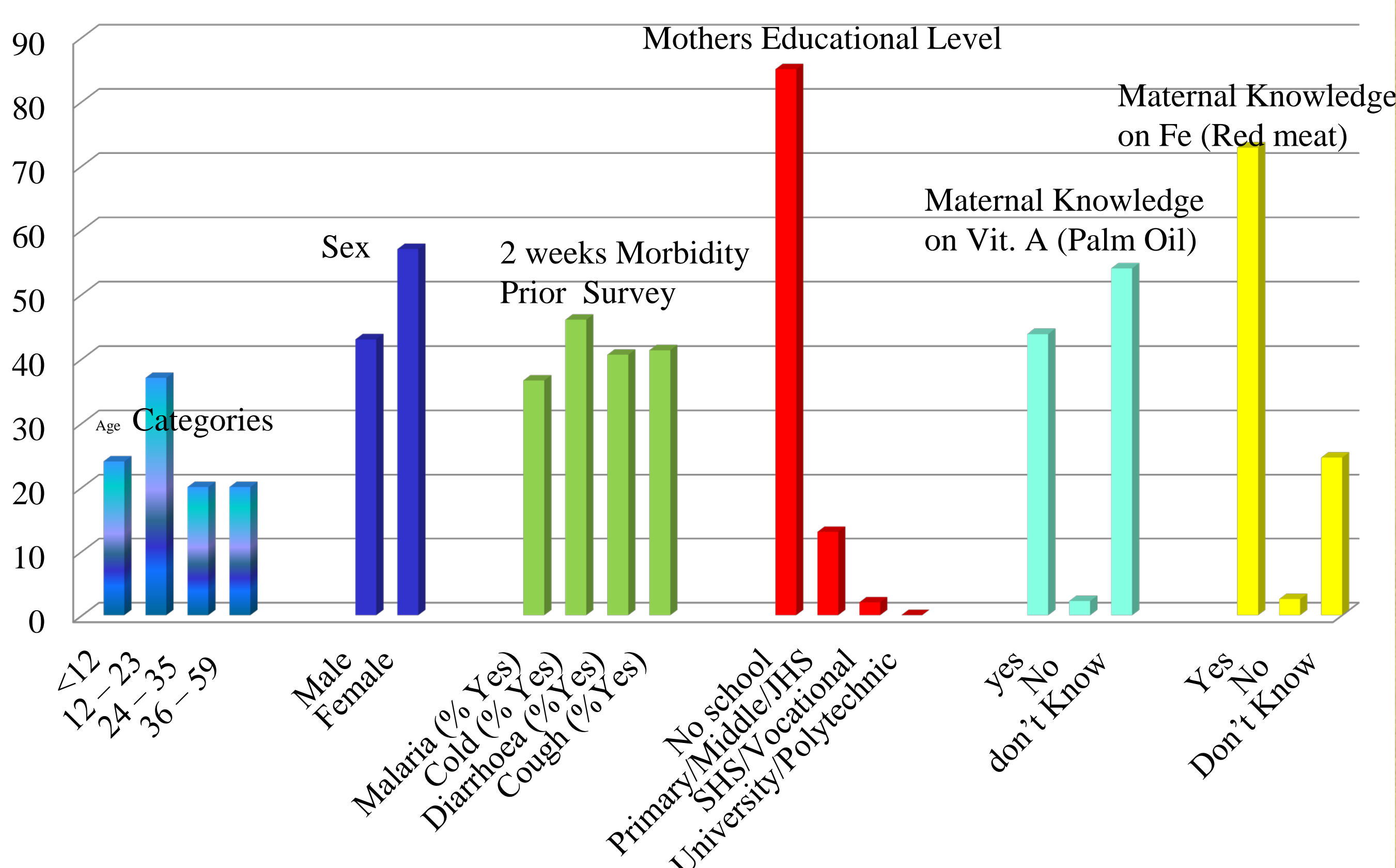


Fig. 2. Prevalence of Goitre, Usage and Concentration of Iodine in Salt

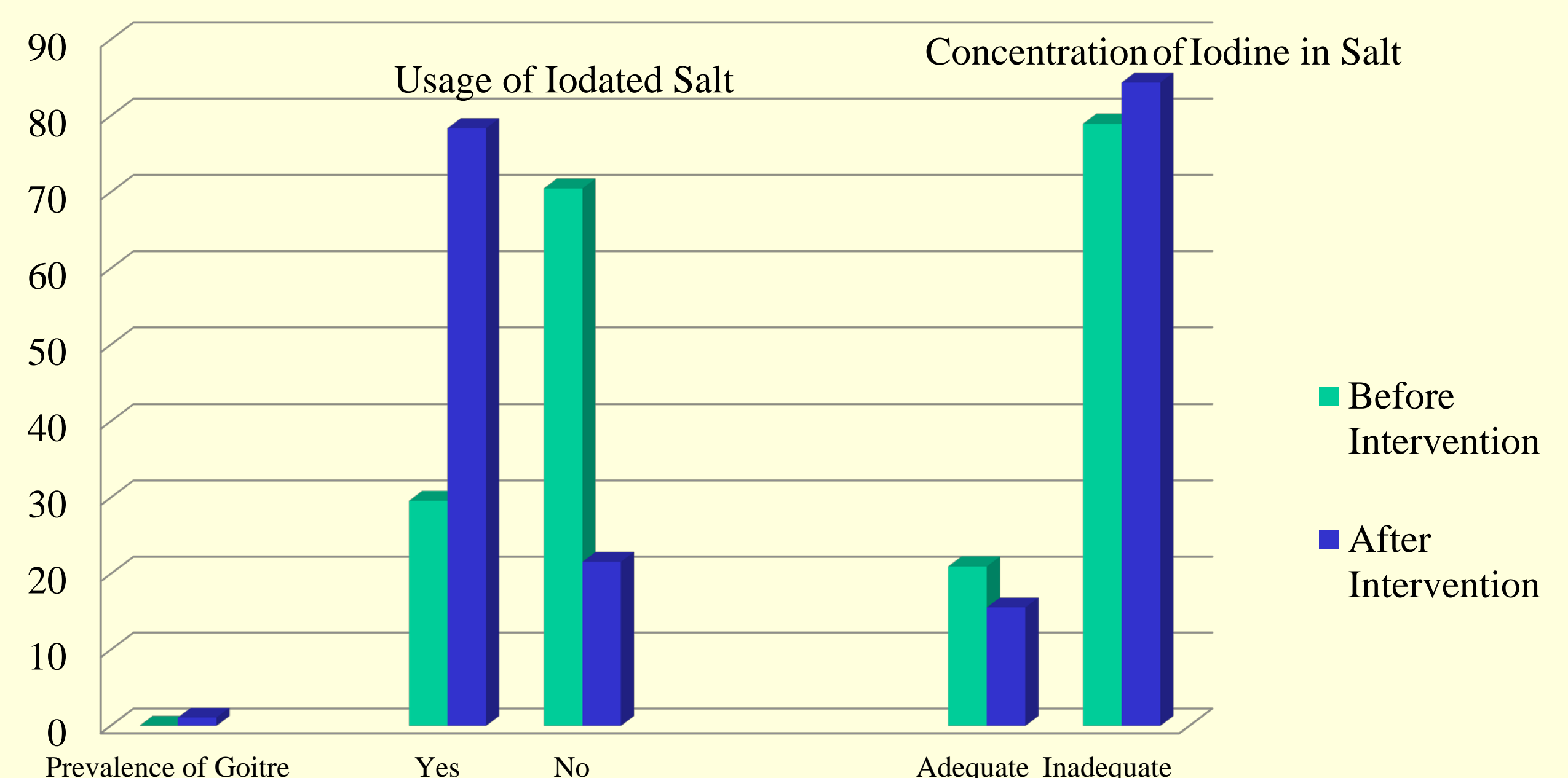


Fig. 3. Nutritional Status of Mothers & Children

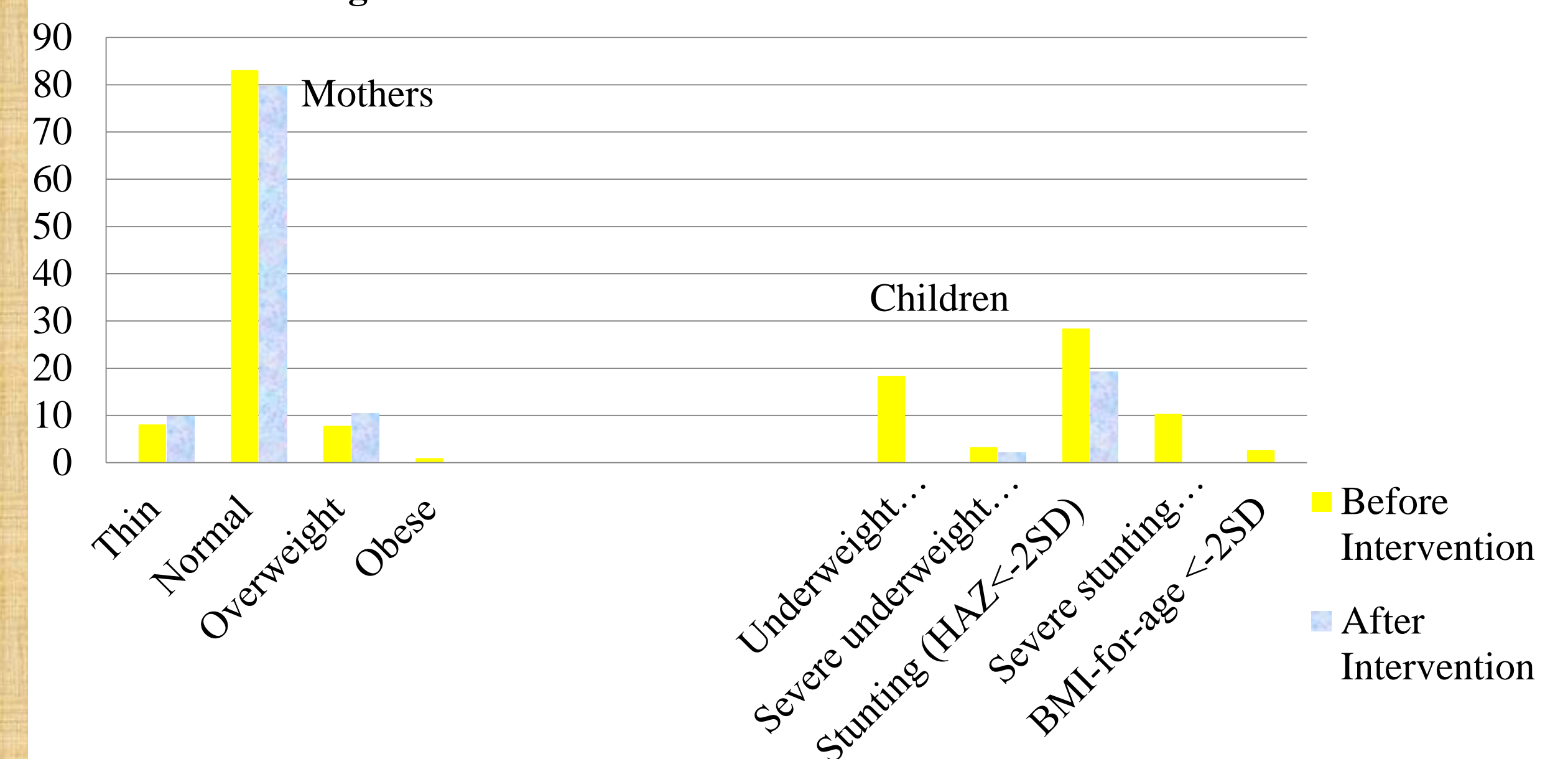
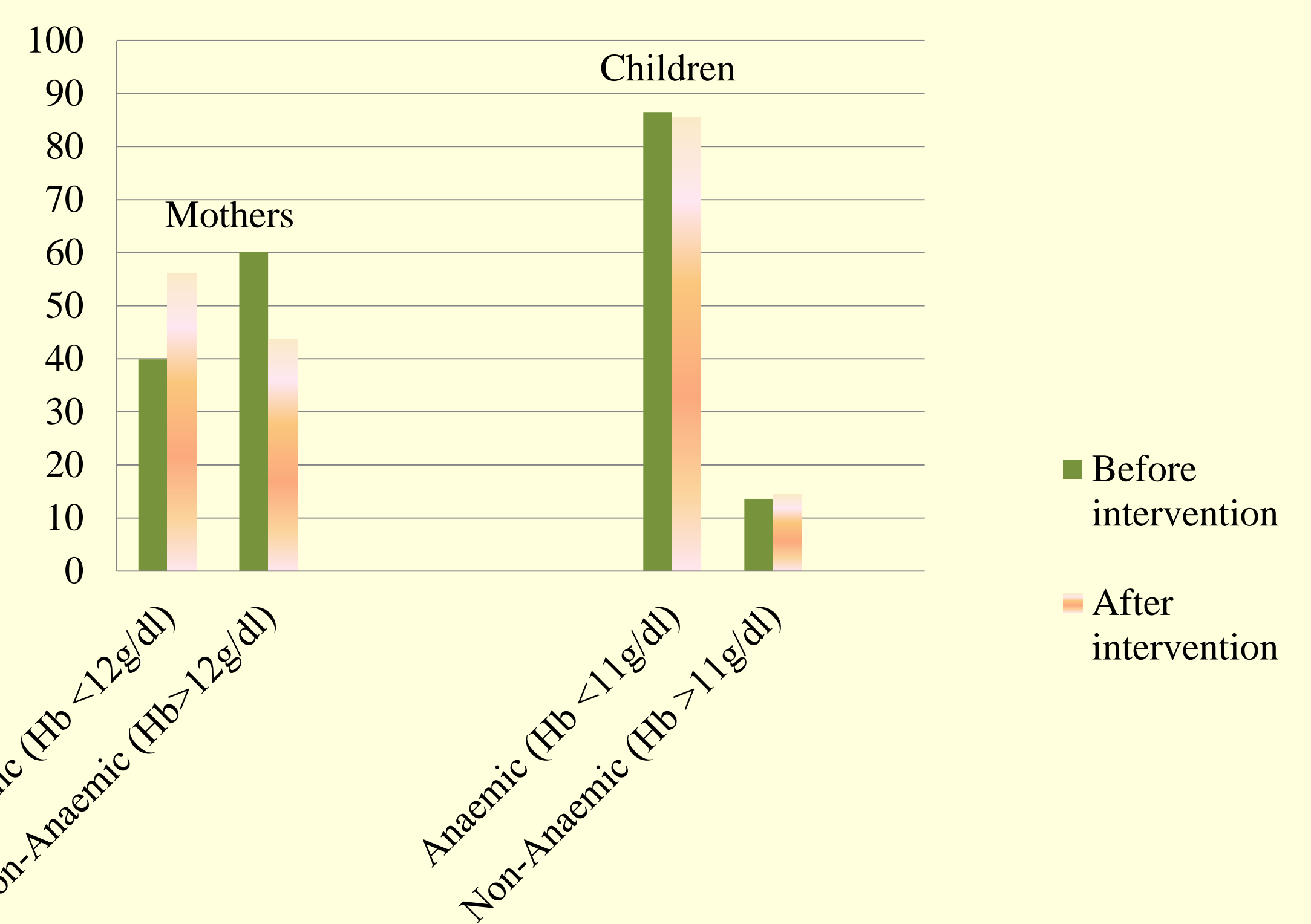


Fig. 4. Prevalence of Anemia Before and After Intervention



## CONCLUSION

Milling and fortification of cereal flour with micronutrients is a good strategy to combat micronutrient deficiencies especially iron deficiency anemia. However, good hygienic practices and appropriate feeding frequencies must be adhered to in order to realize the full benefits of the fortification.

## REFERENCES

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- ❖ WHO Anthro for personal computers, version 3.2.2, 2011: Software for assessing growth and development of the world's children. Geneva: WHO, 2010

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