

## **Micronutrient status specifically (serum ferritin, folate and vitamin A) and risk factors during pregnancy in Eastern Ethiopia: A community-based study**

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Although the high burden of micronutrients deficiencies among pregnant women in low-resource settings like Ethiopia is well documented, evidence is scarce on the underlying causes using biochemical tests. Therefore, this study assessed the micronutrient status and factors associated with micronutrients deficiencies using among pregnant women in Haramaya district, eastern Ethiopia. A community-based cross-sectional study was conducted among randomly selected pregnant women in Haramaya district, eastern Ethiopia. The serum ferritin (SF), retinol and serum folate concentrations were measured in the National Biochemical Laboratory of Ethiopia. A binary logistic regression analysis identified variables associated with micronutrients deficiencies. An adjusted odd ratio (AOR), and a 95% confidence interval (CI), were used to report associations. Finally, the p-value <0.05 was the cut-off point for the significant association. A total of 397 pregnant women) were included in the study. The overall prevalence of at least two micronutrient deficiencies, among the study participants was 36.5% (95% CI=32%-41%). Over 81% of the women were deficient for at least one micronutrient. More than 26% of the pregnant women were both iron and vitamin A deficient, whereas 35% of women were both iron and folate deficient. Almost one-fourth of the women were both folate

and vitamin A deficient. Pregnant women who had no IFA supplementation were 2.15 times more likely risk to have at least two micronutrient deficiency (AOR=2.15 (95% CI=1.24-3.69) compared to those who had IFA supplementation. However, women who had ANC follow up (AOR=0.26; 95% CI=0.16-0.42) and high consumption of ASFs (AOR=0.57 (95% CI=0.33-0.98) 74% and 43% were less likely risky to have at least two micronutrient deficiencies respectively. Micronutrient deficiencies are a real public health problem for pregnant women in the study setting. Social and behavioral change communication intervention on maternal nutrition should include strategies that promote shifts in social norms on food taboos and enable desirable dietary behavior to realize adequate nutrition for pregnant. Ensuring compliance with IFA supplementation during pregnancy at the grassroots level is essential for reducing the micronutrient deficiencies in rural settings. Social and behavioral change communication intervention on maternal nutrition should include strategies that promote shifts in social norms on food taboos and enable desirable dietary behavior to realize adequate nutrition for pregnant. Health policy should give attention to considering the implementation of antenatal multiple micronutrient supplementations (MMS) that might be better than IFAS in terms of the risk of birth outcomes.

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