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A Qualitative Exploration of Maternal Dietary Diversity and Neural Tube Defect Risk in a Folate-Deficient Region of Ethiopia

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Abstract

Neural tube defects (NTDs) are a significant public health burden in Ethiopia, particularly in the folate-deficient Amhara Region. While folic acid supplementation is a known preventive measure, the role of overall maternal dietary diversity during the periconceptional period is poorly understood in this setting. This study aimed to explore community and healthcare provider perspectives on the association between maternal periconceptional dietary diversity and the perceived risk of NTDs in the Amhara Region. A qualitative, exploratory study was conducted using semi-structured interviews and focus group discussions. Purposive sampling was used to recruit mothers of children with and without NTDs, community health workers, and midwives. Data were analysed using thematic analysis. A key theme identified was the perceived direct link between a 'monotonous diet'—dominated by staple cereals with minimal consumption of animal-source foods, legumes, and fruits—and a higher likelihood of bearing a child with an NTD. Participants frequently attributed birth defects to poor maternal diet, though specific knowledge of the periconceptional period was limited. Community and healthcare provider narratives strongly associate low maternal dietary diversity with an increased risk of NTDs. This highlights a critical gap in periconceptional nutritional awareness and intervention strategies that extend beyond folic acid supplementation. Integrate messages on periconceptional dietary diversity into existing antenatal and community health programmes. Develop context-specific nutritional education materials that address local dietary patterns and misconceptions. Neural tube defects, maternal nutrition, dietary diversity, periconceptional period, qualitative research, Ethiopia This study provides qualitative insights into local perceptions linking diet and birth defects in a high-risk Ethiopian setting, which can inform the development of culturally appropriate nutritional interventions.

Keywords: *Maternal nutrition, Dietary diversity, Neural tube defects, Qualitative research, Sub-Saharan Africa, Periconceptional period, Public health*

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