Applicant Information

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Abstract Details

Title:

The impact of maternal anaemia on neurodevelopmental outcomes among infants: a prospective maternal-infant birth cohort follow-up study in low-and middle-income countries

Category:

Non-communicable diseases including mental health

Authors:

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Objectives:

Women of reproductive age (WRA), particularly pregnant and lactating women, are disproportionately vulnerable to anaemia. The prevalence of anaemia among WRA is highest in low- and middle-income countries, with rates of 46% in South-East Asia and 39% in sub-Saharan Africa. Neurodevelopment in early childhood, depends heavily on adequate iron levels, making iron sufficiency during pregnancy and infancy critical. The study aims to assess the impact of maternal anaemia on infant neurodevelopment and brain morphology within a birth cohort in five low middle income countries.

Method:

The study plans to recruit 1,600â€“2,000 mother-infant pairs. It will use the Global Scale for Early Development (GSED) to assess early child development and a portable SwoopÂ® MRI device to analyze brain development in 300 infants from Ghana, Pakistan, and Zambia. The study will examine the impact of maternal anemia on infant neurodevelopment using basic statistics and a linear regression model.

Results:

Data collection is ongoing. Over 900 GSED forms have been completed, and 50 MRI Hyperfine scans have been performed, with over 80% scan quality achieved. Preliminary of the GSED Z-scores and other experiences of scanning infants under one-year-old will be available for presentation during the conference.

Conclusion:

We will characterise the relationship between maternal anaemia and infant neurodevelopmental outcomes, including brain microstructure, at 3, 6, and 12 months. It will evaluate the impact of maternal anaemia on these outcomes, helping to identify infants under 12 months with possible neurodevelopmental deficiencies attributable to maternal anaemia across study sites.

Submission Date:

2024-09-23 10:55:37