Determining spatial heterogeneity in prevalence of anaemia among women aged 15-49 years in India for the year 2019-21

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AIM: To determine the spatial heterogeneity in prevalence of anaemia among women aged 15-49 years using the recent National Family and Health Survey (NFHS-5) 2019-21 data.

INTRODUCTION:

Anaemia is a condition marked by low haemoglobin (Hb) concentration and is a serious public health concern in India. (CNNS,2019). **Every second woman** in the country is anaemic! (NFHS-5, 2021). **Iron deficiency** is the strongest predictor of anemia among adolescents in India. (Lahiri et al., 2020). **Low Dietary intake** of iron from cereal based Indian diets (7-10mg/meal) with **less bioavailable (<5%)** non-heme iron content are few of the prominent causes. (Nair et al., 2016). Various government policies involving supplementation and fortification exist but fail to have desired impact. (Anand et al., 2014)
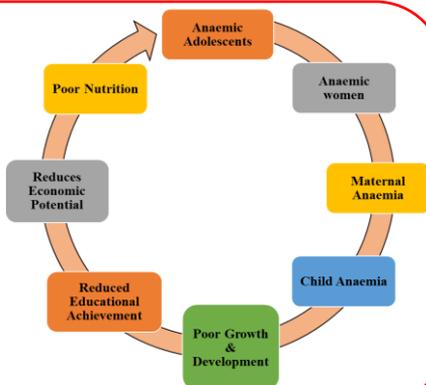
METHOD: Online available NFHS-5 data is used for analysis. Prevalence of anemia among 15-49y women in India was mapped using QGIS. Univariate local indicators of spatial analysis (LISA) was applied to identify the hotspots of high anemia prevalence among women. Bivariate LISA was used to assess spatial autocorrelation between women's anemia and different risk factors (independent variables).
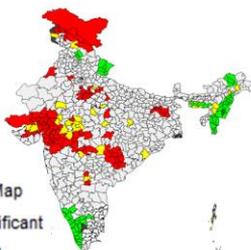
RESULTS:

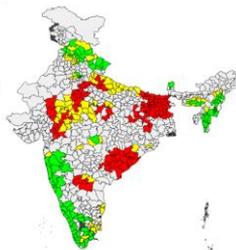Univariate LISA for Anaemia 15-49-year-old
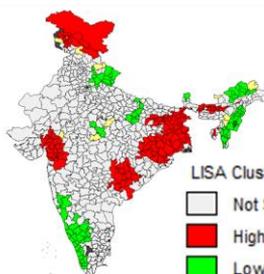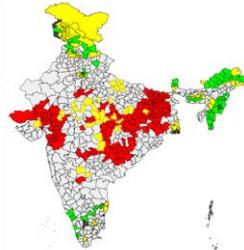

Moran's I value: 0.688 (*p*≤0.05)

Women Anaemia vs Anaemic Children under 5

Women Anaemia vs Women Literacy

Women Anaemia vs Low BMI

LISA Cluster Map
- Not Significant
- High-High
- Low-Low
- Low-High
- High-Low
- Undefined

Bivariate LISA showed anaemia among women to be spatially autocorrelated with child anaemia, women's BMI and literacy (Moran's I values: Child anaemia = 0.45; Women's BMI = 0.33; Women's literacy = -0.31, p≤0.05).

CONCLUSION:

- There is heterogeneity in the anaemia prevalence among 15-49y old women in India.
- Focusing on improving health and awareness/literacy among anemic women likely to help in reducing prevalence among children.
- Current supplementation and fortification practices alone may not enough.
- The high burden clusters need immediate interventions, while focusing on low burden clusters may prove to be economically efficient in the long term.
- Study is relevant in the post pandemic years where preventive measures need to be highlighted rather than the curative ones.