

Social environment, mental health and dietary diversity: A multicomponent pathway analysis among married women of reproductive age in Bihar

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Rationale:

- ***Women of reproductive age** (WRA) are often **nutritionally vulnerable** because of the physiological demands during pregnancy and lactation.*
- *In resource poor state of **Bihar**, **>25% WRA are undernourished**.*
- ***Mental health is often silenced** among women and emotional roots of under nutrition remain unexplored, calling for a deep dive.*
- *Evidence suggest **social oppression and poor mental health are interrelated** precursors for **undernutrition** which affects ~20% Indian women.*

Objectives :

- *To understand the dietary practices of women of reproductive age in Bihar*
- *To determine the correlates of minimum dietary diversity among them*

Methodology and Analysis plan

Study method:

- *Cross-sectional study conducted in 38 districts of Bihar*
- *The study adopted a multi-stage cluster sampling design with a systematic component in the final stage.*
- *In-person interviews of 22,800 consenting married women of reproductive age*
- *Interviews were conducted using a structured, pre-tested tool.*

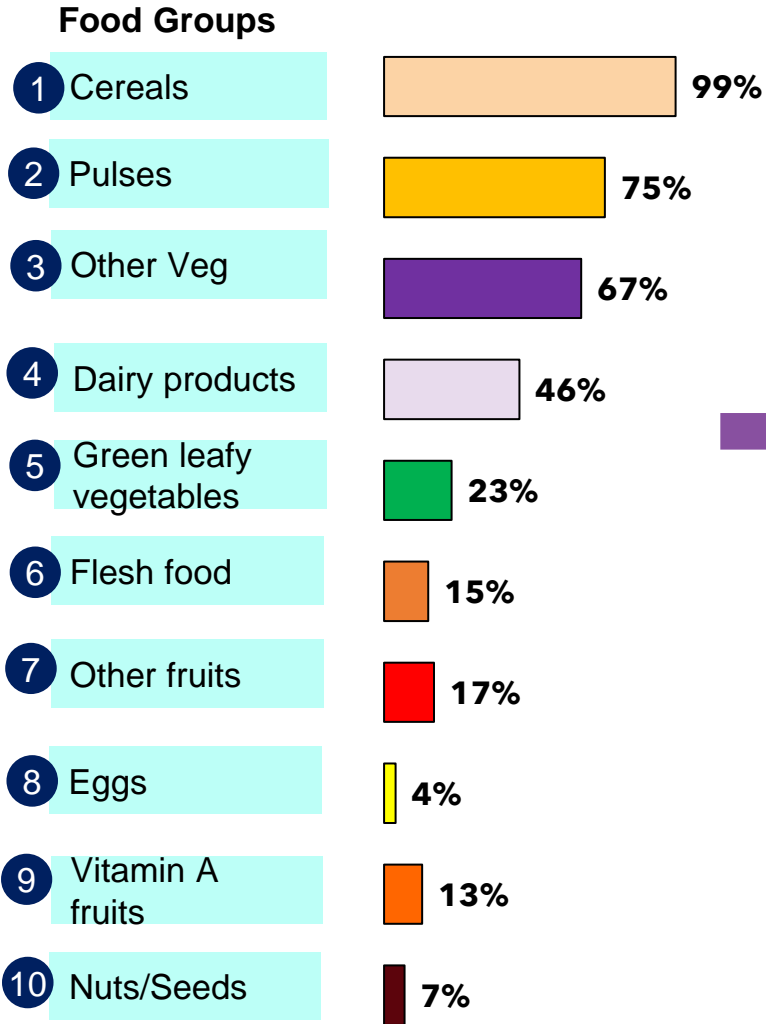
Measures and data analysis:

- ***The outcome of interest*** was minimum dietary diversity for women of reproductive age (MDD-W)
 - *MDD-W was measured as a dichotomous indicator of whether or not women 15–49 years of age⁷ have consumed at least five out of ten defined food groups the previous day or night or in the last 24 hours.*
 - *The MDD-W was developed as a proxy indicator to reflect the micronutrient adequacy of women's diets.*
- ***Potential correlates included:***
 - *Sociodemographic profile of women*
 - *Experience of any (physical/emotional/sexual) form of violence*
 - *Women empowerment (constituted mobility, decision making capacity & economic independence of women)*
 - *Any history of mental health disorders (primarily major depressive episodes, agoraphobia, social phobia, obsessive disorder, compulsion, obsessive compulsive disorder & generalized anxiety disorder)*
- *Analysis (using SAS 9.4) involved frequency distributions of all indicators and logistic regression to establish associations between outcome and probable determinants.*

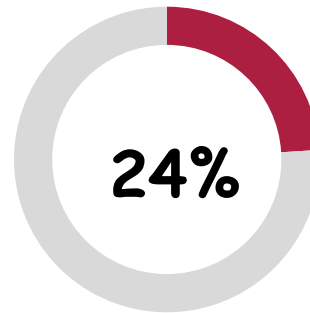
Results

Dietary diversity among women: 24% (N=22800) women consumed adequately diverse diet

Consumption of foods by women (previous 24 hours)



Minimum dietary diversity



Monotonous cereal-based diet: Cereals and pulses (>75%) remained predominantly consumed food groups as opposed to green leafy vegetables, vitamin A rich foods, animal proteins

What do other studies^{1,2} suggest?

- Food groups do not show much variation
- Diet was primarily cereal-based
- Women consumed 1 food group less than other members of the family
- >50% women (pregnant, lactating) and adolescents were unable to achieve MDD
- Mean Dietary Diversity Scores were significantly lower in Bihar than states like Chhattisgarh and Odisha

Who were the women who were more likely to receive diverse diet?

Women belonging to better economic status, non-marginalized caste, educated & Had received advice from FLW on good food habits*

Belong to other caste
(Ref: Scheduled caste/tribe)

1.21
(1.10-1.32)

Had formal education
(Ref: No Education)

Upto 8 years
1.29 (1.21-1.38)

> 8 years
1.78 (1.67-1.90)

Belong to upper tertile of wealth index
(Ref: Lowest)

Medium
1.39 (1.30-1.49)

High
2.19 (2.04-2.35)

Ever received any advice on maternal nutrition from ASHA or AWW
(Ref: No)

1.43
(1.14-1.80)

Women who had media exposure and some level of empowerment*

Media Exposure (Ref: No)

1.50
(1.42-1.58)

Decision making (Ref: No)

1.18
(1.09-1.28)

Economic independence (Ref: No)

1.31
(1.24-1.38)

Women's Empowerment (Ref: No)

1.22
(1.14-1.30)

*P value <0.05

Who were the women who were less likely to receive diverse diet?

Older women belonging to Hindu community, having larger families tend to have lesser diverse diets*

Belong to Hindu religion
(Ref: Other religions)

0.87 (0.81-0.94)

Had larger family size
(Ref: ≤6 members)

>6 members
0.93(0.88-0.97)

Higher age
(Ref: <19)

20-35 years
0.84(0.77-0.92)

>35 years
0.83 (0.75-0.92)

*P value <0.05

Those exposed to domestic violence or suffering from some mental disorders were less likely to have diverse diets*

Experienced any violence in last 12 months(Ref: No)

0.88 (0.83-0.94)

Experienced any emotional violence in last 12 months(Ref: No)

0.84 (0.78-0.90)

Experienced any physical violence in last 12 months(Ref: No)

0.80 (0.74-0.87)

History of any mental disorder (Ref: No)

0.87(0.83-0.92)

Suffered from major depressive disorder (Ref: No)

0.64(0.58-0.70)

Generalized anxiety disorder (Ref: No)

0.65(0.59-0.72)

Study Implications:

- *Mostly initiatives have focused on the improving dietary diversity among children, often neglecting the dietary practices among women*
- *There is a need to focus on MDD-W to improve intergenerational health benefits*
- *Further research is needed to strengthen a causal relationship and define evidence-based strategies to implement in prevention and management of malnutrition and its correlates among women*
- *Broader nutrition related interventions need to incorporate provisions for considering micro groups vulnerable to violence and mental health disorders.*
- *Given programmatic feasibility and interests, current evidence may be utilized in re-orienting and converging existing nutrition programs with the likes of mental health programs.*

Thank you