

## Risk factors associated with wasting and severe wasting among under-5 children in India

This is a summary of the following report: *Center for Health Research and Development & UNICEF India Country Office (2021) Analysis of wasting and severe wasting and its associated risk factors among under-5 children in India.*

Wasting remains a major cause of child mortality and morbidity globally. Current guidelines for the prevention, diagnosis and management, especially among children under six months of age, are mainly based on studies conducted in African settings. In India, specific data for this age group is lacking. This paper, featuring the collaborative efforts of the Knowledge Integration and Translational Platform at the Centre for Health Research and Development, the Biotechnology Industry Research Assistance Council and UNICEF India, contains an in-depth analysis to understand the burden of wasting, including severe wasting, in India and its associated factors. The analysis utilised data from the Comprehensive National Nutrition Survey (CNNS) which included children 0 to 59 months (nationally representative), Knowledge Integration (KI) datasets which covered children aged 0 to 23 months (from 15 national studies) and the intervention group of an ongoing cohort, the Women and Infants Integrated Growth Study (WINGS) which included children aged 0 to 11 months (from a trial in Delhi).

Overall, the authors found a high prevalence of wasting in the CNNS and KI datasets, and a lower prevalence in WINGS (CNNS 17.3%, KI 16.4%, WINGS 5.8%), a pattern mirrored in the severe wasting estimates (4.9%, 3.7%, 0.5%, respectively). Across all datasets, the burden of wasting and severe wasting was highest in the first six months of life compared to older age groups. Children born small for gestational age or with low birth weight each displayed a higher prevalence of both wasting and severe wasting than appropriate for gestational age or and normal birthweight children, respectively. The incidence of wasting (new episodes of wasting) was 0.32 (KI) and 0.55 (WINGS) cases per 365 days follow-up. The patterns for incidence of wasting and severe wasting were comparable to the prevalence data.

In line with other studies, the factors that were associated with wasting were lower maternal education, maternal underweight, Caesarean section, low birthweight and being a male child. Wasting in the first six months of life was found to be an independent risk factor for wasting at 12 and 24 months of age (WINGS and KI datasets). The authors concluded that programmes should focus on health and nutrition interventions at pregnancy and pre-pregnancy time points (e.g., early identification of mothers at risk of undernutrition), as well as close growth monitoring and wasting management over the infant's first 6 months of life, to counter the burden of wasting in early life and risks of wasting later in life.

## An evidence gap map: food systems interventions for nutrition and food security outcomes

This is a summary of the following report: *Moore N, Lane C, Storhaug I, Franich A, Rolker H, Furgeson J et al (2021) 3ie Evidence gap map brief: The effects of food systems interventions on food security and nutrition outcomes in low- and middle-income countries. International Initiative for Impact Evaluation.*

<https://www.3ieimpact.org/evidencehub/publications/evidence-gap-maps/effects-food-systems-interventions-food-security-and>



In low- and middle-income countries (LMICs), constraints and complexities within food systems are significant drivers of malnutrition and food insecurity. However, the evidence base for the impact of interventions within food systems on improving nutrition and food security is complicated and disorganised. To address this challenge, the International Initiative for Impact Evaluations (3ie), with support from Innovative Methods and Metrics for Agriculture and Nutrition Actions, developed an evidence gap map (EGM). The map collates evidence from impact evaluations and systematic reviews, which assess the effects of food systems interventions on food security and nutrition outcomes in LMICs. The evidence is presented graphically on an interactive online platform, facilitating the identification of evidence and potential gaps in a user-friendly way. Supporting information for the map is published in the 3ie EGM report 16.

The map includes 2,035 published and unpublished studies that took place between 2000 and mid-2020: 178 systematic reviews, and 1,838 impact evaluations. Impact evaluations were primarily located in Sub-Saharan Africa (33%), South Asia (20%), and East Asia and the Pacific (17%). The evidence is mapped according to a framework of 49 interventions, 48 intermediate outcomes, and 26 final outcomes. There was an increase in the number of studies published since 2000, with the largest increase in interventions aiming to improve the food supply chain or consumer behaviour within food systems. Similarly, there has been an increase in the quality of studies available. The most common interventions focused on providing supplements, fortification, classes, peer support, and counselling, targeting consumer behaviour, and direct provision of food. However, several interventions, including some that have been widely implemented, have not been well researched, allowing for potentially negative consequences and the inefficient use of funds. For example, the authors did not identify any impact evaluations related to advertising regulations, food waste education programmes, or food packaging.

Despite women being important actors within food systems, the authors identified

relatively few studies examining interventions supporting women's decision-making or measuring outcomes related to women's empowerment. Most impact evaluations were also conducted at a local and subnational level, resulting in less evidence on national and transnational interventions; this gap is likely driven by a tendency to rely on randomised control trials. Few studies implemented mixed methods, reported cost-effectiveness evidence, or considered outcomes along the impact pathway.

Based on the gaps identified, the authors suggested several synthesis opportunities and outcomes and interventions that could be prioritised in future work.

Interventions to prioritise for impact evaluations:

- Government manipulations of price
- Advertising and labelling regulations
- On-farm post-harvest processing
- Interventions to support food packaging
- Efforts to support women's empowerment within food systems
- Innovative store design
- Cold chain storage

Outcomes to prioritise for impact evaluations:

- Women's empowerment
- Economic, social, and political stability
- Food loss
- Environmental impacts of food systems
- Measures of diet insufficiency

Synthesis opportunities:

- Agricultural extension and information-sharing activities within the food value chain
- Provision of free or reduced-cost farm inputs to crop production
- Educational approaches within the food value chain
- Agricultural insurance products
- Outcomes related to other diet quality and adequacy measures

The EGM, corresponding report and brief are available from: <https://www.3ieimpact.org/evidencehub/publications/evidence-gap-maps/effects-food-systems-interventions-food-security-and>