

Maternal and Child Undernutrition: The Lancet Series and Indian Perspective

The maternal and child undernutrition (MCUN) is a major public health problem, which has been recently addressed in a series of five articles and few accompanying commentaries in 'The Lancet' (1-5).

The first article in this series(1) quantifies the global prevalence of MCUN and its determinants. MSUN is the underlying cause of 3.5 million deaths, 35% of the disease burden in under-five children and 11% of total global disability-adjusted life-years (DALYs). Stunting, severe wasting and intra-uterine growth retardation are listed as the biggest problems.

The second paper(2) addresses the potential long-term implications of undernutrition on parameters such as height, school achievement, economic productivity, income and assets, and the birth weight of the offspring. The authors present systematic review of studies from low and middle-income countries for these outcomes and also for indicators related to blood lipids, cardiovascular disease, lung and immune function, cancers, osteoporosis, and mental illness. The relevance of the hypothesis of developmental origins of chronic diseases to low and middle-income countries is also discussed.

Authors of the third article(3) review the available interventions for improving MCUN at international level and identify those, which are effective and applicable in low and middle-income countries. They conclude that effective interventions are available to reduce stunting, micronutrient deficiencies, and child deaths that would reduce DALYs (and all child deaths) by about a quarter in the short term.

The fourth paper(4) in this series discusses seven key issues/challenges to tackle undernutrition: (i) getting nutrition on the list of priorities and keeping it there; (ii) doing the right thing; (iii) not doing the wrong things; (iv) acting at the scale; (v) reaching those in need; (vi) data based decision making and building strategy; and (vii) operational capacity.

The series is concluded by outlining the reasons why many transnational have not been successful in the efforts to eliminate undernutrition. The authors of the final paper in the series(5) identify four functional areas: stewardship, mobilization of financial resources, direct provision of nutrition services at times of natural disaster or conflict, and human and institutional resource strengthening for action to deliver results. They further emphasize that funding to combat undernutrition is grossly insufficient and poorly targeted, and is inappropriately dominated by food aid and supply-led technical assistance.

WHAT STILL MISSES FROM THIS SERIES?

The finding that nutritional interventions especially food supplementation do not have a significant effect beyond 24 months has huge policy implications. Food supplementation strategies have been implemented for years in many of the developing countries with the highest burden of undernutrition. In this light, the effectiveness and cost-effectiveness of such interventions in the national health systems should be urgently examined. The management of childhood SAM has also generated heated debate at international level and the organizations working for childhood malnutrition like Medicines Sans Frontier (MSF) which have been using RUF have severely criticized the series claiming that the authors have not sufficiently explored the available evidence(6). All the available experience and evidence in this field needs more careful examination especially in South Asia and Africa where poor health infrastructure can not afford to provide care as recommended by WHO.

IMPLICATIONS FOR INDIA

India has more than 47 million stunted children, 29% of the global total. Around 30 percent of Indian children are born with low birth weight and more than half (52%) of the mothers are also underweight (7). Additionally, iron, vitamin A and Iodine deficiency are widespread. The progress in reducing the proportion of undernourished children in India over the past decades has been modest and slower. The existing nutrition programs including the Integrated Child Development Services (ICDS) have

Key Findings

The Lancet Series on Maternal and Child Undernutrition (MCUN)

- Undernourished children are more likely to become short adults destined to give birth to smaller infants and consequent lower educational achievement and economic status in adulthood.
- The period from pregnancy to 24 months of age is a crucial window of opportunity for reducing undernutrition and its adverse effects. The actions taken after this period may not be that effective.
- Early childhood stunting is suggested as a better overall indicator of undernutrition than underweight as it predicts poor cognitive performance in middle childhood and the risk of cardiovascular diseases in adulthood.
- Resources should not be used to support actions that have not been proven to have a direct effect on MCUN such as stand alone growth monitoring, preschool and school feeding programs, and large scale supplementary feeding strategies. On the other hand, supplementation to food-insecure populations, and large-scale conditional cash transfer programs have been found to be effective in improving the nutritional status.
- Severe acute malnutrition (SAM) in both community and hospital settings has to be managed as per WHO protocol and there is insufficient evidence to promote use of home based Ready-to-Use-Food (RUF).

dominantly focused on food supplementation rather than changing family-based feeding and caring behavior. Moreover, ICDS targets children from 0-6 years and mostly after the age of three, when undernutrition has already set in. This is contrary to the finding in this series that to make a dent on malnutrition, the countries should focus their attention upon children aged up to 2 years of age. Majority of the ongoing activities like growth monitoring and school feeding are of unproven role in tackling undernutrition. Therefore, the interventions in ICDS should be redirected towards the younger children (0-3 years). The focus should be on the components directly addressing the most important causes of undernutrition in India; such as infant and young child (<2 years) feeding, improving household water and sanitation, strengthening the referral to the health system, and providing micronutrients.

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Chandrakant Lahariya,

*Assistant Professor, Community Medicine,
GR. Medical College, Gwalior 474 009, India.
E-mail: ck1800@rediffmail.com*

REFERENCES

1. Black RE, Allen LH, Bhutta ZA, Caulfeild LE, de Onis M, Ezzati M, *et al.*, for the Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet* 2008; 371: 243-260.
2. Victora CG, Adair L, Fall C, Hallal PC, Martorell R, Richter L, *et al.*, for the Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: consequences for adult health and human capital. *Lancet* 2008; 371: 340-357.
3. Bhutta ZA, Ahmad T, Black RE, Cousens S, Dewey K, Guigliani E, *et al.* for the Maternal and Child Undernutrition Study Group. What works? Interventions for maternal and child undernutrition and survival. *Lancet* 2008; 371: 417-440.
4. Bryce J, Coitinho D, Darnton-Hill I, Pelletier D, Pinstrup-Andersen P, for the Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: effective action at national level. *Lancet* 2008; 371: 510-526.
5. Morris SM, Bruce C, Ricardo U, for the Maternal and Child Undernutrition Study Group. Effective international action against undernutrition: why has it proven so difficult and what can be done to accelerate progress? *Lancet* 2008; 371: 608-621.
6. Medicines Sans Frontier. Lancet series on undernutrition off target to save the lives of millions of malnourished children. Geneva: MSF. 2008. Available from: <http://www.accessmed-msf.org/media-room/press-releases/msf-response-to-lancet-series-on-malnutrition/>. Accessed on February 10, 2008.
7. International Institute for Population Sciences (IIPS) and ORC Macro International. National Family Health Survey (NFHS-3), 2005-06, Mumbai: IIPS; 2007; p. 267-304.