

Planned ENN review of wasting and stunting linkages

Summary of article¹

Location: Global

What we know: The relationship between wasting and stunting is under researched and poorly understood.

What this article adds: A literature review and secondary data analysis that explores the relationship between stunting and wasting will be undertaken by the ENN in 2014.

A recent ENN review of donor financing arrangements around the scale up of community based management of acute malnutrition (CMAM) highlighted a widespread misconception that acute malnutrition (or wasting) is a short term problem largely of concern to humanitarians whereas chronic malnutrition (stunting) is seen as a long term development problem.



The relationship and associations between wasting and stunting are not yet well understood. Malnutrition is a multifaceted process, resulting from a complex web of interactions, from the molecular and microbiological level of the individual, to the cultural and socioeconomic features of societies². Acute malnutrition, manifesting as wasting or ‘thinness’, is characterised by rapid weight loss due to an acute lack of food or a period of infection. It is generally thought of as a short-term process; infrequent, temporary, and therefore a reversible state. Linear growth retardation, manifesting as stunting or ‘shortness’, is a slow, cumulative process which develops over a long period as a result of inadequate intake of nutrients, or repeated infections, or both. Stunting is more likely to be chronic and irreversible.

While both types of malnutrition may share some of the same causal pathways and are unquestionably linked, limited evidence is currently available to describe the relationship and associations between them, and whether one precedes or predisposes to the other. Additionally, almost nothing has been written on the biochemical and physiological processes through which the relationship between stunting and wasting might be both mediated and magnified.

Observations from studies to date include:

- | The prevalence of wasting does not act as a good indicator for the prevalence of stunting. In many countries, children experience high levels of stunting without any wasting. A large review of 175 studies examined the associations between stunting and wasting and concluded that while there was a correlation between stunting and wasting in Asia and the Eastern Mediterranean, there was low correlation in Africa and Latin America³.
- | Stunting has been shown to precede wasting in ‘small’ infants in Malawi; those born with a Low Birth Weight (LBW) as a result of Intra Uterine Growth Restriction (IUGR) are more likely to develop episodes

of wasting between 6-18 months of age⁴. Less clear is whether wasting precedes (or predisposes) the child to becoming stunted.

- 1 The associations between stunting and wasting in children are not consistently found in analyses using cross-sectional data⁵. This may be due to the short-term nature of wasting as opposed to the longer term process of stunting. In addition, wasting may precede linear growth retardation so that cross-sectional data may not demonstrate a concurrent relationship.

What is clear is that more evidence is required in order to understand better the complex relationships and associations between these two forms of undernutrition. Deeper understanding of changes in weight and length will mean that resources can be better targeted to combat undernutrition and reduce child mortality and eventually, pave the way for more connected programming for stunting and wasting. With this in mind, the ENN secured funding from OFDA to undertake a review of the evidence.

Research questions

The following research questions will be considered during a literature review and secondary data analyses:

1. Is there an association between stunting and wasting (and vice versa) in the under-five population, i.e. does stunting predispose a child to wasting? Does untreated or repeated wasting result in a child becoming stunted? If so, how is the association mediated in the body (cellular/biological/hormonal level)?
2. Is there a period of time in a child's growth in which the interaction between stunting and wasting is most evident, i.e. in the 0-6 month age group, in the first 1000 days or in the 36-59 month age group?
3. Are there regions/countries in the world where the associations between stunting and wasting (and vice versa) are more (or less) evident? What are the factors (such as epidemiological profile) which may explain these differences?
4. Are there any gender differences in any of the above associations, for example, stronger relationships between wasting and stunting in male rather than female children or other associations such as birth order, wealth quintiles etc?
5. How are these associations best captured, given that there is a time lag between changes in weight and height velocity (estimated at 3 months) and most surveys are cross sectional?
6. Where a child is both stunted and wasted, what is the additive impact of multiple anthropometric deficits on child mortality?
7. What is the evidence base for the early treatment of wasting leading to better linear growth?
8. What is the evidence base for programmes that aim to reduce or prevent stunting leading to a reduced case load of wasting?

The work will be completed by the end of 2014.

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¹<http://www.ennonline.net/pool/files/ife/enn-cmam-financingmain-report-2013-web.pdf>

²Heikens, G. T, Amadi, B. C, Manary, M, Tollins, N, and Tomkins, A (2008). Nutrition interventions need improved operational capacity. The Lancet. Published online Jan 17 2008. DOI:10.1016/S0140-6736(07)61690-0

³Victora, C. G (1992). The association between wasting and stunting: an international perspective. Journal of

Nutrition (impact factor: 3.92). 06/1992; 122(5):1105-10

⁴Phuka. J. C et al (2012). Developmental outcomes among 18- month-old Malawians after a year of complementary feeding with lipid-based nutrient supplements or corn-soy flour, Maternal & Child Nutrition, Volume 8, Issue 2, pages 239–248, April 2012

⁵Richard. S et al (2012). Wasting is associated with stunting in early childhood. J. Nutr. 142: pp 1291–1296, 2012.

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PDF generated 13 July 2017

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