Special section:
The Wasting and Stunting Technical Interest Group
A summary of the work to date

This article outlines the work of the Wasting-Stunting Technical Interest Group since its inception in 2014, highlighting the important research that has been undertaken to learn more about the complex relationship between wasting and stunting. This article was written by **Natalie Sessions**, Senior Nutritionist at ENN, and **Tanya Khara**, Technical Director at ENN.

Background

Over recent decades, a division in the conceptualisation and practice of tackling child wasting and stunting has pervaded the nutrition sector, resulting in different policies, programmes, research and financing mechanisms to tackle these separately. During emergencies, the focus of programmes tends to be short-term, to treat wasted children and prevent deaths, while in longer-term development programmes the focus has been on preventing stunting and micronutrient deficits caused by long-term undernutrition. This is despite the long-known fact that the burden of wasting is high in many non-emergency contexts where there is a focus on long-term development and that there is a high prevalence of stunting in many humanitarian contexts. This separation also remains despite the fact that as far back as 1973, the child malnutrition expert, John Waterlow, reported on the links between the two, writing that "in practice, in a great many undernourished children, both processes will be at work" (Waterlow, 1973).

In 2014, ENN started to explore this separation, setting out to better understand the complex relationships and associations between wasting and stunting and examine whether current separations were justified or useful to achieve the goals of malnutrition prevention and treatment programmes. To reach its aims, ENN set up the Wasting-Stunting Technical Interest Group (WaSt-TIG), a group of 42 expert researchers, programmers and donors in the fields of child growth, nutrition and epidemiology. Since 2014, the work of the WaSt TIG has evolved, initially focusing on reviewing existing evidence and defining research gaps, to mining existing data, delving deeper and communicating what has been learnt thus far and exploring the implications of findings for policy and practice.

Reviewing existing evidence and defining research gaps

Initially, the WaSt TIG developed a narrative review of the available literature on the relationship between wasting and stunting.[1] This paper explored the evidence of shared causes and effects, examined the patterns of association, highlighted the physiological mechanisms that may link these two manifestations of undernutrition and reflected on the potential policy and programmatic implications of the indications arising from the evidence reviewed. Even at this early stage, it was clear to the group that wasting and stunting were more closely linked than commonly recognised. A particularly striking finding was that children who experienced both deficits had a disproportionally high level of mortality risk (McDonald et al, 2013). This narrative review also highlighted a number of research gaps and, as a natural next step, a research prioritisation exercise was carried out to guide future research investments on the relationship (Angood et al, 2016). This exercise provided the WaSt TIG with clear workplan priorities and the next steps to further understand the relationship between wasting and stunting.

It was determined that quite a number of research questions could be answered through further analysis of existing datasets. Two questions stood out in particular as being relatively straight forward to answer: 1) 'What more can cross-sectional data tell us about the factors associated with childhood wasting and stunting and concurrence?', and 2) 'How does concurrent wasting and stunting develop over time?'. The group began to explore existing datasets in this regard. Based on a request by the independent expert group leading the production of the 2015 Global Nutrition Report, a short analysis of national surveys from five high-burden countries was conducted to estimate the burden of concurrent wasting and stunting.[2] This analysis found that around 16 million children globally may be both wasted and stunted at the same time.

Mining existing data

To expand the analysis, the WaSt-TIG subsequently conducted a re-analysis of Demographic and Health Survey and Multiple Indicator Cluster Survey datasets from 84 countries. This study generated a pooled prevalence estimate of the burden of concurrent wasting and stunting in those countries of 3.0%, 95% CI [2.97, 3.06], with a range from 0% to 8.0%. (Khara et al, 2018). This was the first multiple country estimation of the prevalence and burden of concurrence and the findings were published in the 2016 Global Nutrition Report (Global Nutrition Report, 2016). Available Standardized Monitoring and Assessment of Relief and Transitions survey data from 51 countries was also analysed to examine concurrence in more detail (which children were being affected) and to understand whether existing measures being used within programmes might be identifying them (Myatt et al, 2018). This study found that younger children, under 36 months of age, and males were more likely to experience concurrent wasting and stunting.

As a next step, the WaSt-TIG began exploring available cohort datasets to further elaborate on these findings. To better understand the implications of concurrent wasting and stunting and to hone in on what this meant for identifying those children at highest mortality risk for priority treatment, the group were able to look at nutrition indicators and mortality risk in a cohort of children in Niakhar, Senegal (Garenne et al, 2019). This study reiterated the finding that concurrent wasting and stunting was a strong risk factor for child

[1] https://www.ennonline.net/attachments/1862/WAST_140714.pdf
[2] https://globalnutritionreport.org/2015

mortality and by looking further into the ability of different indicators to identify risk of death, it was found that a combination of severely low weight-for-age z-scores and mid-upper arm circumference worked best for identifying those children most at risk of dying, including those concurrently wasted and stunted. This analysis led to the development of a concept note for a cohort study aiming to examine the relationship between stunting and wasting and their combined effect on mortality into existing programme practices. Funding was successfully raised from the United States Agency of International Development's Bureau for Humanitarian Assistance.

A separate analysis of cohort data from the Gambia from the Medical Research Council (MRC) Gambia surveillance programme began at this time to also explore the child's experience of wasting and stunting over time to see if there were any patterns emerging.

Delving deeper and communicating what we have learned

The MRC surveillance data analysis proved complex but illuminating (Schoenbuchner et al, 2019). It replicated earlier findings by Richards et al (2012) in that being wasted was predictive of stunting three months later, irrespective of whether the subjects were already stunted. It further found that children who became stunted at two years of age had experienced more wasting during their lives compared to non-stunted children. Seasonal patterns for wasting were also noted in this analysis with infants born at the start of the annual wet season showing early growth faltering, putting them at increased risk of subsequent stunting.

Given the emerging evidence, the WaSt-TIG felt it was important to start asking 'So what?'. A policy brief entitled 'Child wasting and stunting, 'Time to overcome the separation',[3] was therefore developed. This brief outlined the scientific grounds for concluding that the current separation between wasting and stunting in policy, programmes and research was not justified and may even be detrimental. It called for a radical change in how we view, finance and intervene to reduce child wasting and stunting. The call was taken further in the publication of a viewpoint article, 'Beyond Wasted and Stunted – A paradigm shift is needed to fight child undernutrition',[4] published in The *Lancet* Child and Adolescent Health.

An evaluation of the WaSt-TIG work was also conducted using a 'Story of Change'[5] method. This evaluation found that successes within the project had been driven by the way in which the WaSt TIG operates: it is made up of a mix of expert individual members who represent themselves rather than their institution's agenda and who function in an engaged, iterative, exploratory and task-orientated manner. In terms of achievements, it was found that the project has contributed to a solid evidence base around the linkages between wasting and stunting, promoted discussions and a shift in the narrative around wasting and stunting and what is needed to address these at the global level among different institutions and has contributed to bridging the divide between the wasting and stunting communities.

Implications for policy and practice

In 2020, the WaSt-TIG entered its fourth phase of work, with work on key workstreams continuing. This included an expansion of the analysis of anthropometric measures and mortality risk in multiple datasets, an updated systematic review exploring the relationship between wasting and stunting, a systematic review and meta-analysis exploring sex differences in undernutrition triggered by the somewhat surprising finding in the group's multiple dataset analyses that boys are more vulnerable to undernutrition than girls, and a briefing note for policymakers and programme implementers on 'best practices in preventing child wasting within the wider context of undernutrition'. The findings of much of this work are highlighted in subsequent articles in this special section and thus will not be explored here in-depth.

Conclusion

A lot has been achieved by the WaSt-TIG in a relatively short period and with limited financial resources. Bringing together researchers with policy developers and nutrition programme staff has enabled discussions about how research can be used to improve our understanding of undernutrition, its consequences for children's growth and how to prevent it. As one respondent noted in the Story of Change evaluation, "Everything we know about (the relationship between) wasting and stunting is a product of this group".

While a great deal has been achieved, there is still much work to be done, particularly in terms of further articulating the programme and policy implications for this work. Some of the exciting next steps have been unpacked in the editorial of this special section. These include a focus on dissemination and advocacy, translating evidence into practice, expanding to other settings at both a country and regional level and further exploring the evidence.

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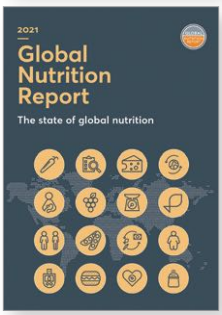
[3] www.ennonline.net/fex/58/childwastseparation
[4] www.sciencedirect.com/science/article/abs/pii/S2352464219302445
[5] https://www.ennonline.net/attachments/3565/SOC_Wasting_Stunting_v5.pdf



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