

The Relationship between Wasting and Stunting in Young Children: A Systematic Review

Authors : Susan Thurstans, Natalie Sessions, Carmel Dolan, Kate Sadler, Bernardette Cichon, Shelia Isanaka, Dominique Roberfroid, Heather Stobagh, Patrick Webb, Tanya Khara

Abstract : For many years, wasting and stunting have been viewed as separate conditions without clear evidence supporting this distinction. In 2014, the Emergency Nutrition Network (ENN) examined the relationship between wasting and stunting and published a report highlighting the evidence for linkages between the two forms of undernutrition. This systematic review aimed to update the evidence generated since this 2014 report to better understand the implications for improving child nutrition, health and survival. Following PRISMA guidelines, this review was conducted using search terms to describe the relationship between wasting and stunting. Studies related to children under five from low- and middle-income countries that assessed both ponderal growth/wasting and linear growth/stunting, as well as the association between the two, were included. Risk of bias was assessed in all included studies using SIGN checklists. 45 studies met the inclusion criteria- 39 peer reviewed studies, 1 manual chapter, 3 pre-print publications and 2 published reports. The review found that there is a strong association between the two conditions whereby episodes of wasting contribute to stunting and, to a lesser extent, stunting leads to wasting. Possible interconnected physiological processes and common risk factors drive an accumulation of vulnerabilities. Peak incidence of both wasting and stunting was found to be between birth and three months. A significant proportion of children experience concurrent wasting and stunting- Country level data suggests that up to 8% of children under 5 may be both wasted and stunted at the same time, global estimates translate to around 16 million children. Children with concurrent wasting and stunting have an elevated risk of mortality when compared to children with one deficit alone. These children should therefore be considered a high-risk group in the targeting of treatment. Wasting, stunting and concurrent wasting and stunting appear to be more prevalent in boys than girls and it appears that concurrent wasting and stunting peaks between 12-30 months of age with younger children being the most affected. Seasonal patterns in prevalence of both wasting and stunting are seen in longitudinal and cross sectional data and in particular season of birth has been shown to have an impact on a child's subsequent experience of wasting and stunting. Evidence suggests that the use of mid-upper-arm circumference combined with weight-for-age Z-score might effectively identify children most at risk of near-term mortality, including those concurrently wasted and stunted. Wasting and stunting frequently occur in the same child, either simultaneously or at different moments through their life course. Evidence suggests there is a process of accumulation of nutritional deficits and therefore risk over the life course of a child demonstrates the need for a more integrated approach to prevention and treatment strategies to interrupt this process. To achieve this, undernutrition policies, programmes, financing and research must become more unified.

Keywords : Concurrent wasting and stunting, Review, Risk factors, Undernutrition

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