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# Combat stunting in Indonesia: Quo vadis?

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Editorial

Stunting, a chronic malnutrition condition featured by impaired growth and development in children, remains a global public health concern. Children are classified as stunting if their body height or length is <-2 standard deviations from the World Health Organization (WHO) standard growth. Stunting is not merely about suboptimal height, but beyond that, it has profound impacts on human quality in future adulthood. It hinders neurocognitive development, decreases the immune system, and increases the risk of cardiometabolic disease.[1]

The Sustainable Development Goals (SDGs) aim to eliminate all forms of malnutrition worldwide, with a specific target of reducing stunting prevalence. The global stunting rate shows a remarkable decline from 2000-2012. However, this reduction continues to be slower in the next decade, with nearly all living in lower-middle-income countries (LMICs), particularly in Africa and Asia. If this decrease continues to slope, there is a potential missed gap between the SDGs target and recent achievement according to the projected trend in 2030.[2]

To address this issue, a comprehensive understanding of the conceptual framework outlining the context, causes, and consequences of childhood stunting is fundamental. This causative model, developed by WHO based on a review of global data, highlights numerous factors that are linked to stunted growth and development. First, at the top level, the framework demonstrates the consequences of stunting, consisting of short and long-term consequences of stunting. Second, the causes include specific conditions that closely hinder growth during the crucial first 1,000 days of life —a pivotal period from conception to a child's second birthday for cognitive and physical development. The causes encompass four key elements: household and family factors, breastfeeding practices, infections, and insufficient complementary feeding.[3]

At the baseline level of the framework, the contextual factors—spanning community and societal aspects—represent the situational background, including political economy, healthcare, education, cultural and societal norms, agriculture and food systems, as well as water, sanitation, and environmental conditions, all of which influence the underlying drivers of childhood stunting[3]. This conceptual framework has been globally adopted as a guideline to analyze to what extent the achievement and constraints in stunting reduction across the countries.[3,4]

Indonesia, as one of the largest LMICs, reflects this global challenge by setting combating stunting as one of its top national priorities. Tackling those obstacles, Indonesia introduced the National Strategy to Accelerate Stunting Prevention (*StraNas* Stunting) in 2017 as an initiative to bring together multisectoral efforts, healthcare, economy, education, and infrastructure, with emphasis the critical phase "first 1,000-day of life" or "*seribu hari pertama kehidupan* (SHPK)". By 2023, Indonesia successfully demonstrates significant improvement but fall short of the annual reductions necessary to achieve the 2024 target.[5]

These situations suggest that works for stunting should be one step ahead. Stunting is not something that suddenly happened but started by a long-term slower growth. In LMICs, lots of

early growth faltering is initiated as early as 3 months post-natal, before they experience stunting later.[6] Thus, timely detection and intervention for early growth faltering is essential, yet most of this problem is still unrecognized. WHO defined growth faltering as a growth velocity or growth increment that is less than the 5$^{th}$ percentile of the WHO growth velocity chart. In contrast to determining stunting, which is based on one cross-sectional measurement, determining growth faltering requires prospective observation. This is because growth faltering needs a comparative of two observation points, namely the 'weight or length increment' between a certain range period of 1, 2, 3, 4, and 6 months from the previous measurement point. These parameters are more sensitive to detect stunting earlier. Despite this parameter advancement, the application of growth faltering detection in daily practices is still complicated.[6]

Considering that many children experience growth faltering early in life, often beginning in utero, indicates the substantial role of prenatal factors in stunting. Low birth weight (LBW), whether due to prematurity or intrauterine growth restriction (IUGR), contributes to early growth faltering and subsequently risk of stunting.[6] Thus, attempts to reduce stunting must also take account of adequate antenatal care (ANC), screening of intrauterine disease or disorders, improving maternal nutrition, addressing pregnancy-related anemia, and educating parents, particularly mothers. Treating anemia and early detecting pregnancy-related conditions such as pre-eclampsia, and infections (malaria, TORCH) significantly lower the risk of fetal growth disorders. However, pregnancy related-anemia reduction, lowering LBW incidence, and complete ANC visits are still a long way from target achievement in Indonesia.[7]

The works for preventing stunting in the post-natal period need to incorporate support for exclusive breastfeeding and continuing it until the age of 2 years or beyond. The lower rate of exclusive breastfeeding is known as a risk of childhood malnutrition due to the higher risk in infants and childhood infections, such as diarrhea, pneumonia, and measles. This situation is also aggravated by improper practice of complementary feeding starting from 6 months old, such as too early or too late for initiating complementary feeding, incomplete nutrition composition and diet diversity, or lack of implementation of responsive feeding. Findings in Asia describe that stunting incidence increased sharply at the age of 6-8 months, as the more extensive gap between nutritional adequacy of breastmilk and lack of good complementary feeding.[8] Nutritional interventions have been widely acknowledged as the most effective work to combat stunting. Unfortunately, for low-income populations, the high cost of nutrient-dense foods remains a substantial barrier to addressing these nutritional deficiencies.[8,9]

Addressing the issue of improving nutrition is inseparable from the importance of managing infections, supported by high coverage immunization, provision of clean water, and proper sanitation and hygiene (WASH).[2] Infections and undernutrition represent a bi-directional interaction where both influence each other. Children with infection have an increase in nutritional needs to combat disease and repair damaged cells that hinder growth and development. On the other hand, it is estimated that undernutrition contributes to one-third of childhood infection cases, largely pneumonia, diarrhea, measles, and acute respiratory infections. The situation is also burdened by the high prevalence of tuberculosis (TB) in LMICs, with Indonesia as the second lead of TB prevalence worldwide in 2022. Unfortunately, pediatric TB cases, which are not the primary source of transmission, remain underdiagnosed. In certain regions, there is evidence of overdiagnosis, while other areas experience significant underdiagnosis of childhood TB. This situation complicates both the prevention and treatment of TB infection or disease.[10]

Efforts to combat stunting are 'big work that must adopt a multi-sectoral, integrated, and convergent approach. It is essential for the government to ensure collaboration among ministries, institutions, academic and professional associations, civil society organizations, private sectors, and the media, as well as enhance communities' engagement to accelerate stunting prevention in Indonesia. Coordinated and unified actions are required across all levels of government, from national to household levels, to effectively address this issue.

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