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## Intergenerational nutrition benefits of India's national school feeding programme

This is a summary of the following paper: Chakrabarti S, Scott S.P, Alderman H, Menon P, Gilligan D.O. (2021).

*Intergenerational nutrition benefits of India's national school feeding programme. Nature Communications, 12;4248.*

Available at: <https://doi.org/10.1038/s41467-021-24433-w>

**G**lobally, 149 million children are too short for their age and over half of these children live in Asia. In 1995, the Government of India launched the Mid-Day Meal scheme (MDM), a social protection programme that provides a free cooked meal to children six to 10 years of age in government and government-assisted primary schools. Meals provided must contain a minimum of 450 kcal and 12 grams of protein. MDM is the largest school feeding programme in the world and has the potential to improve both women's education and height which, in turn, may lead to reductions in stunting among children born to these women. However, to date no studies have examined this intergenerational effect.

This paper studies the intergenerational nutritional benefits of India's MDM using nationally representative data from seven datasets on mothers and their children spanning from 1993 to 2016. Cohorts of mothers were matched by state, birth year and socioeconomic status with data on MDM coverage measured as the proportion of primary-school-age girls receiving MDM.

The study found that the height-for-age z-score (HAZ) among children born to mothers with full MDM exposure was greater (+0.40 SD) than that in children born to non-exposed mothers. Improvements in child height were experienced earlier in states that rolled out MDM in the late 1990s compared to states that scaled up MDM in the 2000s. Associations were stronger among poorer households and likely work through women's education, fertility and health service utilisation. Overall, the study found that MDM was associated with 13-32% of the HAZ improvement in India from 2006 to 2016.

This paper provides evidence that, when intergenerational effects are considered, the complete benefit of school feeding programmes at scale for linear growth is much greater than previously understood. The finding that programmes that target children six to 10 years of age have the potential to make important contributions to reducing future child stunting is also an important outcome for other transfer programmes that to date have focused primarily on the time between conception and the child's second birthday.

## The triple burden of malnutrition among adolescents in Indonesia

This is a summary of the following paper: Rah, JH, Melse-Boonstra, A, Agustina, R, van Zutphen, KG and Kraemer, K (2021) *The triple burden of malnutrition among adolescents in Indonesia. Food and Nutrition Bulletin, 42(Supplement 1).* Available at: [https://journals.sagepub.com/toc/fnb/42/1\\_suppl](https://journals.sagepub.com/toc/fnb/42/1_suppl)

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**I**n many countries, adolescents are facing a nutrition crisis. Despite significant global progress in improving adolescent nutrition, including a renewed focus on anaemia among adolescent girls, major gaps in the research and understanding of this demographic persist. In Indonesia specifically, the triple burden of malnutrition, characterised by the coexistence of undernutrition (wasting and/or stunting), micronutrient deficiencies and overweight/ obesity and related noncommunicable diseases, is present among its 45 million adolescents. Approximately one in four adolescent girls in Indonesia suffers from anaemia while nearly one in seven adolescents is overweight or obese.

The recently published supplement, "The triple burden of malnutrition among adolescents in Indonesia", in the Food and Nutrition Bulletin calls for increased attention to adolescent nutrition in Indonesia and beyond. This supplement includes an editorial and eight original research articles written by nutrition experts at Sight and Life, UNICEF, the University of Indonesia and Wageningen University and represents the first comprehensive review of current knowledge on the nutritional status of adolescents in Indonesia. The research presented includes qualitative evidence on the dietary and physical activity behaviours of adolescent girls and boys and the factors influencing these, the association between body image perceptions and nutritional status, eating habits and physical activity behaviours, the determinants of overweight and obesity among adolescents according to the Indonesia National Health Service 2013-2018 and Family Life Survey 2014-2015 data and three studies on anaemia and its association with micronutrient intake, knowledge attitudes and practices and biological and

behavioural factors such as intake, absorption, infectious disease and inflammation.

The supplement's findings show that the triple burden of malnutrition is driven by shifting diet and physical activity patterns including reduced activity in- and out-of-school and unhealthy eating habits such as frequent snacking and eating outside of the home. Adolescents' body image perception was identified as a predictor of eating and physical activity patterns and the number of years of maternal education was positively associated with the odds of overweight, particularly in boys and in the eldest siblings. In Indonesia, iron deficiency is likely to be responsible for a large proportion of anaemia cases although the need to acknowledge and explore other potential causes is also emphasised.

Overall, this supplement highlights the need for further research on the various determinants of the triple burden of malnutrition, evidence-based interventions that are supported by large-scale implementation research and evaluation and effective delivery platforms to reach the most vulnerable groups of adolescents and to change adolescent behaviours. Furthermore, the results emphasise the importance of positioning adolescent nutrition as central to development which will help to safeguard the nutritional wellbeing of today's forgotten generation.

The supplement was launched during an online media briefing<sup>1</sup> hosted by key partners in July 2021. The launch emphasised a clear message that "breaking the cycle of malnutrition starts with adolescents". The hope is that this collection of nine articles will spur the urgent need for interventions, implementation research and relevant programmes to improve the nutritional wellbeing of adolescents in Indonesia and beyond.

<sup>1</sup> Available at: [https://www.youtube.com/watch?v=Vf0Zl-i\\_mDQ](https://www.youtube.com/watch?v=Vf0Zl-i_mDQ)