Tackling food insecurity could improve children's learning

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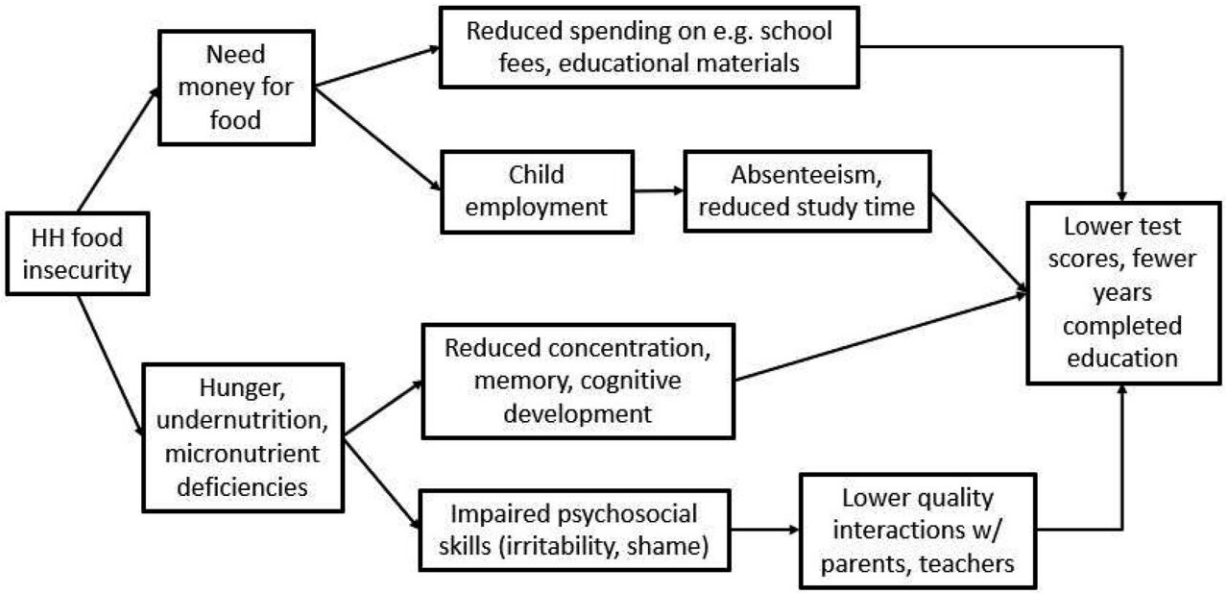

Conceptual model of pathways of the association of food insecurity and children's educational outcomes. Credit: *The Journal of Nutrition* (2023). DOI: 10.1016/j.tjnut.2023.02.008

Indian children's education can be impaired when their households struggle to access enough nutritious food, new research has found.

The study, published in the *Journal of Nutrition*, was undertaken by the Food Security for Equitable Futures research team based at Lancaster University, the Indian Institute of Technology Kanpur and the University

of Barcelona.

Food insecurity—difficulties accessing enough nutritious food—can occur over only a short period, or can be a persistent experience for a household, occurring over many months or years.

It can also range from mild food insecurity, such as worrying about where the household will get food, to severe food insecurity, which can include skipping meals, going hungry, or going a whole day without eating because of a lack of money or other resources.

The study found that both more persistent and more severe food insecurity were linked to lower test scores and fewer years of education completed.

However, food insecurity generally declined between 2009 and 2016. In 2009, 30.4% of households in the study were food insecure. This figure went down to 24% in 2013, then rose slightly back to 25.8% in 2016.

This study did not cover the COVID-19 pandemic period (the period since 2019), and there is strong reason to believe food insecurity increased during COVID-19.

Food insecurity is associated with many child development outcomes and can negatively affect children's cognitive, academic, and psycho-emotional developments.

And, while evidence on links between food insecurity and children's educational outcomes is well-established in the Global North, it is scant in the Global South.

The paper fills this gap.

The study is based on data from 2009, 2012, and 2016 of the Young Lives survey for India, which has followed the same children over time. The research team examined whether severe and persistent food insecurity were associated with children's educational outcomes.

These educational outcomes, measured when children were aged 8, 12, and 15 years old, included scores on a vocabulary test in the local language, scores on a math test, and the number of years of education the child completed.

The study found that both more persistent and more severe food insecurity were linked to lower test scores and fewer years of education completed. In fact, this study showed even the mildest form of food insecurity is detrimental for children's educational outcomes.

This was true even after the team accounted for a wide variety of child and household characteristics that might have explained this association.

For years of education, the researchers looked at how many fewer years of education children in food insecure households completed compared to those in food secure households.

Researchers took the overall average score of vocabulary and mathematics tests for all children in the study. They then looked at how far away children in food insecure households were from that overall average and compared the figures to those for children in food secure households.

The study found:

- Children from households that experienced persistent food insecurity ended up completing 0.19 fewer years of education compared with children from food secure households.

- Moderate/severe food insecurity was associated with completing 0.22 fewer years of education.
- Children from households with persistent food insecurity had lower test scores—by 0.15 standard deviations for vocabulary and 0.17 standard deviations for math.
- Moderate/severe food insecurity was associated with lower test scores, by 0.13 standard deviations for vocabulary and math.

Postdoctoral Research Associate Dr. Thomas Argaw, who led the study, said, "These values may seem to be small in magnitude. However, previous research shows the average effect of educational interventions in the Global South to improve learning do not often go beyond 0.10 standard deviation; this is considered a strong effect."

The study provides evidence that studies focusing on food insecurity should consider disaggregating food insecurity scores to show how different levels of severity might matter.

It adds value to the scant literature on this topic from the Global South, mostly importantly for adolescents, who are known as 'the forgotten population' in food insecurity research. It also paves the way for similar studies from the Global South, and provides evidence for policymakers to come up with proactive solutions to tackle food insecurity during the early stages of children's development.

Dr. Argaw added, "We say children are the future and education is the key to open doors. We should therefore proactively work to look for options that can reduce the burden of food insecurity on children and help children focus on their education."

Principal Investigator on the Food Security for Equitable Futures project Dr. Jasmine Fledderjohann, from Lancaster University, said, "Children's educational outcomes can have lasting implications across the lifecourse.

When household food insecurity means children are reducing their food intake, this can result in micronutrient deficiencies, impair cognitive development, and impact children's ability to concentrate in class."

"But, even beyond this, when children are in food insecure households, they might experience reductions in spending on their school fees and supplies. They may cut back on study time or miss school to earn money for the household. They might experience stigma and shame, and may be impacted by parental distress. Our findings highlight how consequential food insecurity can be for children's learning and educational progression."

More information: Thomas Lemma Argaw et al, Children's Educational Outcomes and Persistence and Severity of Household Food Insecurity in India: Longitudinal Evidence from Young Lives, *The Journal of Nutrition* (2023). DOI: 10.1016/j.tjnut.2023.02.008

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