

# REDUCING CHILD UNDERNUTRITION: WHICH PARENT’S EDUCATION MATTERS MOST?

**Parental education reduces child undernutrition; education of fathers and mothers is similarly important**



Laurie Ohlstein

## Overview

Reducing child undernutrition is a global development goal. To move towards this goal, a better understanding of the determinants of adverse nutritional outcomes such as stunted growth or being underweight is helpful. Traditionally, research in this area has emphasized the role of maternal education as a means to improve child health and, in particular, to reduce undernutrition, at the expense of neglecting the role of fathers. In an article published in the [International Journal of Epidemiology](#), Vollmer et al. (2016) systematically compare the role of maternal and paternal schooling in order to identify the differences between the two.

## Key Results

- **Education matters.** The probability of a child being undernourished decreases with both maternal and paternal education.
- **Fathers matter more than previously assumed.** When differences in demographic and socioeconomic factors as well as local area characteristics are accounted for, maternal and paternal education show a similarly strong effect on children’s undernutrition rates.
- **Channels are unclear.** It is not yet clear as to whether maternal and paternal education is related to children’s nutritional status through the same channels. Future surveys should include more information on the father’s attitude towards and knowledge about child health.

**By**

Christian Bommer, Sebastian Vollmer, SV Subramanian

The Growth to Empowerment (G2E) program within GrOW examines the impact of economic growth on women’s economic empowerment.

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## Background

According to the latest Global Nutrition Report<sup>1</sup>, more than 150 million children (24%) under the age of five are stunted, i.e. have a low height for their age; and roughly 50 million children (8%) are wasted (low weight for height). Despite ambitious goals to drastically reduce the prevalence of child undernutrition by 2025, recent progress has been disappointing. One way to combat this problem is by a better understanding of the socioeconomic determinants of children's nutritional status, helping stakeholders better target their resources at strategies that can effectively reduce child undernutrition.

Existing research shows us that there are strong linkages between maternal education and children's nutritional status. In contrast, the role of the father's education has received relatively little attention and existing evidence shows mixed results. The reason for the limited research in this area is a lack of data on fathers in many household surveys conducted in low-and middle-income countries (LMICs). Moreover, maternal and paternal



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education is highly correlated with each other, which makes it difficult to disentangle the two. Against this backdrop, Vollmer and colleagues provide the first systematic comparison of the relative importance of paternal and maternal education, using data and methods likely to overcome limitations of previous studies.

## Methods and Data

In order to evaluate the differences in the association of maternal and paternal education with child undernutrition, Vollmer et al. (2016) used the largest available dataset assembled from 180 Demographic and Health Surveys (DHS) collected in 60 LMICs between 1990 and 2014. This overcomes a key limitation of previous studies, as a sufficient number of children whose parents have attained different levels of education are needed to investigate differences in the relative importance of maternal and paternal schooling, thus solving the problem of high correlation.

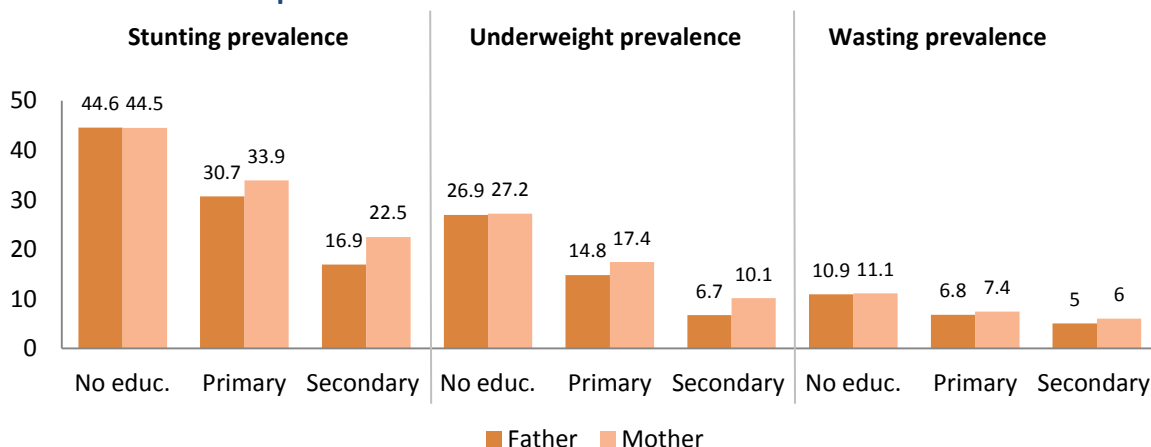
In their analysis, the authors estimate the probabilities of undernutrition for different combinations of maternal and paternal education, allowing a direct comparison of the impact of both factors. To investigate how the results change when potentially confounding variables are included, the study employs statistical models that take demographic and socioeconomic factors, as well as local area characteristics into account. Importantly, controlling for household wealth as well as the local area, in which surveyed individuals live in, largely eliminates the effect of education on income, and shifts the focus on behavior, values and care – channels commonly assumed to be more relevant for the mother.

The study also addresses the fact that educational degrees may tell very little about the actual effect of schooling. As such, specifications using years of schooling and related indicators as a means to compare maternal and paternal education are included. Statistical tools including linear and non-linear models were applied to show that findings are unlikely to be driven by modeling choices and reflect the true underlying data structure.

## Main Results

- **Education matters.** Both maternal and paternal education reduces the probability of undernutrition, particularly for stunting. This result is robust across various statistical estimation methods, and demonstrates the importance of investing in parental education.
- **Fathers matter more than previously assumed.** While naïve comparisons of the correlation between maternal or paternal education and child undernutrition suggest that the mother’s education is more important (Figure 1), the study demonstrates that this result is not robust: when demographic and socioeconomic characteristics as well as local area characteristics (which are likely to reflect the wealth of the neighborhood in which the families reside in) are accounted for, differences between maternal and paternal education disappear almost completely. This suggests that once the income and wealth channel is eliminated, the identity of the more educated spouse does not have any explanatory power.
- **Channels unclear.** To better understand the findings, further research is needed to investigate the channels through which maternal and paternal education operate. The fact that no substantial differences remain, once confounders are accounted for, does not necessarily imply that maternal and paternal education are equal. In particular, it may be the case that maternal education is effective through the channel of teaching mothers *how* to better care for their children, while paternal education may help raise awareness among fathers.

**Figure 1. Naïve comparison of maternal and paternal education suggests that mothers are more important**



Note: “No educ.” includes incomplete primary, “Primary” includes incomplete secondary, and “Secondary” includes higher education. Source: Source: Vollmer, S., Bommer, C., Krishna, A., Harttgen, K., & Subramanian, S. V. (2016). The association of parental education with childhood undernutrition in low-and middle-income countries: comparing the role of paternal and maternal education. International Journal of Epidemiology, dyw133.

## Policy Lessons

- Given the important role of education in reducing child undernutrition, policies aiming to improve educational outcomes in developing countries are likely to have a long-run beneficial effect on children's nutritional status. Given that substantial beneficial effects persist when household wealth and local area characteristics are accounted for, education cannot only be explained by the income channel. Instead, education is likely to shape attitudes and knowledge about child care.
- It should be emphasized that reducing undernutrition today and in the future are not necessarily conflicting aims for policymakers facing budgetary constraints. Instead, formal schooling may be an easy and cost-effective way to provide children from impoverished households with at least one warm meal per day, as demonstrated by the Indian Midday Meal Scheme.
- While higher education is beneficial for children's nutritional status, the gender of the more educated parent does not matter. Consequently, interventions addressing parental attitudes and knowledge about childcare should ideally address both parents to maximize the effects on child nutritional status.

## Open questions

While the findings show that the role of paternal education for reducing undernutrition in children may have been understated relative to maternal education, more research is needed on the particular channels which moderate this relationship. In this context, future surveys need to include more information on paternal knowledge and attitudes regarding child health and nutrition.

## Further Reading

Vollmer, S., Bommer, C., Krishna, A., Harttgen, K., & Subramanian, S. V. (2017). The association of parental education with childhood undernutrition in low-and middle-income countries: comparing the role of paternal and maternal education. *International Journal of Epidemiology*, 46(1): 312-323.

## Endnotes

1. International Food Policy Research Institute. 2016. Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030. Washington, DC.

## Ongoing Research

Currently, the GrOW G2E research team is engaged in comparative research from 12 developing countries to investigate the causal linkage between female employment and economic growth across a range of economic, social, and cultural settings.

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The **GrOW initiative** funds 14 research projects aimed to empower women to participate in economic activities, providing evidence that can inform social and economic policies to improve poor women's lives, while promoting economic growth.

**Research Project – G2E (Growth to Empowerment)** is a project of the GrOW initiative: Pathways for shared prosperity: Understanding the links between women's economic empowerment and growth.

### Information

<https://www.uni-goettingen.de/grow>

### Contact

Sophia Kan | [skan@uni-goettingen.de](mailto:skan@uni-goettingen.de)

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