



Has the Global Burden of Child and Maternal Malnutrition Changed Over 30 Years?

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Editor's Note: *Dr. Julie Evans (she/her) is a resident physician in pediatrics at the University of Virginia. She is interested in general pediatrics and global health. -Rachel Y. Moon, MD, Associate Editor, Digital Media, Pediatrics*

Child and maternal malnutrition (CMM) has long been a cause of death and disability. Malnutrition can cause death, stunting, wasting, diarrhea, acute infections, neurodevelopmental and cognitive impairment, and other adverse outcomes.

Intuitively, we would expect malnutrition to affect children globally, but there are limited studies looking at child and maternal malnutrition, and none that look at this burden globally. Luckily, Xingyu Gong, PhD, and colleagues from Anhui Medical University in Anhui, China, tackled this topic in their article entitled “The Global Burden of Disease Attributable to Children and Maternal Malnutrition: 1990-2019,” which is being early released this week in *Pediatrics* ([10.1542/peds.2023-064167](https://doi.org/10.1542/peds.2023-064167)).

The Global Burden of Disease (GBD) collaborators developed the Global Health Data Exchange GBD results tool, which offers a systematic evaluation of age- and sex-specific deaths and years lived with disability for a diverse set of diseases, injuries, and risk factors in 204 countries and territories. The authors used 2019 data to examine CMM associated with age, sex at birth, region, country, disease, and socio-demographic index (SDI) level in terms of four indices:

- Death

- Years of life lost (YLL): years of life lost due to premature death
- Years lived with disability (YLD): how long someone has been alive with their disability
- Disability adjusted life years (DALY): the sum of YLL and YLD, overall healthy years lost due to disability, ill health, or early death.

Overall, the total number of CMM-related DALYs, YLLs, and deaths decreased from 7.2 million in 1990 to 2.9 million in 2019. The authors suggest that this may be partially explained by aging and expanding populations, and declining birth rates, which decrease the risk of death from CMM.

However, global YLDs increased from 36 to 44.3 years. With advances in lifesaving interventions, children and adults are living longer, but are also living longer with disabilities. The most common causes of death, DALYs, and YLLs were maternal and neonatal conditions. YLDs were most often caused by nutritional deficiency, closely followed by maternal and neonatal conditions. This further reinforces the concept that gestational age at birth and maternal health are important factors for population health overall.

Low SDI regions—those that are the least affluent—experienced the largest rates of death, DALYs, YLLs, and YLDs caused by CMM. Low SDI regions can be deficient in accessible resources, have poorer quality medical care, lack of medications, and have higher prevalence of maternal conditions that could lead to a lower level of maternal and child survival attributing to this correlation.

In recent years, there has been less attention paid to child and maternal malnutrition; however, it still poses a threat to populations, especially those with low SDI. To continue decreasing CMM- related death and disability, strategies targeting all major determinants of CMM, such as neonatal care, together with nutrition-based treatments are needed.