

Parental education & inequalities in child mortality

A global systematic review and meta-analysis

The comprehensive study, *Parental education and inequalities in child mortality: A global systematic review and meta-analysis*, (The Lancet, 2021) provides the most comprehensive evidence to date showing the degree to which lower education of mothers and fathers is a risk factor for mortality of children under the age of 5.

The study was conducted by the Centre for Global Health Inequalities Research (CHAIN) in partnership with the Institute for Health Metrics and Evaluation (IHME) to systematically assess the impact of maternal and paternal education on child survival on a global scale. The results also advance the science around social determinants of health.

Interventions

It is crucial to **mobilise evidence-based investments in education**, especially towards universal education and the elimination of the gender gap in schools, as a potential mechanism to achieve SDG target 3.2 of reducing neonatal and child mortality.

Key findings

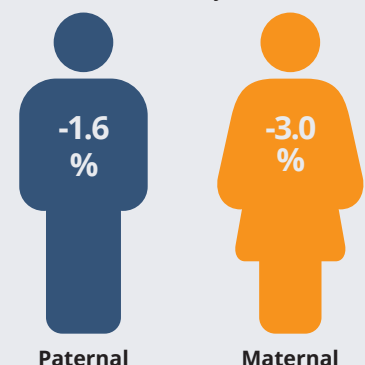
Lower parental education levels are risk factors for child mortality under the age of 5. This finding holds even after controlling for wealth or income, parents' partner's years of schooling, and sex of the child.

The CHAIN-IHME study also shows that:

- The educational attainment of both mothers and fathers is important. The importance of fathers' education for child survival has been under-communicated in the past.
- Each additional year is linked to an improvement in child survival. This pattern is seen across primary, secondary, and tertiary education. The work is not done once universal primary education is achieved.
- Education matters everywhere: there are no patterns showing that education is more important for child survival in some regions compared to others.

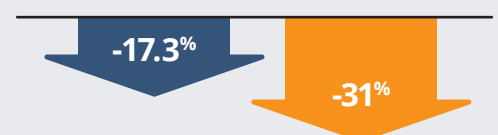
Increased maternal and paternal education are both linked with reduced all-cause child mortality globally

Each additional year of schooling leads, on average, to a **reduction** in under-5 mortality of



The health-protective effect of each parent's education is significant across all age groups. The effects accumulate and grow stronger as children age.

Compared to 0 years, 12 years of education is linked to a reduction of



The largest and most comprehensive study to date on the relationship between parental education and child mortality - How does the CHAIN-IHME study go beyond what we already know?

Including the under-examined effects of paternal education

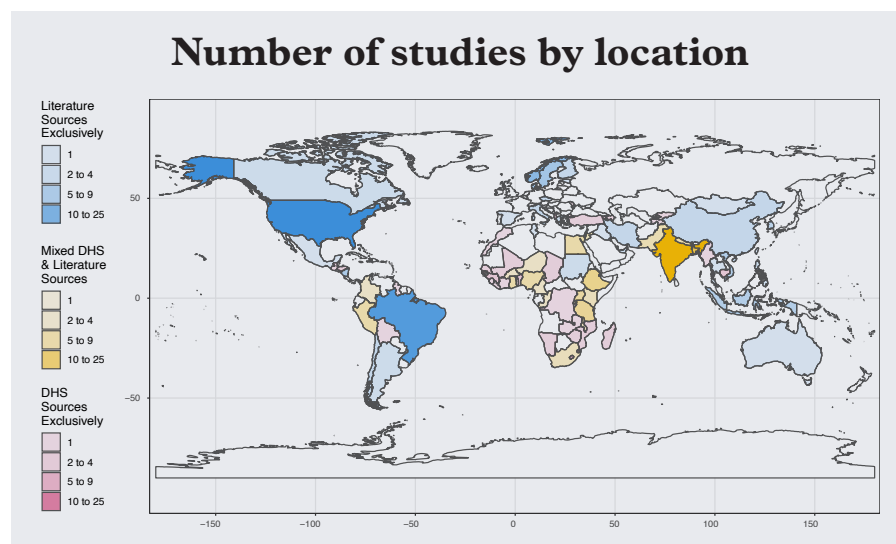
The effect of fathers' education on child mortality is critically under-examined, as the vast majority of studies have looked only at mothers' education. With this study, CHAIN and IHME make a major contribution to our understanding of the links between increased paternal education and lower child mortality.

Going beyond the neonatal period to six distinct age intervals

Studies to date have focused heavily on the first month of life (neonatal period). This study estimates the education-related reductions in under-5 mortality during distinct age intervals: *neonatal period* (0-27 days), *infancy* (1-11 months), and *childhood* (1-4 years).

Exceeding previous studies in scale, geographic scope and comprehensiveness

This CHAIN-IHME study significantly exceeds the scale of all previous research on the topic. It combines a time-, location-, and language-unrestricted systematic review and meta-analysis of all existing studies of the effects of parental education on neonatal, infant, and under-5 child mortality, with primary analyses of data from the Demographic and Health Survey (DHS).



300 studies

92 countries

- Systematic review:
 - 5,339 individual records captured by literature search
 - 7 databases searched
 - Full-text review in 15 languages
- DHS data:
 - 114 surveys
 - Capturing **3,112,474 live births**

The Sustainable Development Goals

Education offers a way to improve the health of future generations and promote sustainable development through improving opportunities, participation, and providing knock-on effects for other determinants of health.

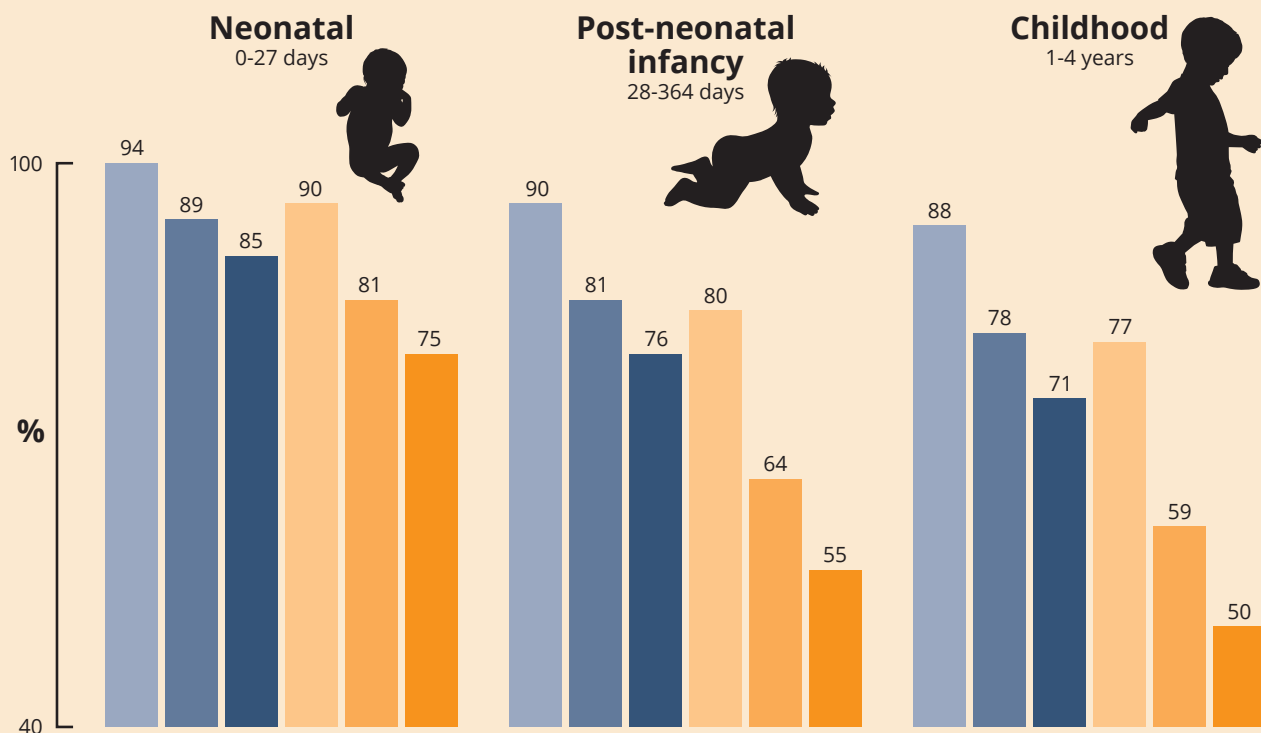
These results provide robust evidence to support **Sustainable Development Goal (SDG) 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all with universal quality education across the life-course.** Investing in education, particularly universal education and the elimination of the gender gap in schools, can contribute to achieving SDG target 3.2 of reducing neonatal and child mortality.

“With the recent robust evidence, the necessity of renewed focus on not only education but equitable education for disadvantaged population groups, especially girls, cannot be emphasized further.”

Excerpt from accompanying commentary by Zohra S. Lassi & Rehana A. Salam, “Education: A Key Social Determinant for Child Survival”.

Diving into the findings

Summary of relative risks of child mortality by parental education



Key findings

Increased education for either parent is significantly associated with lower levels of mortality for all child ages.

Compared to paternal education, higher maternal education is more strongly associated with child survival at every level.

Stronger effects can be seen after the first month of life.



Relative risks of mortality (shown as percentages with 95% confidence intervals) for neonates, infants, and children in relation to years of maternal and paternal education.

Neonatal mortality

The more years of education a parent has, the lower the risk of mortality in their first month of life. For each year of maternal education, the risk of neonatal mortality decreases by 1.8%; for paternal education, the risk decreases by 1.1%.

Causes of death in the neonatal period are strongly influenced by ante- and perinatal healthcare quality and access. It is therefore not surprising that the relationship between parental education and mortality is stronger in the post-neonatal period.

However, even a comparatively small reduction of neonatal mortality linked to parental education in relative terms may in fact contribute to a substantial number of lives saved in absolute terms.

Explaining the link between parental education and child survival

Education is an important determinant of health. Investing in education can contribute to improving health outcomes across the life course.

Exploring factors underlying the findings

The study demonstrates a strong link between parental education and child survival.

These findings may be explained and mediated by factors such as parents' health literacy, health-seeking behaviors, consanguinity factors and family structure, and quality of early care and education. The fact that the positive effect of fathers' education is smaller than that of mothers' education may reflect the gendered pathways through which parental education affects child mortality.

Indeed, increased female autonomy, resources, and knowledge may translate into improvements such as increased use of health services and health-seeking behaviours, greater autonomy in deciding parity levels, reduced fertility, and better child nutrition. Maternal education and literacy can also improve women's agency to influence family and childcare decisions.

Monitoring: Considerations for further research

This study is an important step towards understanding the distinct effect that education has on health generally, with child mortality examined here due to its stark and persistent global disparities. It can aid future research in measuring the impact of other markers of socioeconomic and gender inequalities and improving comparability across contexts.

Further research is needed to learn more about:

- Parental education and cause-specific child mortality.
- Parental education, trends in healthcare access and quality and child mortality.
- Relationships between quality of parental education and child mortality.
- Parental education and child mortality between ages 5 and 18.
- Pathways for the differences between maternal and paternal education on under-5 / child mortality.
- Causal research on the pathways of parental education's impact on child survival.
- The isolated unique impact of parental education in family's socioeconomic context.

This factsheet was based on Parental education and inequalities in child mortality: A global systematic review and meta-analysis (The Lancet, 2021).

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All references can be found in the article. The study contains detailed methodological descriptions and annexes.

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The Institute for Health Metrics and Evaluation (IHME) is an independent population health research center at UW Medicine, part of the University of Washington, that provides rigorous and comparable measurement of the world's most important health problems and evaluates the strategies used to address them. IHME makes this information freely available so that policymakers have the evidence they need to make informed decisions about how to allocate resources to best improve population health.

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