



Policy Brief

No. xxx?

/Monthxx 20xx?

Can a Mother's Education Affect Child Malnutrition?

Grace Kumchulesi¹

Executive Summary

Malnutrition among Malawian children under the age of five has remained persistently high in the past two decades. In our analysis, we found that children whose mothers have low education are particularly likely to have poor nutrition outcomes. Mother's post-primary education increases nutrition of children, hence attention should be paid to generally low post-primary education levels to improve child nutritional health. Previously, in keeping up with the millennium development goals, education policy in Malawi focused on universal primary education. This policy has managed to sustain primary school enrollments of over 90% since 1994. However, our findings indicate that this initiative will have only a small impact on child nutritional status and that universal secondary education would have a greater impact. The objectives of this policy brief are to highlight the importance of mother's education on child nutrition outcomes and to inform the Ministry of Education that extending the free primary education to secondary education can potentially reverse the current trend of child malnutrition in Malawi.

Introduction

Child malnutrition in Malawi is one public health and developmental problem that has made sluggish progress in the past two decades since 1992². Over the period 1992 and 2010, an average mortality rate of 48% of under-five children was envisaged?. The proportion is almost

¹Population Council, One dag Hammaraskjold Plaza, New York, NY 10017, USA. Email: gracek78@yahoo.co.uk

²Malawi has a series of cross-sectional data from the Demographic and Health Surveys, first of which was conducted in 1992.

25 times the level expected in a healthy, well-nourished population (National Statistical Office (NSO) and ORC Macro, 2011).

If the current trend of child malnutrition in Malawi continues, the country is unlikely to achieve the fourth Millennium Development Goal (MDG) of reducing infant and child mortality by two thirds by 2015.

Malnutrition is an important factor in the deaths of many young children. Even if a child is only mildly malnourished, the mortality risk is increased. Findings from the 2004 Malawi Demographic and Health Survey (MDHS) indicate that in Malawi, 34% of all deaths that occur before age five are related to both severe and moderate malnutrition. The contribution of moderate malnutrition was found to be higher at 30%, compared to the contribution of severe malnutrition, at 4% (NSO and ORC Macro, 2005).

Although increased risk of death remains the most serious concern of child malnutrition, economic consequences and other health outcomes are important. Among other things, children who are undernourished between conception and age two are at a high risk of illness and impaired cognitive development, which results in a lower education attainment. The longer-term consequences of malnutrition include reduction in workers' productivity and increased absenteeism in the workplace. Mishra (2011) found that childhood anemia alone is associated with a 2.5% drop in adult wages. Ultimately, a nation's productivity and economic growth get compromised if its workforce is comprised of unproductive workers. Because of its long-lasting burden and influence on the achievement of many MDGs, child malnutrition deserves urgent attention.

Methodology

In 2006, the World Health Organization (WHO) designed standards for calculating malnutrition indices from information on the weight and height of children between 6 and 60 months. The first index, height-for-age, is a measure of growth. A child who is considered short for his/her age is *stunted*, a condition reflecting chronic malnutrition.

Weight-for-height is the second index and it assesses a child's recent nutritional deficit. A child who is considered too thin for his/her height is *wasted*.

The third measure is the weight-for-age (*underweight*) index. Underweight does not distinguish between wasting and stunting and is an overall indicator of nutritional health. The study used stunting and underweight measures.

Data was collected from the 1992, 2000, 2004 and 2010 MDHSs. Although these surveys are independent, they were generally designed to provide information on, among other things, various indicators of child health and nutrition. The samples are sufficiently large and nationally representative as shown by the household, male and female sample sizes in Table 1 .

Table 1: Number of Households, Females and Males in the Demographic and Health Surveys

Year	Households	Females 15-49	Males 15-54
2010	27,000	24,000	7,000
2004	15,091	11,698	3,261
2000	14,213	13,220	3,092
1992	5,223	4,849	1,151 ³

Source: NSO and ORC Macro 1994, 2001, 2005, 2011

Results and Conclusions

There have been improvements in mother's education since 1992. Proportion of mothers with no education reduced from 54% in 1992 to 19% in 2010; and that of mothers with at least some primary education remarkably jumped from 45% in 1992 to 69% in 2010. Although the proportion of mothers with at least a secondary education increased from 1% in 1992 to 12% in 2010, more still needs to be done to encourage females to obtain a secondary education. Moreover, only a 3 percentage point increase was realized for mothers with both completed secondary schooling and tertiary education, from 0% in 1992 to 3% in 2010.

After controlling for other factors⁴, we found that education of the mother influences child nutrition outcome positively. In 1992, height-for-age Z-scores (HAZ)⁵ of children whose mothers had either a complete or an uncompleted primary education improved by 0.04 points, compared to that of children whose mothers did not receive any formal education. In 2010, the picture was similar for children whose mothers did not complete primary education. For children whose mothers had completed primary education, nutrition outcomes improved by 0.15 points.

The effect of secondary education on nutrition outcomes was more remarkable than that of primary education. The 1992 DHS suggests that compared to mothers with no education, the nutrition status of children whose mothers have some secondary education improved by 0.24 height-for-age Z-scores. The nutrition outcomes improved by a remarkable 0.37 to 0.61 HAZ for children whose mothers had at least completed secondary education. In 2010, having at least a secondary education qualification improved the HAZ by 0.04 to 0.19 from 0.15 if the mother had incomplete secondary education.

³ In 1992, men aged 20-54 were interviewed.

⁴ The control factors are child characteristics, including age and sex; household characteristics, comprising age and gender of the household head, mother's height, education of the mother's partner and wealth status; and community characteristics, namely, residence type and type of water source.

⁵ Children whose height-for-age Z-score (HAZ) and weight-for-age Z-score (WAZ) values are below minus two standard deviations from the median of the WHO Child Growth Standards adopted in 2006 are respectively considered stunted and underweight. HAZ and WAZ are continuous outcomes.

These findings are similar to those in the underweight model and support the findings of Makoka (2013) for Malawi, Tanzania and Zimbabwe; Kabubo-Mariara et al. (2009) in Kenya and Mbuya et al. (2010) in Zimbabwe, among others.

Implications and Recommendations

The free primary education currently offered in Malawi may not be sufficient to address child malnutrition. In 2010, child nutrition outcomes improved by only 0.04 points for children whose mothers had some primary education, compared to an improvement of 0.19 points for those children whose mothers had completed secondary education⁶. The policy implication of these findings is that the free primary education initiative will have only a small impact on child nutritional status and that universal secondary education would have a greater impact. While evidence⁷ exists that other factors, such as wealth status of the household in which the child lives, his or her age, feeding practices and the community in which the child lives affect the nutrition outcome of children, if literacy of mothers is not improved through attainment of a higher education level by the mother, child malnutrition in Malawi will remain high.

To address the problem of child malnutrition, we first recommend an extension of free primary education to secondary education. If maternal education is to play a significant role in reducing child malnutrition in Malawi, women need to be educated beyond the primary school level. It is quite understandable that the introduction of free secondary education policy can be challenging for a resource-constrained country like Malawi, which heavily relies on charging fees to parents to finance the education system. Therefore, the recommended policy can be implemented by making the secondary schooling partially free. For example, the cost of education can be reduced by abolishing school uniforms and other fees, while maintaining tuition fees.

For parents and guardians who are already out-of-school with low levels of education, nutritional education programs may be offered to help them attain better nutritional outcomes for their children.

References

- Chirwa, E.W. and Ngalawa, H.P.E., 2008., Determinants of Child Nutrition in Malawi, South African Journal of Economics Vol. 76:4.
- Kabubo-Mariara, J., Ndenge, G.K. and Mwabu, D.K., 2009. Determinants of Children's Nutritional Status in Kenya: Evidence from Demographic and Health Surveys." Journal of African Economies 18(3): 363–87.
- Kumchulesi, G., 2013. *Child Malnutrition in Malawi*, Unpublished Manuscript.
- Makoka, D., 2013. The Impact of Maternal Education on Child Nutrition: Evidence from Malawi, Tanzania, and Zimbabwe, DHS Working Paper No. 84.
- Mbuya, M.N.N., Chidem, M., Chasekwa, B. and Mishra.V., 2010. Biological, Social, and Environmental Determinants of Low Birth Weight and Stunting among Infants and

⁶These figures compare with children whose mothers had no formal schooling.

⁷For example, Chirwa and Ngalawa (2008).

- Young Children in Zimbabwe, Zimbabwe Working Papers, No.7. Calverton, MD, USA: ICF Macro.
- Mishra, U., 2011. The Imperative of Improving Child Nutrition and the Case for Cash Transfers in Cambodia, UNICEF.
- National Statistical Office (NSO) and ORC Macro, 1994. Malawi Demographic and Health Survey 1992, Calverton, Maryland: NSO and ORC Macro.
- National Statistical Office (NSO) and ORC Macro, 2001. Malawi Demographic and Health Survey 2000, Calverton, Maryland: NSO and ORC Macro.
- National Statistical Office (NSO) and ORC Macro, 2005. Malawi Demographic and Health Survey 2004, Calverton, Maryland: NSO and ORC Macro.
- National Statistical Office (NSO) and ORC Macro, 2011. Malawi Demographic and Health Survey 2010, Calverton, Maryland: NSO and ORC Macro.
- WHO Multicentre Growth Reference Study Group, 2006. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development, Geneva: World Health Organization.