Explaining Child Malnutrition in Developing Countries

A Cross-Country Analysis

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Foreword

One in three preschool children in the developing world is undernourished. As a consequence, their human rights are violated. In addition, they are more likely to have impaired immune systems, poorer cognitive development, lower productivity as adults, and greater susceptibility to diet-related chronic diseases such as hypertension and coronary heart disease later in life. Undernourished female preschoolers are likely to grow into undernourished young women who are more likely to give birth to babies who are undernourished even before they are born, thus perpetuating the inter-generational transmission of deprivation.

Reducing these unacceptably high numbers remains a tremendous challenge to public policy. As a guide to the direction of future efforts, this research report examines the success of the efforts of the past 25 years to reduce preschooler undernutrition. The report uses an econometric model to identify the factors associated with the reduction in undernutrition. The formulation of the econometric model is guided by the widely accepted food-care-health conceptual model of child growth. The contributions of both underlying and basic determinants to reductions in undernutrition are assessed using the model. The potential of these factors to further reduce undernutrition is evaluated in a region-by-region priority-setting exercise. In addition, projections of child nutrition are made under various scenarios to the year 2020. What will it take to dramatically reduce undernutrition in the next 20 years? The report attempts some broad answers to these questions. This work represents one component of IFPRI’s 2020 Vision initiative and will continue to be updated periodically.

Because the results of this research are so important to policymakers, IFPRI is also publishing a less technical version of this report as a 2020 Vision discussion paper titled Overcoming Child Malnutrition in Developing Countries: Past Achievements and Future Choices, Food, Agriculture, and the Environment Discussion Paper 30, available in February 2000.

Per Pinstrup-Andersen
Director General
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Summary

Developing countries have made great strides in reducing child malnutrition over the past few decades. The prevalence of underweight children under five years of age in the developing countries was 46.5 percent in 1970. By 1995 it had dropped to 31 percent (167 million children), indicating that while past progress has been substantial, it still has a long way to go. This research draws on the experience of 63 countries during 1970–96 (1) to shed light on some of the main causes of child malnutrition, (2) to project how many children are likely to be malnourished in the year 2020 given current trends, and (3) to identify priority actions for reducing malnutrition most quickly in the coming decades.

The determinants of child malnutrition can be divided into three levels of causality: immediate, underlying, and basic. The immediate determinants are dietary intake and health status. They are influenced by three underlying determinants, on which this report focuses: food security, care for mothers and children, and health environment quality. Four explanatory variables represent these concepts: per capita national food availability (for food security), women’s education and women’s status relative to men’s (for both food security and care), and safe water access (for health environment quality). The report also examines the role of two basic determinants that influence child malnutrition through their effects on the underlying determinants. These are economic resource availabilities and the political environment. The explanatory variables representing these two factors are per capita national income and democracy.

Of the explanatory variables that represent the underlying determinants, women’s education is found to have the strongest impact on child malnutrition. It is followed closely in strength of impact by per capita food availability. As the amount of food available per person increases, however, its power to reduce child malnutrition weakens. Women’s status relative to men’s and the quality of a country’s health environment also strongly affect child malnutrition. For the developing countries as a whole, however, these two factors do not have as strong an influence as women’s education and per capita food availability.

Per capita national income and democracy are both important factors influencing child malnutrition. Per capita national incomes reduce malnutrition by increasing public and private investment in all of the underlying-determinant variables. Democracy
affects child malnutrition at least partially through improvements in safe water access and increases in per capita food availability.

One of the limitations of the study is that it is unable to consider the effects of food security or poverty on child malnutrition because sufficient data are lacking. However, it should be recognized that having enough food available per person at a national level is a necessary but not sufficient condition for that country to achieve food security; households must also be able to access available food in order to achieve adequate nutrient intakes for their children on a sustainable basis. Similarly, increases in the amount of income available per person are a necessary but not sufficient condition for reducing poverty. How the available income is distributed among a country’s population is also important.

As a result of the strong influence of women’s education and the substantial progress made in increasing it, women’s education is estimated to be responsible for almost 43 percent of the total reduction in child malnutrition that took place from 1970 to 1995. Improvements in per capita food availability have contributed about 26 percent to the reduction, health environment improvements 19 percent. Because there was little improvement in women’s status relative to men’s over the 25 years, its contribution—while still substantial—was the lowest (about 12 percent). Through improvements in the underlying-determinant variables, increases in per capita national income have made a very large contribution—roughly 50 percent of the total reduction in the prevalence of child malnutrition during 1970–95. While increases in democracy have great potential for reducing child malnutrition, no progress has been made in this area for the developing countries as a whole, and therefore it has made no contribution.

If current trends continue, the prevalence of child malnutrition is projected to remain high in the year 2020, with roughly 20 percent of all developing-country children under age five, or 140 million children, malnourished. South Asia and Sub-Saharan Africa will remain the regions with the highest child malnutrition rates. The absolute numbers of malnourished children in Sub-Saharan Africa are expected to be higher in 2020 than they were in 1995. A sharp regional shift in the location of child malnutrition is projected: South Asia’s share of the total number of malnourished children will fall from approximately 51 percent to 47 percent, but Sub-Saharan Africa’s share will rise from 19 percent to near 35 percent.

However, the future does not have to look like the past. The findings of this report indicate that significant progress can be made toward reducing child malnutrition through accelerated actions in sectors that have not been the traditional focus of nutrition interventions. Increased investments in women’s education, in raising food supplies (or reducing population growth), in measures that improve women’s status relative to men’s, and in health environments should be an integral part of strategies for reducing children’s malnutrition in the future. These investments should be seen as complements to more direct nutrition interventions, such as breast-feeding promotion and nutrition education.

A key message of the report is that any comprehensive strategy for resolving the problem of child malnutrition must include actions to address both its underlying and basic causes. If national incomes and democracy are not improved, on the one hand,
the resources and political will necessary to increase investment in health environments, women’s education, women’s relative status, and food availability will not be forthcoming. On the other hand, if national incomes and democracy improve, but additional resources are not directed toward improving the underlying determinants, the improvements will make little difference.

Given resource constraints and the costs of alternative interventions, how should policymakers prioritize investments to reduce child malnutrition most quickly? The investments that should receive priority will differ by geographical area because they differ in (1) the relative strength of the determinants’ effects and (2) the current progress in reaching the determinants’ desired levels. The top priorities in each developing region, based on consideration of these two criteria, vary greatly.

In Sub-Saharan Africa and South Asia—the regions with the highest rates of child malnutrition—improvements in per capita food availability and women’s education offer the best hope for future reductions in child malnutrition. An additional secondary priority for South Asia is promotion of women’s status relative to men’s. In East Asia, the Near East and North Africa, and Latin America and the Caribbean, the primary priority is women’s education and a second priority is women’s status relative to men’s. Additional priorities are food availability for East Asia and health environment improvements for Latin America and the Caribbean. To maintain the necessary resource base and political will for these investments, investments in national income growth and democratic development must be accelerated as well.