

Findings



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Nutritional Status and Poverty in Sub-Saharan Africa

Introduction

Sub-Saharan Africa (SSA) has had an aggregate malnutrition rate of nearly 30 percent for the last decade. While malnutrition prevalence has decreased significantly in most other developing countries in the last decade, it has been nearly static for SSA. This static trend in the percentage of malnourished children, however, does not fully reflect the rapidly rising numbers of malnourished children given SSA's high population growth rate. The LSMS/ISs (Living Standards Measurement Survey/ Integrated Survey) and PSs (Priority Survey) over the last decade provide for the first time data to undertake a more comprehensive analysis of the factors that could affect malnutrition in selected countries in Sub-Saharan Africa.

Based on LSMS data, determinants of malnutrition are investigated for Côte d'Ivoire and Ghana. Both studies find that household expenditure plays an important role in improving the preschool-age children's long-term nutritional indicator status (height-for-age), but not the short-term nutritional indicator status (weight-for-height). Nutritional studies have found that linear (height-for-age) growth and ponderal (weight-for-height) growth have different nutritional requirements. While inadequate energy intake is the main reason for wasting (low weight-for-height), stunting (low height-for-age) can be caused by numerous nutrient inadequacies. Just as overall dietary inadequacy (also called protein-energy malnutrition) causes stunting, so does deficiency in any of a large number of micronutrients. Micronutrients are concentrated in specific foods and are low or absent in staple grains and legumes. Since the specific foods are often more expensive than staples, stunting and wasting may be affected differently by income. The purpose here is to review the evidence for this proposition using available data from SSA countries.

There are now 22 LSMS and PS data sets containing anthropometric information for 14 Sub-Saharan countries. Using these newly available data, malnutrition rates among children under age 5 are examined for 10 of these countries, which account for 27% of total Sub-Saharan population. These 10 countries are Burkina Faso, Côte d'Ivoire, Djibouti, Ethiopia, Ghana,

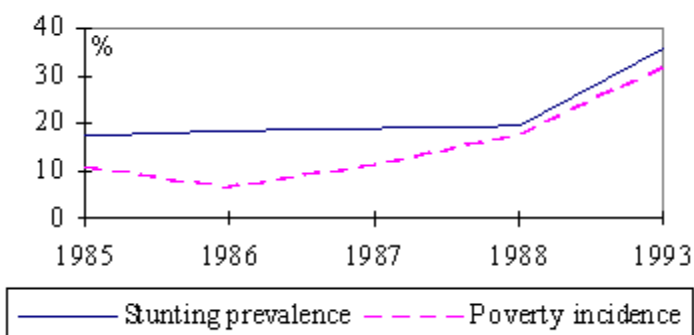
Guinea, The Gambia, Kenya, Madagascar and Senegal. Among these 10 countries, Côte d'Ivoire has 5 data sets in time series. All other countries have one year of data. Based on these data, stunting and wasting rates are compared for children between poor and non-poor, and between rural and urban (poor children are defined as children who live in households with income per capita below two-thirds of the mean national income per capita).

Low Height-for-age (stunting)

The calculation of the stunting (low height-for-age) rate for these Sub-Saharan countries shows that in 8 out of 10 cases stunting is more prevalent among poor than among non-poor children (Ethiopia and Guinea were exceptions) and in 10 out of 10 cases stunting is more prevalent in rural than in urban areas. This might be expected since it is well known that in rural areas poverty is generally higher, the provision of health services less adequate, clean drinking water more scarce, and hygiene and education levels lower than in urban areas.

For Côte d'Ivoire, there are 5 years of survey data available (1985, 1986, 1987, 1988 and 1993), which can be characterized as two periods : first, 1985-1988, which is a period of gradual decline in household expenditure (except 1986); and second, 1988-1993, which is a period of rapid decline in household expenditure. Poverty incidence increased from 11% to 18% from 1985 to 1988 and from 18% to 32% from 1988 to 1993. Figure 1 shows that from 1985 to 1988, the period of gradual economic decline, stunting prevalence changed slightly for the worse. However, from 1988 to 1993, the period of rapid economic decline, stunting prevalence increased almost proportionally to the increase in poverty. The stunting rate among children born in this period is 80 percent higher than those who were born before 1988. This suggests that while households can buffer children against mild economic stress, they have much greater difficulty protecting their children during dramatic economic downturns.

Figure 1 : Côte d'Ivoire, 1988-93: Stunting prevalence among children under 5



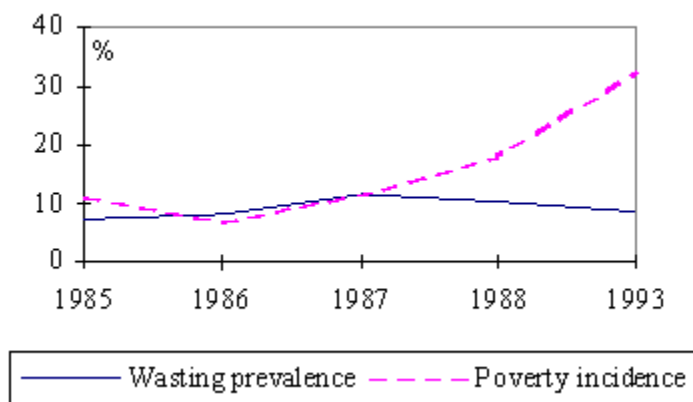
Low Weight-for-height (wasting)

The calculation of the wasting rate shows that wasting prevalence is slightly higher among poor than among non-poor children in 8 out of 10 cases. However, there is no clear pattern in regard to wasting prevalence between rural and urban areas, even though the disparities in health

service access, education, water and sanitation mentioned in connection with stunting are also applicable. These results are consistent with most of studies, which, in general, do not show a definite relationship between wasting prevalence and income levels.

The time series data of Côte d'Ivoire do not show any consistent pattern between poverty and wasting prevalence (Figure 2). Especially from 1988 to 1993, while poverty increased substantially, wasting prevalence decreased. This could be partially explained by "seasonality" since while the surveys from 1985 to 1988 were conducted all year long, the 1993 survey was only conducted from June-November 1993. It is well documented that children can lose weight during the hungry and high malaria season. However, in Cote d'Ivoire, since June to November covers different seasons and seasons differ in the country from north to south, further investigation would be needed to evaluate the impact of this seasonality on children's weight.

Figure 2 : Côte d'Ivoire, 1988-93: Wasting prevalence among children under 5



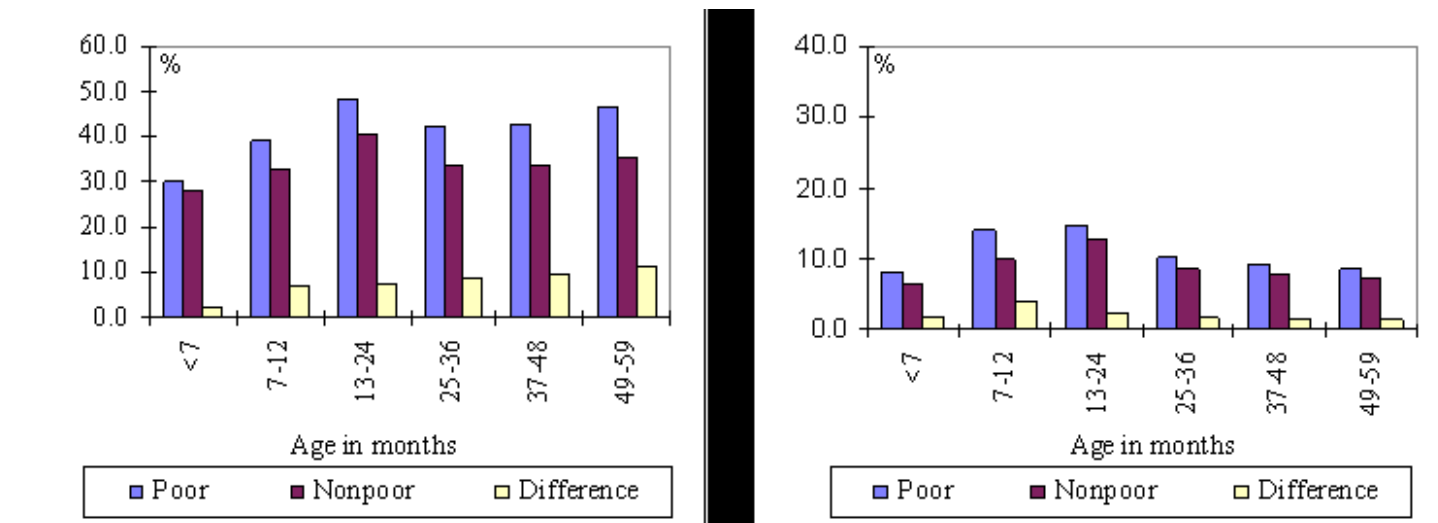
The analysis of these newly available data generally supports results from earlier studies regarding the relationship between malnutrition and household income levels. Stunting is more closely related to income levels, while wasting is highly variable and appears to be unrelated per se to household expenditures at low income levels.

Income, the quality of nutrition and nutritional status

It is well documented that malnutrition rates rises during the period 6 months to 2 years, which is principally because children in this age group have special nutritional needs. Grains and legumes, the staples for low income households, are not ideal foods for toddlers (under 2 years). Damage done in this period is often not reversible in later years. More digestible, denser nutrition (and micronutrients) would contribute to the healthy growth of these children. Foods that meet those requirements, however, are often more expensive in both money (e.g. vegetable oil) and preparation time (food processing). It is the special nutritional needs that make these very young children most vulnerable to malnutrition. Thus, the relationship between the quality of the diet (including diet density and micronutrients) and levels of income/expenditure in households are important, little understood and would benefit from intensive investigation.

Figures 3 and 4 present results of stunting and wasting rates reflecting differences between poor and non-poor children among different age groups, aggregating selected data sets from the 10 countries. Figure 3 shows that the difference (in percentage points) in stunting between poor and non-poor children goes up steadily as the age of young children rises. In contrast, Figure 4 shows that the difference (in percentage points) in wasting between poor and non-poor children peaks at 7-12 months and then gradually decreases. In addition, the magnitude of the difference in stunting between poor and non-poor children is much greater than that for wasting.

Figure 3 : Stunting prevalence for children under 5 by poor/non-poor under 5 by poor/non-poor



There may be various factors explaining such differences, e.g. disparities in education levels, access to health services, exposure to information, education and communication messages, mother's time and labor demands, availability of water and sanitation, etc. One such factor from a nutritional perspective is that at low income levels, households consume staples (grains and legumes), which are primary sources of energy and protein and largely satisfy the energy need for the ponderal growth of children older than 2 years. However, in addition to energy and protein, linear growth requires a number of key micronutrients, which are mostly concentrated in the sauces, seasonal foods, condiments and festival foods (leafy greens, yellow fruits and vegetables, meat, and milk) and are likely to be less regularly affordable by poor households. That wasting rates peak at ages 7-24 months emphasizes the need for quality calorie and protein intake by children under age 2. As young children pass 2 years of age, they can absorb adequate calories and protein from staple foods, as demonstrated by the shrinking gap between poor and non-poor children after age 2. The increasing gap in the stunting rate (Figure 3), on the other hand, indicates a continued deficiency in micronutrients in poor children's diet. This difference in affordability of quality energy and key micronutrients as part of the regular diet may explain, at least partially, why stunting, but not wasting, is consistently found to be related with income levels. From an economic point of view, the results of wasting unrelated to income levels may also indicate that in Sub-Saharan Africa, non-poor households in general do not have a higher capacity compared with poor households to deal with sudden and severe stress, such as infection and famine, that causes weight loss.

Conclusion

In Sub-Saharan Africa, poverty is seen as one of the main factors contributing to the high and static prevalence of malnutrition. Significant poverty reduction would be a necessary contributor to any significant improvement in nutritional status in SSA. The data from Côte d'Ivoire demonstrate that during a period of economic decline, the nutritional status of a population is likely to deteriorate as well. However, this experience would not indicate that economic growth would necessarily improve nutritional status at an equal pace. Improvements in income for the poor and their food security, both in terms of quantity and quality, and better-designed programs in nutrition and health may have a more significant impact on nutritional status.

This article is based on " Status Report on Poverty in Sub-Saharan Africa, 1997, Tracking the Incidence and Characteristics of Poverty," Draft SPA study, World Bank, Washington, D.C. For more information, please contact Xiao Ye, Rm. J2-100, World Bank, 1818 H Street NW, Washington, D.C. 20433. Tel. no. : (202) 4588037; e-mail address : xye@worldbank.org

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