



Child Anthropometrics and Malnutrition in Malawi

In 2010/11, Malawi's National Statistics Office, in collaboration with the World Bank, conducted the Third Integrated Household Survey (IHS3), which collects nationally representative data from 12,271 households on several dimensions of welfare and income-generating activities. The IHS3' sample forms the basis for wave 1 of the Integrated Household Panel Survey (IHPS). Wave 2 was completed in 2013 and will be available in 2014. This note summarizes the anthropometric data and resulting malnutrition indicators from IHS3¹.

Background: Child Anthropometrics

The three anthropometric indicators most often referenced for monitoring malnutrition in children are: stunting, or low height-for-age; underweight, low weight-for-age; and wasting, low weight-for-height. More specifically, these figures represent children whose height-for-age, weight-for-age, and weight-for-height fall more than two standard deviations below the median of internationally accepted growth standards. Thus, a child is labeled stunted if he or she has a height-for-age z-score that is less than -2.

Table 1 shows the stunting, underweight, and wasting, prevalence estimates for Malawi. The data reveal that of children 6-59 months old, 31 percent are stunted, 7 percent are underweight, and 3 percent suffer from wasting.

Table 1: Malnutrition estimates

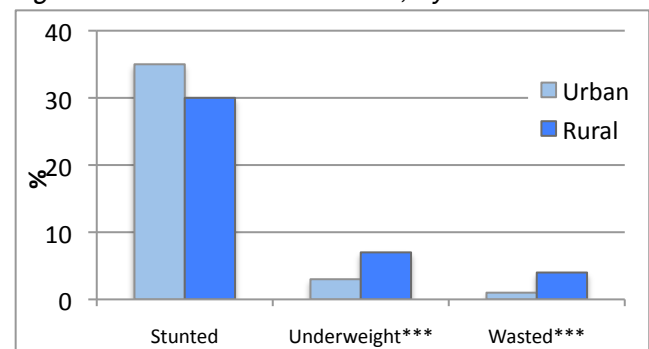
| | Prevalence (%) (Std. Error) |
|-------------|--------------------------------|
| Stunted | 31 (2) |
| Underweight | 7 (1) |
| Wasted | 3 (1) |

Geographic Differences in Malnutrition

Looking at the data further, we can identify geographic areas with particularly high rates of

malnutrition. Interestingly, while rural areas face a higher burden of underweight and wasting, urban areas have a higher prevalence of stunting, although the difference is not statistically significantly different (see Figure 1).

Figure 1: Malnutrition estimates, by rural and urban



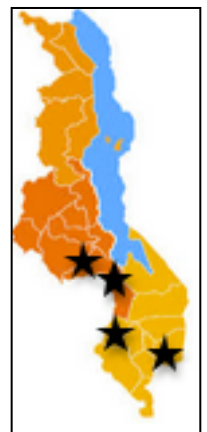
Note: *** Difference is significance at $p < 0.01$

Table 2 shows the regional averages for stunting, underweight, and wasting among children under-5. All three indicators are significantly lower in the Northern Region; 12, 39, and 29 percent of children are stunted in the Northern, Central, and Southern regions, respectively.

Table 2: Malnutrition estimates, by region

| Region | Stunted (%) (SE) | Underweight (%) (SE) | Wasted (%) (SE) |
|---------|---------------------|-------------------------|--------------------|
| North | 12 (1) | 2 (0) | 2 (0) |
| Central | 39 (2) | 8 (1) | 4 (1) |
| South | 29 (2) | 6 (1) | 3 (0) |

Wasting is a measure of acute malnutrition; it typically results from severe cases of diarrhea or food insecurity, and thus looking at geographic disparities in wasting may help identify regions needing immediate attention. The IHS3 was stratified by district and has 31 domains of analysis. The districts Neno, Phalombe, Dedza, and Salima, all concentrated in the southern half of Malawi, have wasting prevalence estimates at 8 percent or above (see map).

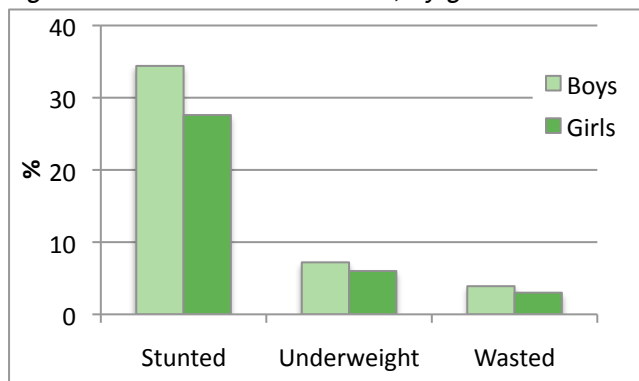


¹ The final sample for this analysis included 7,714 children aged 6-59 months

Identifying Vulnerable Sub-Populations

In developing countries, boys typically exhibit higher rates of malnutrition than girls. Uganda proves to be no exception; 34 percent of under-5 boys are stunted, compared to only 28 percent of under-5 girls (see Figure 3).

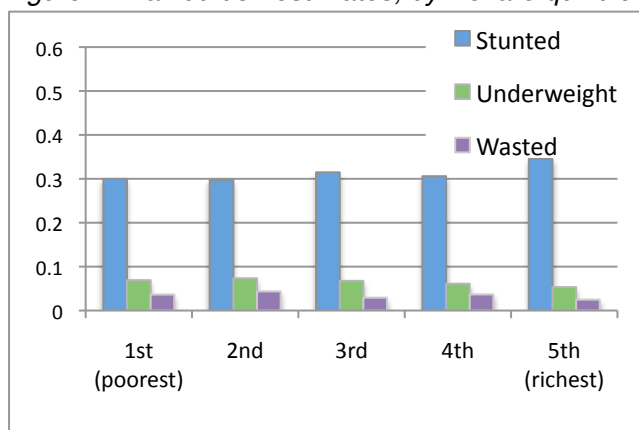
Figure 3: Malnutrition estimates, by gender



Despite a consensus in the literature that children living in households with female and/or educated heads tend to have better health outcomes, there is no such difference observed for stunting, underweight, or wasting prevalence among Malawian children. However, having a chronically ill household head is associated with higher rates of wasting at 6 percent, compared to only 3 percent for children living with a healthy head of household.

We used household consumption to create welfare quintiles. The poorest households are grouped into the 1st quintile and the richest households fall into the 5th quintile. Overall, and perhaps surprisingly, we find no decrease in malnutrition as one moves from the poorest to the top quintile (see Figure 4).

Figure 4: Malnutrition estimates, by welfare quintile



Although the welfare gradient does not seem to be associated with malnutrition, a household's

ownership of certain assets is strongly correlated with lowering all three malnutrition indicators. Children living in households without a refrigerator are more than twice as likely to be stunted, seven times as likely to be underweight, and twice as likely to be wasted, than those whose households own a refrigerator (see Table 3). Similarly, households owning a television have lower rates of stunting, underweight, and wasting among children under-5.

Table 3: Malnutrition and household assets

| Asset | Stunted | Underweight | Wasted |
|----------------------|---------|-------------|--------|
| TV (%) | | | |
| <i>Owns a tv</i> | 26** | 3*** | 2*** |
| <i>No tv</i> | 31** | 7*** | 4*** |
| Fridge (%) | | | |
| <i>Owns a fridge</i> | 14*** | 1*** | 2*** |
| <i>No fridge</i> | 31*** | 7*** | 4*** |

Note: ** Difference is significant at $p < 0.05$; *** Difference is significance at $p < 0.01$

Analysis of the IHS3 anthropometric data suggests that Malawi faces a high burden of malnutrition, a conclusion that matches that of the current literature. Identifying particularly vulnerable groups, such as children the Central and Southern regions, boys, and those living in households without a refrigerator or television, can help policy makers target nutrition programs more effectively.

This brief was prepared by Ilana Seff, World Bank, based on data collected by the National Statistics Office as part of the Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA) project. The full dataset is available for download at NSO via <http://www.nsomalawi.mw/>.



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