

Taking Action for the World's Poor and Hungry People

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SPEAKER SUMMARY NOTE

Session: HOW TO IMPROVE THE MEASUREMENT OF CHILD MALNUTRITION: Strategies for Effective Implementation of Intervention

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Title: Can Indicators of Child Malnutrition be Improved—And For What Purposes?

Accurate measures of child malnutrition are needed for:

- (i) Growth and weight references for child monitoring in all countries (WHO).
- (ii) Assessing the overall prevalence of child malnutrition in poor countries and gauge trends over time (e.g., the MDG).
- (iii) Identifying children at the highest morbidity and mortality risks in poor countries so as to accomplish efficient targeting in intervention programs.

Regarding (i), the WHO recently (2006) published revised growth and weight charts that hopefully are improvements on the earlier WHO/NCHS ones. The drawback is that the comparability between recent estimates of child malnutrition, based on the new norms, and earlier estimates, based on the previous norms, will be compromised (rectifiable?).

Counting the malnourished

In the presentation, I will focus on (ii) and (iii). The basic idea was set out briefly in my book (2000): we need a more disaggregated classification of child anthropometric failure than offered by the standard Waterlow 3-tier scheme. This scheme delineates only **stunting**, **underweight** and **wasting**, but many children have double or triple anthropometric handicaps, being either:

- * **Stunted and underweight**
- * **Wasted and underweight** (Figure 1)
- * **Stunted, underweight and wasted.**

When these 6 categories are summed up, in a **composite index of anthropometric failure (CIAF 1)**, we get a more comprehensive estimate of the total burden of child malnutrition in a population. In India, for instance, the share of children belonging to one or more of the 6 categories of anthropometric failure was 60 percent in 1998/99. The shares of the children classified as stunted and underweight were 45 percent and 47 percent, respectively (Figure 2).

Predicting mortality risk

The traditional markers of child malnutrition, stunting, underweight and wasting, have been found to be rather blunt predictors of elevated risk of child mortality (or morbidity). In most prospective studies, most of the initially stunted or underweight children survive (error of inclusion) and many children with normal anthropometric status die (error of exclusion).

A recent investigation, based on my 6-tier classification system, showed that children in India with triple handicaps, being stunted, underweight and wasted (category 4 in Figure 1), live in the poorest households and have the highest incidence of morbidity (Figure 3). Moreover, children with double anthropometric failures (categories 3 and 5) are more frequently ill than children who suffer a single handicap (statistically significant).

In ongoing work, I have extended the 6-tier scheme to include as malnourished children who are:

- * **Overweight and stunted (7)**
- * **Overweight (8)** (Figure 4)
- * **Overweight and wasted (9)**

The rationale is that child overweight is on the increase in a large number of poor countries. In China, 12.5 percent of the children are overweight or obese, and 40 percent have a weight for age 1 standard deviation above the new WHO median norm (approaching overweight). In Mexico, 5–10 percent of rural children have a form of double-burden malnutrition not observed earlier: they are stunted concurrent with being overweight. (Being overweight and wasted is a theoretical possibility, but probably non-existent.)

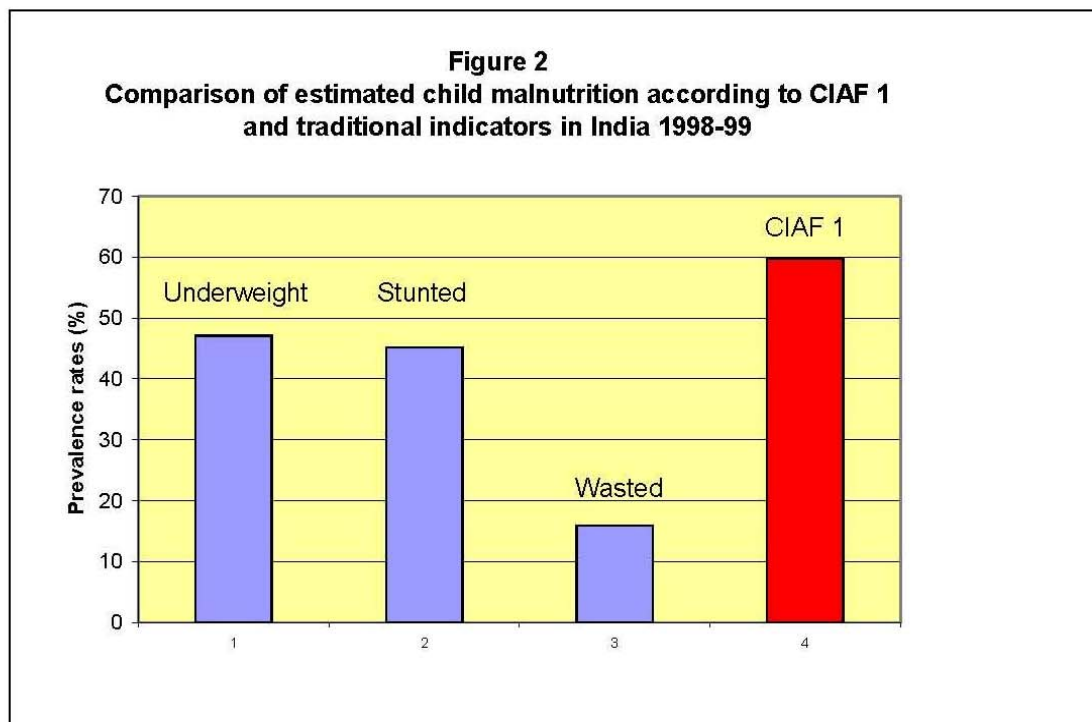
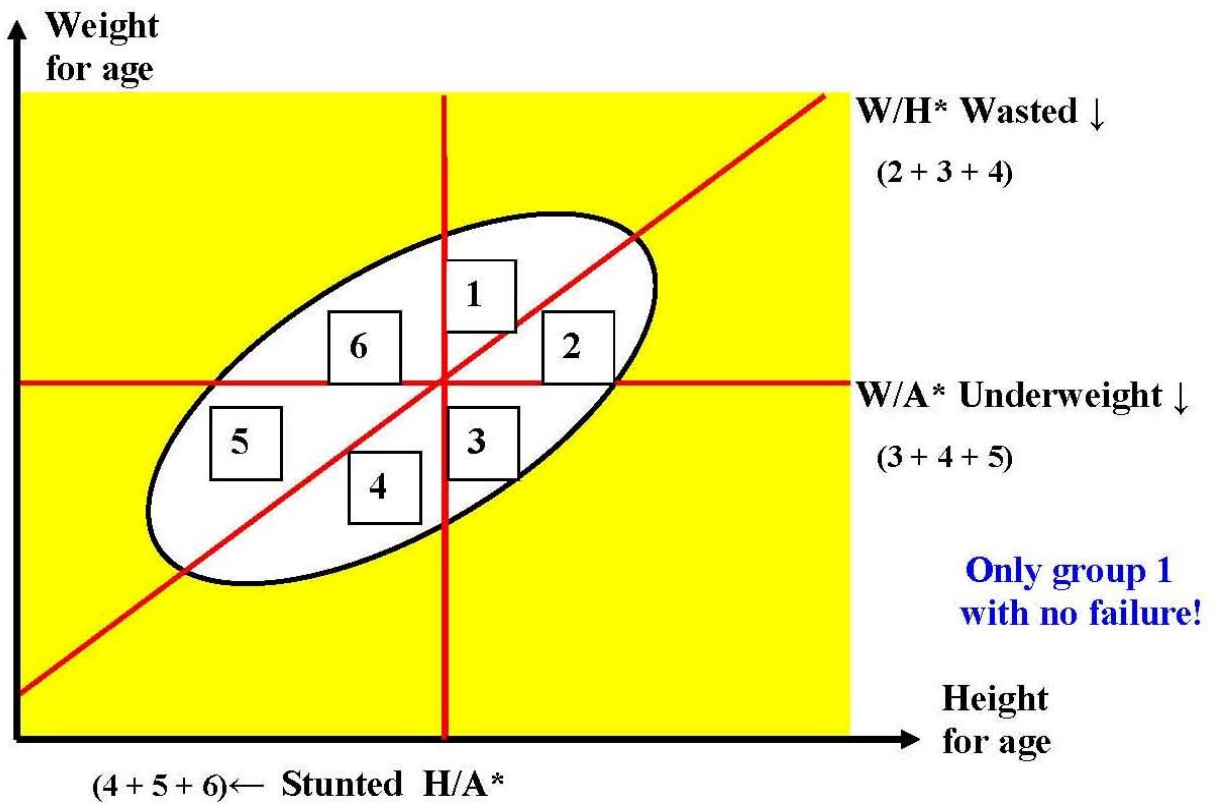
Summary

1. The **composite index of anthropometric failure** provides a more comprehensive measure of the overall burden of child malnutrition.
2. The more **detailed anthropometric classification scheme** seems to provide more accurate predictions of subsequent child morbidity (and mortality?).

References

- Fernald, L. C., and L. M. Neufeld. 2007. Overweight with concurrent stunting in very young children from rural Mexico. *European Journal of Clinical Nutrition* 61: 623–632.
- Nandy, S. et al. 2005. Poverty, child undernutrition and morbidity: New evidence from India. *WHO Bulletin* 83: 210–216.
- Svedberg, P. 2000. *Poverty and undernutrition: Theory, measurement, and policy*. Oxford: Oxford University Press.

Figure 1. Estimating the Total Burden of Child Malnutrition (CIAF 1)



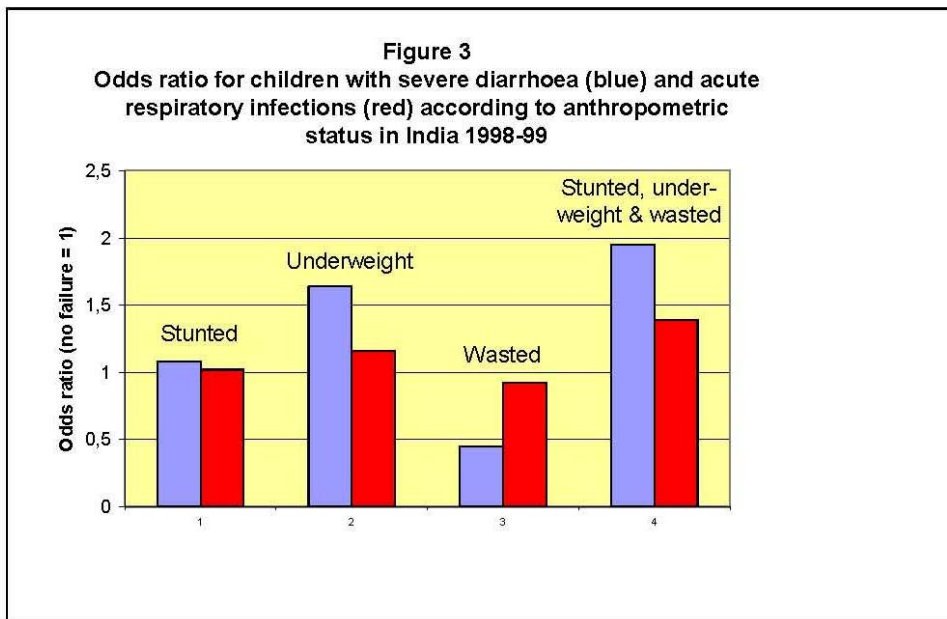


Figure 4. Estimating the Total Burden of Child Malnutrition including Overweight (CIAF 2)

