

HUNGER OF THE BODY, HUNGER OF THE MIND: A COMPARATIVE ASSESSMENT OF CHILD ANTHROPOMETRY AND HOUSEHOLD FOOD SECURITY¹

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INTRODUCTION

To study hunger, we have to define it. Although hunger seems like an intuitive and immediately recognizable concept the varied ways in which it has been operationalized have had a significant impact on who is and who is not “hungry.” In particular, the last ten years have seen a general broadening of the term as biomedical criteria have begun to give way to classification systems based on personal perceptions and experiences. Hunger is no longer solely measured through caloric intake or the heights and weights of standard anthropometry but also in terms of the emotional impact of deprivation.

Within the American context, this shift was prompted in large part by the skepticism of policymakers during the 1980s. At that time, the decentralization agenda pursued by the Reagan administration largely abdicated responsibility for social programs to the states and private

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sector, ultimately leading to a reduction in benefits that would coincide with the recession (Nestle and Guttmacher 1992). The dual pressure of an eroding safety net and general economic downturn increased the demand for food assistance, leading to a reemergence of hunger, particularly among homeless and elderly persons, minority groups and the “new poor” – unskilled and unemployed youth, children, and the mentally ill (Abramovitz 1992, Brown 1992, Nestle and Guttmacher 1992, Himmelgreen *et al.* 2000). Yet despite ample documentation, many policymakers continued to insist that evidence of malnutrition was lacking as demonstrated by the 1984 report of the President’s Task Force on Food Assistance.

Given the tendency to equate nutritional need with scarcity, it seemed counterintuitive to supply food to a target population that was, in many cases, suffering from *overnutrition*. Researchers recognized that food quality is often sacrificed to increase the quantity of available food and that hunger can be expressed in the periodicity of food consumption levels, differential intrahousehold food distribution, and overcompensation during times of plenty. Yet it was not possible to quantify the underlying causal stress. There was no recognized way to “see” hunger in the absence of wasting and stunting prior to the development of the food security scale. By operationalizing hunger as “the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so,” Radimer and colleagues (1992:S39) were able to capture the full scope of the concept, measuring cognitive hunger without reference to physical malnutrition. Food security became a way to differentiate structural constraints from personal preference, shifting the focus of analysis from the individual to the household and thereby illuminating the socioeconomic disadvantage underlying much of the emerging “obesity epidemic.”

Food security has since been adopted as a means of program monitoring and evaluation in a variety of settings outside of the United States. In fact, the Food and Nutrition Technical Assistance Project (FANTA) within the U.S. Agency for International Development (USAID) has worked for several years to develop cross-culturally relevant food security assessment tools, such as the Household Food Insecurity Access Scale (HFIAS) utilized in this study (Coates *et al.* 2007). Yet the application of this concept in settings where child undernutrition persists begs the question of what is added by an experiential measurement when physical indicators are readily available. To address the issue, this study applies the HFIAS within two rural Malay *kampungs*

on the northwest coast of Borneo where the local health department has documented a concentration of child malnutrition cases. HFIAS results are compared with standard anthropometric measurements in order to assess the relationship between the experience of household food insecurity and the occurrence of child weight-for-age, height-for-age, and weight-for-height measures greater than two standard deviations (-2SD) below the reference norm. Drawing on this comparison, this paper will address: (1) the extent to which food insecurity and physical undernutrition are correlated, (2) the utility of food insecurity data in the presence of documented undernutrition, and (3) whether household-level food insecurity necessarily precedes child undernutrition in a natural progression.

METHODS

An initial census was conducted among all households with children between the ages of six-months and six-years within the geographical and administrative boundaries of the two selected villages. In addition to basic household demographics, height and weight measurements were collected for each child in the target age-group, following the standard methodology detailed by Cogill (2003). Epi Info 3.4.3 was used to calculate weight-for-age, height-for-age, and weight-for-height z-scores. The child database was then exported to SPSS 16.0 for further analysis.

The HFIAS questionnaire was initially translated by the author in consultation with her bilingual research assistant, a native Sarawakian and local resident with extensive knowledge of the regional dialect. Following this initial translation, an informal focus group was organized based on the recommendations presented by Coates and colleagues (2007) to assess the connotations and local meaning of key words and phrases and provide examples and operational definitions that were relevant for community members. The draft instrument was edited to reflect these suggestions and then pre-tested with two additional volunteers – community residents with children just outside of the specified age range. Due to the sensitive nature of the questions posed, interviews were conducted in private within the respondents' homes after the author had maintained a residence within the community for approximately two months. The data were summarized as outlined by Coates and colleagues (2007) to create dichotomous occurrence and ordinal frequency variables for each question, frequencies for each food insecurity access domain (*i.e.* anxiety, food quality, and food quantity), and household insecurity scale scores that can be analyzed as continuous variables. These results were merged with the child database in

SPSS 16.0 where basic descriptive statistics were performed and potential correlations between household insecurity scale scores and weight-for-age, height-for-age, and weight-for-height z-scores were assessed with conservative, one-tailed tests using Spearman's rho.

RESULTS

A total of 104 children were measured from a set of 70 eligible, consenting families.² The majority of the children were under three years old, although there was a large birth cohort in the 54 to 60 months age range. There were also slightly more girls enrolled (52.9%). The mean z-scores for the sample were within the healthy range for weight-for-age (-0.97), height-for-age (-1.04) and weight-for height (-0.54). However, these averages conceal a sizeable number of children with nutritional difficulties. When one considers the frequencies, 13.7% of the children are stunted, 22.5% are underweight relative to their age and 9.8% are underweight relative to their height.

When considering lived experiences within the households over the course of the past month, 51.5% worried that their families did not have enough food. Among this group, the most common response was not simply yes but “*mesti*” – the local Malay equivalent of “of course.” In relation to food quality, 45.6% were unable to eat the foods that they would prefer – things like fruit or meat – and were forced to eat a limited variety of foods due to economic necessity. Only 25% were forced to eat unwanted foods. Yet this response was often accompanied by the assertion that the family was not picky or overly fussy, which may indicate acceptance of the situation rather than an absence of structural constraints. Food quantity was also compromised as 42.6% of families ate meals which were smaller than they considered adequate and 35.3% were forced to skip meals that they felt that needed. Strikingly, 11.8% of families reported that they had had no food in the house and no way to access food at least once in the previous month; 10.3% either went to sleep early to avoid hunger or went to bed hungry; and 4.4% had been unable to eat for an entire day. Taken together the HFIAS results demonstrate that as many as half of the households in both villages experienced food anxiety and uncertainty (51.5%), consumed foods that they recognized as being of insufficient quality (55.7%), and reported insufficient food intake or its physical consequences (50%). Merely 36.8% of households were food secure and among the food insecure majority 26.5% experienced forms of severe insecurity.

² Response rates were exceptional in both villages with only a single eligible family declining to participate.

A quick comparison of the numbers demonstrates that there are a greater proportion of households experiencing the emotional impact of deprivation than there are children suffering its physical consequences. But can this be taken to mean that the HFIAS is identifying hunger in a larger sense? Phrased in a more practically significant manner – Can we assume that household-level food insecurity is a managed form of hunger? The importance of this issue is that if we can “see” hunger prior to its physical manifestations, programmatic responses can become preventive and avoid the type of negative incentive system implicit in Malaysia’s current food supplementation program for children which withdraws assistance to families as soon as children are rehabilitated without addressing conditions within the household. If the HFIAS is in fact a more sensitive but related measure of hunger, we should see a negative correlation between food insecurity and child health status. As expected, child height-for-age z-scores have a strong, significant negative correlation ($r = -0.290$, $p = 0.002$) with household food insecurity scale scores. A similar, although weaker relationship exists between weight-for-age and food insecurity ($r = -0.180$, $p = 0.03$) while there no significant relationship between weight-for-height and food insecurity ($r = -0.06$, $p = 0.279$).

SUMMATION

The correlation results presented above are biologically plausible if we assume that food insecurity – while ostensibly measured over the past month – is in fact a long-term hunger indicator as is stunting (height-for-age) and weight-for-age albeit to a lesser extent. This interpretation also corresponds to the accepted social science understanding of respondent reliability. As noted in Bernard and associates’ (1984) classic study, informants are simply inaccurate when it comes to recounting specific past events, behaviors and circumstances although they can be counted on to report general patterns and norms. It is highly likely that the families in this study *are* relating a more generalized, long-term state of affairs which aligns with the children’s embodied nutritional history.

What then is the utility of this food insecurity data? Beyond its demonstrated role as a more sensitive measure that precedes visible child malnutrition, the food insecurity scale scores derived from the HFIAS are a valuable validation tool. In many non-Western and resource-constrained settings, evidence of long-term nutritional deprivation, particular stunting, is routinely dismissed as genetic difference or the inappropriate application of Western standards.

These arguments become difficult to support when a high proportion of “naturally short” children live within food insecure households. It seems oddly fitting that a concept which originated from the need to substantiate the existence of hunger in the *absence* of wasting and stunting can now be usefully applied to support hunger’s existence in communities where these same physical measure are being dismissed as normal.

REFERENCES

- Abramovitz, M. (1992). The Reagan Legacy: Undoing Class, Race, and Gender Accords. *Journal of Sociology and Social Welfare*, 20, 91-110.
- Bernard, H. R., Killworth, P., Kronenfeld, D., & Sailer, L. (1984). The Problem of Informant Accuracy: The Validity of Retrospective Data. *Annual Review of Anthropology*, 13, 495-517.
- Brown, J. L. (1992). When Violence Has a Benevolent Face: The Paradox of Hunger in the World's Wealthiest Democracy. *International Journal of Health Services*, 19, 257-277.
- Coates, J., Swindale, A., & Bilinsky, P. (2007). *Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide*. Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development.
- Cogill, B. (2003). *Anthropometric Indicators Measurement Guide*. Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development.
- Himmelgreen, D. A., Perez-Escamilla, R., Segura-Millan, S., Peng, Y., Gonzalez, A., Singer, M., et al. (2000). Food Insecurity Among Low-Income Hispanics in Hartford, Connecticut: Implications for Public Health Policy. *Human Organization*, 59(3), 334-342.
- Nestle, M., & Guttmacher, S. (1992). Hunger in the United States: Rationale, Methods, and Policy Implications of State Hunger Surveys. *Journal of Nutrition Education*, 24(1), S18-S22.
- Radimer, K. L., Olson, C., Greene, J. C., Campbell, C. C., & Habicht, J. P. (1992). Understanding Hunger and Developing Indicators to Assess It in Women and Children. *Journal of Nutrition Education*, 24(1), S36-S44.