Need Adequacy Over Simplicity


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The Welthungerhilfe and Concern Worldwide Global Hunger Index (GHI) 2021 (bit.ly/3G8Nx6p) finds India seven positions down to 101st from 94th last year, ranking lower than neighbours like Pakistan, Bangladesh and Nepal. This has added to anxieties — and suspicions — in India's policy circles.

'Hunger' comprises the prevailing calorie undernourishment in a population, the extent of child stunting and wasting, along with the levels of child mortality. Such a combination of indicators has its inherent contradictions between calorimetric and anthropometric assessments of undernourishment. Early-age mortality, for instance, has far less to do with stunting and wasting, and more with compromises in water, sanitation and hygiene (WASH) practices and incomplete immunisation. But even though stunting and wasting are not life-threatening, they do have long-term effects that compromise reaching healthy adulthood and one's life potential.

While the purpose of an index is to position a set of units in a comparative hierarchy of best to worst, the aggregation of multiple dimensions needs to be sensitive, in terms of their implications and mutual substitution. Aggregating population undernourishment, child undernourishment and child survival on equal footing, as GHI does, dilutes these three aspects and their interconnectedness to the extent that it cannot qualify to represent hunger, or deprivation, in the right sense of those terms.

Also, the simplistic aggregation in terms of an average does not contest mutual substitution — improvement in one being possible to be substituted with the deterioration in another. For example, between the 2005-06 National Family Health Survey (NFHS) and 2015-16 NFHS, the proportion of under-5 children reported as stunted (height-for-age) declined from 48% to 38.4% over 10 years. But the proportion of children under 5 reported as wasted (weight-for-height) *increased* from 19.8% to 21% in the same period.

The GHI uses both these indicators for its calculation. India has improved in terms of height, but not weight. Similar data are not available for India as a country from the 2019-20 NFHS 5, but are available separately for 22 states and Union territories (UTs).

Global indices with indicators in terms of percentages overlook the absolute magnitude of the adversity as well as the base levels from where change is realised. GHI includes populous Asian countries as well as sparsely populated European nations. In such a situation, a comparison should not overlook the magnitude — that is, the population, absolute number of children, etc. But noting the transition taking place from a particular level to another sheds more light.

Therefore, the global value of GHI — 17.9 — is placed with a positively skewed distribution of these index values across countries. Also not highlighted is the extent to which betterment in this index value is experienced across countries, despite being ranked at the same level or even at lower ranks.

This ordinal valuation of ranking often masks the kind of changes taking place, which may be gradual and in the right direction. The simplistic normalisation of considered indicators in terms of a ratio to the ideal, and their arbitrary weightage in aggregation, makes GHI less robust for inter-national comparisons.

Accounting for 17.7% of the global population and one-sixth of child births in the world, India, with its four considered indicators, is not badly placed in terms of their levels and progression. The hunger index value has shifted more than 10 units in two decades, a factor crucial to the improvement of the global index value. So, the interpretation of progress towards an ideal of a zero hunger index value should be with equivalence of progress made by India vis-à-vis other countries. The pace of progress realised in India will make the world index value shift faster in due course.

Considering that India has 28 states and eight UTs, it is not particularly important for the country to worry too much about global indices such as GHI. 2019-20 NFHS has produced two GHI indicators — stunted and wasted among under-5 — for 22 states and UTs. Among these, eight states and UTs have shown improvement in both indicators, and 14 states have shown deterioration. The lowest proportion of stunted children was found in Sikkim (22.3%), the highest in Meghalaya (46.5%). On the other hand, the lowest proportion of wasted children was found in Mizoram (9.8), the highest in Maharashtra (25.6%).

Ranking countries, as in GHI, is perfectly acceptable. But its purpose goes unserved unless qualified by robust measurement in which simplicity does not outweigh adequacy.

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Famished of 'Hunger' Facts


Davendra Verma & Padam Singh

GHI 2021 has received much attention in India due to its claim that levels of hunger in the country have accentuated. Headlines have highlighted India now being 'below' Pakistan, Bangladesh and Nepal, without going into details of what GHI is actually measuring.

When GHI 2019 ranked India 102nd among 117 countries, the Indian Council of Medical Research (ICMR) constituted an expert group to examine GHI's methodology and its interpretation. Members of this expert group included statisticians, paediatricians and nutritionists. They came to the view that GHI indicators for undernourishment — stunting, wasting and child mortality — do not measure hunger per se.

GHI remains a misleading hunger index as its methodology ignores genetic factors for which norms on stunting and wasting may not be applicable to India. Over the years, many have observed that GHI lacks statistical robustness and gives higher representation to under-5 children.

The index is calculated as a weighted average of four indicators, none of which actually measure hunger — proportion of the population that is undernourished; prevalence of wasting (low weight-for-height) in children under 5; prevalence of stunting (low height-for-age) in children under 5; and child mortality. Importantly, the first indicator (proportion of undernourished) is for the entire population, while the other three are specific to under-5 children.

So, what does GHI actually measure? If these indicators measure hunger, then for the relatively well-off, those possessing sufficient purchasing power, and not facing challenges to access food, the value of these indicators should be negligible. But this is not so. The National Sample Survey Office (NSSO) survey and 2015-16 National Family Health Survey (NFHS) provide estimates of these four parameters for different wealth quantiles. The top two wealth quantiles represent the top 40% of the population who would have sufficient purchasing power and access to food to meet all their nutrition requirements.

Undernourishment, stunted and wasted children, as well as child mortality, in these top two wealth quantiles were sizeable — 11.3%, 25.7%, and 18.6% respectively, while the under-5 mortality per 1,000 live births was 25.8. This clearly establishes that undernourishment, stunting, wasting and child mortality are not the consequences of hunger alone.

Further, as per National Nutrition Monitoring Bureau (NNMB) data, a substantial proportion of the population that consumes less than the minimum dietary energy requirement (MDER) of 1,800 kilo-calories per capita a day are overweight (29% and 10% urban and rural areas respectively) and obese (10% and 2%). This is contradictory as overweight and obesity are consequences of *over*-nutrition. The NNMB survey also shows, among those consuming less than MDER, a sizeable proportion also had raised levels of biochemical parameters commonly associated with over-nutrition.

Child stunting as an indicator in GHI implicitly assumes that those who are hungry are likely to be short-statured. But height differences are not influenced by nutrition alone, but also by genetic, biological and environmental factors.

There are serious concerns about the use of child wasting as a proxy for quantifying 'hunger'. Studies on children aged 5-19 years in India have shown that among schoolchildren between 5 and 18, 11% boys and 7.9% girls with any cardio-metabolic abnormality were thin. The corresponding figures for pre-hypertension were 13.7% and 8.1% respectively.

The inclusion of child mortality under GHI assumes hunger is the major cause of child mortality. This is not supported by data on cause of death. According to Unicef, nearly 62% of under-5 mortality occurs in the neonatal period. Major causes of neonatal death are preterm birth (35%), sepsis (33%), birth asphyxia or intra-partum-related complications (20%), and congenital malformations (9%). Beyond the neonatal period, the leading causes of under-5 mortality are diarrhoea (8%) and pneumonia (14%).

Similar findings have been reported in the Centre for Global Health Research's (CGHR) ongoing 'Million Death Study' (MDS), which estimates preterm birth complications resulting in 25.5% deaths; intra-partum-related events comprising 11.1%; sepsis 7.9%; congenital 6%; pneumonia 6%; tetanus 0.6%; injuries 0.5%; diarrhoea 0.4% and others 3%. Further, there is no scientific evidence to suggest that these causes of neonatal deaths could be addressed by food supplementation. Thus, child mortality as a measure of hunger and its use in GHI is questionable.

Referring to GHI as a hunger index is a misnomer. Which makes the need to develop a robust methodology to measure hunger a priority.

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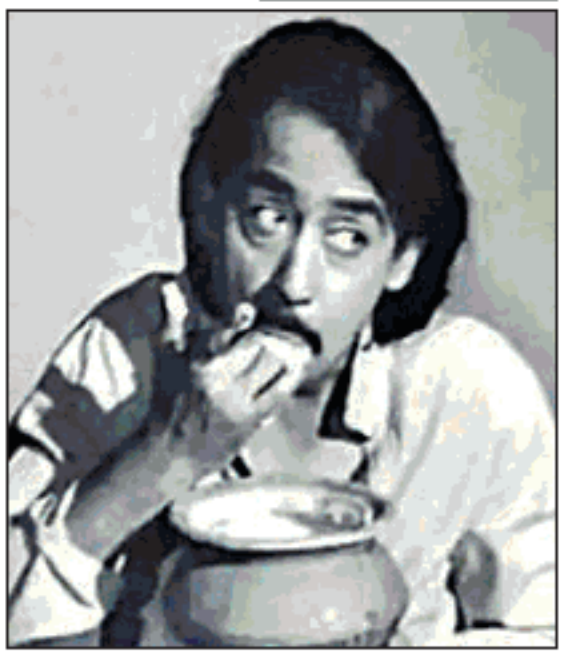
GLOBAL HUNGER INDEX



Not hungry, just thin