



## Childhood Undernutrition Trends in India – What is Our Direction and Speed?

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Childhood undernutrition remains a major concern in the developing world including India and is estimated to contribute to nearly half of child mortality in the world [1]. Though combating malnutrition is given its due importance globally by placing it among the sustainable development goals (SDG) by United Nations, progress has been patchy worldwide [2]. In India, National Family Health Surveys (NFHS) remain an important source of data for assessing the progress made in various health indicators including childhood nutrition.

In this issue of the Journal, Khadilkar et al. have reported their secondary analysis of the data from the four NFHS from 1992-93 to 2015-16 [3]. The data from the NFHS round 5 (2019-20) has not been included. They have compared the change in nutritional status observed over the span of 4 NFHS surveys with additional comparison between urban and rural setting and boys and girls. Their study reported a greater reduction in stunting (16%) than in underweight (10%) status over the 4 NFHS rounds from 1992 to 2016 in children under 5 y of age [3]. In addition, at the 4th NFHS round, higher percentage of boys (8%) than girls (6%) and rural (7%) than urban (5%) children were malnourished [3]. Consistent improvement in stunting over the years is a positive sign probably indicating improvement in many risk factors including poverty, maternal education, maternal nutrition, perinatal care, improved childhood vaccination etc. While the distribution of malnutrition among rural and urban areas and among boys and girls seems to be on expected lines, the observation that improvement in stunting is much more than that of underweight is a bit puzzling. The questions that naturally come to the mind is whether this reported difference, a true phenomenon due to improvement

in risk factors that affect stunting and underweight differently or is there a possibility of overlooking some other aspects of the data including timing of data collection.

Though there have been debates about the role of stunting in assessing malnutrition and the relationship between stunting and wasting with the possibility of having different determinants for both, recent systematic reviews have found strong association between the two [4, 5]. Hence it is unlikely that improvement in stunting can significantly outpace undernutrition. The explanation can be one of many possibilities. Wasting is an acute phenomenon which can commonly result from an acute insult, most commonly an infection from which the child can recover fully if it is well managed. Repeated occurrence of these wasting events can lead to stunting [4]. Hence an overall improvement in stunting can be due to a decrease in the number of these adverse events at the community level. But since decrease in occurrence of wasting episodes are not captured in a cross-sectional survey, the survey may wrongly conclude that wasting is still prevalent. This seasonal variations in the prevalence of wasting in cross-sectional surveys is well described [6, 7]. In fact it has been pointed out that seasonal differences may have introduced bias to the estimated difference in prevalence of wasting between the survey years of NFHS. This has not been observed in case of stunting [6].

Hence to conclude, without further analysis to account for the biases, we should be cautious in accepting the observation by Khadilkar et al. that there has been a discrepancy in the trends of various nutritional indicators in India. But the take home point is still valid. There has been improvement, albeit at a slower pace than we desire, in the nutritional indicators. Deeper analyses including the state wise variations and the identification of risk factors showing poor improvement over time would have been useful in planning and implementing strategies. Future surveys should also address the issue of seasonal biases to get a clearer picture of the direction and speed of our progress in nutritional indicators. We need this information to put us back in track to achieve the SDG-2 goals in a timely manner.

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## Declarations

**Conflict of Interest** None.

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