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Towards a Multi-Dimensional Index of Child Growth to Combat the Double Burden of Malnutrition

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Abstract

Background: There is growing awareness in the field of public health that combating the double burden of malnutrition requires approaches that address its multi-dimensional origin, rather than focusing primarily on the biomedical domain. Current frameworks of malnutrition like the UNICEF conceptual framework, and the Lancet Series 2013 framework have been instrumental in understanding the determinants of malnutrition and developing appropriate interventions. However, these frameworks fail to explicitly address issues of agency, that is, about being able to pursue one’s goal. The capability approach as originally developed by Amartya Sen includes agency in the causal chain. Summary and key Messages: In the past 5 years, the International Union of Nutritional Sciences Task Force “Towards a multi-dimensional index for child growth and development” has developed a capability framework for child growth, and conducted empirical research applying this framework. The working group discussed what would be needed to further develop the approach and explained the added value to international organisations and policy makers. We suggest developing an index of advantage that will be a proxy for a child’s agency. We hypothesise that such an index will explain much of the variance in studying inequalities in child nutrition and thus call for action to improve this focal point.

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Introduction

The fact that combating the double burden of malnutrition (DBM) requires approaches that address its multi-dimensional origin, rather than focusing primarily on the biomedical domain, is increasingly being recognised in

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A Capability Approach to Child Growth

Over the past 5 years, the International Union of Nutritional Sciences Task Force “Towards a multi-dimensional index of child growth” has developed a conceptual framework for a multi-dimensional approach to child growth [3–5]. This framework aims to provide a means of operationalizing the contemporary understanding of the complex nature of malnutrition in its manifestations as undernutrition and overweight. In developing the framework, the capability approach provided the major underpinning of the efforts. The capability approach was originally developed by Amartya Sen [6, 7] and further developed by Martha Nussbaum [8], and has been applied in different fields such as disability [9], education [10, 11], gender inequality [12], poverty [13, 14], healthy ageing [15, 16], well-being in adults [17–19] and in children [20–23], and health [24]. The Convention of the Rights of the Child [25] served as the initial source for identification of potential dimensions that could be included in such an index [3]. Further resources for developing the framework were provided by the nutrition transition theory, which identified the role of macro-level societal and political processes in the current obesity epidemic [26], as did new developments in life history theory that are seeking physiological explanations of the intergenerational transfer of metabolic predisposition, linking low birth weight with later adverse health outcomes [27, 28].

Two activities by the Task Force to learn more about the application of the capability approach in nutrition consisted of (i) ethnographic research examining the role of parental and child capabilities in child growth in Tanzania [29] and Bangladesh (unpublished data), and (ii) empirical analysis of a demographic health survey from India (unpublished data). The latter yields important insights about the analytic challenges of applying the approach to population data that included data on nutritional status.

The working group was organised to take this work to the next level. Further operationalization of the framework and applying appropriate quantitative modelling techniques are required. The development of the human development index [30], and the empirical work of Anand and Roope [22] applying the capability approach to child well-being provide a model for child growth. In the capability approach, the emphasis is on “what people are able to do and be to live the life they value”. Attendees discussed what additional concepts should be added in addition to those that have already been used in frameworks for child health and other areas. Considerable discussion was devoted to issues related to “empowerment”. The rationale for focusing on “empowerment” is based on the proposition that parents’ capability to act upon the determinants of growth involve certain prerequisites that can be captured by the idea of “agency” (being able to pursue one’s goals) [31]. Till date, this fundamental idea has not received attention in the frameworks developed for malnutrition.

Although the concept of a multi-dimensional, capability-grounded approach to child growth has been shared with the wider nutrition community [3, 4, 29], its utility for policy and social programmes depends on its translation into an operational tool. The working group discussed the next steps to achieve this, particularly in the context of the DBM.

Starting with the UNICEF and the Lancet Series frameworks [1, 2], and recognising the importance of power issues at stake at each of the levels of the frameworks, the task requires elucidating the manifestations of “agency” or “the ability to pursue one’s goals” in achieving healthy child growth. People are agents. Thus, the effort to expand the framework requires working with people as early in the process as possible. In other words, the research must include the perspective of various stakeholders, including parents, health professionals and policy makers, to understand the constraints that are actively (dis)empowering societies, households, and parents in relation to children’s growth.

Data is required to initiate discussions on this complex issue. The group suggested conducting an analysis with a “sufficiently rich” database (in terms of contextual data) and including an index of (dis)advantage that would show how diverse constraints on societies, households, and mothers feed through to poor growth of children. Such an index could include national level data (e.g., recent exposure to war/civil conflict/natural disaster, gender equality, rates of violence against women, proportion of imported – processed – foods) as well as individual level data (e.g., shelter, time allocation of carers, breastfeeding success).

Another key discussion topic at the working group session was the issue of context. Although the pathways to
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healthy growth may, to some extent, be universal, a con-
textual lens is needed to make sense of conditions on the
ground and to develop interventions that are aligned with
cultural beliefs, expectations and conditions. The example
of when a child should achieve the developmental marker
of walking is illustrative. This is a universal capability that
is valued for all children. However, to guide parents in this
learning process, walking should be understood from the
perspective of mothers and fathers. Similarly, the capability
to adequately feed one’s children is universal; but we
know that in every society there are foods that are not
given to children [32]. The rationale for judgments about
the suitability of specific foods for children at particular
ages and developmental stages needs to be understood
and considered in interventions to improve feeding prac-
tices. Contextual knowledge about these and related top-
ics needs to be integrated in a capability approach that
aims to support the design of interventions.

In the adult capability literature, the focus is on indi-
vidual capabilities. However, children are highly depend-
ent on their parents, who are, in turn, affected by the so-
cietal conditions in which they live. This not only involves
current conditions, but the past conditions in which the
parents grew up. There is an expanding body of data to
show that a mother who frequently experienced hunger
when she was young has a limited capability to provide a
healthy intra-uterine environment for her child [33]. Thus,
a multi-dimensional index of child growth has to include
not only capabilities at the child level, but also parental lev-
el conditions, considered in a larger time perspective.

A critical issue for combatting the DBM is attention to
“doing no harm”. Difficult questions need to be examined,
including the fundamental question of whether well-inten-
tended nutrition education in a situation where a mother
is not able to pay for the suggested food changes is doing
harm. Asking the community about what they can do, rather than telling them what to do, is one strategy to
mitigate harm. A focus on parental capabilities offers a
powerful tool to nutrition educators and policy makers to
address what people can do. It will guide us to decide on
“the right strategy” and “the right intervention”.

Participants at the session noted that a multi-dimen-
sional index can be used for monitoring purposes, spe-
cifically for public health practice. But it will also be valu-
able for larger policy and planning at multiple levels. The
group discussed the idea that the approach resonates with
earlier initiatives, such as a rights-based approach [34] or
positive deviance [35, 36]. For example, a demonstration
of resilience in children who are positively deviant in
growth provides direction for decisions about where to
target an intervention. Moreover, a multi-dimensional
index does more than this: given what is known about the
multiple determinants of growth, it will demonstrate that
a child is never “achieving poorly” on only one dimen-
sion, but rather is likely to be achieving poorly on a range
of dimensions. This demonstration, in a well-constructed
index, will have many implications for programme plan-
ning and policy that will draw attention to the need for
coordinated planning.

Concerning the utility of a multi-dimensional set of
indicators, the working group’s discussion stressed that it
will have utility at local and regional levels as well as at the
national level. A multi-dimensional or capability ap-
proach to child growth could serve as a monitoring tool
and as a model for the development of interventions.

Finally, the working group stressed the value of the ca-
pability approach for assessing progress and barriers to
progress on common national indicators. Explicitly ad-
ressing issues of (dis)advantage and (dis)empowerment
will shed light on what we intuitively know but neverthe-
less fail to address in relation to the DBM: the issue of who
is accountable.

Conclusion

In conclusion, to take the capability framework to the
next level, it will need to be further operationalized. Subse-
quently, empirical analysis applying econometric analytical
techniques and using an existing “rich” dataset should be
conducted to derive easily understood charts and graphs
that help to reveal barriers that constrain people from
choosing growth-promoting choices. Finally, the multi-di-
imensional index should be tested in several settings.

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