

Multidimensional Index for Child Growth and Development

Report Form 2023



Task Force Chair/s

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Task Force Members

- Chumki Chakraborty, BRAC, Bangladesh;
 - Shirish Darak, Prayas Health Group, Pune, India;
 - Ali Dhansay - South African Medical Research Council and Stellenbosch University, Cape Town, South Africa (Council member)
 - Rolando Gonzales Martinez, Marie Skłodowska-Curie Actions postdoctoral researcher, University of Groningen, Netherlands;
 - Zaina Mchome - National Institute for Medical Research, Mwanza, Tanzania;
 - Sridhar Venkatapuram - King's College, London;
- (no changes since last year)

Has your objective(s) as a task force been modified since the original proposal? If so, please provide brief justification.

There have been no changes in objectives, however, we are progressing and objectives are moving towards implementation of our multidimensional approach and implications for policy and practice.

Have the activities to be undertaken been modified since the original proposal? If so, please provide brief overview and justification.

There have been no changes in activities; however, the focus is shifting towards outreach (fitting with the progress of our work).

Brief Overview of activities since last annual report

This report is built around the objectives, as described in the proposal, namely:

- To serve as a platform for examining implications and activities of adopting a "capability approach to child growth", that includes discussion among scientists, health professionals, as well as with professionals from international organizations.

The past year we further expanded the knowledge base of the capability approach to child growth as well as focused on the implementation of the approach. Our symposium "Towards a multidimensional approach for child growth" at the IUNS-ICN in Tokyo in December 2022 was instrumental for the outreach activities that followed in 2023. Researchers as well as donor organisations showed an interest in the approach. We connected with Zulfiqar Bhutta at the ICN in Tokyo, and discussed the challenges for the implementation of an index. Zulfiqar was a member of the UNICEF-WHO Lancet Commission that developed the Child Flourishing Index. This index has in common with the Multidimensional Index for Child Growth that it is based on the Convention of the Rights of the Child. We were invited for a webinar for USAID staff and for another webinar for the UNICEF Dept of Nutrition staff in February 2023. We submitted a concept note to USAID in March 2023 that was unfortunately not successful. Discussions of Chumki Chakraborty with Alison Tumilowicz from Bill & Melinda Gates Dhaka resulted in a third webinar with BMG staff in September 2023. BMG showed an interest but currently there is no programme that would be fitting. However, Alison would keep an eye on other potential donors or NGOs that could be relevant for further research or for the implementation of our research.

Zaina Mchome established the Mtoto Stawi Foundation (NGO) in Tanzania, with the aim to implement the multidimensional approach to improve child growth monitoring practices in Tanzanian (see future plans).

Chumki presented at three conferences, two in Asia, and one in the Netherlands:

1. 'Improving sustainable development goals by enhancing women's empowerment', held in Dhaka Bangladesh, from 1-2 November, 2022;
2. 'Health Systems Strengthening' (session chair) in the conference D4N 2023 "Delivering for Nutrition in South Asia: Equity and Inclusion" held on November 1-2, 2023 in Kathmandu, Nepal;
3. 13th European Congress on Global Health (ECTMIH) held on 20-23rd November – Utrecht, Netherlands.

Hinke consulted with TNO Child Health Group to discuss possibilities for implementing the approach in clinical practice in the Netherlands. Recent changes at TNO (such as discontinuation of the Growth Studies Survey in the Netherlands) have reduced TNO's interest.

A next step will be following up these conversations with the Dutch Institute for Youth and Family (NJG).

● To conduct research on the multiple dimensions of child growth in different countries During the past year we continued with the quantitative analytical phase of our research using the Young Lives database from Oxford University (with data from Vietnam, India, Ethiopia, and Peru) to empirically test the approach as a proof of concept. Two papers resulted from this research, of which one has been resubmitted after minor revisions, the other (proof of concept study) is under review.

A PhD student from the International Institute for Population Studies (IIPS), Mumbai, Satyam Raj Singh, wrote a research proposal on the trickling down of interventions that were designed to improve malnutrition amongst young children to their mothers and how this improves their capabilities. He is supervised by several members of the Task Force as well as by a supervisor from IIPS.

● To disseminate the findings from this research, and create a knowledge base' In the past year we developed a website that presents all research of the Task Force since 2012. It includes the conceptual and theoretical underpinnings of our research, the qualitative research done in Bangladesh and Tanzania, as well as the ongoing quantitative research using the Young Lives database. The website can be reached through the University of Groningen, as well as through the IUNS Task Force website.

In September, Hinke taught about the Capability Approach to Child Growth during her yearly lecture on Global Nutrition at Wageningen University.

In April, Zaina Mchome spent two weeks at the University of Groningen to work on two policy briefs for the Tanzanian Ministry of Health with the aim to implement the findings of her PhD research (ethnography of child growth in Morogoro) for growth monitoring practice in Tanzania. In November, Chumki Chakraborty presented her research at the European Conference on Public Health and Nutrition in Utrecht, Netherlands and also spent three days at the University of Groningen to finalise the revisions of a methodological paper from her PhD research (use of a participatory approach to identify parental capabilities for child growth). This paper has been accepted for publication

1 paper has been accepted for publication:

- Chakraborty, Barnali; Darak, Shrinivas; Haisma, Hinke. Operationalising the capability approach for healthy child growth via a participatory method: an illustrative case in haor areas of Bangladesh. J of Hum Dev and Capabilities (in press)

2 papers are currently under review:

- Anand, Paul; Gonzales Martinez, Rolando; Hoddinott, John; Haisma, Hinke. Multi-Dimensional Child Growth: Evidence and Models for Children in Ethiopia. PlosOne (submitted after minor revisions);
- Gonzales Martinez, Rolando; Peltó, Gretel; Wells, Jonathan C; Anand, Paul; Barros, Aluísio; Delamónica, Enrique; Venkatapuram, Sridhar; Mchome, Zaina; Chakraborty, Barnali; Dhansay, Ali; Haisma, Hinke. Leaving no child behind: Inequalities in multidimensional child growth in Ethiopia, Vietnam, Peru, and India (under review).

2 policy briefs have been prepared to share with the Ministry of Health;

- Mchome, Zaina; Haisma, Hinke. Engaging local knowledge to reduce childhood stunting;
- Mchome, Zaina; Haisma, Hinke. Strengthening the practice of child growth monitoring promotion (GMP) to reduce childhood malnutrition.

● To initiate the application of the capabilities approach for the development of interventions:

Chumki drafted a concept note as a start for grant application: "Assess and understand the regional differences in child growth capabilities and prioritise interventions to address the inequalities in multiple dimensions of child nutrition in Bangladesh"

● To apply for funding to expand our efforts:

Rolando Gonzales Martinez received a prestigious EU Marie Skłodowska-Curie Actions Fellowship (MSCAF) to pursue his career at the University of Groningen. A secondary placement at the Division of Data, Analytics, Planning & Monitoring at UNICEF-HQ (with Enrique Delamónica) is included in his fellowship. His research goes beyond state-of-the-art assessment of contextual indicators for child growth and includes data-simulation and spatial machine-learning. This will allow obtaining data that affects multidimensional growth of children in remote and vulnerable regions.

Please list any successes accomplished during this period (Aligned with proposed measures of success from original proposal, or include justification for modifications).

This year has been very productive in terms of outreach activities (ICN, Tokyo; three webinars with USAID, UNICEF, and BMG Foundation; two policy briefs for the MoH in Tanzania; exploration of potential for implementation in the Netherlands)

Please mention your plans for the coming year and how they have been adapted based on success to date (if appropriate).

Our plans for 2024 will be a continuation of the objectives as mentioned in the proposal for 2017-2021/2022 but with a stronger focus towards the implementation of the index for monitoring and evaluation as well as for comparisons between countries:

1. To serve as a platform for discussion (see above);

- Present our work at the ICN in 2025 in Paris (apply for additional funding);
- Discussion of our paper on Child Growth Monitoring (Zadelhoff and Haisma, 2022) with WHO and UNICEF staff and relevant scientists. Aim is to contextualise child growth monitoring manuals in various countries, starting with Tanzania, India, and the Netherlands (Hinke).
- Reaching out to BMG Foundation (Alison) to continue the search for interested donor organisations (Chumki);

2. Continuation and elaboration of current activities with a focus on implementation, on empirical analysis, and on issues of justice and ethics:

Growth Monitoring Practice and Evaluation

- Advocate for and develop a visualisation tool for monitoring multidimensional child growth that can be used for implementation in well-baby clinics in the Netherlands and in Tanzania (Hinke, Rolando, Zaina, all), which will complement traditional growth charts used by paediatricians;
- Cultural sensitive growth monitoring and promotion activities starting in a small community in Tanzania (in relation to Mtoto Stawi Foundation and based on Zaina's PhD research);
- Advocate for and application of the multidimensional index for child growth for assessing progress towards SDGs (Rolando);

Methodological considerations and reflections

- The philosophy and ethics of child growth policies (Sridhar). Building on the analytical work of group members, flesh out the conceptual contributions made to the capabilities

approach, and articulate the ethical and equity implications of an MDI.

- The use of the CA in children, what are conceptual (Sridhar) and methodological (Rolando) implications?
- Who are the major policy and influential actors in child growth (Sridhar/ Hinke/ student)

Quantitative research

- Continuation of empirical research using various databases and satellite imagery (Rolando), including advocacy for and collection of contextual rich data on child growth in surveys (DHS and MICS) and government records (Rolando, Hinke, Chumki);
- Assess the regional difference in terms of the deprivation level of multidimensional child growth in Bangladesh to inform inequality in child growth outcomes using the survey tool developed as part of PhD programme (Chumki)
- Copernicus' satellite imagery will be used as an input of spatial machine learning/deep learning (ML/DL) models aimed to identify multidimensional determinants of malnutrition. The targets are traditional anthropometric measures (stunting, wasting, underweight, overweight). Circumscribed in the ecological framework of the theoretical capability approach for multidimensional child growth, potential factors that can affect malnutrition will be considered at child, parental, community, and environmental (spatial) level. The focus of ML/DL on prediction will help to anticipate malnutrition in vulnerable children. (Rolando)

Qualitative research

- Understand how climate change intersects with parents'/ caregivers' capabilities to promote child growth (Zaina);
- More participatory approaches need to be applied in hard-to-reach areas that were not covered in our previous studies but vulnerable for child growth and need deeper insights to understand the contextual differences, such as hilly, coastal, urban slum areas (Chumki);
- Assess how the child-growth capabilities can be transformed into a context specific multidimensional child growth index for programme planners and policy makers (Chumki);
- Comparative research of old and new approaches in real-life settings (RCT) (Chumki);

3. To disseminate the findings from the research:

- Publications/ webinars/ lectures/ conferences;
- Specifically, sharing policy briefs with MoH, Tanzania (Zaina).

4. Apply for funding to expand our efforts (including some of the above mentioned activities) requires continuing attention.

We are aiming for a consortium type grant, such as the Marie Curie doctoral network grant, a Horizon grant, ERC Synergy grant of Wellcome Trust UK.