Multi-dimensional indicators of child growth

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“Multi-dimensional indicators of child growth"
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Why?

› Growth standards are universal – ignoring people’s diverse realities;

› Anthropometric indicators (weight and height) are applied as ends – not means towards an end.
Current situation

- Persistent high levels of malnutrition and mortality - inequality;
  - SDGs intend further reduction, and might benefit from a different model to conceptualise growth and the causes of malnutrition.
THE MILLENNIUM DEVELOPMENT GOALS (MDGs) ARE THE MOST SUCCESSFUL GLOBAL ANTI-POVERTY PUSH IN HISTORY. LET'S STEP UP ACTION TO THE 2015 MDG TARGET DATE AND BEYOND.

MDG4
REDUCE CHILD MORTALITY

17,000 FEWER CHILDREN DIE EACH DAY THAN IN 1990

LETS STEP UP

6 MILLION+ CHILDREN STILL DIE

BEFORE THEIR FIFTH BIRTHDAY EACH YEAR
SDGs – 2015 - 2030
A capability approach to child growth

› Focus on opportunities and agency: address inequalities – social justice – ethics;
› Multi-dimensionality, therefore tailor-made counselling advices – child/maternal/parental agency
Amartya Sen

> Nobel Prize in Economic Sciences in 1998 for his contributions to welfare economics and social choice theory and for his interest in the problems of society's poorest members.
Components of the Human Development Index

The HDI—three dimensions and four indicators

Life expectancy at birth
Mean years of schooling
Expected years of schooling
Gross national income per capita

Health
Education
Living standards

Three dimensions

Human Development Index

Four indicators

Note: The indicators presented in this figure follow the new methodology, as defined in box 1.2.

Source: HDRO.
(Chiappero-Martinetti & Venkatapuram, 2014)
What does the CA add?

› It makes “people’s opportunities” and “agency” explicit in the causal chain;
› It allows a multi-dimensional outcome of growth;

› Growth as the human right to the capability to be growing well.
How to identify various dimensions of child growth?

› Convention of the Rights of the Child
› Nutrition transition theory
› Parent-offspring conflict theory
› Life history theory

Categories of capabilities for children

- life and physical health;
- love and care;
- mental well-being;
- bodily integrity and safety;
- social relations;
- participation;
- education;
- freedom from economic and non-economic exploitation
- shelter and environment
- leisure activities;
- respect;
- religion and identity;
- time autonomy;
- mobility

Source: Biggeri & Mehrotra 2011
Nutrition transition

**Figure 2. Stages of the Nutrition Transition**

- **Pattern 1**: Paleolithic man/Hunter-gathers
  - *Wild plants & animals*
  - *water*
  - *Labor intensive*
  - Lean & robust, high disease rate
  - Low fertility, low life expectancy

- **Pattern 2**: Settlements begin/Monoculture period/Famine emerges
  - *Cereals dominate*
  - *water*
  - *Labor-intensive*
  - Nutritional deficiencies emerge, stature declines
  - High fertility, high MCH mortality, low life expectancy

- **Pattern 3**: Industrialization/Receding Famine
  - *Starchy, low variety, low fat, high fiber water*
  - Labor-intensive work job/home
  - MCH deficiencies, weaning disease, stunting
  - Slow mortality decline

- **Pattern 4**: Noncommunicable Disease
  - *Increased fat, sugar, processed foods*
  - *caloric beverages*
  - Shift in technology of work and leisure
  - Obesity emerges, range of other NR-NCD’s
  - Accelerated life expectancy, shift to increased DR-NCD, increased disability period

- **Pattern 5**: Desired societal/Behavioral Change
  - *Reduced fat, increased fruit, veg, CHO, fiber*
  - *Increase water, Reduce caloric beverage intake*
  - *Replace sedentarism w/ purposeful activity*
  - Reduced body fatness, Reduced NR-NCD’s

*Source: Popkin 2002 revised 2006.*
Parent-offspring conflict theory

Source: Kall et al. Trends in Ecology & Evolution; Volume 25, Issue 8, p442–449, August 2010
Life history theory

## Analytical framework

<table>
<thead>
<tr>
<th>Resources</th>
<th>Conversion factors</th>
<th>Capabilities</th>
<th>Functionings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>Sex</td>
<td>Being able to be fed</td>
<td>Growing well physically</td>
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<tr>
<td></td>
<td>Ethnicity</td>
<td></td>
<td>Being playful</td>
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<tr>
<td>Safe environment</td>
<td>Culture</td>
<td>Being able to play</td>
<td></td>
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<tr>
<td></td>
<td>Religion</td>
<td></td>
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<tr>
<td><strong>Household level</strong></td>
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<tr>
<td>Income</td>
<td>Education</td>
<td>Being able to provide care</td>
<td>Providing care</td>
</tr>
<tr>
<td>Parental skills</td>
<td>Infrastructure</td>
<td></td>
<td>Providing shelter</td>
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<tr>
<td>Availability of child care services</td>
<td>Mobility</td>
<td>Being able to provide shelter</td>
<td>Providing a healthy environment</td>
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<tr>
<td>Safe environment</td>
<td>Ethnicity</td>
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<td></td>
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<td>Religion</td>
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<tr>
<td><strong>Societal level</strong></td>
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<tr>
<td>Data</td>
<td>Laws</td>
<td>Being able to provide social</td>
<td>Providing tailored projects to the</td>
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<tr>
<td>Infrastructure</td>
<td>Public policies</td>
<td>protection</td>
<td>disadvantaged communities</td>
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<tr>
<td>Child-focused</td>
<td>Urban/rural</td>
<td>Being able to provide social</td>
<td>Providing health</td>
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<tr>
<td>budgeting</td>
<td></td>
<td>protection programs</td>
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<tr>
<td></td>
<td></td>
<td>Being able to</td>
<td></td>
</tr>
</tbody>
</table>
using antenatal services

being healthy (child)

impact of using growth monitoring services on other functionings

being nourished (child)

using ECD services

using sources of information

using breastfeeding services

using growth monitoring services maximized

using growth monitoring services average

Unpublished results
Impact on

› Measurements
› Counselling
› Interventions
› Prevention

› Child malnutrition
› Child mortality

› Long-term health outcomes
In conclusion:

› A Capability Approach to Child Growth requires shifting our current biomedical thinking;

› The framework needs to be applied/ tested;

› Needs to be further developed in consultation with experts from different disciplines and international organisations such as WHO/UNICEF.
Thank you!

Symposium 144/98 at ICN.

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