What can we learn from nutrition impact evaluations?

A review of recent evaluations of interventions to reduce child malnutrition

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Stunting among children under five is widespread and the poor are most affected

Source: Van de Poel and others 2008
Overview

I. Review questions and sample of impact evaluations

II. Main findings

III. Lessons
Questions for the review

1. What is the impact of different interventions on children’s anthropometric outcomes?
2. How do the findings vary across settings and children, and what accounts for the variability?
3. What is the evidence on cost-effectiveness?
4. What are the lessons from implementing impact evaluations of World Bank-supported programs to improve child nutrition?
Impact evaluations reviewed

- Forty-six impact evaluations from 2000-09
- Child anthropometric outcomes:
  - Weight, weight for age, underweight (low wt/age)
  - Height, height for age, stunting (low ht/age)
  - Weight for height, wasting (low wt/ht)
  - Birth weight, low birth weight (<2500 g)
- Evaluations constructed a counterfactual
- All assessed short-term impacts
- Seven main types of intervention
### Distribution of nutrition impact evaluations by type of intervention (n=46)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Number</th>
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<tbody>
<tr>
<td>Conditional or unconditional cash transfers</td>
<td>12</td>
</tr>
<tr>
<td>Community-based nutrition</td>
<td>8</td>
</tr>
<tr>
<td>Micronutrient supplements</td>
<td>7</td>
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<tr>
<td>Child feeding or food transfers</td>
<td>5</td>
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<tr>
<td>Early Child Development</td>
<td>4</td>
</tr>
<tr>
<td>Integrated health</td>
<td>3</td>
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<tr>
<td>De-worming</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>
Number of evaluations measuring each anthropometric outcome

- Ht/age: 25
- Stunting: 10
- Height: 10
- Wt/age Underweight: 20
- Weight: 10
- Wt/ht Wasting: 6
- Birthweight: 11
- Low birth weight: 7
- Low birth weight: 10
- Low birth weight: 8
II. Main findings
1. A wide range of interventions had an impact, but the results were variable across different contexts.

Number of evaluations showing impact on any height variable, by intervention (18 of 33)
What accounts for the variability?

- Differences in underlying causes and baseline levels of malnutrition
- Differences in the age of the children studied
- The duration of exposure to the intervention
- Evaluation methodology
- Complexity and variability in program implementation

* External validity
The pathways from public policy to child nutrition outcomes

Exogenous factors
- Weather, geography, prices, technology

Government
- Policies and programs
- Regulatory framework

Public/ Private Health System
- Access to health care, nutrients, quality of care, information

Government welfare programs
- Cash transfers, food transfers

Other public services
- Agriculture, education, food subsidies, water supply, infrastructure

Households & Individuals
- Income, assets and savings, household composition, human capital, time

Child care practices

Dietary intake of mother and children

Number and spacing of children

Hygiene and sanitation

Use of preventive and curative health care

Nutritional Status
- Low birthweight, stunting, underweight, wasting, micronutrient deficiency

Health Status

Cultural/Social Context
- Women’s status, institutions, political structure, civil unrest
2. We are learning a lot less from nutrition impact evaluations than their potential suggests.

They usually measure average nutrition impacts, not the distribution

- Only a third (16/46) had any distributional analysis
- Only 9 assessed impact for the poor and non-poor
- Only 4 each assessed impacts by mother’s education and by gender
- Availability of public infrastructure may make a difference (Madagascar) or not (Mexico)

Source: Global Monitoring Report 2009
2. We are learning a lot less from nutrition impact evaluations than their potential suggests.

- They usually measure average nutrition impacts, not the distribution

- Costs and cost-effectiveness are rarely measured
  - Six evaluations measured intervention cost (Uganda & Kenya deworming), cost per case averted (Peru nutrition education), long-run benefits (Mexico CCT), benefit-cost ratio (Bolivia early child development, S. Africa Child Support Grant)
  - The benefit–cost can look good, but the program can still be completely unaffordable (Bolivia)

Source: Global Monitoring Report 2009
2. We are learning a lot less from nutrition impact evaluations than their potential suggests.

- They usually measure average nutrition impacts, not the distribution.
- Costs and cost-effectiveness are rarely measured.
- Many do not track program implementation and outputs, so we can’t tell what part “works”.
  - Only half (24) documented at least one intermediate output or outcome.
  - Important explanatory information.

Source: Global Monitoring Report 2009
Example: The causal chain for a community nutrition intervention in Bangladesh

Community workers trained
- They show up for work
- They implement the program correctly

Mothers and children attend
- Mothers acquire knowledge

Children appropriately targeted for supplements
- Mothers change behavior
- They consume the food (no substitution or leakage)

Reduction in malnutrition
Diagnosing the weak link in the community nutrition intervention in Bangladesh

- Community workers trained
- They show up for work
- They implement the program correctly
- Mothers & children (90%) attend
- Mothers in program areas know more
- \( \frac{1}{4} \) fed at home (possible substitution or leakage)
- \( \frac{2}{3} \) of eligible children not fed (don’t attend, targeting not applied or drop out of feeding)
- Mothers change behavior (no change)

Positive impact on most malnourished

VERY LITTLE Reduction in malnutrition

Source: White and Masset 2007
3. The impact evaluations had limited impact on policy

- 12 evaluations in 8 countries evaluated nutrition impact of World Bank support
- Most used quasi-experimental data
- All but one was a large-scale government program
  - Delays in launching intervention
  - Political pressure (implementation before the baseline, randomization, certain interventions)
  - Disruption in service delivery (political, natural disasters, program breakdowns)
- Nutrition status improved in six of eight countries (in at least one age group)
- However, impact on policy and programs likely in only 2
III. Lessons

For program managers, asking “what works?”

► The extent to which the “impact” measured in one setting applies to another is limited

► Need to understand the underlying causes of malnutrition

The right question to ask:

“What works, under what conditions does it work, for whom, what part of the intervention works, and for how much?”
III. Lessons

For researchers asking “how can we do better nutrition impact evaluation”?

► Measure distribution of impacts, interactions with public services
► Collect costs and document the results chain to make them operationally relevant
► Critical to understand underlying causes of malnutrition, when intervention started, and the full results chain; disaggregate age groups in analysis
► Time the evaluation in relation to key decisions
► Have a “plan B” if the research protocol is compromised
Coming soon!

What Can We Learn from Nutrition Impact Evaluations?
Lessons from a Review of Interventions to Reduce Child Malnutrition in Developing Countries

www.worldbank.org/ieg
The pathways from public policy to child nutrition outcomes