Sustaining Early Childhood Development Impacts

A systematic review of impact evaluation evidence

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Outline

► What we did
► What we found
► How you can use it
What we did—Methods

Inclusion Criteria
- All interventions (Bank and non-Bank) occurring during early childhood
- All outcomes occurring after early childhood (primary school/age 6)
- Middle- and Low-Income Countries
- Published 1990-2014 (including gray literature)
- Impact Evaluations with a credible counterfactual (passed risk of bias)
  - These provide causal, attributable measures of project outcomes

Resulting studies
- 115 relevant studies
- 54 studies (24 projects, 21 countries) passed quality inspection
  This becomes our dataset
What we did—Scope

6 Domains of HD outcomes
- Physical Development
- Cognitive Development
- Language Development
- Socioemotional Development
- Schooling Outcomes
- Labor Market Outcomes

3 Factors Influencing Outcomes
- Gender
- Socioeconomic Status
- Time
What did we find?

- We can do a better job supporting parents and families.
  - Three-quarters of the programs that support parents are in the Latin American and Caribbean Region
  - More screening for disabilities, developmental delay and maternal depression; More wellness check-ups, childcare
  - Robust IE evidence that parent support for Health Care and Early Stimulation leads to large and growing benefits
What we found - Confirming priors

OUTCOMES

- Cognition: Early Stimulation for most measures, and CCTs, deworming and breastfeeding improve general cognition
- Language: Early Stimulation and CCTs
- Schooling: Early Stimulation, Preschool, and CCTs work
- SES: Children from poorer families benefitted

INTERVENTIONS

- Early Stimulation works for most outcomes most of the time
- Health and Social Protection also fairly robust
- Earlier starts and longer exposure are associated with better outcomes
What we found - A few surprises

OUTCOMES
- Early stimulation can in fact improve labor market outcomes
- Can’t (yet) sustain physical benefits beyond early childhood, though evidence on height is mixed
- Socioemotional effects tend to lag, peak in adolescence, then fade
- Most outcomes are gender-neutral. However, Early Childhood interventions are particularly impactful for girls’ schooling

INTERVENTIONS
- Deworming can improve both Cognition and Language. So can MCH packages.
- Nutrition needs to be supported throughout and beyond the first thousand days to have any lasting effects
Nutrition Interventions

Must be in place throughout (and beyond) the first thousand days to be effective.
What did we find?

- Key interventions should be sustained throughout the First Thousand Days (and beyond).
  - Nutrition unlikely to have sustained effects otherwise
  - Water, Health Care also more beneficial if 0-3

- Only the Latin American and Caribbean Region consistently emphasized child development interventions for those younger than 3 across sectors
How You Can Use It - Decide, Design: YMMV

- Decide between interventions
- Design of chosen intervention

Resources
- Sections are Cross-referenced, summarized, stand alone
- Chapters address an outcome domain and subcategories, organized by intervention type
  - Tables, Forest plots, Vignettes
- Gap Maps: Intervention x Outcome, Region
- Challenges and suggestions for doing a long-term IE on ECD
- Appendices:
  - A: Details on the 21 interventions, by country
  - B: Details on outcome instruments
  - E: Anthology of other ECD Systematic Reviews
  - F: List of IEs that didn’t pass the quality rating
- Full Coding Database on Web
How You Can Use it—

**Gap Map by Region**

**Where to Study?**

- MENA and EAP highly under-represented
- Need more from China, India, Africa interior
- Little from Lower-Middle Income countries
Only 1 IE directly measures ECD’s effect on reducing poverty—by measuring impact on later jobs and incomes

<1/2 of the IEs explored ECD’s effects on shared prosperity—by measuring how outcomes differed by gender or parents’ income

Only one each study on sustained effects of early childhood from sanitation, water or hygiene interventions

Little or no evidence on long-run benefits to children whose mothers received common interventions.

0: nutrition counseling, pre-natal visits, prevention of depression
1: breastfeeding promotion, attended delivery or family planning
How You Can Use it—

Fill in the Gaps!

Interventions x Outcomes

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>Intervention Categories</th>
<th>Outcome Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
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<td>Social Protection</td>
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<td>Policy or regulation in nutrition, health, education and social protection</td>
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</table>

Number of Unique Studies: 21

Number of Unique Projects: 16
Summing up

What did we do?

- A systematic review of credible IE evidence of the effect of early childhood interventions on later life outcomes in developing countries

What did we find?

- Early Stimulation works. Social Protection and Health may too
- Nutrition needs full 1st 1000 days
- Sustaining improvements to physical development is tough
- Poor most often benefit: Implications for/against targeting?

How to Use It?

- Deciding between interventions, Designing selected interventions
- Rich Resources; explore from multiple angles
- MINE THE GAPS
From surviving to thriving...

...Will require coordination between actors

- Sustained interventions from birth to age 3
  Leverage existing early childhood entry points across sectors

- Support for parents in early stimulation
  Actively engage parents as allies

- Strategic selection of operations and impact evaluations by region & sector
  Build on LAC experience
Thank you.

Systematic Review:

ECD Evaluation page:
http://ieg.worldbankgroup.org/evaluations/wb-support-early-childhood-development
Challenges and Cautions for Systematic Reviews

Everything that is known; Not everything that is knowable

► Representativeness of Interventions—non-random selection
  • Overrepresentation of easily evaluable interventions
  • Focus on “reduced form” studies excludes those with intermediate outcomes
  • Lack of evidence does not imply no effect

► Representativeness of Impact Evaluations
  • Includes only existing studies
  • Publication bias (file drawer bias)

► Interpretation of Results
  • IEs measure partial equilibrium; general equilibrium may be different
  • Null results must be interpreted carefully—we never “accept” zero
  • External validity—changes to time, place, or scale may affect results
Why little meta-analysis or meta-regression?

- Bin sizes too small
- Methods underdeveloped—Highly nested structure of the data
  - Multiple outcome measures per
    - Domain with multiple domains per
      - Study with multiple studies per intervention
        - With multiple interventions per country

...all of which are unbalanced—and heterogeneous

- But simple meta-analysis generally shows results (early stimulation) or null results (physical development) where they would be expected by visual inspection of the data.
Quick Tutorial

Getting the most from the ECD Systematic Review
How You Can Use It - Decide, Design: YMMV

- Decide between interventions
- Design of chosen intervention

Resources
- Sections are Cross-referenced, summarized, stand alone
- Chapters address an outcome domain and subcategories, organized by intervention type
  - Tables, Forest plots, Vignettes
- Gap Maps: Intervention x Outcome, Region
- Challenges and suggestions for doing a long-term IE on ECD
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How You Can Use It - Decide, Design: YMMV

Example: Tanzania

Make an argument based on likelihood of LT impacts on Schooling: Early Stimulation
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How You Can Use it—

Gap Map by Region

- Nothing from Tanzania, but there is material from neighbors Kenya and Mozambique
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What about those ECD interventions in Kenya, Moz?
How You Can Use it—

Gap Map by Region—low quality studies

- See 1 low-quality study from Tanzania

Look it up in
- Appendix F—citation information;
- Online database—why it was rated low quality

Source: IEG
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Look up that study in Appendix F
Find out why it didn’t pass in the database
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What is known about schooling outcomes from other areas?
How You Can Use It - Decide, Design: YMMV

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What are some options for measuring schooling outcomes?
How You Can Use It - Decide, Design: YMMV

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These resources are useful for post-early childhood outcomes, but what about more proximate effects?
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Hmm... Would it contribute significantly to global knowledge to start a LT impact evaluation on this project?
### How You Can Use it—

**Gap Map**  
Interventions x Outcomes

There are relatively more IEs on Schooling outcomes for Early Stim, but still few in absolute number

But there are none on Labor outcomes

The table and diagram highlight interventions and their outcomes in various domains such as Cognitive Development, Language Development, Socioemotional Development, Physical Development, Schooling Outcome, and Employment and Labor Market Outcome. The number of unique studies for each intervention is also provided.
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I’ve heard setting up an IE for the long haul can be a challenge. What should I look out for?
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<td>Micronutrients and iron-folic acid: supplementation and fortification</td>
<td>Physical development</td>
<td>8</td>
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<tr>
<td>Exclusive breastfeeding promotion</td>
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<tr>
<td>Complementary feeding</td>
<td>Supplemental feeding (preschool, center-based and/or take home rations)</td>
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<tr>
<td>Counseling on optimal feeding practices:</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Therapeutic zinc supplementation for diarrhea</td>
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<td>4</td>
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<tr>
<td>Growth monitoring and promotion - prevention and treatment for acute malnutrition</td>
<td>Micronutrients and fortification for children</td>
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<tr>
<td>Antenatal visits</td>
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<tr>
<td>Attended delivery</td>
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<td>Disease prevention</td>
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<tr>
<td>Deworming</td>
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<tr>
<td>Planning for family size and spacing</td>
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<tr>
<td>Access to health care</td>
<td>Well child visits, growth monitoring, screening for developmental delays</td>
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<tr>
<td>Immunization</td>
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<tr>
<td>Prevention and maternal depression</td>
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<tr>
<td>Access to safe water</td>
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<tr>
<td>Hygiene or hand-washing</td>
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<td>Adequate sanitation</td>
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<tr>
<td>Quality teaching, programming or curricula</td>
<td>Pre-school Infrastructure</td>
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<td>Transition to quality primary schools</td>
<td>Birth registration</td>
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<tr>
<td>Conditional</td>
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<tr>
<td>Unconditional/targeted income support (child grants, etc)</td>
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<td>Child protection interventions</td>
<td>Orphans and fostering</td>
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<td>Governance reflecting ECD interests</td>
<td>Women's political reservation</td>
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<td>16</td>
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**Intervention Categories**
- Counseling on adequate diet during pregnancy
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