



SAHEL ADAPTIVE SOCIAL PROTECTION PROGRAM

Early Childhood Development interventions relevant to Sahel and other FCV contexts: Review of the Evidence

April 2022



Setting the stage

- Early Childhood Development (ECD) interventions can improve nutrition, growth, and overall development of children under the age of 5.
- ECD interventions refer to a broad set of programs, ranging from nutrition supplementation to parenting programs, sometimes accompanied by a cash transfer.
- Infants and children that are exposed to war in-utero or in early years can suffer from lower height-for-age than their peers ([Akresh, Lucchetti and Thirumurthy \(2012\)](#); [Minoiu and Shemyakin \(2014\)](#)). Some studies also highlight low weight-for-age and weight-for-height as well as an increased likelihood of wasting ([Ekhatior-Mobayode & Abebe Asfaw \(2019\)](#)) and acute malnutrition ([Howell et.al. \(2020\)](#)).
- There are significant difficulties associated with operating in conflict-afflicted and fragile states, from program implementation to conducting rigorous evaluations. As a result, there is little evidence of programs directed at fostering ECD in crisis contexts.

What is this note?

- What works and does not work to foster early-childhood development gains in fragile settings?
- **Methodology:** systematizing evidence from impact evaluations, quasi-experimental research, systematic reviews, meta-analyses and mixed-methods studies.
- **Aim:** identify intentional design features that make ECD interventions work in FCV contexts.

Intentional design features of successful ECD interventions



Cash+

Combining cash transfers with nutrition information or parenting training can significantly improve development outcomes for young children.



Nutrition supplementation

Nutrition supplementation tends to benefit younger children the most. These gains may only be sustained in the short run.



Parenting intervention

Parenting programs work best when delivered directly. Stimulation interventions can yield long-term benefits.

Examples of successful interventions

✓ In India, a parenting intervention had similar impacts on children's cognition and language when delivered via group as home sessions, for a quarter of the cost.

✓ In Bangladesh, when health workers incorporated early stimulation messages to their existing nutrition program, children demonstrated improvements in their language, cognition and socio-emotional skills.



Parenting program

+ home visits
+ group visits



Cash+

+ nutrition training
+ parenting training



Nutrition supplementation

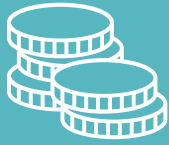
+ parenting training

✓ In Nigeria and Yemen, monthly Cash+ Nutritional training campaigns yielded significant positive effects on young children's Height-for-Age z-scores.

✓ In Niger, combining Cash with Nutrition and Parenting training improved both child development and dietary diversity.

✓ In Jamaica, children who received nutrition supplementation experienced short term gains in growth indicators. In the medium and long-run however, children who benefited from the stimulation intervention experienced greater gains, including higher intellectual capacity in childhood, and higher earnings in adulthood.

Cash+

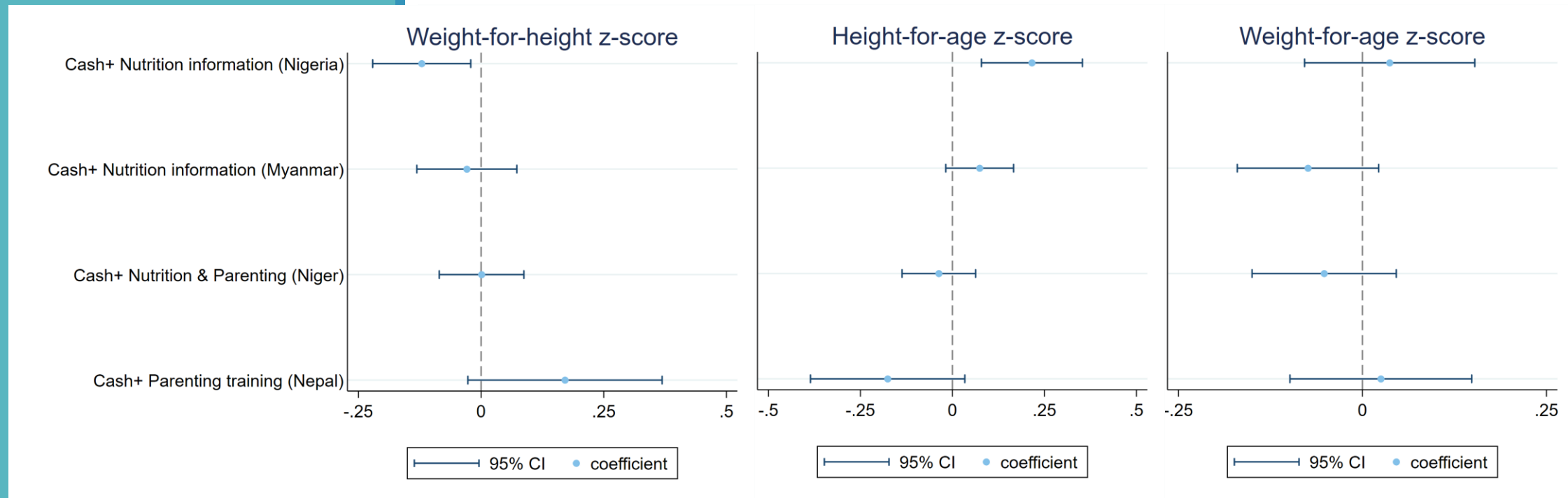


Cash payments made to households weekly or monthly, conditionally to encourage households to invest in their child, or unconditionally to lift financial constraints.

- In Nepal conditional cash payments were made to encourage the purchase of specific types of nutritious foods.
- In Nigeria cash transfers were unconditional, to lift potential financial barriers and optimize the effects on young children of parallel interventions.

The effectiveness of cash transfers alone in improving early childhood outcomes is debated.

- In Myanmar and Niger, young children in households that solely received cash showed no improvements when compared to the control group.



Nutrition supplementation



Nutrition supplementation consists in complementing nutrition with iron and vitamins, encouraging nutritious foods for pregnant women and young children.

In [Senegal](#), information on the benefits of exclusive breastfeeding and nutritious foods, together with iron and vitamin A supplementation, contributed to improved growth outcomes, especially for the youngest children.

In [Madagascar](#), a nutrition counselling + nutritional supplements program also yielded growth improvements in the youngest children.

In [Jamaica](#), although nutrition supplementation impacted stunted children's growth outcomes in the short run, it did not yield longer-term benefits.

Sig. impacts of nutrition interventions on anthropometric outcomes



Parenting programs



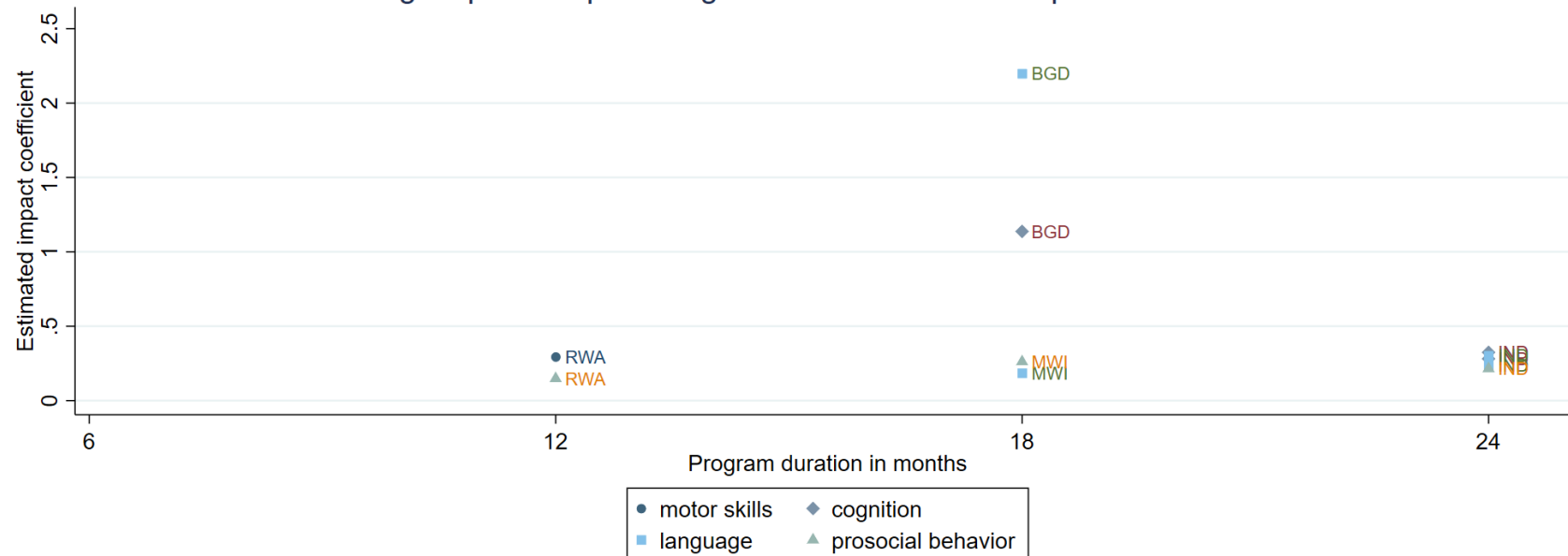
Encourage parents to provide stimulation activities to infants and toddlers with an aim to improve their children's cognitive and motor development, socio-emotional skills, problem solving skills and overall well-being as they grow.

In [Rwanda](#), a home visiting program to promote ECD and reduce intra-household violence resulted in significant improvements in child motor, communication, problem solving and social skills.

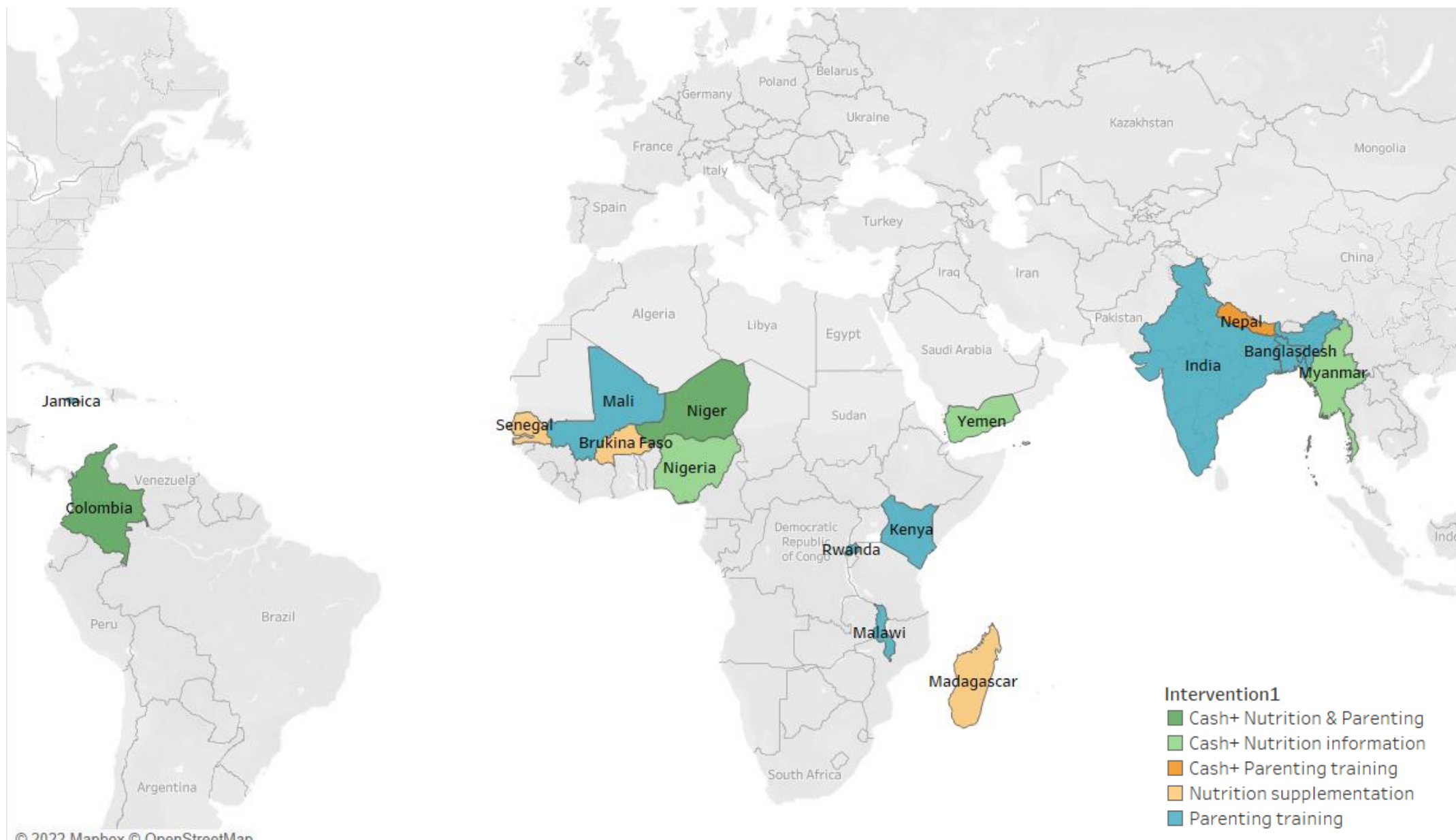
In [Bangladesh](#), a parenting program to supplement an existing nutrition supplementation program, improved both the child's language and cognitive development as well as anthropometric outcomes.

In [India](#), a parenting program delivered both via group and home sessions improved child cognition and language skills with significant costs differences, with promising lessons for scaling-up.

Sig. impacts of parenting interventions on development outcomes

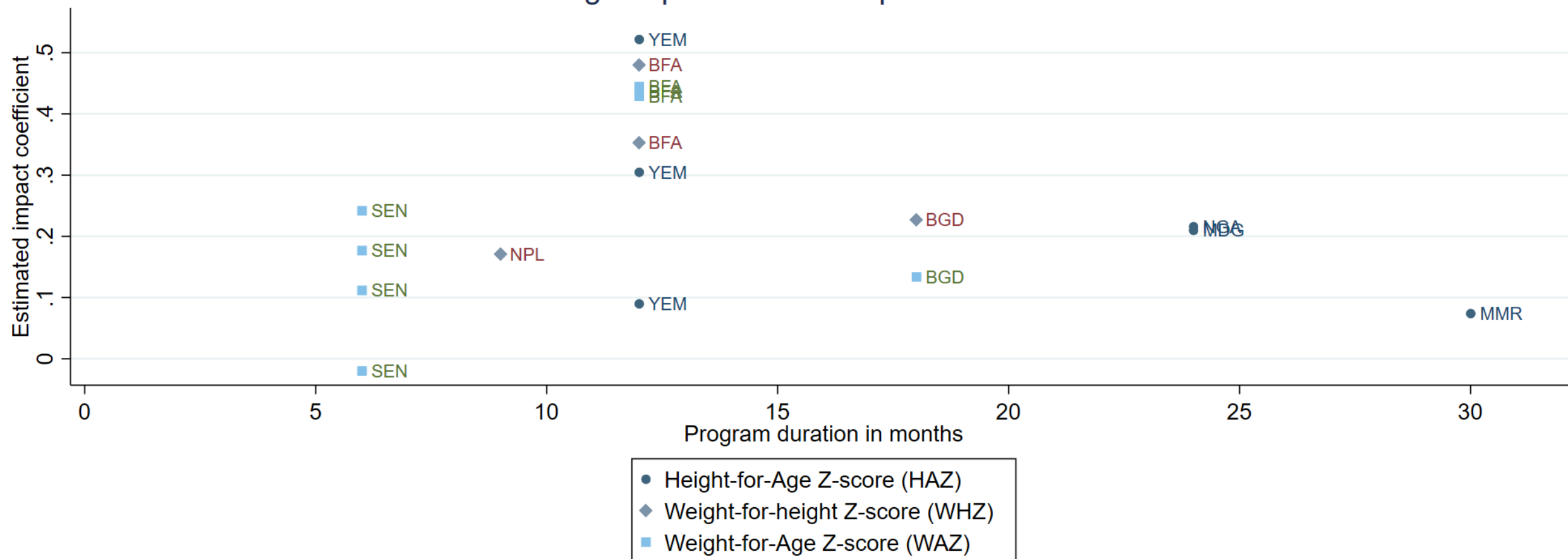


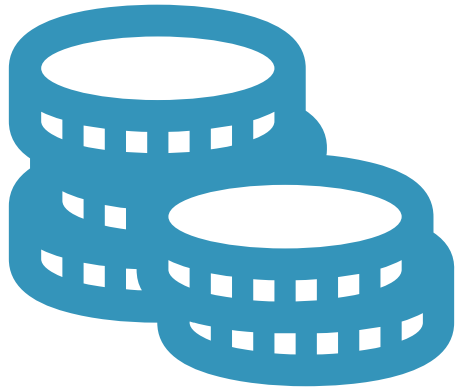
Evidence on ECD interventions in this note



Statistically significant results

Average impacts on anthropometric outcomes





Cash+

Nutritional training

Parenting training

Nutrition & Parenting training

Long-term effects of a large-scale **Cash+** nutrition information campaign on children's health in Northern Nigeria

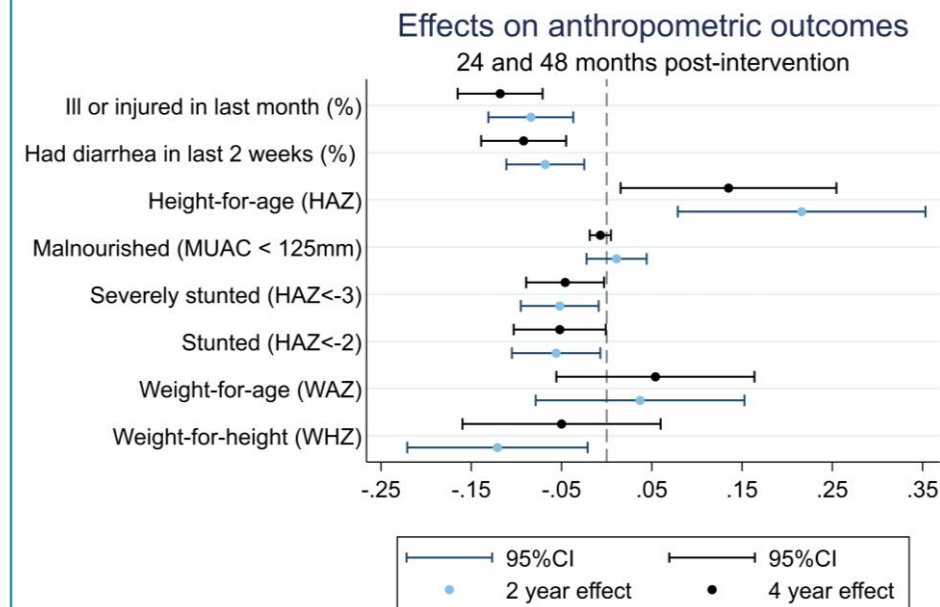
Intervention – Cluster-randomized control trial at the village level

- Evaluation of a **Cash+ Nutrition information** campaign called the Child Development Grant Program that ran from 2015 to 2019.
- The evaluation sampled of 3,600 women pregnant at baseline, from 210 villages Northern Nigeria. 2,417 women were assigned to the Treatment group. Women were selected at random irrespective of poverty status.
- The monthly program comprised of **Unconditional cash transfers** until the child is 24 months old; and **Nutrition information** delivered to both mothers and fathers. The aim was to estimate the effect of the program for 1,000 days starting during pregnancy.

Results – OLS regression

- **Height-for-Age (HAZ):** At 24 months (end-line), treated children show a **significant increase** in their Height-for-Age Z-score by **0.22s.d.**(SE:0.07), and the incidence of **stunting** (HAZ<-2) is **8% lower** and **extreme stunting** (HAZ<-3) is **15% lower** compared with non-treated children.
- At the end-line, 4-years post-intervention, **Height-for-Age score is 0.14s.d.**(SE:0.06). The effect on stunting is maintained at the end-line.
- No impact on Weight-for-Age Z-scores (WAZ) attributed to the low incidence of wasting in the sample; no significant change in malnutrition (proxied by middle upper arm circumference).

Relevant to FCS: 23% of women had dropped out by the end-line, almost entirely due to insecurity and the fact that enumerators were unable to reach them.



Cash for nutrition during Yemen's humanitarian crisis: evidence from a cluster randomized control trial.

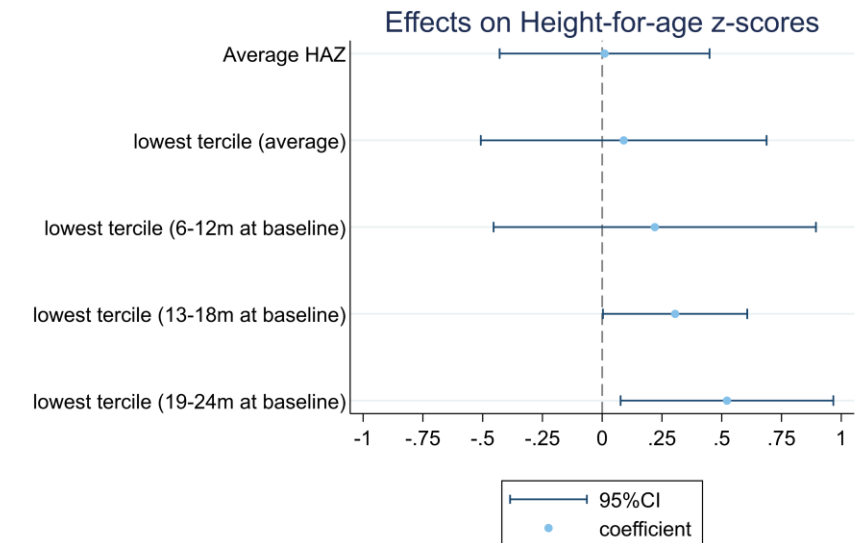
Intervention – Cluster randomized control trial (level)

- Monthly cash transfers with monthly nutritional trainings and child malnutrition monitoring.
- The program targeted the poorest and most vulnerable households in Yemen by linking eligibility with Yemen's main national safety net program, the Social Welfare Fund (SWF). Women of interest were indirect beneficiaries of the SWF, that is, indirect family members of direct beneficiaries (i.e. sisters-in-law or daughters-in-law of SWF beneficiaries) and women who were pregnant or had a child under the age of 2; although there were also direct SWF beneficiaries (i.e. sisters and daughters of beneficiaries) in both treatment and control villages participating in the program.
- The sample included 2,000 indirect beneficiary women in 95 Treatment communities (1,001 households) and 95 Control communities (999 households). The program ran for 12 months in 2016-2017.

Results – Difference-in-Difference

- **Child dietary diversity scores increased** by +0.62 food groups (SE:0.24) (on a scale of 1-7) across all the HH as a result of an increase in the purchase, which represents an increase of 7 percentage points across households, and 11p.p. in the poorest households.
- Large significant gains in **height-for-age z-score** for the poorest children by **+0.31s.d.(SE:0.15)**.
- Authors were unable to disentangle the effects of cash transfers from the training component.

Relevant to FCS: Although the program started in 2015, cash transfers were suspended for 9-months due to financing challenges during the civil war. Randomization was not fully respected, with 24% of control households receiving treatment. Limited external validity due to similar programs in the area.



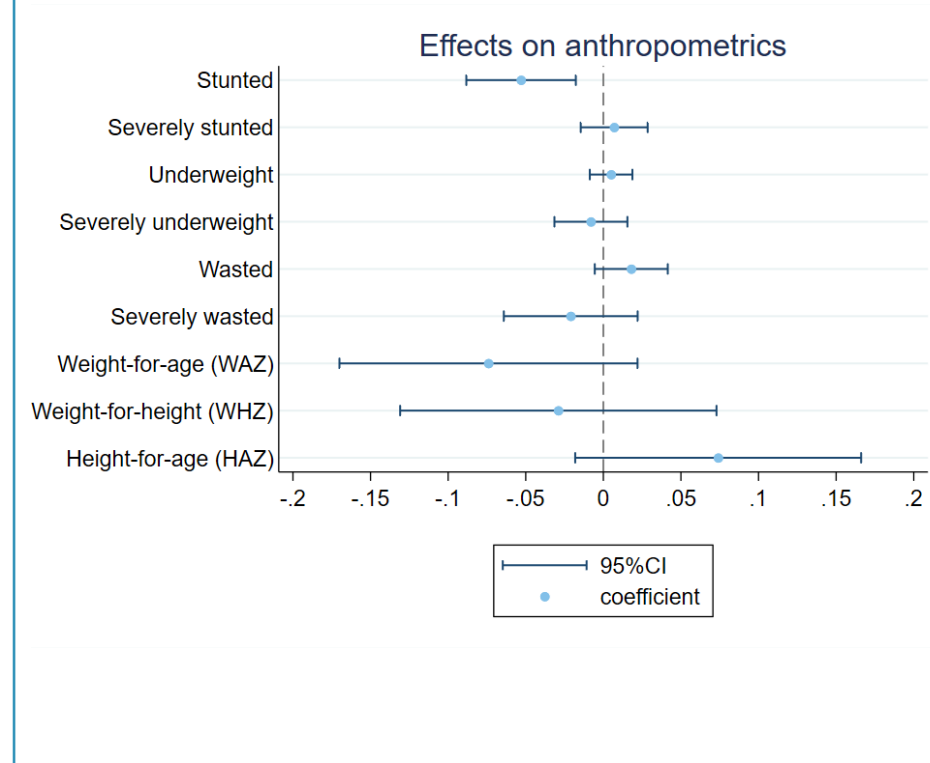
Delivering cash transfers with nutrition training to reduce malnutrition: evidence from Myanmar

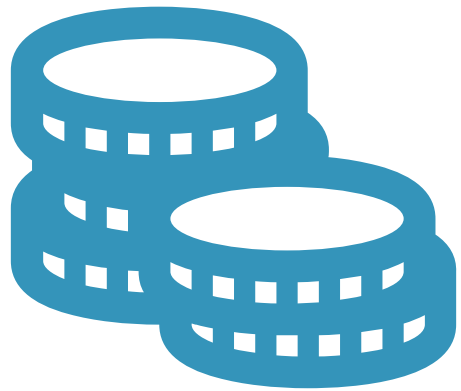
Intervention – Cluster RCT of Cash Transfer + Nutrition Training

- Evaluation of a monthly unconditional cash transfer delivered to pregnant women with and without nutrition information to reduce malnutrition in the first 1,000 days of children’s lives.
- The program ran for 30 months from 2016 to 2019 in 416 villages and targeted all the pregnant women in intervention villages from enrollment until their child turns 2.
- In a randomly selected subset of treatment villages women also participated in monthly group sessions on child health and nutrition.
- Cash+ nutrition was delivered in 142 villages; cash only was delivered in 146 villages; and the control group was 149 villages. The sample included 2,134 pregnant women (2,154 children).

Results - OLS

- Outcome of interest: stunting among children 22-35 months old.
- In control villages 34% of the children are stunted, including 7% severely stunted. **‘Cash-only’ had no effect on child malnutrition** relative to the control group, including no impact on stunting and height-for-age and no significant effect on child dietary diversity.
- Adding the parenting intervention to cash transfers significantly reduced the proportion of stunted children in treated villages by a coefficient of **-0.046 (SE:0.021)** which means they are 4.6 percentage points or 13.5% less likely to be stunted. Despite the large coefficient (+0.074), the combined intervention had no statistically significant effect on height-for-age z-scores.
- Most of the improvement in reducing malnutrition is attributed to the increase in child dietary diversity. Indeed, food consumption in the combined treatment group also increased by 15%, highlighted by a significant improvement in child dietary diversity scores by **+0.655 (SE:0.063)** food groups.





Cash+

Nutritional training

Parenting training

Nutrition & Parenting training

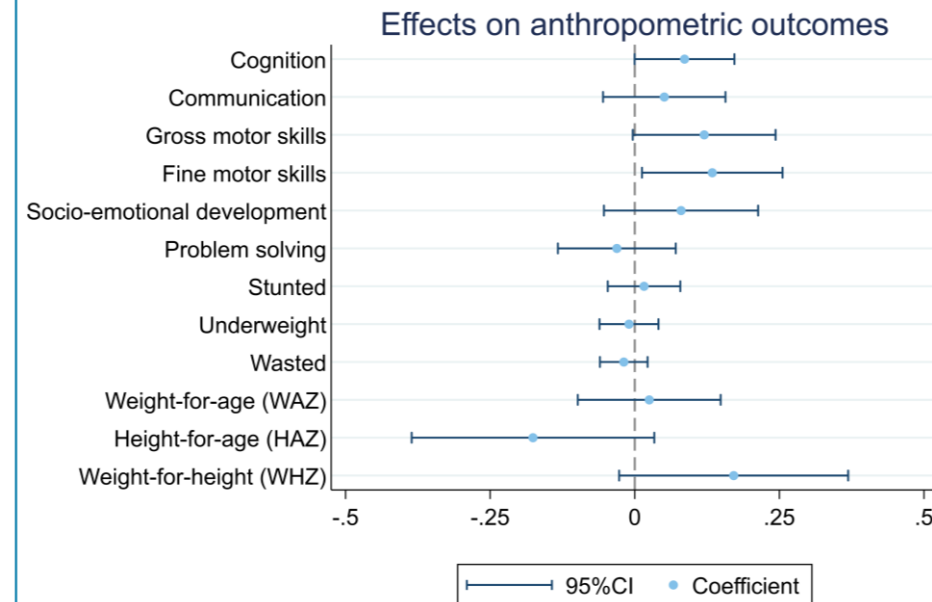
Providing Cash+ childcare training: Evidence from Nepal

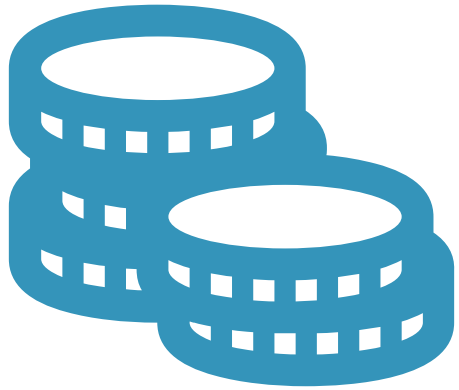
Intervention – RCT of a Cash+ childcare information program in Nepal

- Two treatment arms:
 - Childcare and nutrition information only
 - Childcare and nutrition information together with a monthly conditional cash transfer
- Information on childcare and nutrition was given weekly for 9 months via group sessions.
- Cash transfers started later than information session and lasted for 5 months.
- Treatment targeted families in extreme poverty with pregnant women and/or a child under the age of 2 from 591 villages across 184 counties.
- Randomization was done at the county level, with 45 control counties; 48 information only counties; and 46 cash+ information counties.
- The final sample included 2,338 women and 1,953 children.

Results – OLS

- **Women's knowledge improved significantly** in both treatment arms. Women in the cash+ info group show greater knowledge gains than women in the info only group.
- **Statistically significant improvement in cognitive development** in cash+ info group relative to both the control and info only group, with an increase in 0.086s.d.(SE: 0.044) in the cognitive index. These gains are attributed to improvements in gross and fine motor skills.
- **Cognitive improvements are dominated by boys** who show an increase in 0.13s.d.(SE: 0.064), significant at the 5% level, compared with *girls*: 0.04s.d. (SE: 0.053)
- **No significant improvements in anthropometrics** (unexpected), except for weight-for-height (WHZ): +0.171s.d. (SE:0.101).





Cash+

Nutritional training

Parenting training

Nutrition & Parenting training

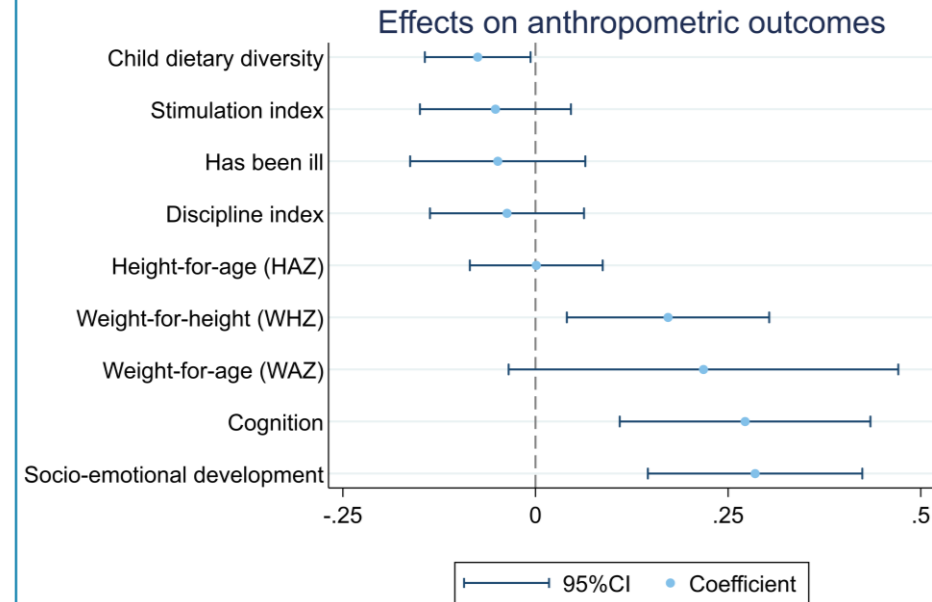
Using stimulation & nutrition education to improve ECD outcomes of a large-scale cash transfer program in Niger

Intervention

- Evaluation of Niger's national safety nets system that provides monthly cash transfers and parenting training to women in poor households.
- Women receive monthly unconditional cash transfers for 24 months.
- Parenting training activities to encourage health, nutrition and psycho-social stimulation, and child protection practices. The training takes place via monthly village assemblies, community meetings and household visits.
- The RCT was embedded in the national program to dissociate the effects of parenting training from cash transfers to very poor households.
- Villages were randomly assigned to control group or cash only or cash+ information.
- The effect was measured across 10,000 very poor households from 2012-2015.

Results - OLS

- No significant effect on ECD or parenting practices of cash transfers alone.
- The information component improved **nutrition**, with an increase in the nutrition practice index of 0.44s.d.(SE:0.136) attributed to an increase in exclusive breastfeeding.
- Children's **dietary diversity** increased by 0.29s.d.(SE:0.071).
- Information also improved **preventive health** behavior, whose index rose by 0.21s.d.(SE:0.082).
- The **stimulation** index rose by 0.22s.d.(SE:0.129).
- Despite these gains the study show no significant effect on anthropometrics and cognitive outcomes and moderate gains in children's socio-emotional development (+0.17s.d.(SE:0.067)).
- The study found significant spill-overs of the information component on non-beneficiary households' nutrition and stimulation components.



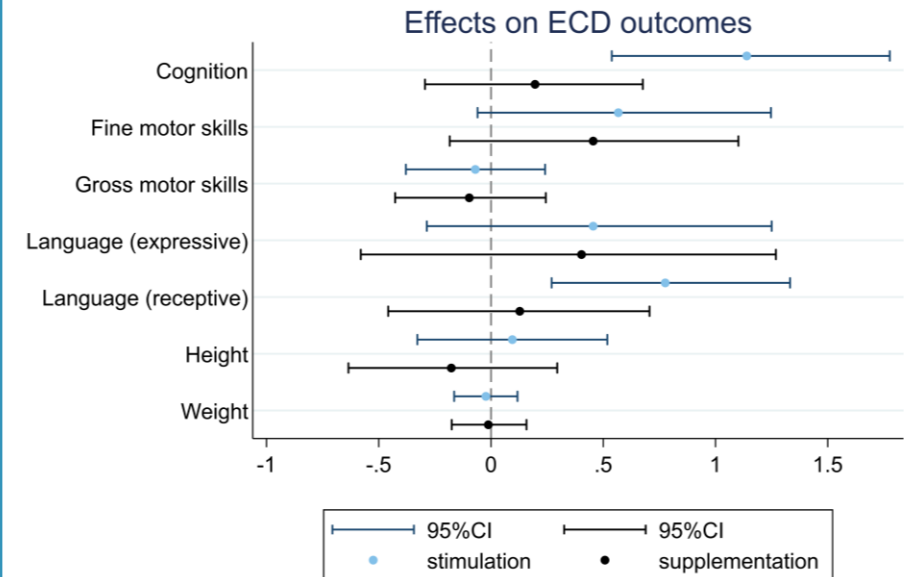
Assessing the effectiveness of a large-scale cash+ stimulation or nutrition program in Colombia

Intervention – Cluster RCT of a large-scale Cash+ Stimulation or Nutrition program

- 96 municipalities across 8 of 32 departments in Colombia already benefiting from a national cash transfer program were randomly assigned to:
 - **Psycho-social stimulation** as weekly home visits with play demonstrations; or
 - **Micro-nutrient supplementation** given as daily sprinkles; or
 - **Combined** intervention; or
 - **Control** group.
- 1,420 children aged 12-24 months and their primary caregivers took part in the study.
- The intervention was delivered by female community members for 18 months.
- Outcomes of interest include cognitive, receptive and expressive language, and fine and gross motor scores on the Bayley scale of infant development-III; height, weight, and hemoglobin levels.

Results - OLS

- Effects were estimated 18 months after it started when the children were 2.5 to 3.5 years old:
 - Stimulation **improved cognitive scores** by $\beta=1.139$ (95CI:0.538;1.776, $P=0.002$).
 - Stimulation **increased receptive language** by $\beta=0.776$ (95CI:0.270;1.332, $P=0.032$).
- The second evaluation two years later found that these gains in parental engagement could not be sustained. There was no detectable difference between treatment and control groups.
- Nutrient supplementation had no significant effect on any outcomes.
- No intervention affected height, weight or hemoglobin levels.





Nutrition supplementation

What's the most effective way of tackling chronic malnutrition and poor child development? Evidence from Madagascar

Intervention - RCT

- The government-run intervention was implemented by community health workers and targeted pregnant women and infants from birth until age 2 for 1,000 days. Participants were assigned to one of five groups:
 1. Home visits for intensive nutrition counselling by community health workers (T1);
 2. Counselling + nutritional supplements for children aged 6-18 months (T2);
 3. Counselling + nutritional supplements for children + for pregnant or breastfeeding mothers (T3);
 4. Counselling and home visits to promote early childhood stimulation activities (T4);
 5. Control group which did not receive any intervention.
- The intervention involved 125 poor communities; 738 mothers; 1,248 pregnant women and 2,490 children. Outcomes of interest were child growth (HAZ and WAZ) and development at 18-30months.

Results - OLS

- On average, none of the interventions improved physical growth or development, and home visits did not translate into improved dietary diversity; and none of the children's motor, communication and problem-solving skills improved with stimulation visits. This lack of effect was attributed to low take-up of stimulation messages and difficulty of health workers in implementing the program.
- Supplementing mothers also conferred no benefits.
- **Supplementation improved child growth and nutrition** when the child was <6 months at baseline:
 - ✓ Significantly higher height-for-age (HAZ) for T2: +0.210 SD [95% CI: 0.004 to 0.424], borderline for T3: +0.216 SD [0.043 to 0.389].
 - ✓ This contributed to significant reduction in stunting: -9.0% [95% CI -16.7 to -1.2] for T2 and -8.2% [-15.6 to -0.7] for T3.

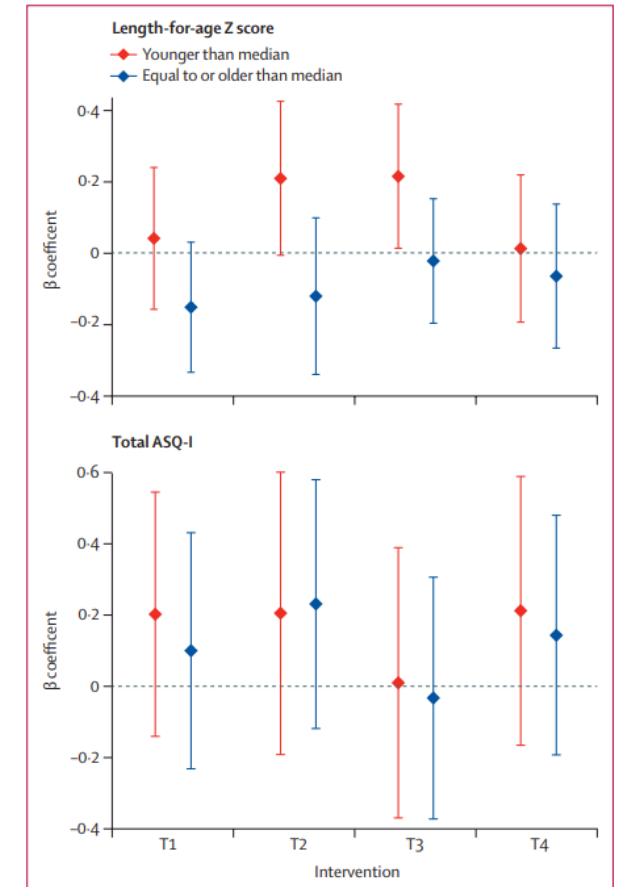


Figure 3: Heterogeneity impact on length-for-age Z score and total ASQ-I score by child median age and intervention group
Child age is dichotomised as younger than versus equal to or older than the median values at study end. Total ASQ-I is the age-normalised score for all five subdomains of the ASQ-I. ASQ-I= Ages and Stages Questionnaire: Inventory version.

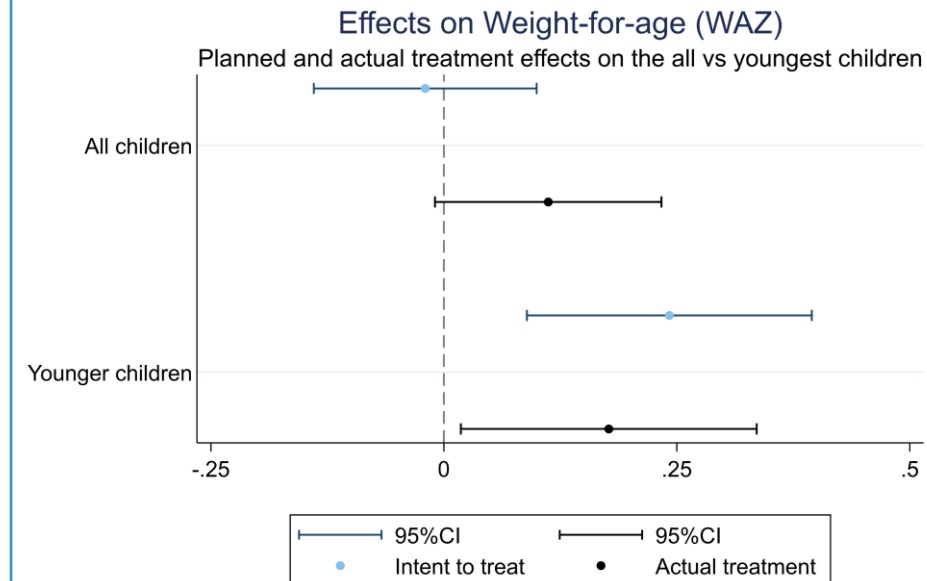
Effectiveness of a large-scale randomized nutrition program in Senegal

Intervention – Large-scale RCT

- Large-scale, randomized nutrition program – “Nutrition Enhancement Program” which reached 200,000 households between 2004-2006 across three poor rural regions of Senegal.
- Treatment was given to 212 randomly chosen villages and consisted of a monthly session with mothers and village elders delivered at the community-level, which included:
 - ✓ Information on exclusive breastfeeding in the first 6 months of a child’s life;
 - ✓ Child weight measurements;
 - ✓ Vitamin A biannually to children 6-59 months and mothers in the month after birth;
 - ✓ Iron supplements to pregnant women;
 - ✓ Households were given bed nets and instruction on their use;
 - ✓ Deworming to children aged 6-59 months;
 - ✓ Cooking workshops using nutritious foods for mothers and children over 6-months.

Results – DID – main outcome: weight-for-age z-score (WAZ)

- The aim of the study is to accurately assess the effects of large-scale programs, whose attrition rates are often large due to implementation constraints. In this case 30% of treatment villages did not receive treatment.
- Using *planned treatment status*, the program shows significant impacts on vitamin A and near-significant impacts of iron supplementation. However, the program shows no significant impact on the provision of bed nets and the WAZ of children under 3 (-0.06s.d., SE:0.065).
- **Limiting the analysis to children that have participated in the program reveals evidence of significant weight gain (although small) for younger children**, whose mothers received the program when they were pregnant (**WAZ: +0.17s.d., SE:0.081**).



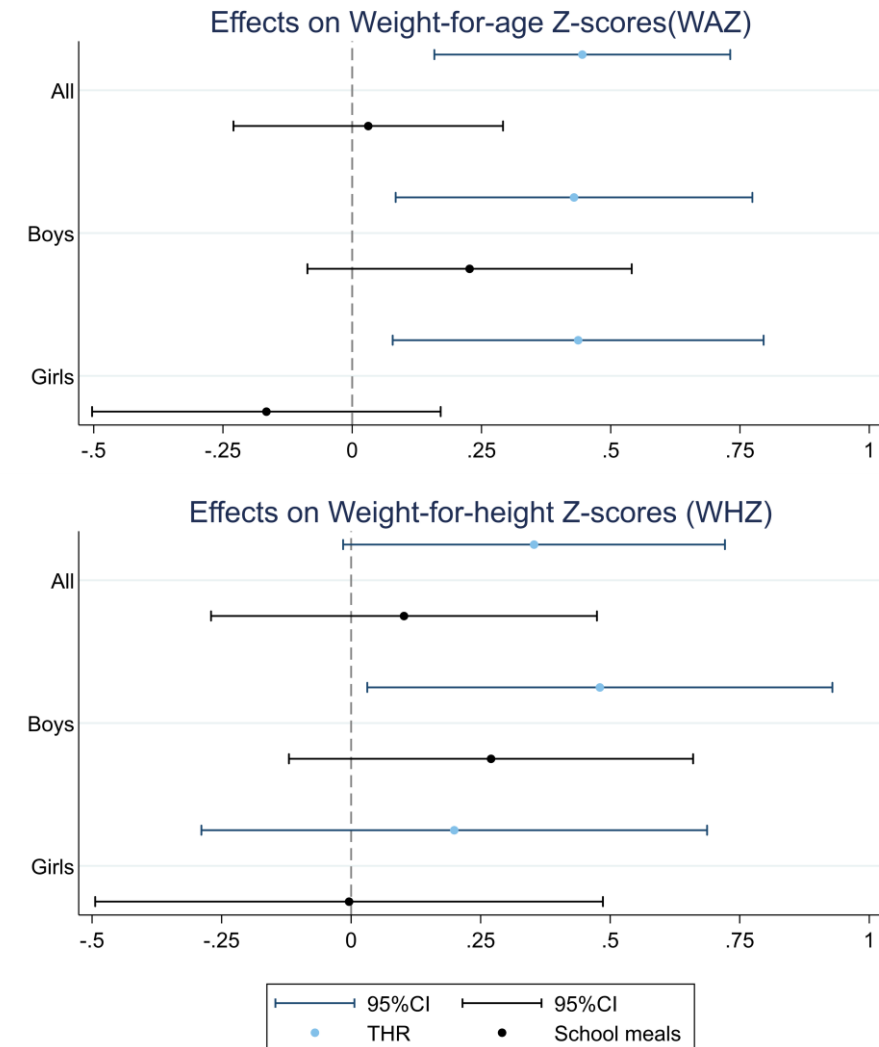
Can feeding siblings at school benefit pre-school age children at home? RCT evidence from Burkina Faso.

Intervention - RCT

- RCT on the impacts on under-5 siblings at home of two school-feeding schemes experimented in 46 newly opened schools:
 - **Daily school meals** to all children attending school that day (16 schools);
 - **Monthly Take-Home Rations** consisting of 10Kg of cereal flour to girls only, conditional on 90% school attendance rate (16 schools);
 - **Control group**: no feeding program (14 schools).
- The experiment took place in 2005-2006 in the Sahel region of Burkina Faso.
- Randomization was done at the village level across 4 provinces of the region.
- The study involved **1,900 under-5 siblings of 4,140 recipient children** from 2,208 households.
- The main outcome of interest is the weight-for-age of pre-school aged siblings (0-60 months old), as a proxy for nutrition and intra-household reallocation of food.

Results – OLS

- **School meals had no impact** on the weight of siblings at home, suggesting that program had no effect on intra-household re-allocation of foods.
- **Take-Home Rations significantly increased Weight for Age (WAZ):** +0.45s.d. (SE:0.146) to both boy and girl siblings at home, with comparable effects on boys (0.43s.d., SE:0.176) and girls (0.44s.d., SE:0.183).
- The meals program had an impact on recipient children, while take-home rations did not.



Is a combined approach to malnutrition as effective in Kenya as in South Sudan's fragile context?

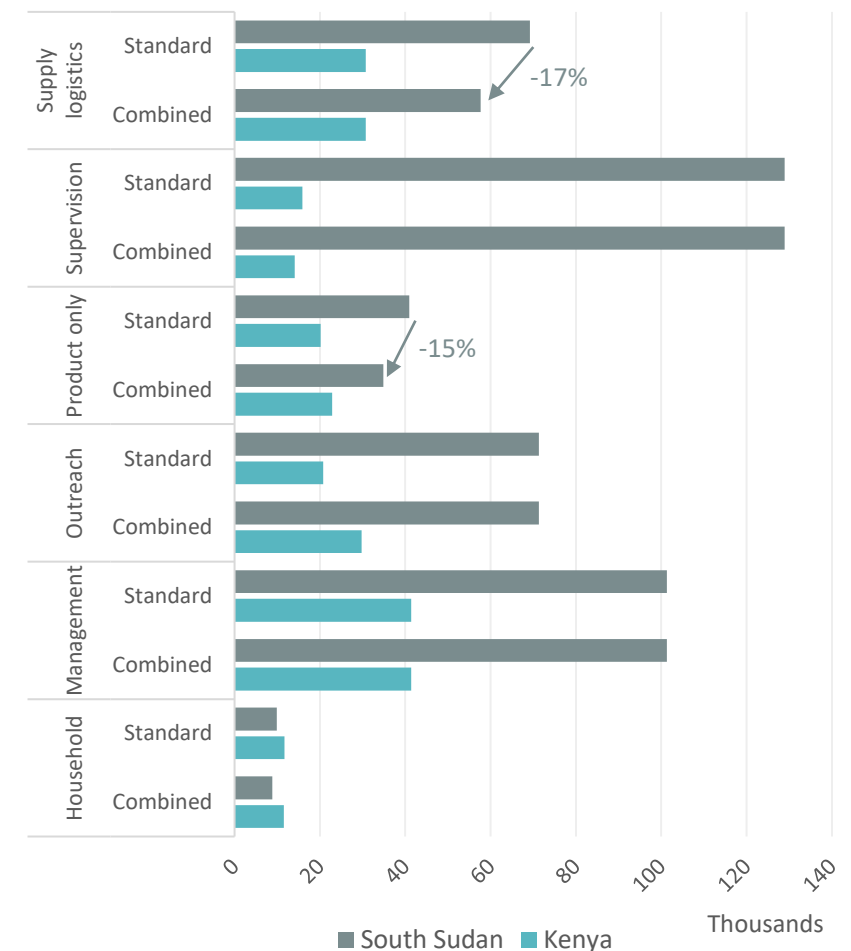
Intervention – Cluster RCT of a standard vs. combined protocols to treating malnutrition

- The aim of the study was to assess whether treating severe acute malnutrition (SAM) and moderately acute malnutrition (MAM) with a combined solution as opposed to standard treatment yielded different outcomes for malnourished children.
- The study lasted 11 months from May 2018 to March 2019 and involved 4,100 children aged 6-59 months across 12 combined protocol clinics and 12 standard care clinics (6 facilities per treatment type in each country). Randomization was stratified by country (Kenya and South Sudan).

Results - OLS

- The unified protocol to treat severe and moderate acute malnutrition is **as effective** as standard treatment in both countries, achieving the same numbers of children recovered:
 - 62% of combined protocol children completed treatment, and 76% of them recovered.
 - 59% of standard care children completed treatment, and 74% of them recovered.
 - There were 23 (1.8%) deaths in the combined arm against 21 (1.8%) in the standard one.
- Although significantly more expensive there, **the combined protocol is significantly more cost-effective in South Sudan** as the combined protocol cost significantly less per child there.
- The cost saving in South Sudan is attributed to:
 - The cost of treating SAM using the combined protocol is 5% more expensive than using standard care however it is 23% lower than the cost of treating MAM. As there were more children suffering from SAM in South Sudan, the **total cost difference was 15% lower**.
 - The reliance on an independent supply chain in South Sudan increased delivery speed and reduced costs associating with transporting a single product, while Kenya's centralized medical supply chain, managed by the national government, functioned as usual.

Cost difference of standard and combined malnutrition treatments





Nutrition supplementation

+ Parenting program

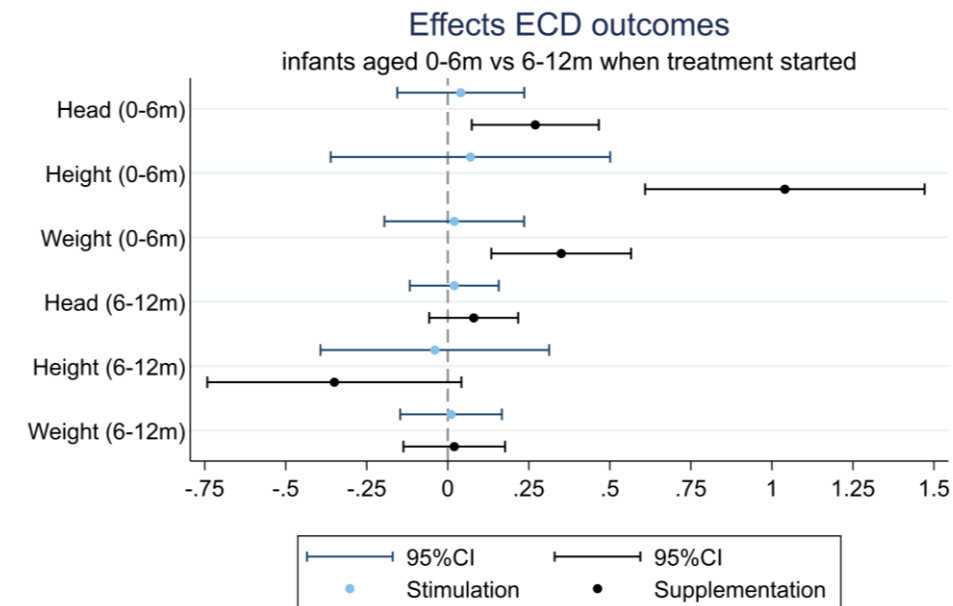
Nutritional supplementation, psychosocial stimulation, and growth of stunted children: the Jamaican study

Intervention – RCT of a stimulation program for stunted children

- 129 growth-stunted children (height-for-age z-score inferior to -2 s.d.) aged 9-24 months from poor neighborhoods of Kingston, Jamaica in 1986-1989 took part in a small-sample randomized early childhood education stimulation.
- Children were assigned to one of four groups:
 1. **Psycho-social stimulation** (N=32), delivered as weekly 1-hour play sessions during home visits for 2 years with trained community workers to foster cognitive, language and psycho-social skills;
 2. **Nutrition** supplementation (N=32), delivered weekly as 1Kg of formula containing 66% of daily recommended nutrition intake for 2 years; or
 3. **Combined** (N=32); or
 4. **Control** group (N=33).
- The children were compared to 84 non-stunted children that lived nearby.

Results – OLS

- Stimulation had no effects on growth and there was no significant interaction between stimulation and supplementation.
- After 6 months, **nutrition supplementation** contributed to significantly increased:
 - **Height** (+1.04, SE:0.22, $P < 0.001$)
 - **Weight** (+0.35, SE:0.11, $P < 0.01$); and
 - **Head circumference** (+0.27, SE: 0.10, $P < 0.05$).
- These effects were inferior to outcomes of non-stunted children.



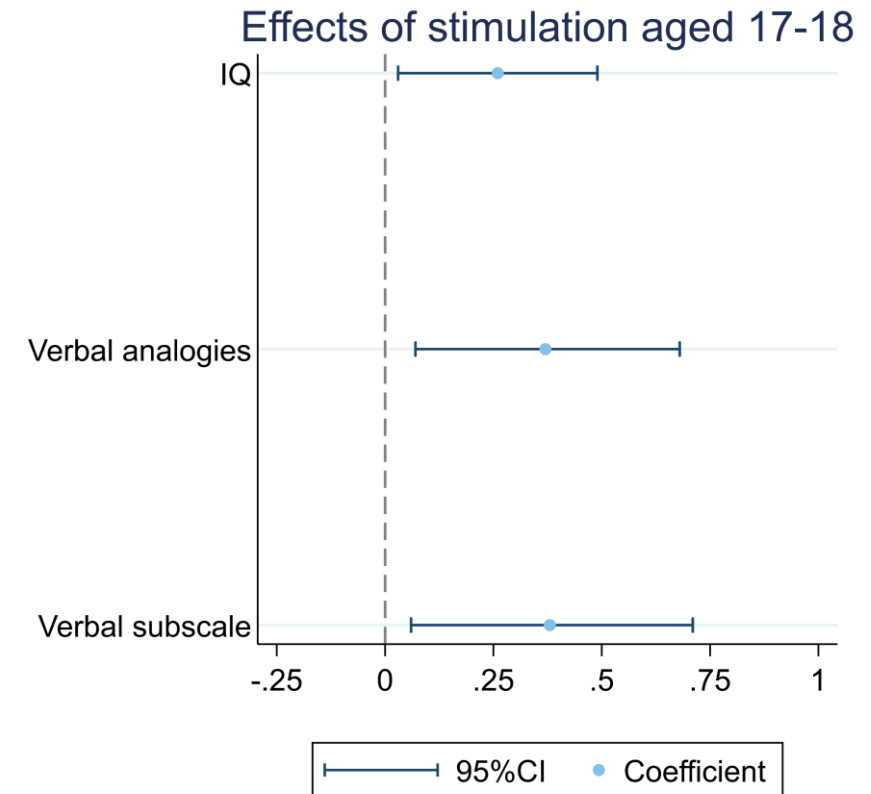
2005 follow-up to the Jamaican Study: stunting leads to cognitive and educational deficits in late adolescence, mitigated by early stimulation.

Intervention

- Trial of nutritional supplementation and psycho-social stimulation in stunted children aged 9-24 months old compared with non-stunted children. The trial revealed that both interventions led to improved development.
- The follow up, 16-17 years later, assesses the effect of the trial on 103 of 129 stunted children and compares them with 64 of the 84 non-stunted children.

Results

- Nutrition supplementation shows no significant long-term effects.
- Compared with no intervention, **stimulation led to higher IQ scores** (coeff. 0.83; 95%CI:0.06-0.71;p=0.02).
- Stimulation also led to **higher scores** on:
 - The **verbal** subscale (0.37, 0.07–0.68, p=0.02);
 - Peabody picture **vocabulary** test (7.84, 0.73–14.95, p=0.03);
 - **Verbal analogies** (0.26,0.03–0.49, p=0.03);
 - and **reading** tests (4.73, 1.31–8.14, p=0.007, and 2.7, 1.12–4.37, p=0.001).
- Stunted and non-stimulated participants had significantly lower scores than non-stunted children on 11 of 12 cognitive and educational tests.



2021 follow-up to the Jamaican study: Labor market returns to an early childhood stimulation intervention in Jamaica

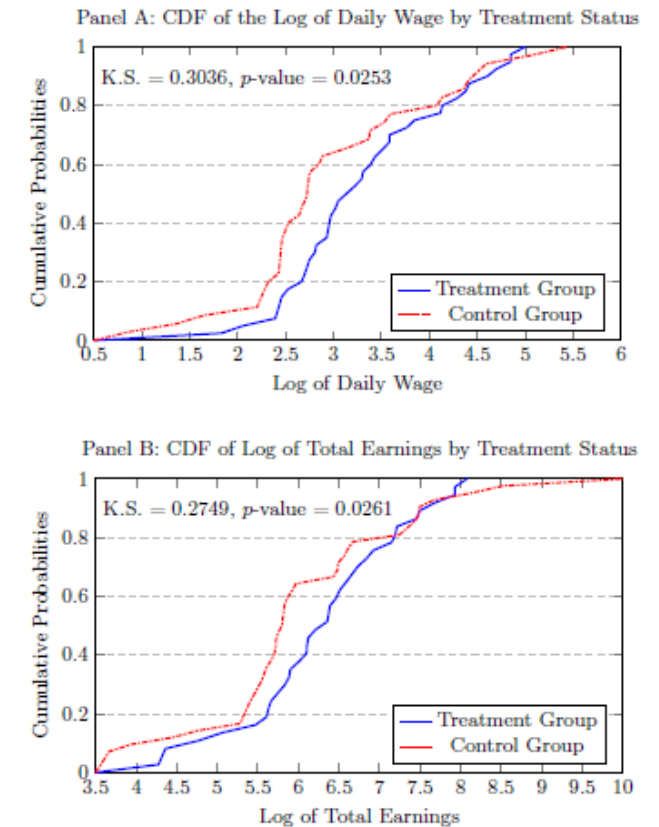
Intervention – long-term labor market effects of an RCT stimulation program for stunted children

- Assessment of the labor market effects of the Jamaica Early Childhood Stimulation intervention 30-years post intervention. The original sample involved 129 stunted children between the ages of 9 and 24 months old. Subsequent studies were conducted when respondents were 7 (1991), 11, 17 (see Walker et. al., 2005), and 22 (Gertler et al, 2014).
- This 2021 follow-up presents findings of 95 of the original 127 original study participant as they turn 31 years old. They compare them with 64 of the original 84 participants.
- As for the 2014 assessment, both treatment arms containing stimulation were merged, while nutrition having no effect in the previous assessment, was merged with the control group.

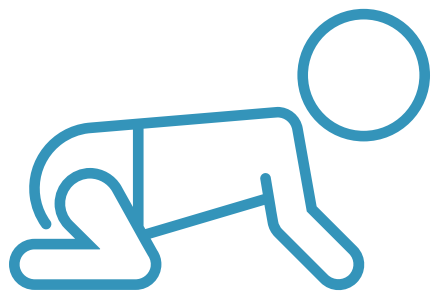
Results

- Stimulation had large and statistically significant effects on income and schooling:
 - Treated children had **43% higher hourly wages** and **37% higher earnings** than the control group. This is a substantial increase over the treatment effect estimated for age 22 where a 25% increase in earnings was observed.
 - Treatment increased **college enrollment by 14 percentage points** and likelihood of obtaining a **higher education diploma by 26 p.p.**
- [Walker et. al. \(2021\)](#) published a separate assessment of the same participants.
- Treated participants had 18 significant outcomes of 33 assessed compared with the control group.
- These include greater IQ and cognitive flexibility, reduced depressive symptoms), increased grit and conscientiousness, lower substance use and risk taking related to health and work.
- Comparison participants had higher IQ than control and treatment groups; and better executive function, lower social inhibition and risk taking than the no-treatment group.

Figure 1: Cumulative Density Functions for Wage and Earnings by Treatment Status



Panel A of this figure presents the estimated cumulative density function (CDF) of the Log of Daily Wages by treatment status. Panel B displays the CDF of the Log of Earnings by treatment status. Both wage and earnings variables are measures in US dollars. Treatment group combines the stimulation arms of the intervention while the control group comprise the participants that did not experience the stimulation treatment. We perform the two-sample Kolmogorov-Smirnov (KS) one-tailed test for equality of distributions against the hypothesis that the distribution of the treated group dominates the distribution of the control group. The KS statistic for Log of Daily Wage (Panel A) is given by 0.3036 and its associated p-value is 0.0253. The KS statistic for Log of Last Earnings (Panel B) is given by 0.2749 and its associated p-value is 0.0261.



Parenting program

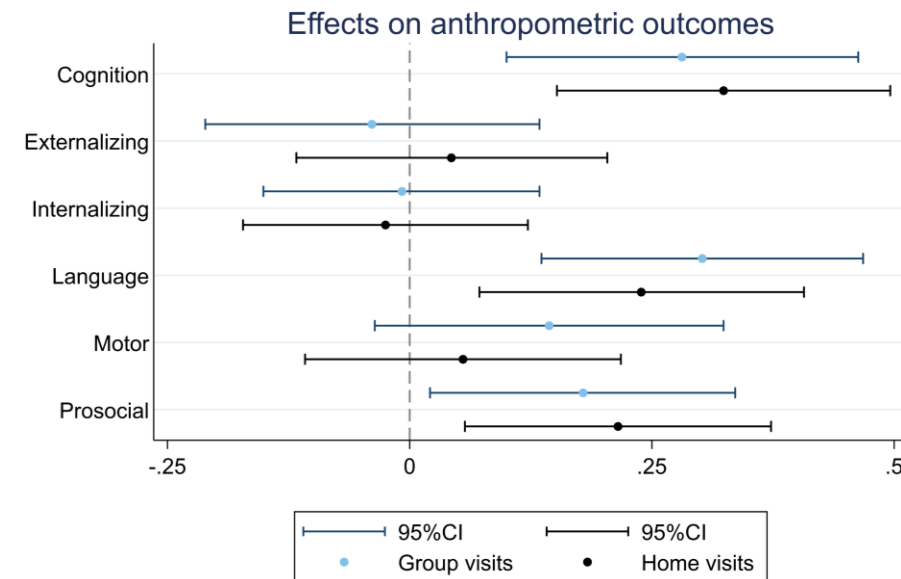
Group Sessions or Home Visits for Early Childhood Development in Odisha, India: A Cluster RCT

Intervention – Cluster RCT

- Interventions were delivered weekly for 24 months, and targeted children that were 7-16 months old at the start in December 2015. Facilitators were recruited from within the communities.
- The intervention consisted of either: Individual Nutritional Education sessions (NE); Stimulation by Group Sessions + NE; Stimulation by Home Visits + NE; Control Group
- 192 communities with approx. 8 children in the target group age, randomized into one of the four experimental arms. The study included 1,400 children at baseline. To evaluate the progress of impacts over time data was collected at 12 and 24 months

Results - OLS

- Home visiting and group sessions had similar positive average (intention-to-treat) impacts on **cognition** (home visiting: 0.324s.d., 95% confidence interval [CI]: 0.152 to 0.496; group sessions: 0.281s.d., 95%CI: 0.100 to 0.463) and **language** (home visiting: 0.239s.d., 95%CI: 0.072 to 0.407; group sessions: 0.302s.d., 95%CI: 0.136 to 0.468). Most benefits occurred in the first year.
- Nutrition-education had no benefit.
- There were no consistent effects on any other primary outcomes.
- **Cost:** Group Sessions cost 38\$ per child per year but attendance was only about 50%, lower than home visits, which cost 135\$ per child per year and had a 76% attendance rate. Low attendance is an issue for scaling up, more research is needed to improve attendance.
- With equal average effectiveness, **group sessions have a 3.5 times higher return to investment than home visits.**



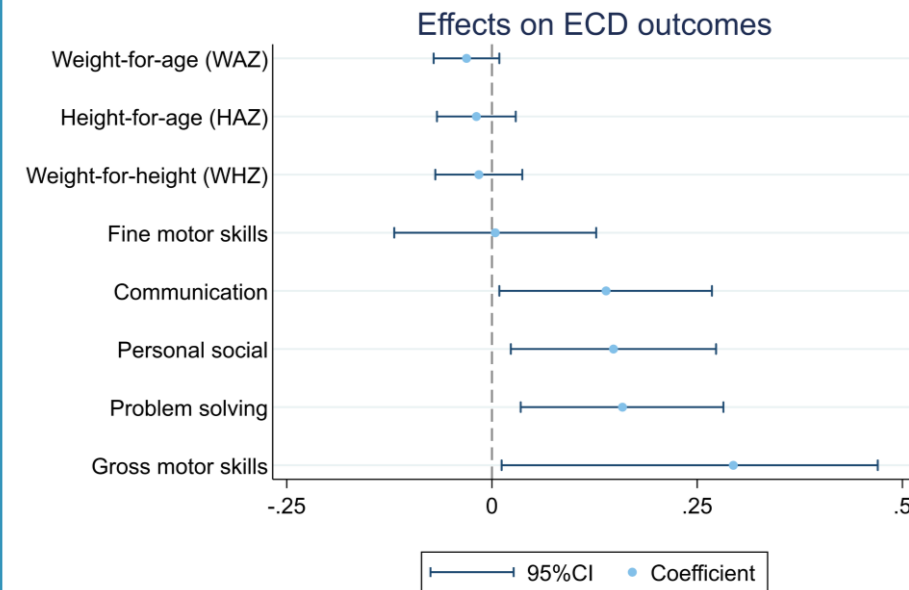
Effect of a home-visiting parenting program to promote early childhood development and prevent violence: a cluster-randomized trial in Rwanda

Intervention – Cluster RCT

- Cluster randomized trial to evaluate the effectiveness of Sugira Muryango (SM), a home-visiting program linked to Rwanda's social protection system to promote ECD and reduce violence. The control group are non-beneficiary households who use usual care routes.
- Over 1,000 families with children aged 6-36 months from 284 geographical clusters across 3 districts. Randomization was done at the cluster level. Treatment lasted 3 months, and results were collected at 12 months.
- A total of 541 families that benefit from SM and 508 usual care families are part of the study.

Results - OLS

- Children in SM families improved more on:
 - **Gross motor skills** (difference, $d=0.162$, 95% CI 0.065 to 0.260),
 - **Communication** (difference, $d=0.081$, 95% CI 0.005 to 0.156),
 - **Problem solving** (difference, $d=0.101$, 95% CI 0.002 to 0.179) and
 - **Personal-social development** (difference, $d=0.096$, 95% CI -0.015 to 0.177) on the Ages and Stages Questionnaire.
- SM families showed **increased father engagement** (odds ratio, $OR=1.592$, 95% CI 1.069 to 2.368), **decreased harsh discipline** (incidence rate ratio, $IRR=0.741$, 95% CI 0.657 to 0.835) and **intimate partner violence** (incidence rate ratio, $IRR=0.616$, 95% CI:0.458 to 0.828).
- There were no intervention-related improvements on the Malawi Development Assessment Tool or anthropometric outcomes, including child growth.



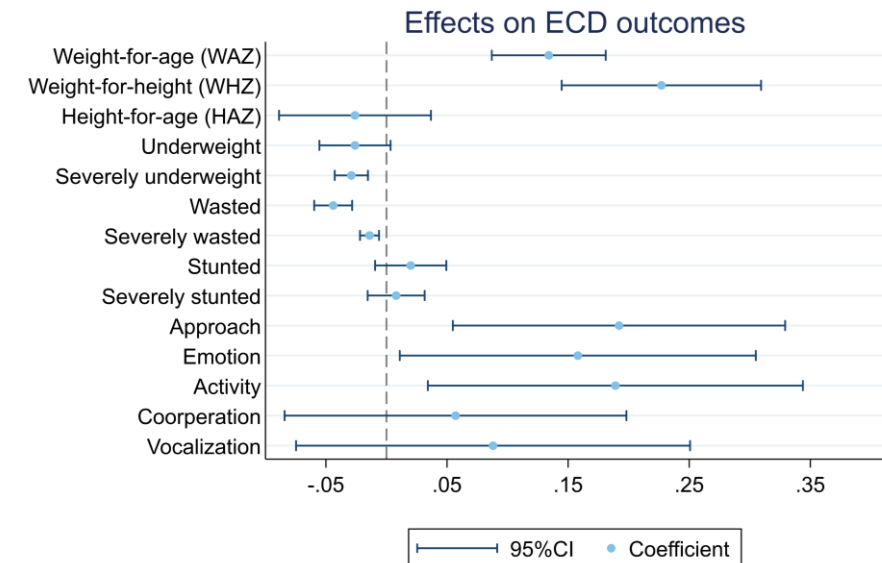
Effects of an Early Childhood Stimulation Program in Bangladesh

Intervention – Cluster RCT of a Parenting Training program in Bangladesh

- 78 community clinics were randomly assigned to disseminate Save the Children's Early Childhood Stimulation program (ECS) (the treatment, N=39), which consists in supporting parents in their parenting practices; increase access to materials to stimulate the child's development and increase awareness of the importance of stimulation; or participate in the control group (N=39).
- ECS was implemented complementary to Bangladesh's National Nutrition Services program.
- Baseline data was collected in 2013-2014 prior to the implementation of ECS in June 2015; end-line data was collected late 2015. The final sample included 2,486 households and children.

Results – OLS

- Significant positive effects on Child Development Outcomes:
 - Effect size of +0.08 on **cognition** (ANCOVA coefficient of 1.137 (SE:0.379))
 - Effect size of +0.14 on **language** (ANCOVA coefficient of 2.198 (SE:0.509))The program found modest significant effects on subscales of the Wolke Behavioral Rating Scale, with positive significant results on Approach; Emotion and Activity, and no significant effect on Cooperation and Vocalization.
- Significant positive effects on Anthropometric Outcomes:
 - **Weight-for-age z-score (WAZ)**: effect size of +0.108; coeff. of +0.134(SE:0.024) with a sig. reduction in the percentage of underweight and severely underweight children.
 - **Weight-for-height z-score (WHZ)**: effect size of +0.108; coeff. of +0.227(SE:0.042) with a sig. reduction in percentage of wasted and severely wasted children.
 - **Height-for-age z-score (HAZ)**: no significant effect on HAZ, stunting and severe stunting.



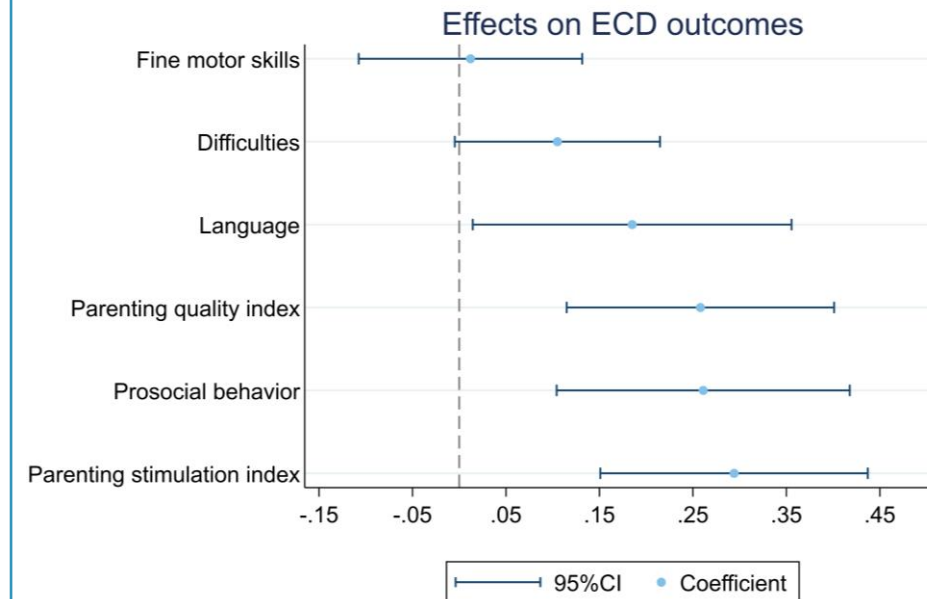
Pre-school teacher training for parenting education: A cluster-randomized controlled trial in Malawi

Intervention – Cluster RCT

- The program involved teachers in informal child-care centers and the families that attend them.
 - In one group, teachers only received training and mentoring;
 - In a second group, teachers received training and mentoring together with a monthly stipend to incentivize them; or
 - In a third group, teachers received training and mentoring and had to lead, together with child protection workers and mentors, group-based parent training sessions. Sessions covered child development, growth and nutrition, and learning mechanisms.
 - The fourth group was the control group.
- All of the groups (including the control group) received a UNICEF Play and Learn kit.
- The study involved 199 childcare centers, 310 teachers, 2,009 caregivers and 2,120 children.

Results – OLS

- At 18 months, only the group that combined teacher training with parent education showed improvements in parenting practices at home: Parents experienced a +0.294s.d. improvement in a stimulation index (SE:0.075, $P < .01$) compared to the control group. No other treatment showed gains in parenting practices over the control group.
- The **combined intervention** was also the only program that generated improvements in child development compared to the control group: **Language skills** were +0.185s.d.(SE:0.071, $P < .05$) higher than the control group. Parents in this group also reported their children exhibited fewer behavioral problems and more pro-social behaviors.
- At 36 months, no sustained impacts were measured despite parents reportedly still provided stimulation activities at home.



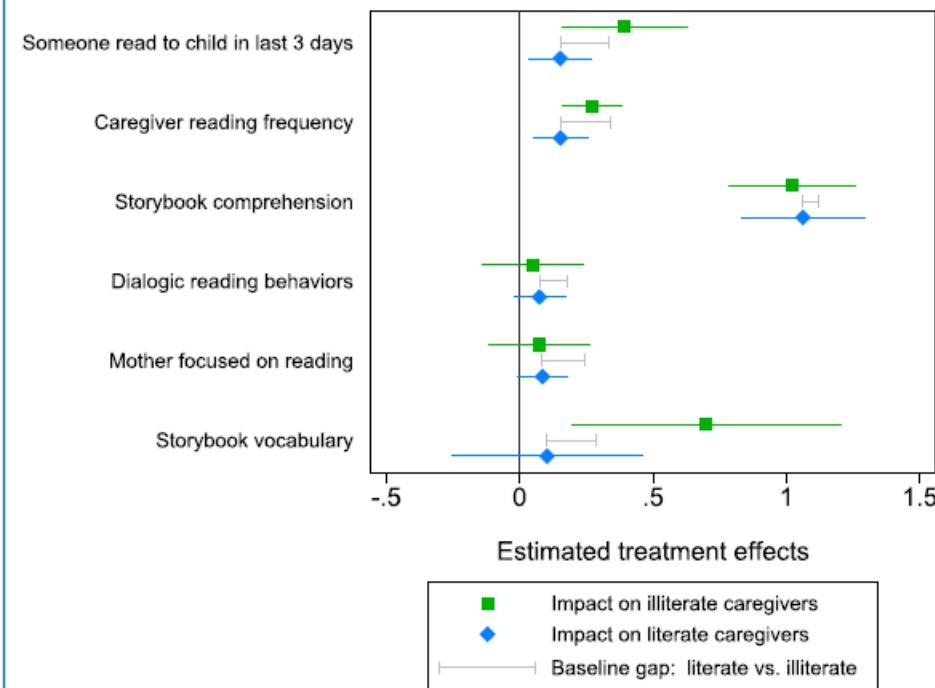
Helping parents read to their children in Kenya

Intervention – RCT of a book-sharing intervention

- 357 caregivers, and 510 children aged 24 to 83 months old in low-literacy villages rural Kenya
- The pilot study contained four treatment arms implemented for 1 month:
 - The first group received 2 culturally appropriate storybooks;
 - The second group received the storybooks + parents received training on how to actively read with their children;
 - The third group received storybooks + the parent training + a follow-up booster training a week after the initial training;
 - The fourth group received storybooks + the parent training + the follow-up booster + a home visit.
- Training was adapted to both literate and illiterate parents; and a fifth group received neither books nor any training activity.

Results - OLS

- All treatment arms showed significant improvements in the **child comprehension index z-score**, including the group that only received books – although the program had little impact on these children, they did show evidence of engagement with the books after a month as their comprehension scores were higher than the control group (coeff: +0.978, SE:0.137, $P < 0.001$). That score is similar to that of the group that received only training (coef: +0.924, SE:0.125, $P < 0.001$).
- **Increased parent-child interactions during reading** also suggest more frequent use of dialogic reading techniques taught during training.
- There were **no significant gains in expressive vocabulary** across groups and **more intensive training did not generate higher impact**.



Do social norms and expectations influence breastfeeding behaviors in Mali?

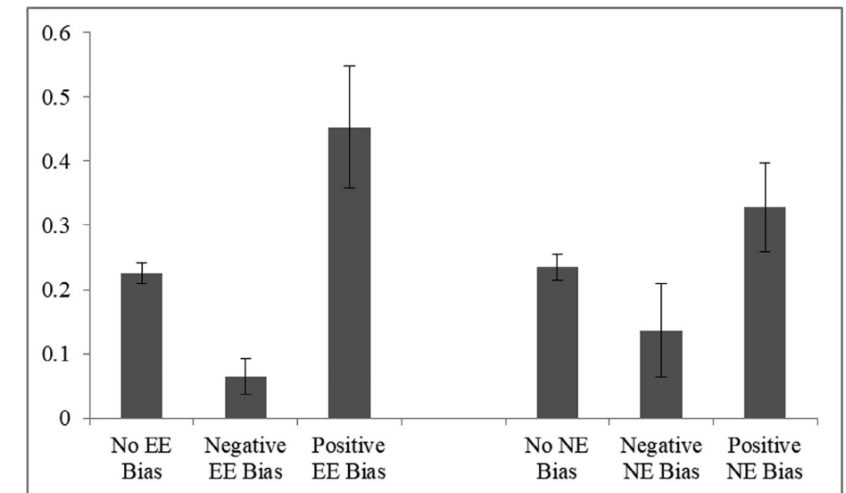
Intervention – Survey questionnaire + vignette intervention

- Survey of 925 breastfeeding women with children under 2 years old collected self-reported data on their social expectations about the breastfeeding beliefs and behaviors of fellow community members.
- Vignettes are then used to manipulate perceptions and social expectations regarding breastfeeding:
 - Prevalence and beliefs on community feeding behaviors are randomized across respondents.
 - Respondents are then asked to predict the breastfeeding behavior of an imaginary community member.

Results – OLS and probit regressions

- Initial data shows that women who believe others exclusively breastfeed (regardless of belief accuracy) are **significantly more likely to exclusively breastfeed** their infant in the first 6 months (coeff:+0.221 , SE:0.035 , P<0.001).
- Beliefs about whether exclusive breastfeeding is accepted in the community are also significant although the effect is modest (coeff:+0.102 , SE:0.031 , P<0.001).
- The vignettes experiment yielded a robust positive relationship between the prevalence of community-level exclusive breastfeeding and the predictive behavior of the respondent regarding their own practices, although not significant.
- The study shows the potential in altering social expectations to influence infant breastfeeding behaviors.

Estimations for EE and NE bias



EE = Empirical Expectations: *one's expectations of what others do*

NE = Normative Expectations: *one's expectations of what the community thinks I should do*

4. Discussion

- In fragile settings:
 - Attrition rates can be high;
 - Program implementation costs tend to be higher;
 - Projects are sometimes halted or altered due to changing security situations.
- Due to accessibility and cost constraints, there is little evidence of ECD programs at scale in FCV settings.
- High attrition rates require adjustments in program evaluation methods.
- ECD programs tend to be evaluated as soon as they end to avoid attrition. This makes it difficult to establish a correlation between the program and the impact on a child's growth.
- Program length may not be correlated with higher impact.

5. Conclusion

- Cash transfers work best when provided with a nutrition or a parenting component.
- Encouraging the purchase of nutritious foods tends to have significant impacts on anthropometric outcomes, especially weight gain.
- Although nutrition interventions show great short-term anthropometric benefits, parenting interventions (with and without nutrition) may lead to longer-term gains.
- Parenting programs work better when delivered individually, however group sessions are much more cost-effective.
- Reducing intra-household violence can have significant impacts on a child's developmental outcomes.

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