

Centre for the Evaluation
of Development Policies
at The Institute for Fiscal Studies

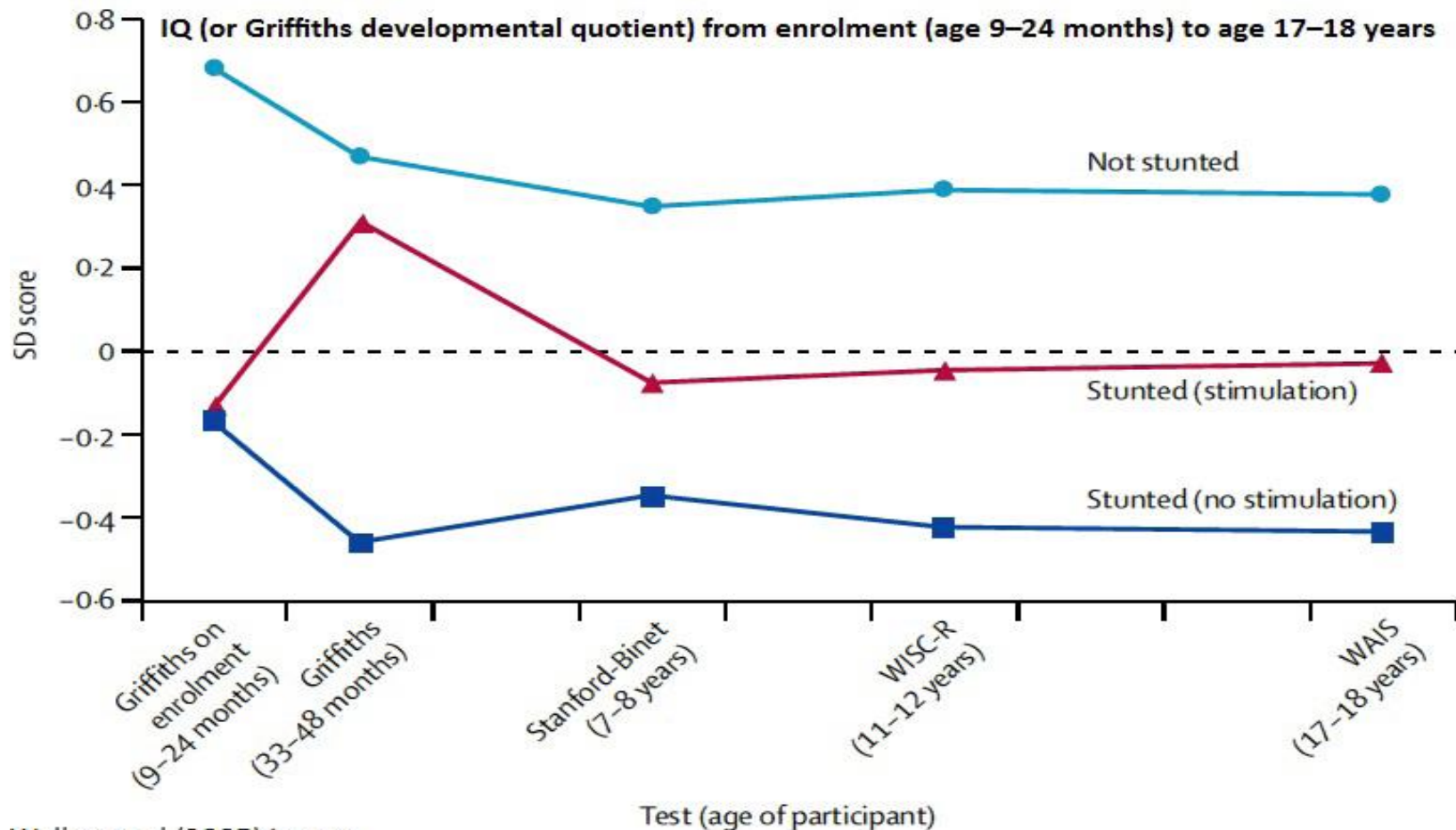
Design and Impacts of a Scalable Home Visitation Intervention in Colombia

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Attanasio et al., British Medical Journal 2014, 349:g5785

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Jamaica Experiment in the 1980s: Grantham-McGregor and UWI Team



Walker et al (2005) Lancet

More recently, cognition effects sustained at 22 years, behavioural impacts (Walker et al 2013), as well as important effects for labour market outcomes (Gertler et al. 2014)

Role of Policy in Parenting Interventions: from Efficacy Trials to Scalable Programs

The Jamaica experiment demonstrates the potential of early childhood interventions.

However, some outstanding key questions to address:

1. How to design scalable interventions that are both:
 - ✓ cost-effective?
 - ✓ sustainable in the long run?
2. How do these interventions affect household behaviour?
3. Externalities in knowledge transmission: spillovers of these interventions in the family and the broader community?

We set out to answer at least some of these questions

Our Project in Colombia: medium-size pilot

Design, implement and evaluate an intervention in Colombia:

1. Psycho-social stimulation via home visits
2. Micronutrient supplementation

in 96 semi-urban towns (2,000 – 42,000 inhabitants) in 3 regions (Zona Cafetera, Oriental, Central)

targeting 1,429 children aged **12-24 months** at the start of the intervention

lasting for 18 months (during 2010-2011)

2 Main Innovations

1. Intervention: use **community resources**

- exploit existing infrastructure of CCT, *Familias en Acción*, and network of *Madre Líderes (ML)*: *elected beneficiaries representative*
 - train and hire *MLs* to deliver intervention
- cost-effectiveness & scalability

2. Research Design:

- collect detailed data to understand mechanisms (pathways of impact) and key quality inputs, costs

Using Community Resources

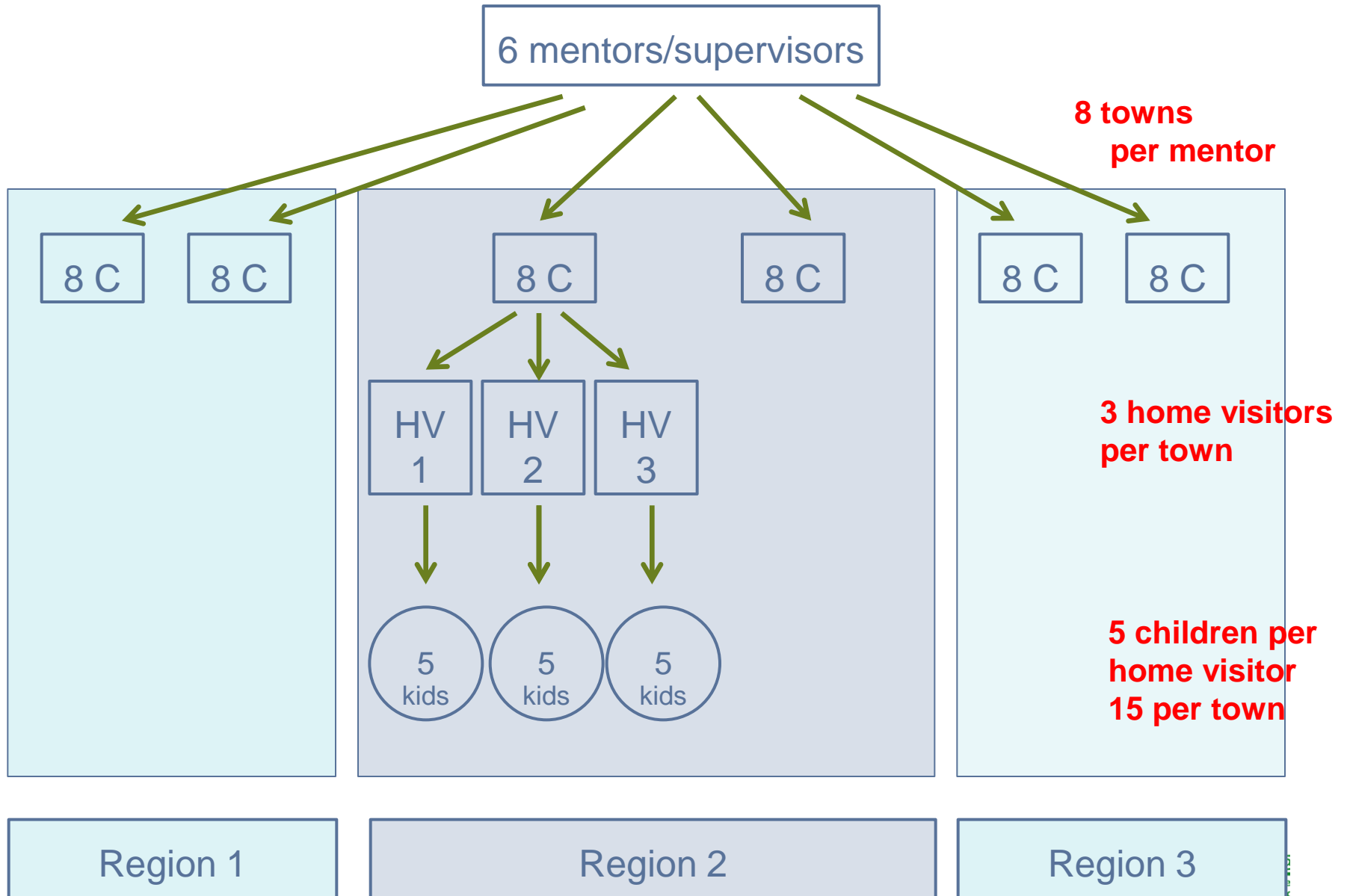
Key Element for Scalability & Sustainability:

1. Low(er) intervention costs
2. Community mobilization & information spread: local women may become agents of change within communities
3. Communities may take ownership of intervention
4. Scheme easily replicable in other less developed contexts

Challenges to Sustain Quality:

1. Identify suitable women
2. Adjust intervention to ability of home visitor & delivery at scale
3. Adequate training, continuous mentoring and supervision

Intervention Design



Implementation Details

1. Hiring & Training of Supervisors

- 6 weeks training in Bogota (+ 2 briefing sessions)

2. Identification of Home Visitors

- *Madre Líderes* (60%)
- Reading comprehension test, interest and time availability

3. Training of Home Visitors

- 3 weeks (2 + 1) in the field

4. Monitoring & Supervision

- Supervisor visits community once every 6 weeks (7 - 10 wks)
- Phone communication throughout, text messages, bulletins

TRAINING HOME VISITORS



The Curriculum

- ✓ Promote cognitive and language development
- ✓ Mother focused: support mother in promotion of child's development
- ✓ Rich in play materials
- ✓ Incorporate concepts/skills to be taught in daily routines
- ✓ Organised by weeks to match the developmental level of the child
- ✓ Keep costs down: use home-made & rotating toys

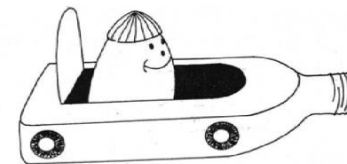
Actividades <ul style="list-style-type: none">• Canción• Muñeca con carro• L6: "La camisa sucia"• Juego 7 – seguir las instrucciones III	MES: 32 SEMANA: 1
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Canción Cante al niño una canción que usted escoja

Muñeco de trapo con gorro y carro

Objetivo: Que el niño disfrute de jugar con el juguete y aprenda los conceptos "parar" y "andar", "rápido" y "despacio", "cerca" y "lejos".

Instrucciones: Deje que el niño juegue con el muñeco y el carro. Haga que el niño siga instrucciones como: "Para el carro cuando llegues a la puerta", "anda otra vez", "maneja rápido, ahora despacio".



L6: "La camisa sucia"

Objetivo: Que el niño sea capaz de hablar acerca de las imágenes.

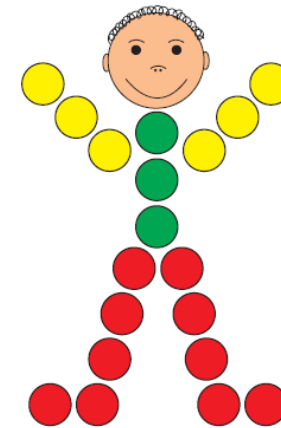
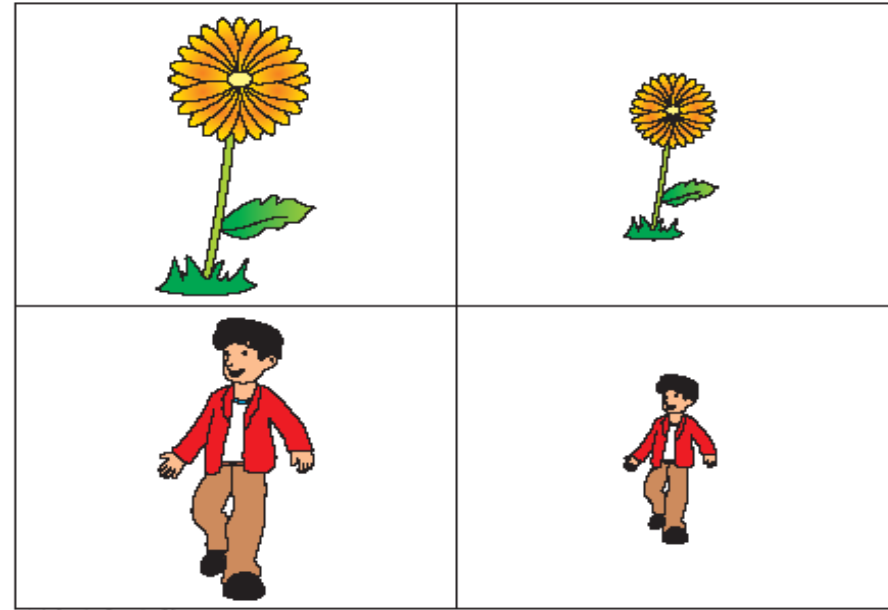
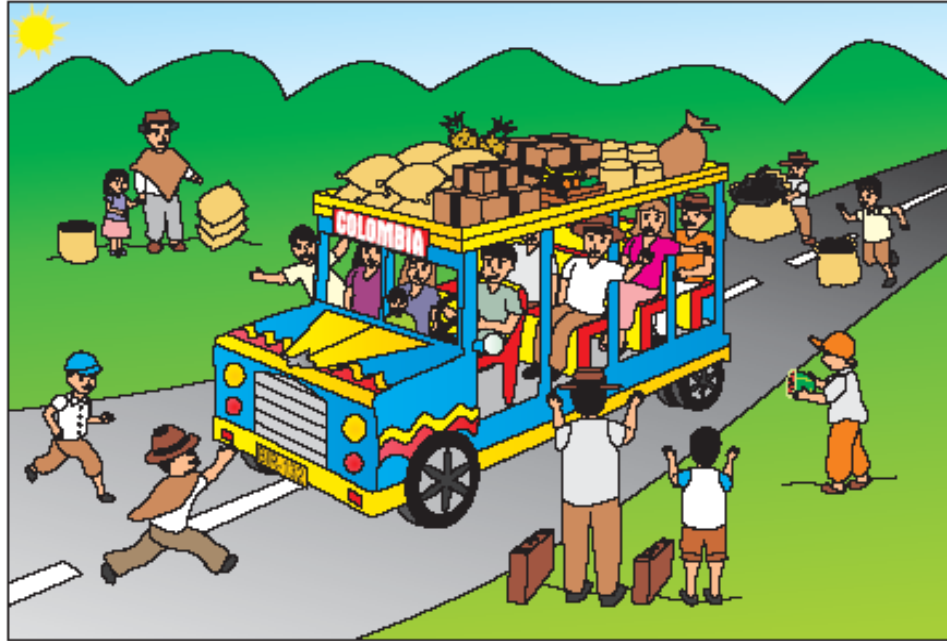
Instrucciones: Mire el libro con el niño y describa todo lo que el niño de las imágenes está haciendo (Por ejemplo "El niño se ensució su camisa" "El niño está abrazando a su mamá porque ella le lavó la camisa"). Enfóquese en nombrar la acción (por ejemplo vistiéndose, bañándose, comiendo, yendo a la cama). Luego pídale al niño que cuente qué está pasando en la historia (por ejemplo, que el niño está jugando en el charco o que la madre está lavando la camisa que el niño ensució). Pídale al niño que señale algunas ilustraciones como por ejemplo diciéndole "Dime ¿dónde está la camisa del niño? ¿dime cuál es el balde?".

Haga que el niño represente lo que el niño de las imágenes está haciendo. Empiece a hacer preguntas sencillas al niño que le permitan hablar un poco más sobre la historia por ejemplo "¿por qué la mamá está lavando la camisa?". A medida que se avanza en el libro, tenga presente las situaciones en que se puedan utilizar las palabras de los diferentes grupos de conceptos del nivel 1 (húmedo, seco, grande, pequeño, encima, debajo, al lado, etc.).

Juego de instrucciones III

Usando una cuerda dígame al niño que ponga su pie DEBAJO de la cuerda y ENCIMA de ella. Con la misma cuerda, dígame al niño que SALTE sobre ella, que se DEVUELVA, que CORRA alrededor de ella.

Conversation Scenes & Books & Lottos

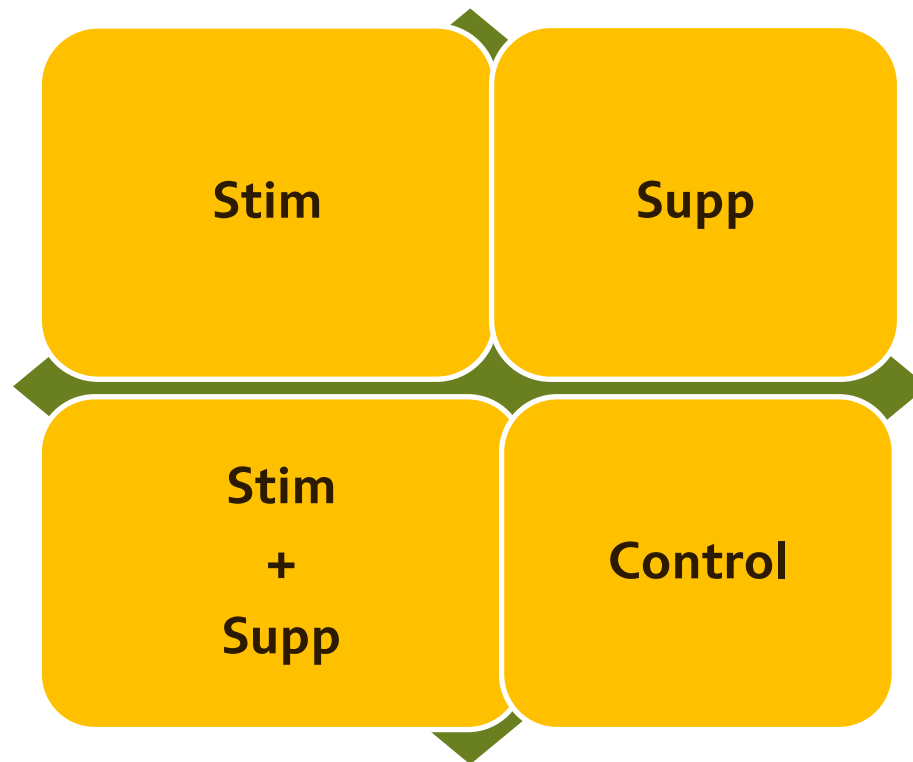




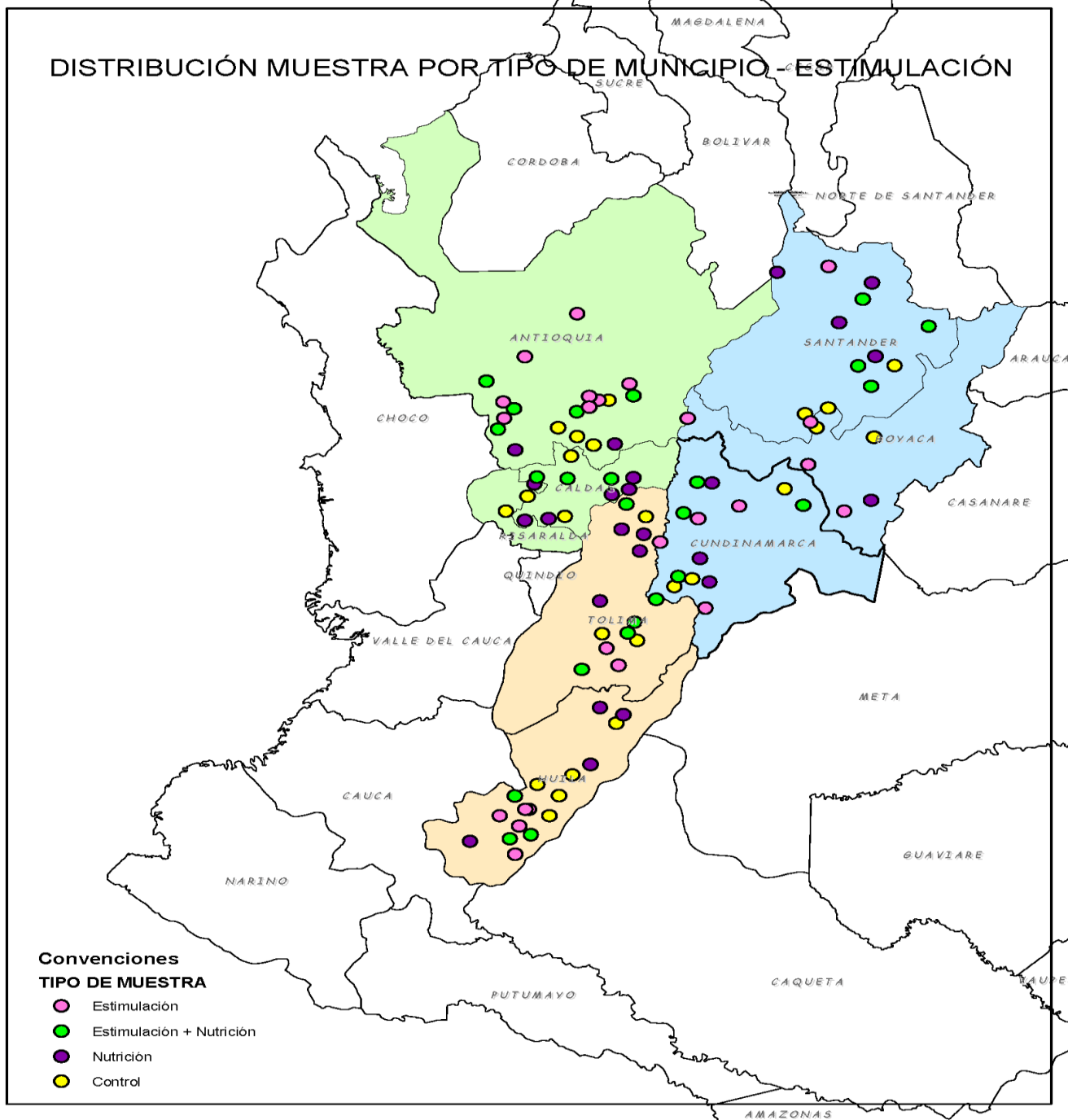


Evaluation: Randomised Control Trial

- 96 municipios stratified in 3 regions
- **Randomization** at the municipality level within strata.
4 groups:



DISTRIBUCIÓN MUESTRA POR TIPO DE MUNICIPIO - ESTIMULACIÓN



- Convenciones**
- TIPO DE MUESTRA**
- Estimulación
 - Estimulación + Nutrición
 - Nutrición
 - Control

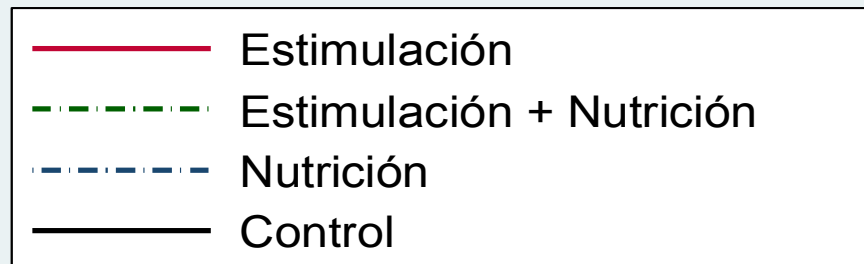
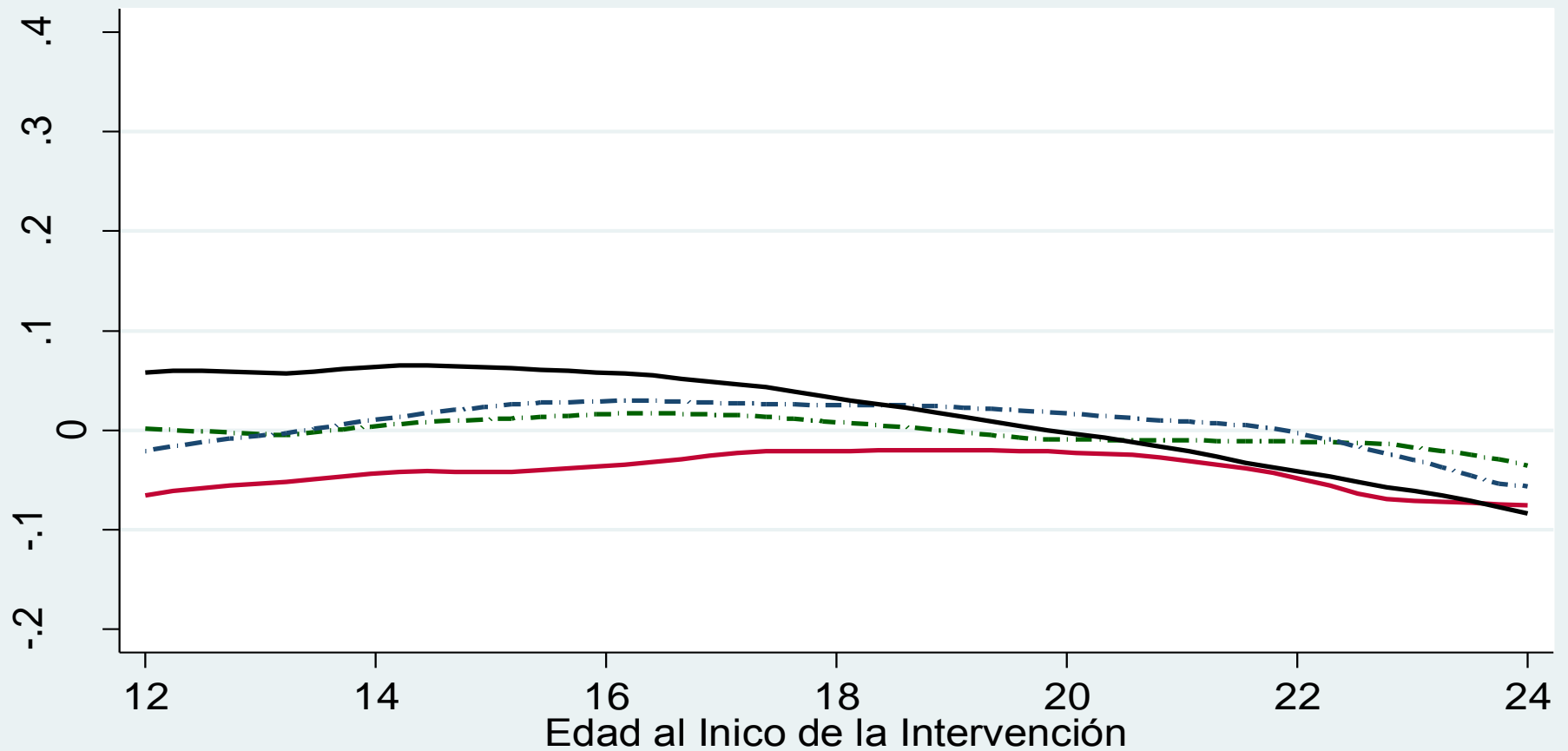
Evaluation Timeline

- Feb – May 2010: **Baseline Data Collection**
 - Socio-economic questionnaire (n = 1,429)
 - Child development outcomes, including Bayley test
 - Information on mothers/carers & home visitors

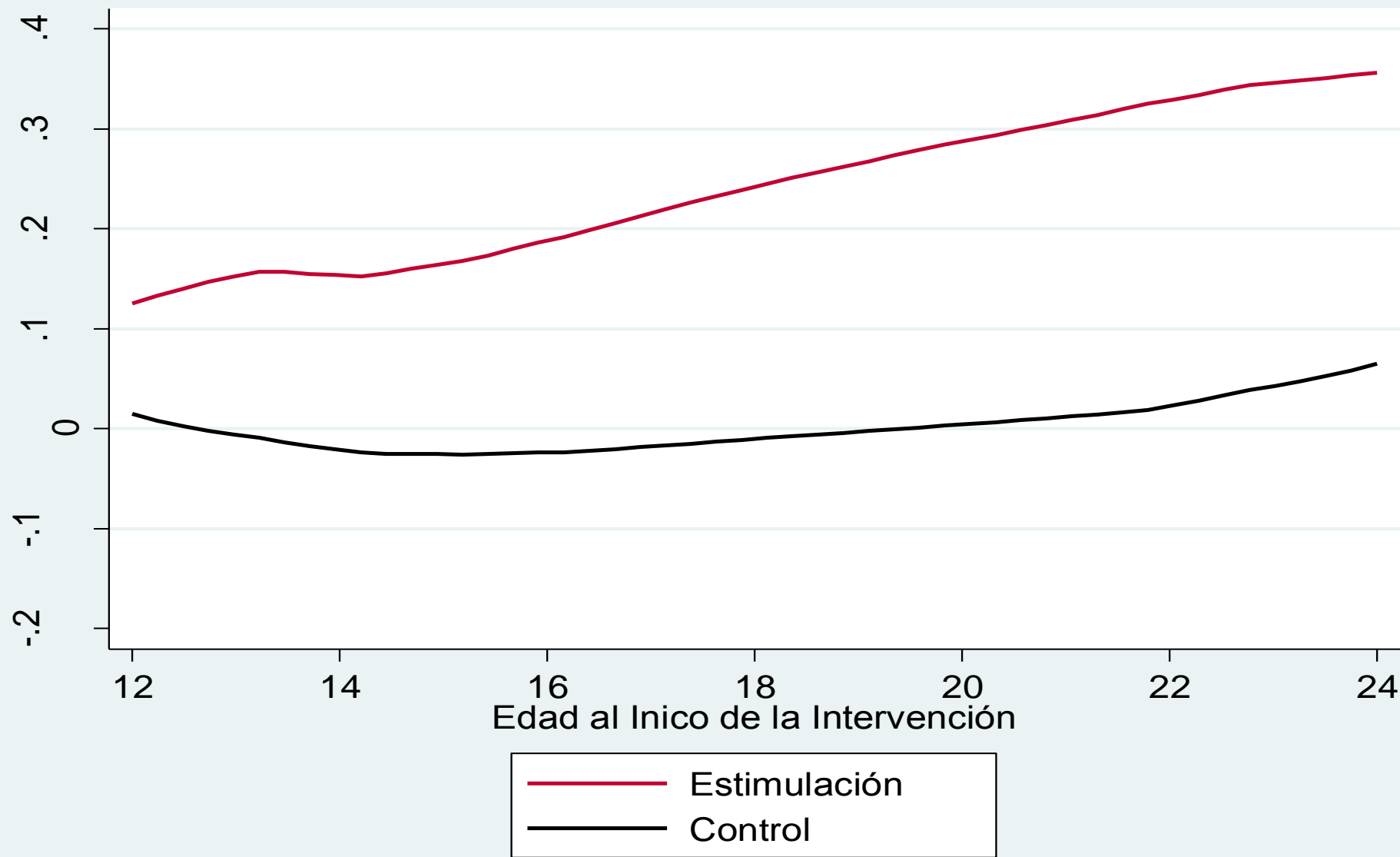
Phase-in intervention as baseline data were collected

- Collect **process data** on visits (frequency & quality) and intake of micronutrients (maternal reports) throughout
- Sept – Dec 2011: Intervention ends & **Follow Up Data Collection** (n = 1,330)
- Focus Groups with beneficiary mothers (Aug 2011)

Cognitive Scores over Age at Baseline by Intervention Group



Impacts of Stimulation on Cognitive Scores by age at start (Bayley-III)



Effects of Intervention (Stimulation Hypothesis)

	Stim			Supp			Stim x Supp		
	β	D	P value	β	D	P value	β	D	P value
Bayley-III Raw Scores									
Cognition	1.139	0.26	0.002	0.196	0.05	>0.50	-0.352	-0.08	>0.50
Receptive Language	0.776	0.22	0.032	0.128	0.04	>0.50	-0.330	-0.09	>0.50
Expressive Language	0.455	0.08	>0.50	0.403	0.07	>0.50	-0.375	-0.06	>0.50
Fine Motor	0.567	0.12	0.340	0.455	0.10	>0.50	-0.492	-0.11	>0.50

n=1,263

- Stimulation has an effect on cognition (0.26 SD) and receptive language (0.22 SD)
- No effect of micronutrient supplementation
- No interaction effect

Effects of Intervention (Supplementation Hyp)

	Stim			Supp			Stim x Supp		
	β	D	P value	β	D	P value	β	D	P value
Haemoglobin (g/L)	0.178	0.15	>0.50	0.048	0.04	>0.50	-0.014	-0.01	>0.50
Height (cm)	0.095	0.02	>0.50	-0.177	-0.04	>0.50	0.084	0.02	>0.50
Weight (Kg)	-0.023	-0.01	>0.50	-0.012	-0.01	>0.50	0.021	0.01	>0.50
Gross Motor (Bayley-III)	-0.070	-0.03	>0.50	-0.097	-0.03	>0.50	-0.064	-0.02	>0.50

- No effect of micronutrient supplementation on outcomes
- No interaction effect

Mechanisms: Improvements in the Home Environment –UNICEF Family Care Indicators

	Stim			Supp			Stim x Supp		
	β	D	P value	β	D	P value	β	D	P value
Home Environment									
Play Materials	0.520	0.28	<0.000	0.185	0.10	>0.50	-0.244	-0.13	>0.50
Play Activities	0.545	0.27	<0.000	0.113	0.06	>0.50	0.045	0.02	>0.50
Maternal Depression									
Depression Score: CESD-10	-0.142	-0.03	>0.50	0.587	0.10	>0.50	-0.791	-0.14	>0.50

Suggestive evidence of “crowding-in” of resources –
i.e. increased parental investment in children

Intervention Costs & Scalability

- Cost of the intervention is \$515 USD per child per year

Budget Item	USD child/year	%
Supervisors	265.2	52%
Materials Stimulation	37.0	7%
Wages Home Visitors & Training	186.1	36%
Micronutrients	15.4	3%
Wages MLs Micronutrients & Training	11.3	2%
	515	

- At scale, supervision costs could be reduced substantially if supervisors were selected from neighbouring towns.
- Colombian government ECD Strategy (0 a Siempre) ~ \$1,300 USD per child per year budgeted

What did we learn

- Well designed *cost-efficient larger scale* interventions can have significant impacts on child development in the short run:

1. Impacts of 26% and 22% of a SD increase in cognition and receptive language, respectively

Impacts equivalent to closing 1/3 of the gap between low income and middle income households in Bogota

2. Increased parental investments in children

--- sustainability of effects?

.... further investigation

3. Quality is crucial, yet VERY challenging at scale

What Next?

- Understand key quality inputs for replicability at larger scale – Peru
 - Identify “local champion”
 - Training and mentoring/monitoring schemes
 - Fidelity to original intervention, respecting culture
 - Assessment of process and impacts (evaluation)
- Exploit externalities (spillovers in the community) --- delivery in group settings (Odisha, India)
- Study complementarities with 3-5 interventions in child care centres (Colombia).



Muito Obrigada