

Parental Beliefs, Investments, and Child Development: Experimental Evidence from Chile

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Motivation

- ▶ Broad consensus that parental investments are crucial determinants for child development [Heckman 2006, 2007][Cunha, Heckman 2007] , subset of nurturing care [LANCET 2016]
 - ▶ Material investments
 - ▶ quality parent-child interaction (opportunity for learning/responsive caregiving)
- ▶ **Question:** What are the determinants and drivers of parental investments?
 - ▶ How to define information, beliefs [Bonstein Handbook of Parenting]
 - ▶ Map beliefs to practices/investments and investments to outcomes
- ▶ Large scale program in Chile aimed at shifting information, parental perceptions and beliefs about parenting

Framework: dynamic process of human capital formation [Attanasio's keynote]

Stylized framework to model parental behavior: choose 'investments' I as a function of:

- ▶ **preferences** (how much parents value their children human development, how much they enjoy engaging/interacting with their children)
- ▶ **constraints** (income/resources, time, prices], environment
- ▶ a given level **child development level** at the beginning of the period (H_0)
- ▶ **Subjective beliefs** about the process of child development: how do investments map into next period child development?

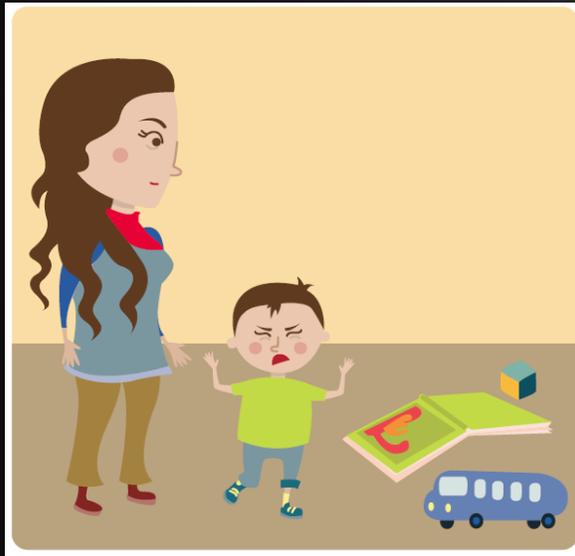
$$(I, H_0) \longrightarrow H_1$$

What we would like to measure? $I \rightarrow H_1$

- ▶ **Why it is important** [beliefs about the process of child development] ?
 - Subjective returns about the importance of investing [Cunha, Elo, and Culhane 2013] [Attanasio, Cunha, Jervis, 2019], or the perceived cost about not adopting a positive practices
 - Subjective perceptions that intelligence and child development is malleable

Cuhna: scenarios to elicit perceived beliefs on how investments map onto outcomes

Scenario 1: high investment



El cuidador principal

- no pierde la paciencia con el niño cuando hace pataletas.
- No se enoja ni lo golpea.
- lo apoya cuando está asustado o enojado



El cuidador principal:

- elogia al niño/niña cuando se porta bien
- no le presta atención cuando no coopera.
- Establece reglas claras

Scenario 2: low investment



El cuidador principal

- A veces pierde la paciencia con el niño cuando hace pataletas.
- Se enoja con el niño



El cuidador principal:

- No elogia al niño a menudo cuando se porta bien
- No establece reglas claras

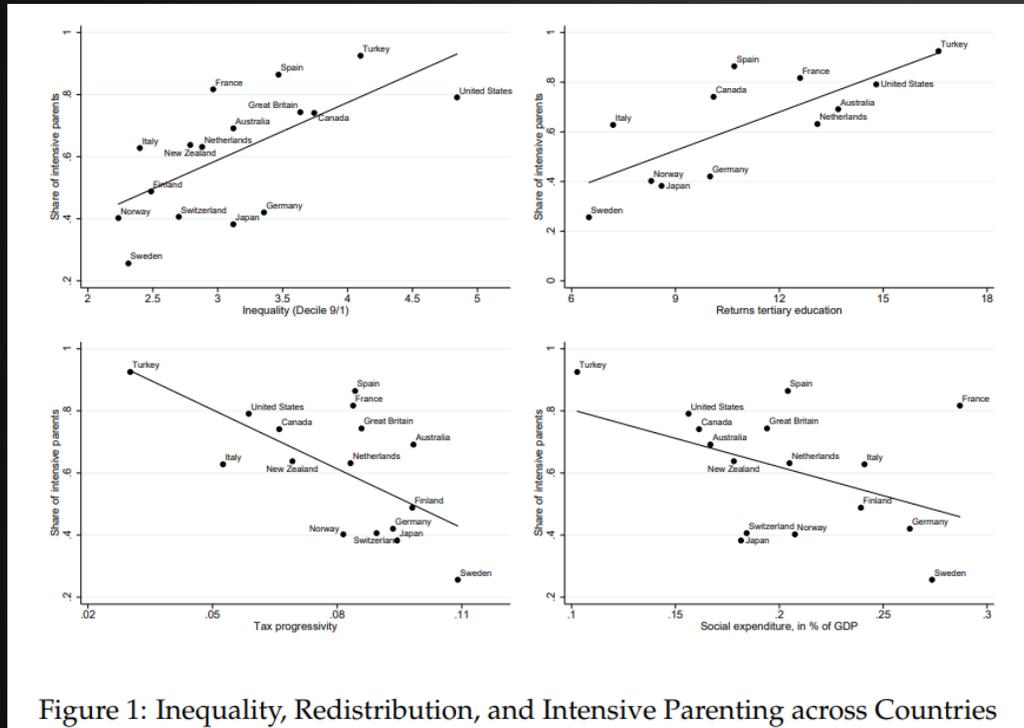
What we would like to measure? $U(H_1, I)$

- ▶ Elicit **what is perceived to be important**: unpacking preferences. What domains are valued [cognition, behavior, creativity] at different stages
 - intergenerational transmissions of parenting styles [Zilibotti, Doepke 2017]
 - Kağıtçıbaşı 2007 and Sharon Wolf's work Ghana]
- ▶ Elicit aspirations about educational attainment

Parenting equilibrium as a function of the economic environment

Across countries

Within countries and over time



- ▶ Democratic/authoritative (structure, communication, scaffolding) requires effort and non-cognitive skills
- ▶ educational aspirations for their children held by parents Q1 in Chile increased from 18 to 63% between 1999 and 2009 [Urzúa, 2012]

Doepke, Sorrenti, Zilibotti 2019 using World Value Surveys
Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?"

What we would like to measure?

- ▶ Know what a '**normal**' child development level is for a given age? H_0
 - Reference dependent preferences: height [Fink et al 2013], [Wang, Puentes, Berhman, Cuhna 2018] or child development [Chung et al 2019] relative to a 'reference' population
- ▶ Investments I
 - ▶ Know **what to do** (information, demonstration, social learning)
 - ▶ **Do what you know** mediated by:
 - Beliefs that caregivers can activate behaviors [parenting self-efficacy] [Bandura]
 - Behavioral constraints: attention/planning/mental space

Nadie es Perfecto a large-scale low intensity group-based parenting intervention in Chile

[CARNEIRO, GALASSO, LOPEZ, CORDERO, BEDREGAL 2019]

Nadie es Perfecto (NEP): background

- ▶ Adapted from the Health Canada “Nobody's Perfect” program
 - ▶ Community nurses systematized parenting needs about children 0-6
 - ▶ Semi-structured curriculum: promote positive parenting in group dynamics.
- ▶ Implemented in Chile in 2009 within the Chile Crece Contigo system
 - ▶ Delivered through public health clinics (existing primary health care infrastructure)
 - ▶ Group session conducted by a trained facilitators (health worker)
 - ▶ Target: low income families of children ages 0-5, not in crisis [1/2 sample belong to Q1]

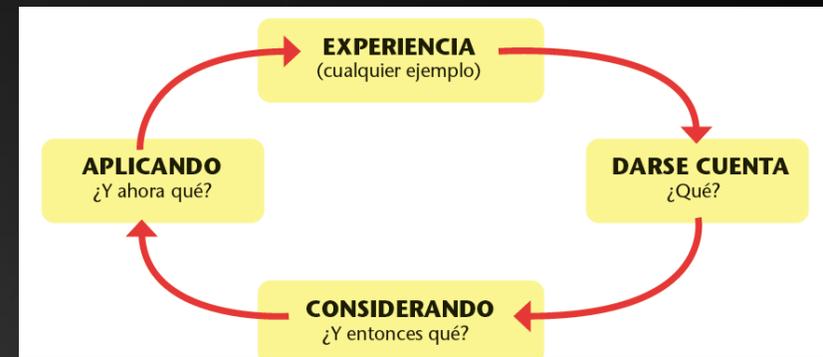
Tested two modalities:

- ▶ **NEP Basico** (Canadian standard Policy) group parenting sessions
 - 6-8 weekly sessions, 2 hours each
 - 6-12 parents per session
 - 1 certified facilitator from the health center
 - Sessions implemented through group dynamics organized by topic
 - Parents take home simple booklets by topic
- ▶ **NEP Intensivo:** Basico + two sessions of parent-child interactions
 - designed to boost language (dialogic reading) and the importance of play [only experimental]
 - Discussion of videos, age-specific activities

Demand side intervention within an ecosystem of services



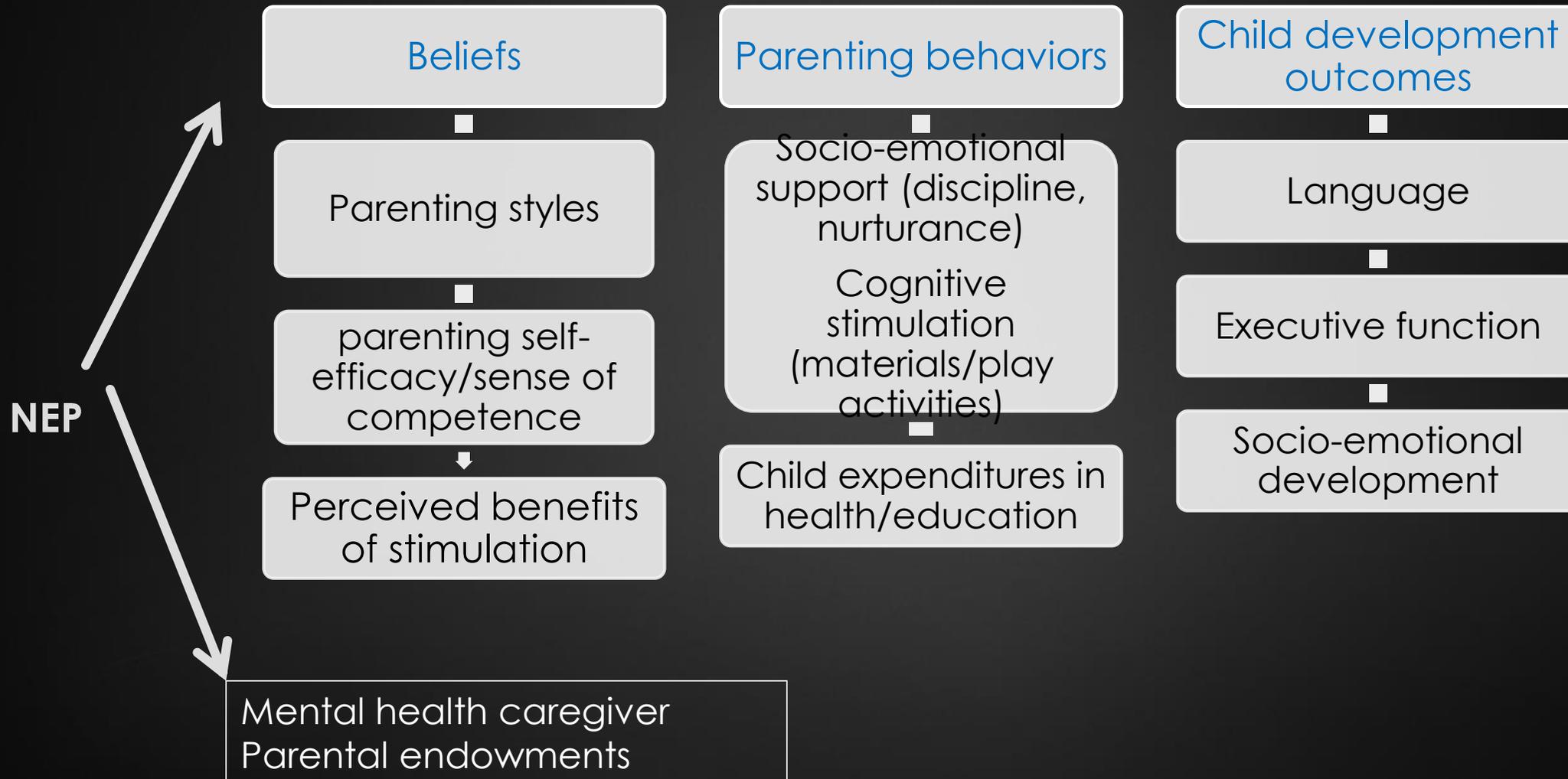
Innovation: curriculum experiential learning



Awareness; Internalizing the experience; adopt new strategies

- ▶ Emotional connection: Facilitator asks participants common questions and daily struggles
- ▶ Parents choose which topics will be discussed in each session
 - ▶ • Managing Behavior (24.1%)
 - ▶ • Parental self-image and self-care (21.8%)
 - ▶ • Child cognitive and socio-emotional development (18.6%)
- ▶ Facilitator prepare group activities to tackle these problems
- ▶ Parents discuss main challenges to adopt new strategies at home.

Pathways and theory of change



Evaluation Design

- ▶ Sampled 162 public health centers, stratified by type
- ▶ Drew random sample 18 families per center among potential participants (waitlist 45-60 per health center)
- ▶ Within centers random assignment: NEP basico, NEP intensivo, Control
- ▶ Total sample: 2.916 hh's, 3.600 children at baseline
- ▶ Compliance with treatment: 25% basico, 30% intensivo Attrition: 10% households, 19% children
- ▶ Timeline:
 - ▶ 2011 baseline >> 2011/12 intervention >>> 2014 endline

Measurement

Beliefs

Ideas about parenting (IAP)

parenting sense of competence scale (PSCS)

Beliefs about parental role in caregiving (PACOTIS)
Elicitation beliefs

Parenting behaviors

Parenting Behavior Checklist (nurturing, discipline)

HOME/Family Care Indicators

Child expenditures in health/education

Child development outcomes

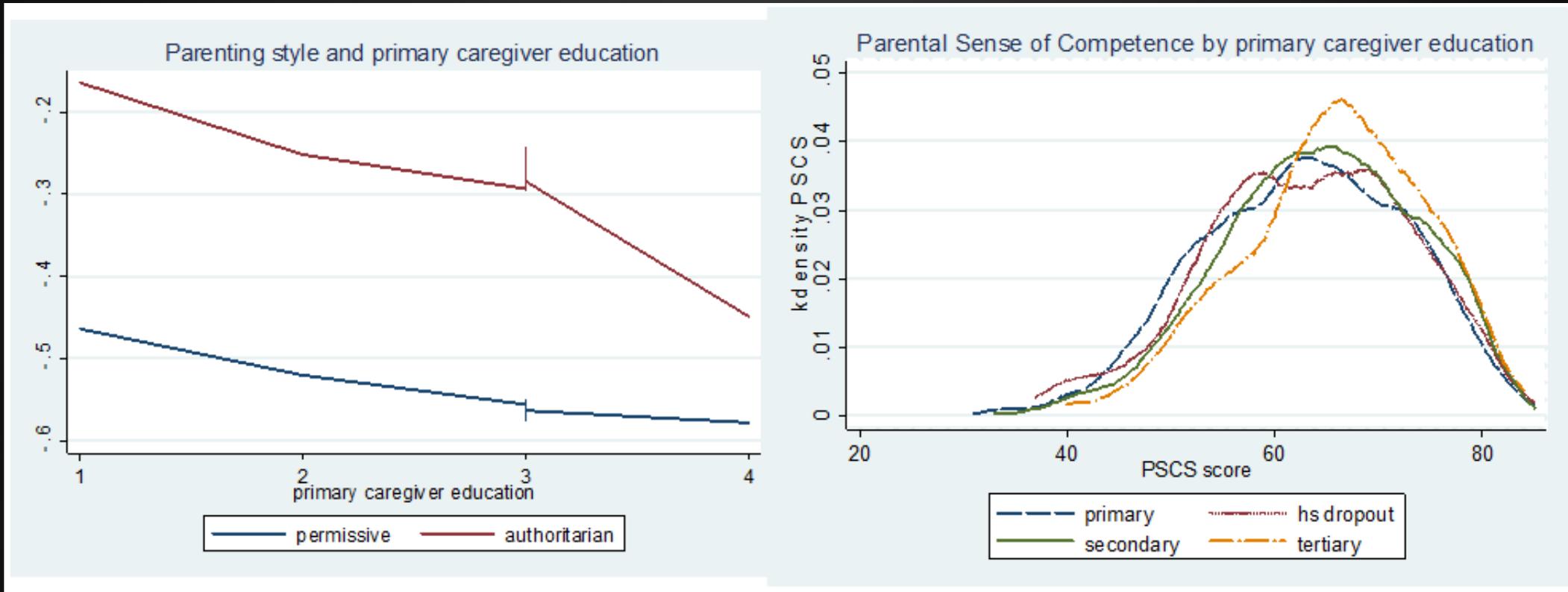
Receptive Language (TEVI-R ~ TVIP)

Dimensional Change Card Sort (DCCS)

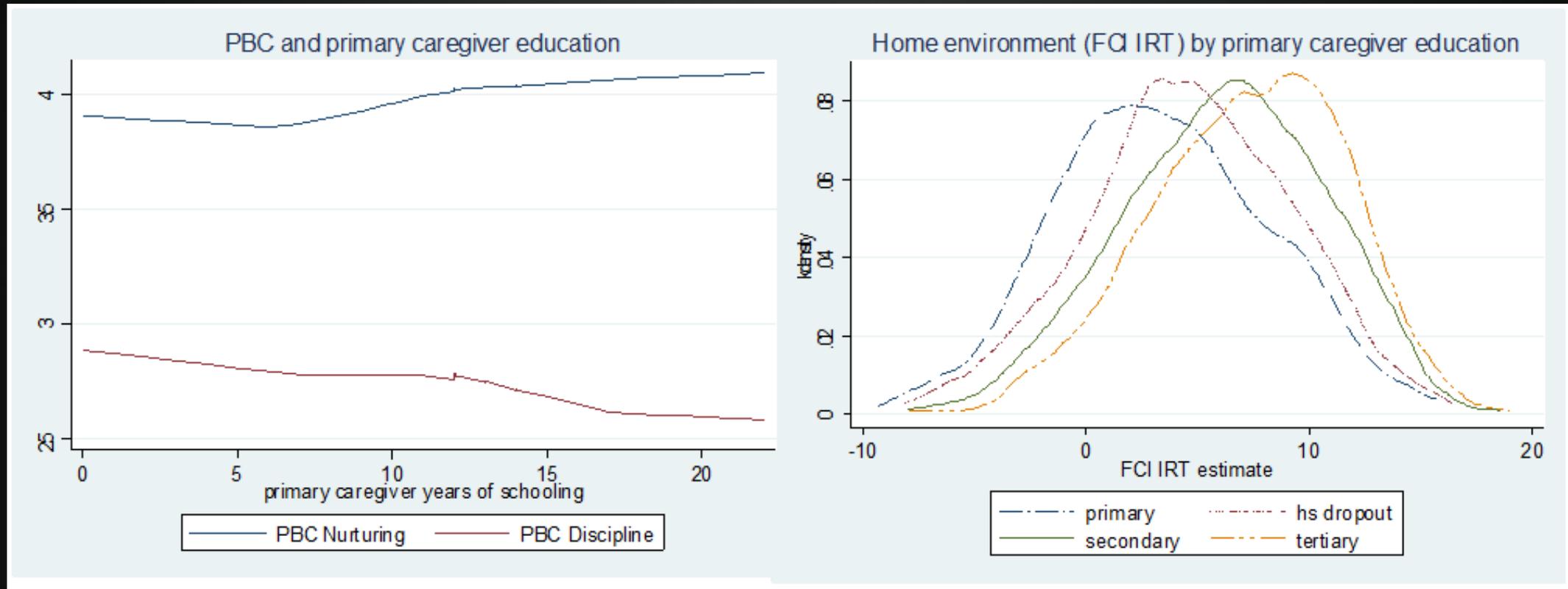
Battelle socio-personal Internalizing/Externalizing behaviors: Achenbach (CBCL)

Parenting Stress Index, Depression
Perceived social support
Parental cognition, personality

Baseline SES gradients in beliefs



Baseline SES gradients in investments



Results: Beliefs

	Obs.	NEP-B	NEP-I	P-value test B=I
Parental Beliefs, Attitudes, Perceptions				
Perceived Self-efficacy	2543	0.037 (0.047)	0.100**† (0.047)	0.174
Perceived Parental Impact of own behavior on child development	2545	0.067 (0.046)	0.103**† (0.046)	0.429
Perceived Social Support - Family	2545	-0.078 (0.048)	0.005 (0.048)	0.076
Perceived Social Support - Friends	2545	0.071 (0.046)	0.082* (0.046)	0.797
Perceived Social Support – Others	2545	-0.014 (0.047)	0.013 (0.047)	0.554
Democratic style	2545	0.040 (0.048)	0.046 (0.048)	0.907
Authoritarian style	2545	0.026 (0.048)	-0.026 (0.048)	0.267
Permissive style	2545	-0.064 (0.048)	-0.018 (0.048)	0.323
Elicited Age High Investment Home Scenario	1487	-0.049 (0.050)	-0.064 (0.048)	0.763
Elicited Age Low Investment Home Scenario	1486	-0.057 (0.051)	-0.103* (0.054)	0.416

Results: investments

	Obs.	NEP-B	NEP-I	P-value test B=I
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Parental Practices				
Home Index	2545	0.084 (0.072)	0.155**† (0.072)	0.313
PBC Affection	2545	0.042 (0.046)	0.085* (0.046)	0.348
PBC Interaction	2545	0.015 (0.046)	0.013 (0.046)	0.959
PBC Negative discipline	2545	-0.047 (0.047)	-0.077* (0.047)	0.516
PBC Positive discipline	2545	0.054 (0.048)	0.054 (0.048)	0.988

Results: child development outcomes

	Obs.	NEP-B	NEP-I	P value Test B=I
Receptive Language	2895	0.076* (0.044)	0.100**† (0.045)	0.623
Personal-Social Development: Composite Index	1532	0.064 (0.061)	0.132**† (0.062)	0.258
Behavioral problems: Externalization	1971	-0.022 (0.050)	-0.014 (0.050)	0.874
Behavioral problems: Internalization	1887	-0.028 (0.049)	-0.019 (0.049)	0.856
Executive Function	2879	-0.008 (0.044)	0.035 (0.045)	0.329
Sustained attention	2893	-0.035 (0.044)	0.009 (0.044)	0.318

Mediation analysis:

- ▶ Simple estimation of Direct and Indirect Effects using Montecarlo Simulation methods:
- ▶ Effects in receptive language explained up to 20% by intervention-induced changes in HOME and (to a less extent) self-efficacy
- ▶ Effects in socio-emotional development explained up to 40% by intervention-induced changes in HOME, Nurturing and Discipline behaviors.

Conclusions

- ▶ Large and exciting measurement agenda on the determinants of parental investments
- ▶ NEP: We find sustained impacts three years after the end of the intervention in parental beliefs, stimulation practices, and child outcomes.
- ▶ NEP delivers the highest returns for children in the most disadvantaged households.
- ▶ This is remarkable/surprising:
 - Low intensity of the intervention: just 6/8+2 sessions over 3 months
 - Effects persist. In many ECD interventions the effects quickly fade out. Potential key role of beliefs and expectations in sustaining effects
- ▶ Mediation: changes in behaviors play a bigger role in observed changes in socio-emotional development than in language.
- ▶ Need more structure to fully map pathways of change from beliefs->behaviors->outcomes