Promoting Skills to Promote Successful Lives

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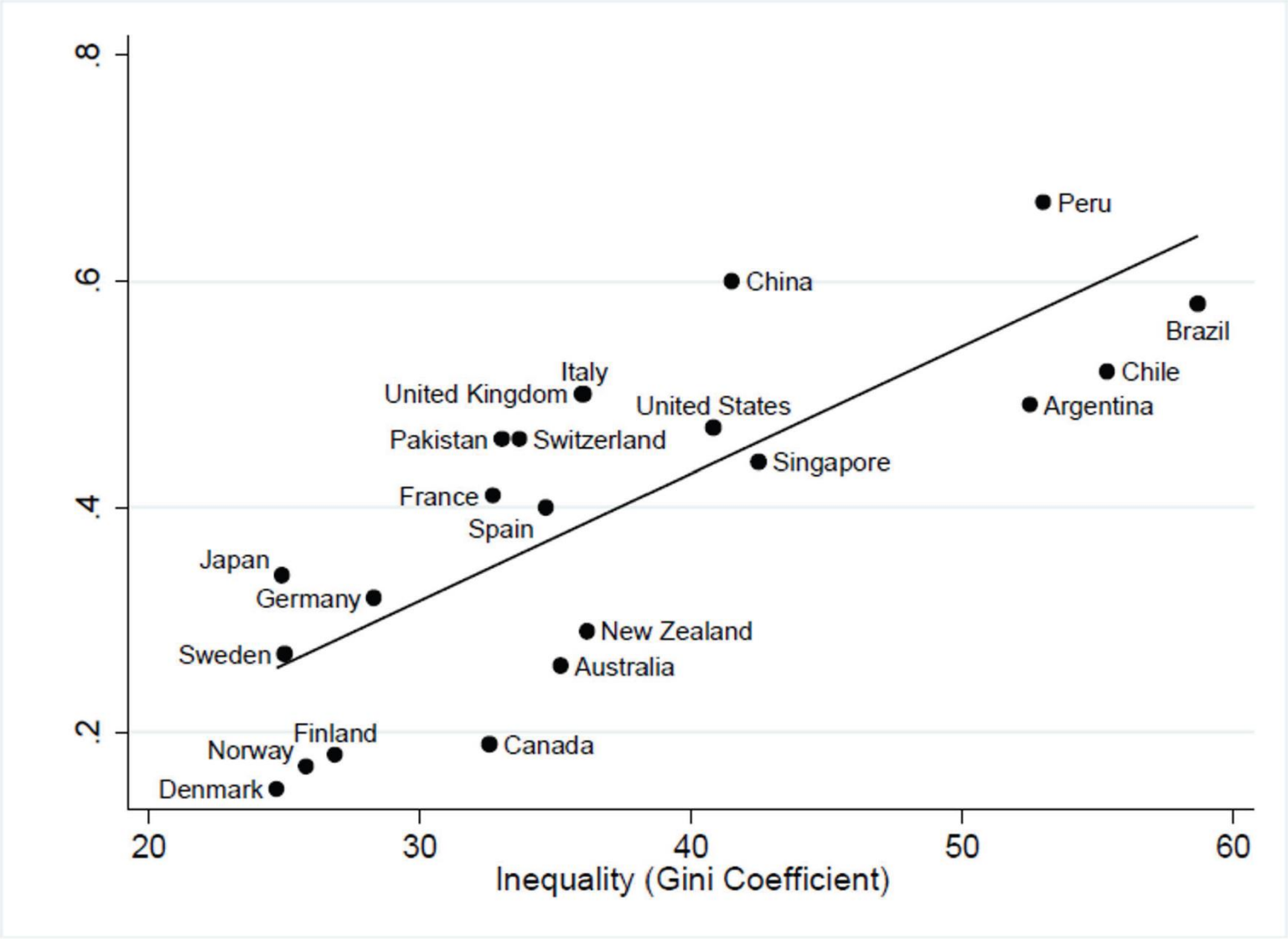
Challenges facing many countries: poverty, inequality, and social immobility.

Intergenerational Mobility and Inequality

(Child Income) $= \alpha + \beta$ (Family Income) + Other Factors



The Traditional Approach to Poverty and Social Immobility: **“Alms to the Poor”** Redistribution Through the Tax-Transfer System

The U.S. Great Society Programs tried this, as part of a broader strategy, to end poverty and intergenerational poverty through large scale cash transfers.

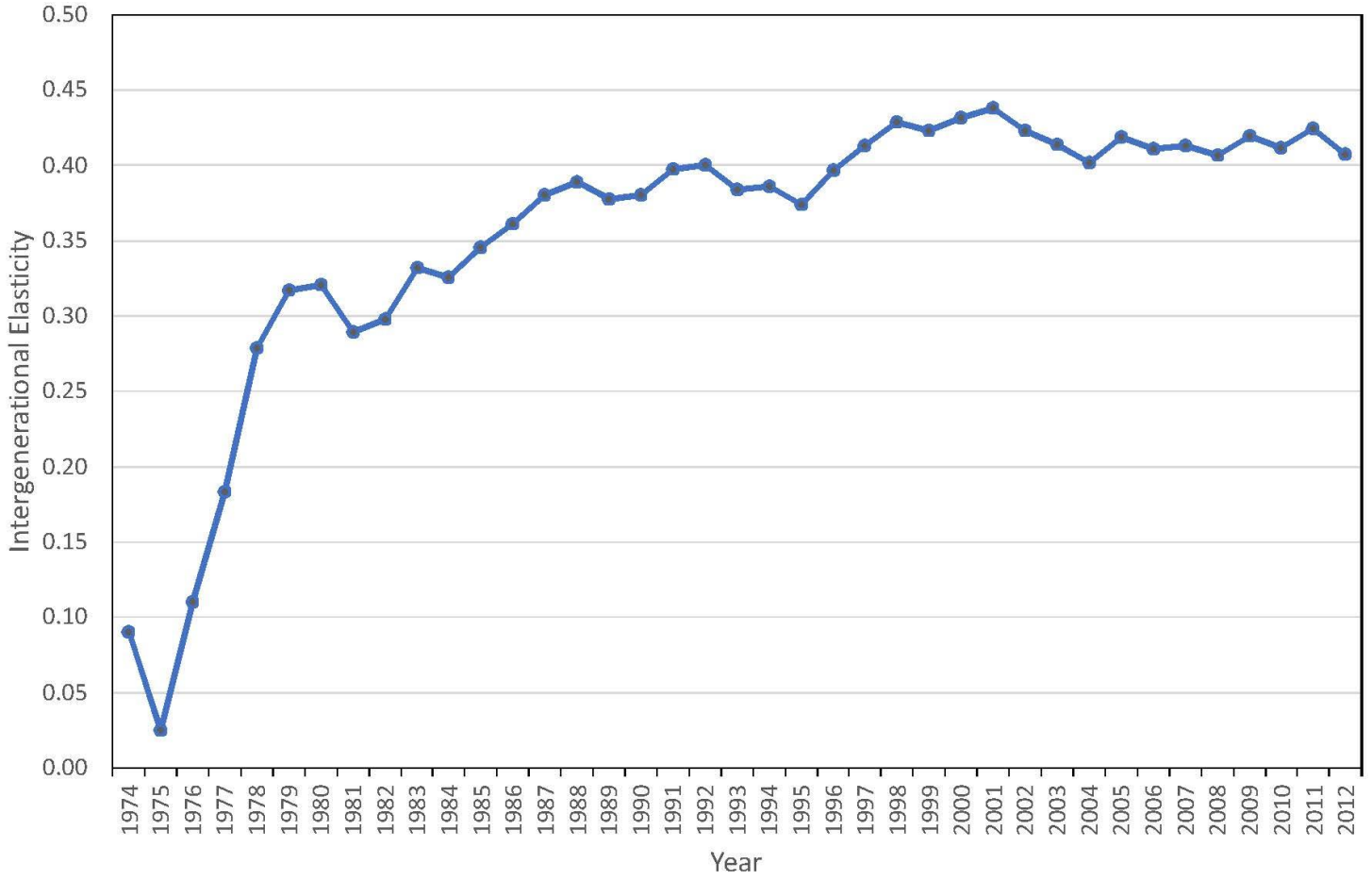
It also had a “shotgun skills strategy”: Invest at all stages of the life cycle

War on Poverty

Welfare Policy Subsidized Poverty Enclaves – Detached the Poor from Society

U.S. Experience with Income Transfers: Failed in its Attempt to Use Income Transfers to Promote Social Mobility

Trends in the Intergenerational Correlation of Welfare Participation: Neither Transfers Nor Work Requirements Reduced Intergenerational Poverty



Source: Hartley et al. 2016
Note: Welfare participation includes AFDC/TANF, SSI, Food Stamps and Other Welfare.

Many of the policies had strongly regressive components: heavy implicit taxes on the working poor and penalties for marriage

New Policies: After The War on Poverty

1. Eliminate tax on earnings for poor
2. Incentivize work
3. U.S. now has progressive tax and transfer policy.
4. Retains an unfocused “shotgun” skills policy.

An effective way to alleviate poverty and inequality and to enhance social mobility

Build skills, not rely on tax and transfer policy which is still the main vehicle used by most countries.

But create a focused skill enhancement policy that draws on recent knowledge about the dynamics of life cycle skill formation

Skills are major determinants of flourishing lives

Promoting inclusion and social mobility by fostering skills is an effective policy

Boosts aggregate growth and builds successful lives

A skilled workforce is a flexible, adaptable, and productive workforce.

Building skills creates dignity, agency, and engagement in society.

Need a comprehensive life cycle approach to build skills

Sources of Inequality

How to address social problems?

Address them as they arise, or prevent them from occurring in the first place?

Fragmented Solutions

- Current policy discussions around the world have a fragmented quality.
- They focus on one problem at a time when they arise in the life cycle with policies that are designed to address that one problem, often (but not always) by some remediation strategy.

Examples of Fragmented Solutions

- For employment, subsidize job creation, using tax breaks.
- For crime, have more police.
- For health, have more doctors and medical facilities.
- For teenage pregnancy, conduct pregnancy prevention programs.
- To reduce inequality, give cash transfers and promote housing programs for the poor.
- To promote skills, focus on schooling and school quality, especially college-going.
- None of these ideas are necessarily wrong, but there is a better and more effective way.

Fragmented solutions are often not the most effective ones—the problems and their causes are interrelated.

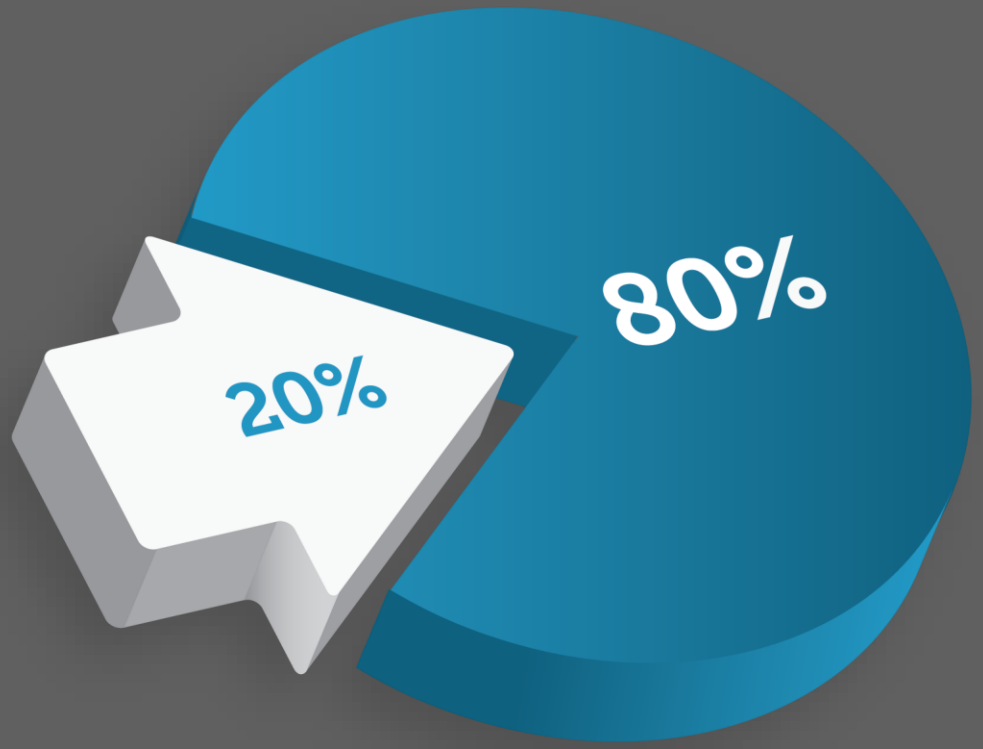
Rethink Public Policy

Should only the squeaky wheel get the grease?

Wait for Problems to Appear?

Depends crucially on how well we can predict later life problems and target populations at risk.

The Pareto Principle



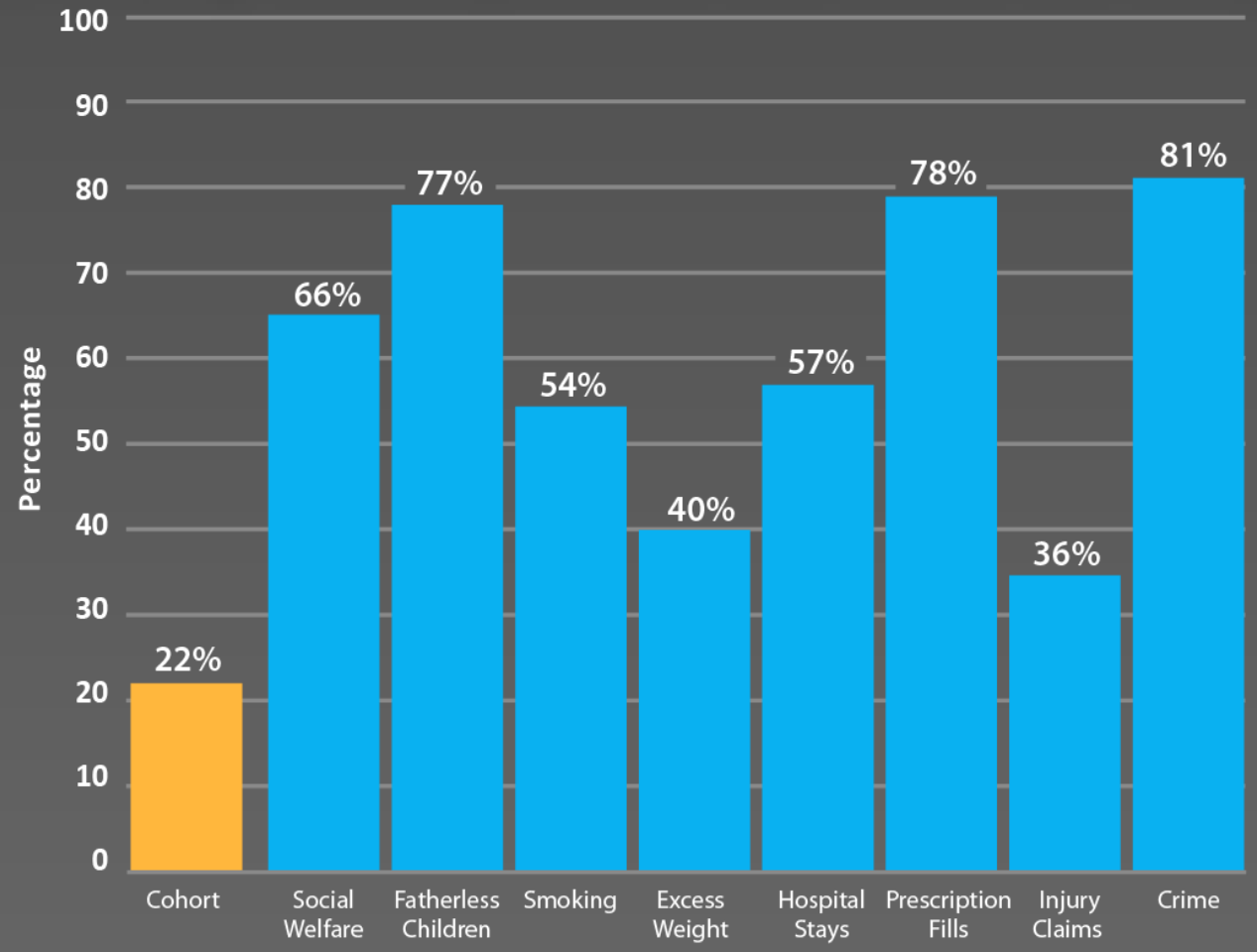
20% of the Actors Account for **80%** of the Results.

Vilfredo Pareto, 1848-1923

- A high-need/high-cost population segment uses more than half of resources in multiple sectors.
- Most high-need/high-cost people in this segment share risk factors in the first decade of life;

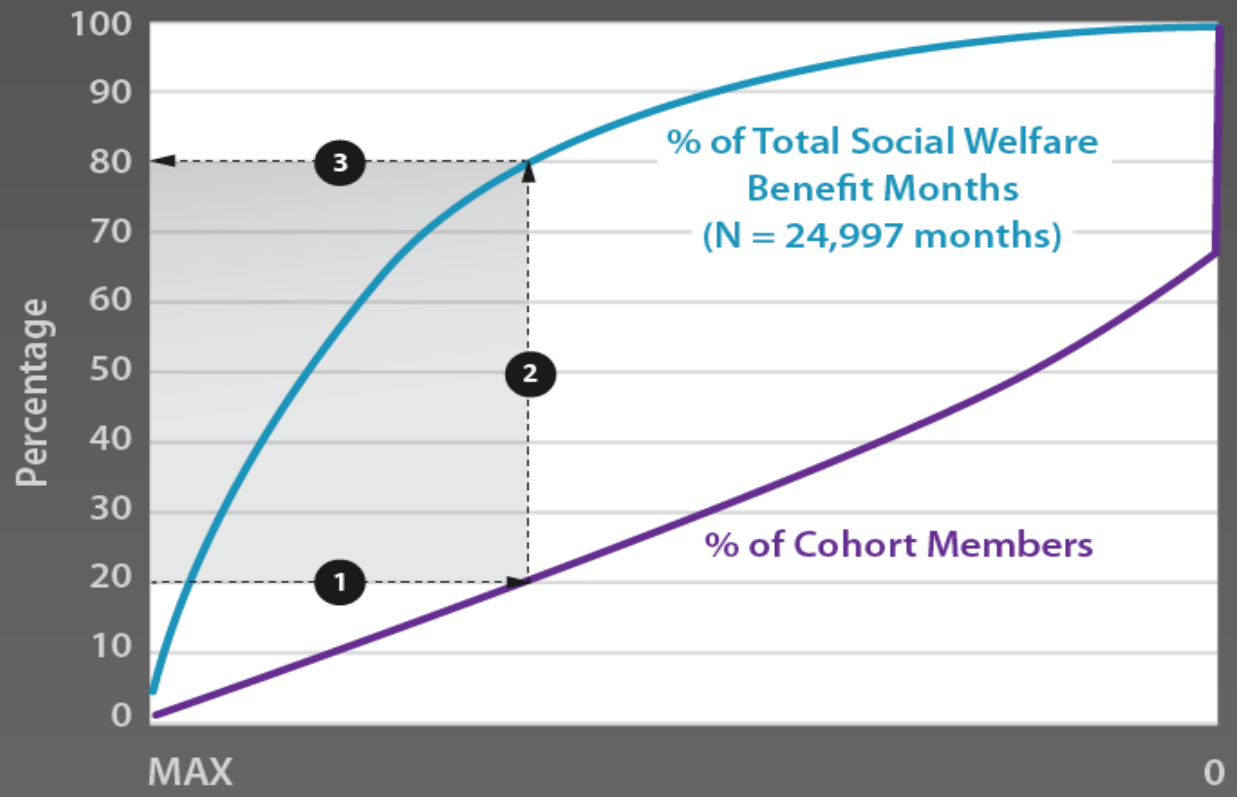
Seen in this way, targeting early-life risks seem important enough to warrant investment in early-years preventions.

The High-need/High-cost Group in 3 or more sectors: How many health/social services do they use?

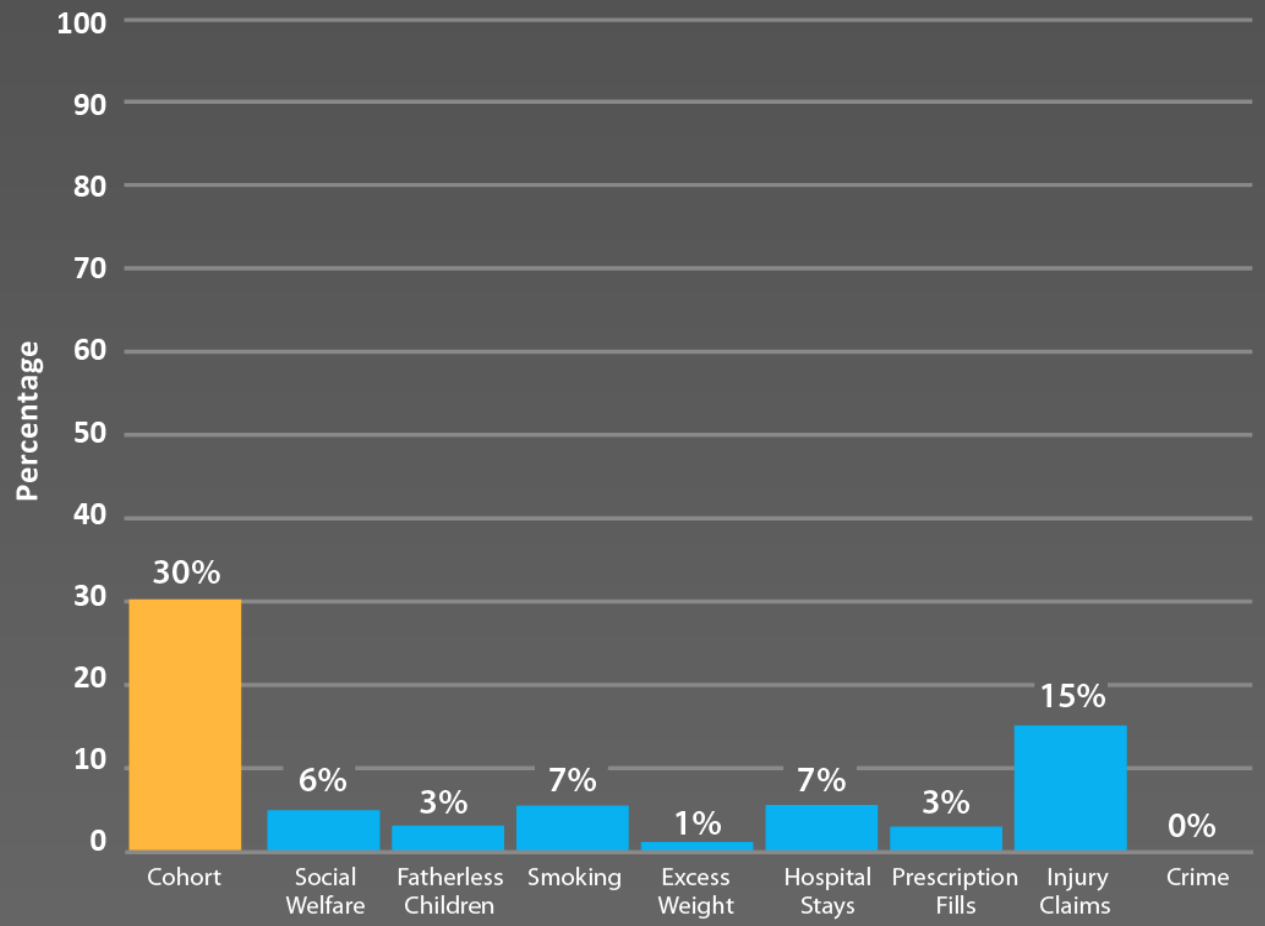


Social Welfare Benefit Months

20% of Cohort Members = 80% of Total Social Welfare Benefit Months



Small footprint of more advantaged cohort members never in any high-cost group:



Childhood Risk Factors Describe High-cost Actor Groups: Composites across ages 3, 5, 7, 9, 11

- IQ
- Self-control
- SES (socio-economic status)
- Maltreatment

Current discussions of achievement gaps focus almost exclusively on schools as the sources and solutions of these gaps

They miss the fundamental role of the early years of a child’s life, and especially the role of the family in creating gaps

Schools play a role, but not the dominant role, nor can schools alone close the gaps

Need to understand
skills that are life-relevant

Recent research shows the benefits of cognitive, social and emotional skills in enhancing the capacities of persons to function in many aspects of economic and social life and to foster or retard schooling.

Hard evidence on the importance of “soft” skills.

a) Major advances have occurred in understanding which human capacities matter for success in life.

b) Cognitive ability as measured by IQ and achievement tests is important for success in school.

c) So are **socio-emotional skills** – sometimes called character traits or personality traits:

- Motivation
- Ability to show up on time
- Sociability; ability to work with others
- Attention
- Self Regulation
- Self Esteem
- Ability to defer gratification
- Health and mental health

IQ alone explains at most a small portion of the variability in lifetime earnings among people.

Higher Levels of Cognitive and Socioemotional Skills are Associated With:

a) Reduced Crime

b) Higher Earnings

c) Better Health and Healthy Behaviors

d) Higher Civic Participation

e) Higher Educational Attainment

f) Less Teenage Pregnancy

g) Greater Trust

h) More Human Agency and Self-Esteem

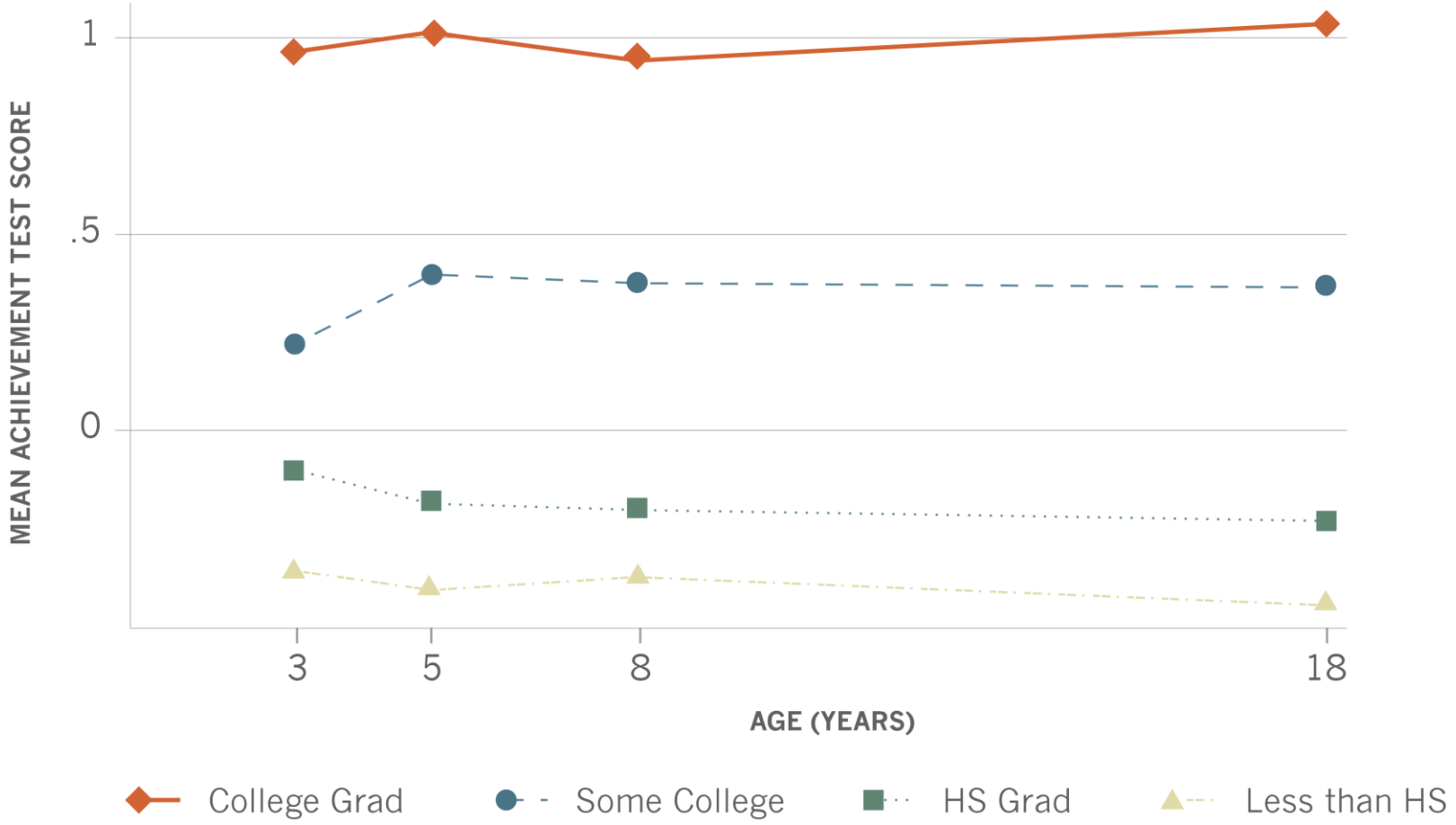
They are the principal outputs of successful schools and families.

How are skills produced?

Schools are important, but so are other institutions in society.

Skill formation starts in the womb, long before children enter formal schooling.

Mean Achievement Test Scores by Age by Maternal Education



Each score standardized within observed sample. Using all observations and assuming data missing at random. Source: Brook-Gunn et al. (2006).

- Recent research suggests the wisdom of investing more in prevention and less in remediation in creating skills
- Creating a secure foundation to benefit from the opportunities life offers

Families and social environments, not just schools, are the major producers of the skills of children.

The family is the cornerstone of effective skill development.

We Have Learned the Importance of the Early Years: Skills Beget Skills

Supporting families in engaging and nurturing their children is key to success in education and learning at all stages of a child's life

- Cost-effective and fair

Home Environments Matter

Hart & Risley, 1995

Children enter school with “meaningful differences“ in vocabulary knowledge.

1. Emergence of the Problem

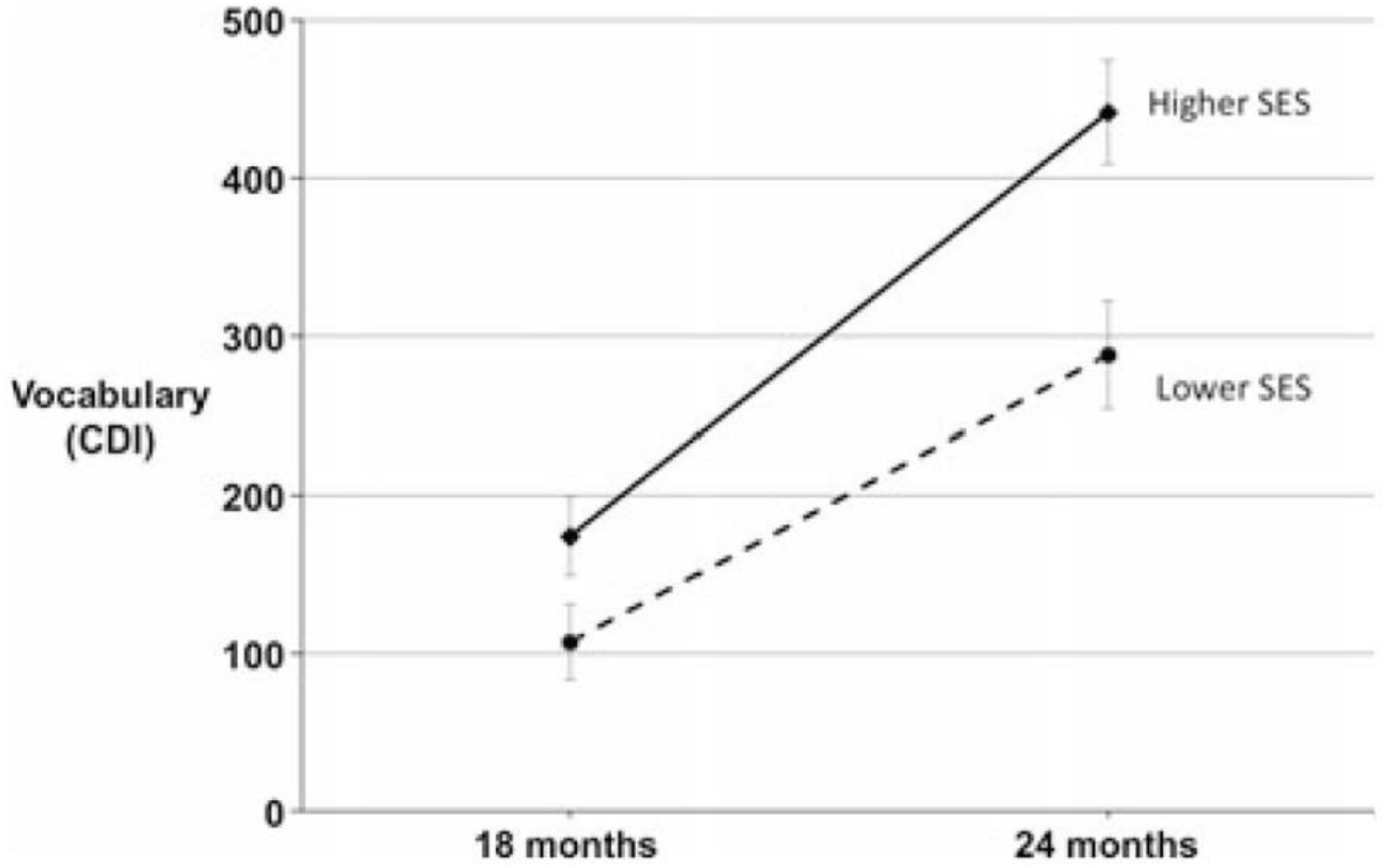
In a typical hour, the average child hears:

Family Status	Actual Differences in Quantity of Words Heard	Actual Differences in Quality of Words Heard
Welfare	616 Words	5 affirmatives, 11 prohibitions
Working Class	1,251 Words	12 affirmatives, 7 prohibitions
Professional	2,153 Words	32 affirmatives, 5 prohibitions

2. Cumulative Vocabulary at Age 3

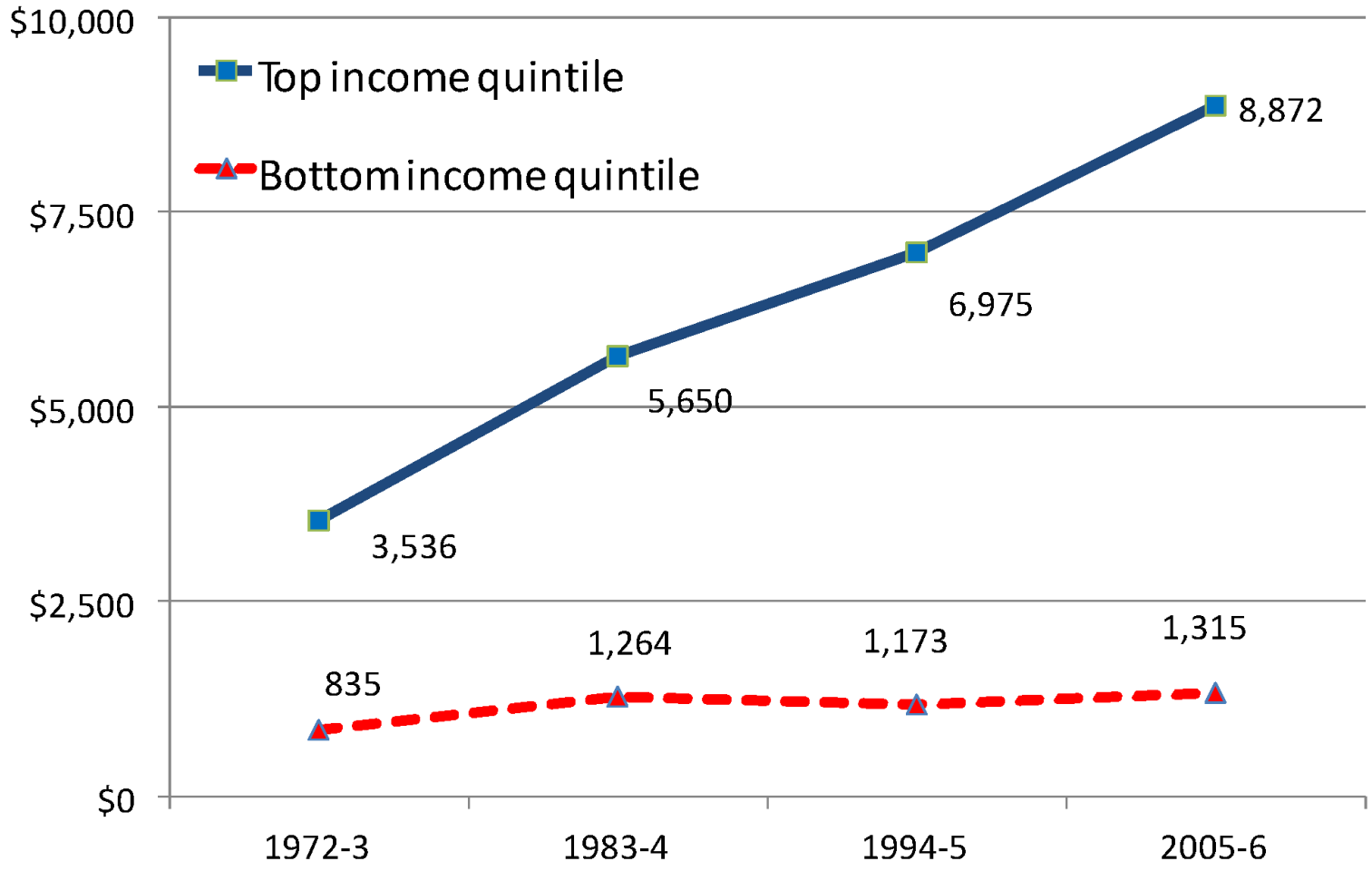
Cumulative Vocabulary at Age 3	
Children from welfare families:	500 words
Children from working class families:	700 words
Children from professional families:	1,100 words

Mean number of spoken words reported on the MacArthur/Bates CDI by age and SES (HI)



Source: Fernald et. al (2013). *Note:* Error bars represent SE of the mean over participants.

Per Capita Enrichment Expenditures on Children ($2008) Top Versus Bottom Quartile of Households



Source: Duncan and Murnane (2011)

Home environments are associated with child outcomes

Targeted early childhood programs substantially reduce achievement gaps and produce better child outcomes.

Successful interventions work with and encourage parents. They promote interactions between parents and children, which are fundamental to child development.

The nature of and level of parent-child interactions vary greatly by social and economic status of the family.

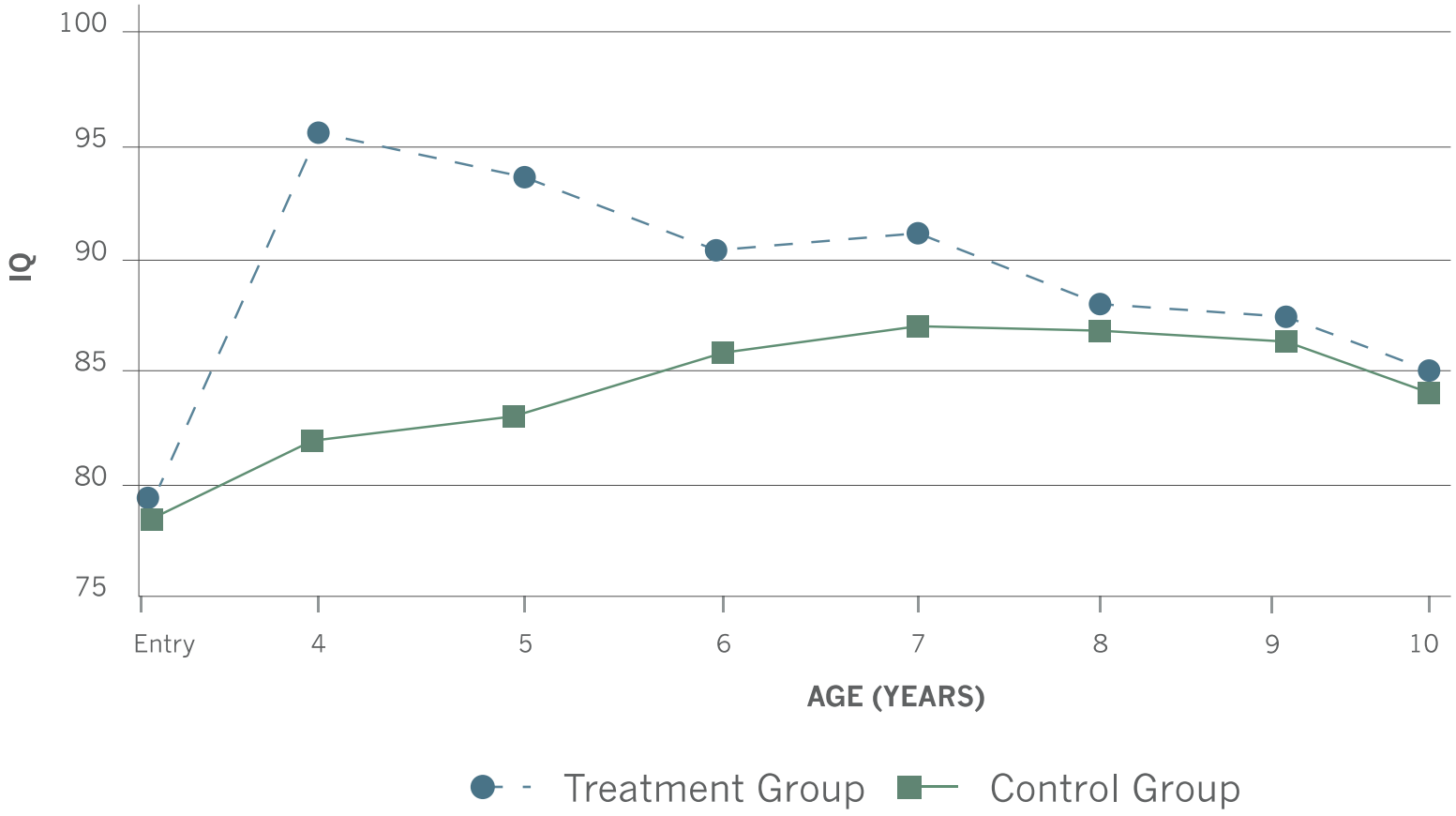
There are Proven Effective Programs

Examples:

- Perry Preschool (ages 3-4), 2 hours per day
- Abecedarian Program (ages 0-5), 8 hours per day

To evaluate them, we need full inventories of the life-relevant skills

Perry Preschool Program: Early Results
IQ, by age and treatment group



Source: Perry Preschool Program. IQ measured on the Stanford. Binet Intelligence Scale (Terman & Merrill, 1960). Test was administered at program entry and each of the ages indicated.

Figures like this stimulated the critique of Arthur Jensen (1969)

Led to Herrnstein and Murray’s Bell Curve and their emphasis on genetics

Like many still do today, they assumed that IQ was an important determinant of life outcomes and that it was genetically determined

- Yet, Perry was not a failure by any means. Children in the treatment group had far better life outcomes than those in the control group.
- They did better in school, had higher levels of employment and wages, and lived healthier and more socially productive lives.

Despite “fadeout,”7-10% per annum rate of return.

A Key boost is in executive functioning—the ability to control one’s life and passions—which is closely related to IQ.

Worked primarily through boosting social and emotional skills.

- Even led to higher achievement test scores

Childhood Family Environments of the Second-Generation Children

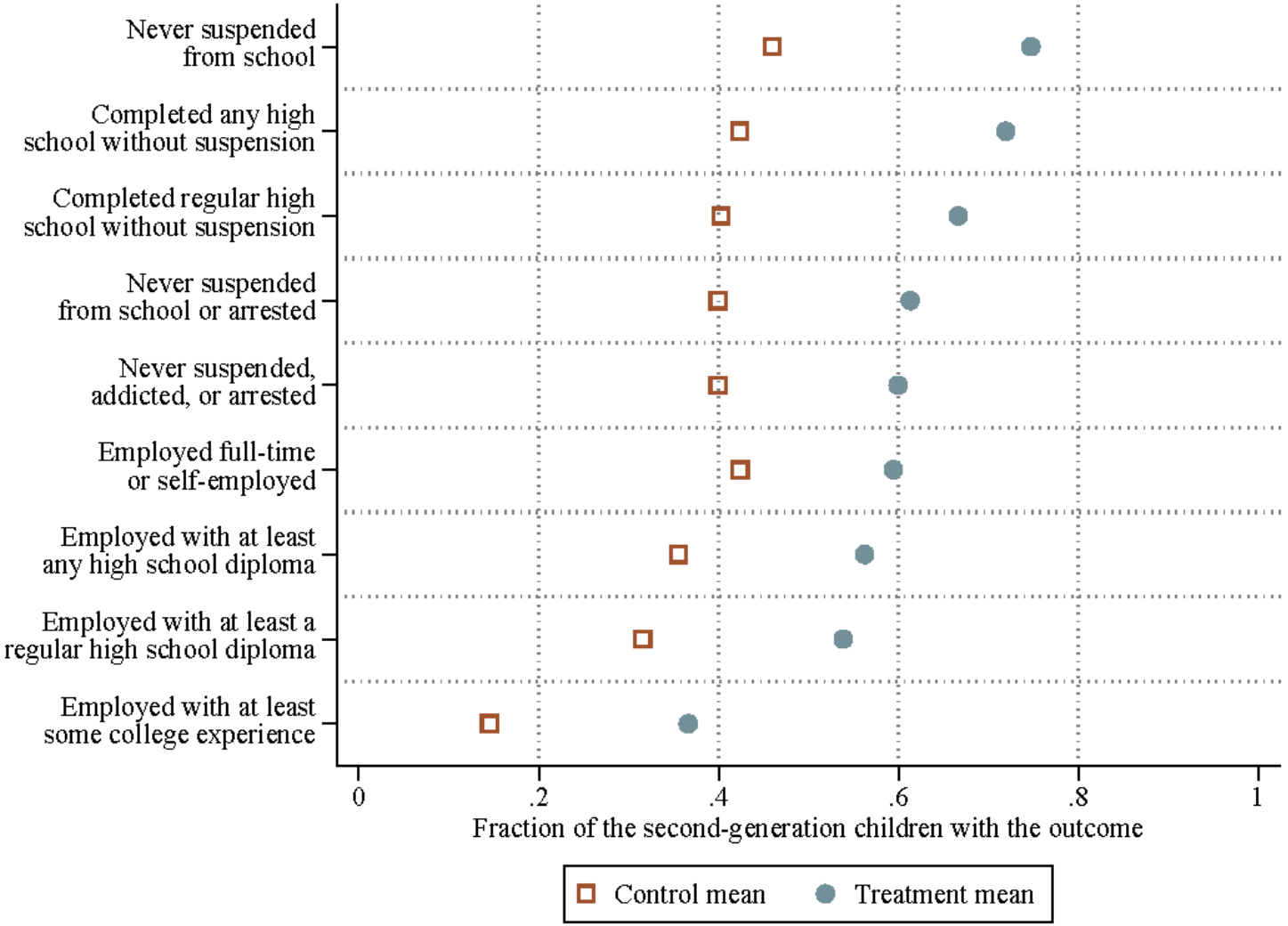
Achievement tests (as opposed to IQ tests) measure effort and desire to learn as much as raw smarts.

Effects of These Programs Last Over Generations

Recent Evidence

The Children of the Original Perry Participants

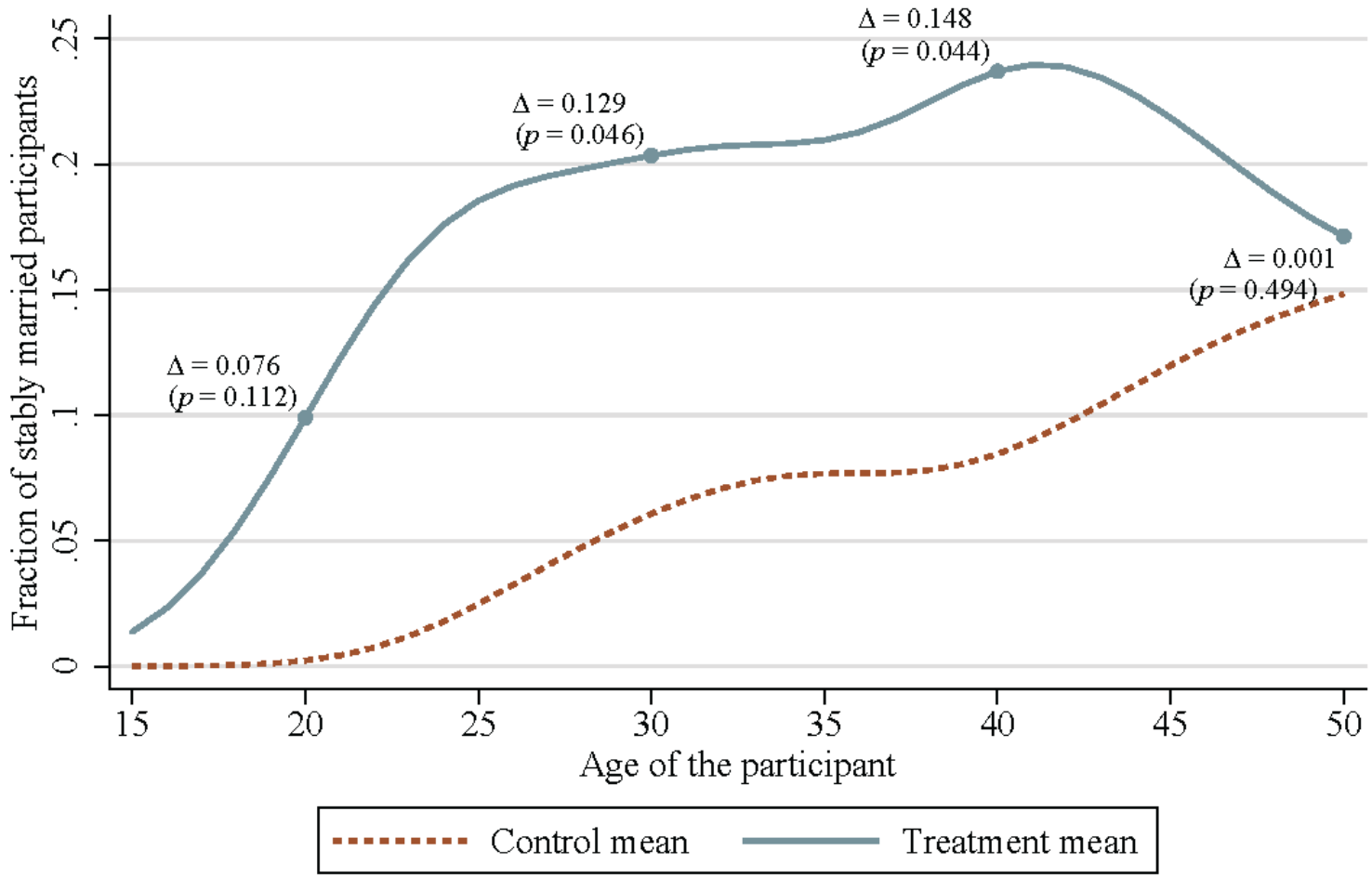
Statistically Significant Intergenerational Effects at the 10% Worst-Case Level



Note: These estimates of the intergenerational treatment effects are statistically significant at the 10% level using the conservative worst-case test procedures developed in Heckman and Karapakula (2019).

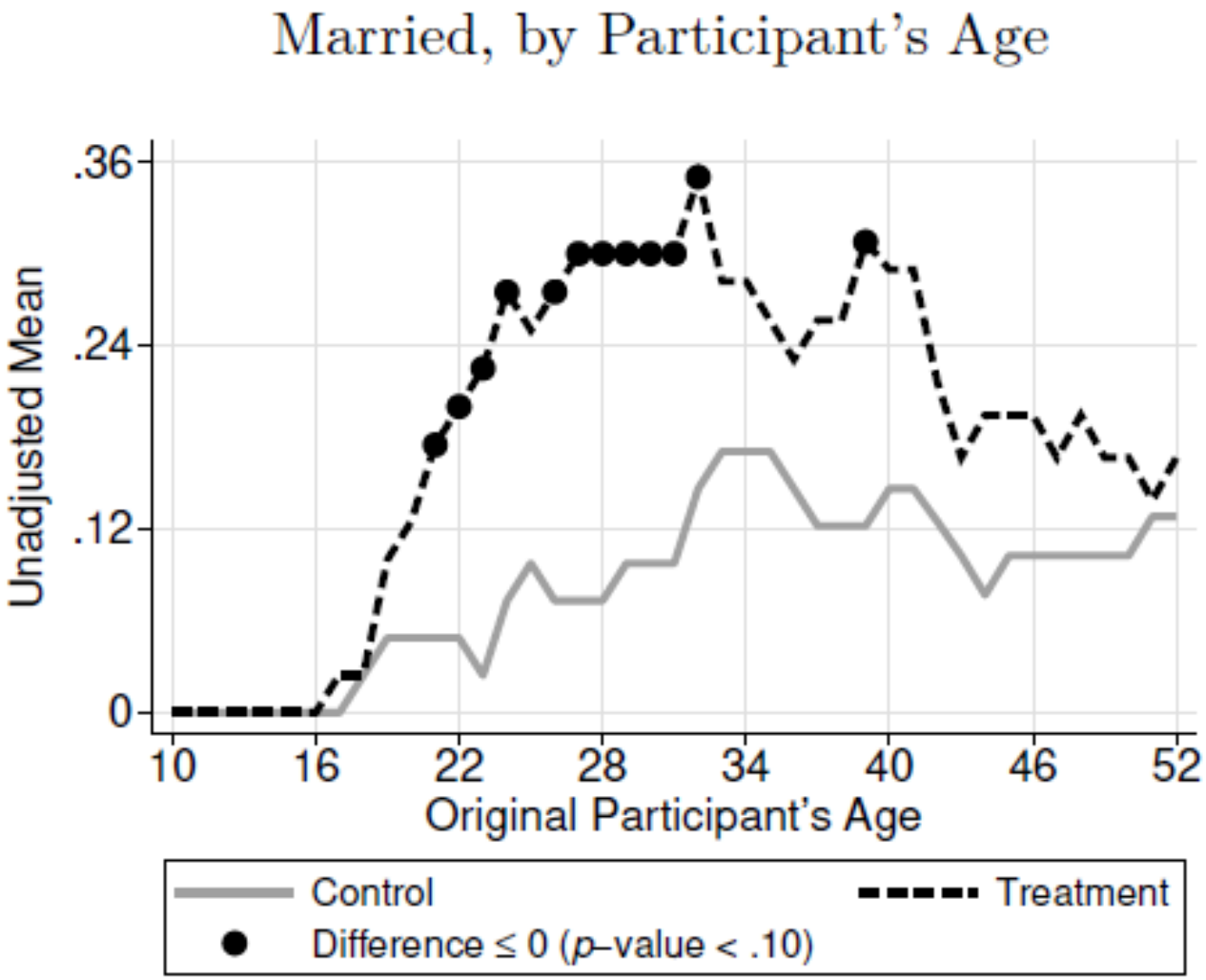
Mechanisms Producing These Effects

Stable Marriage Rate over the Life Course for Male Participants

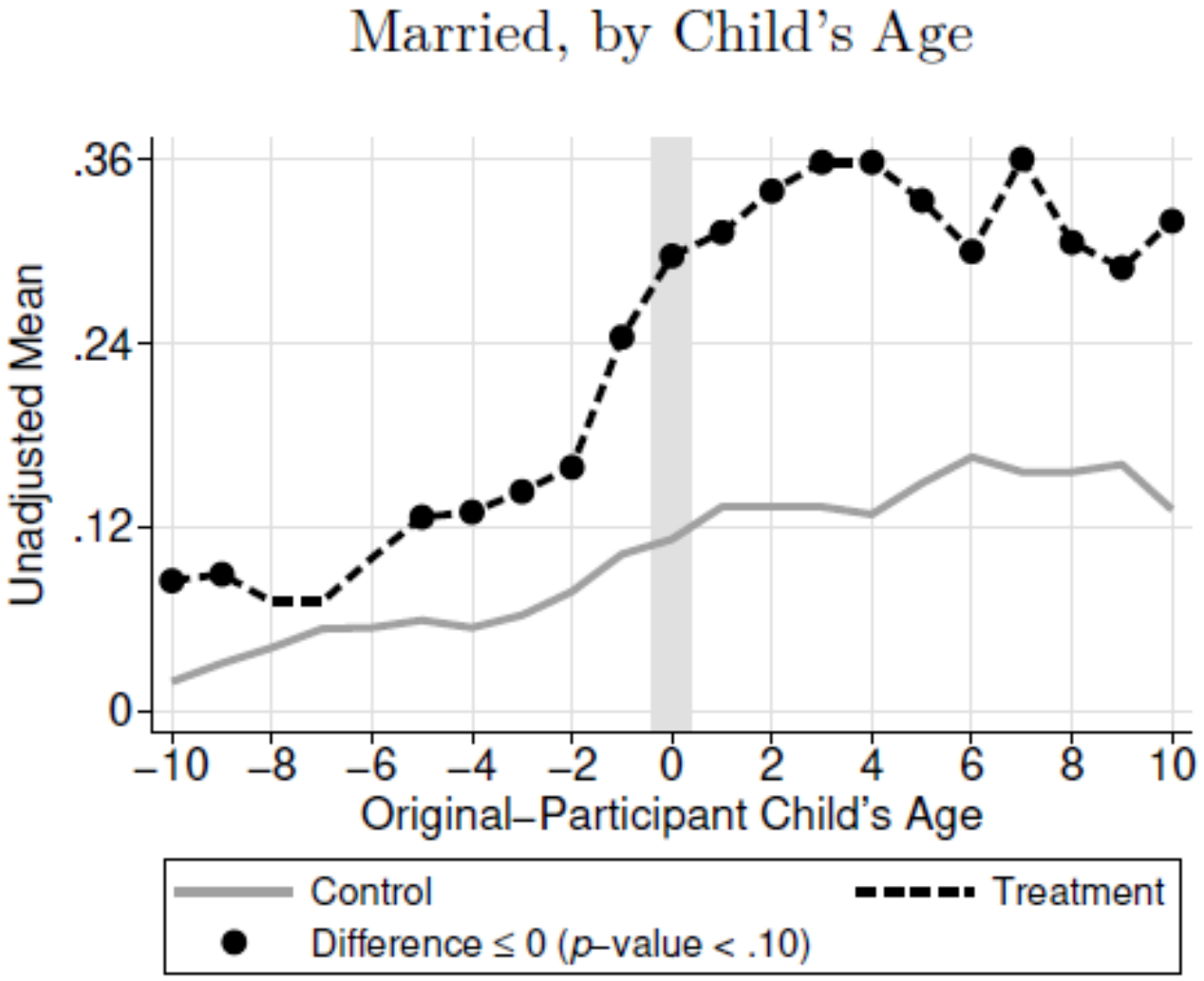


Note: Δ = augmented inverse probability weighting estimate (AIPW) of the treatment effect;
p = worst-case maximum *p*-value based on approximate randomization test using studentized AIPW;
the control and treatment means are smoothed estimates using the Gaussian kernel with bandwidth of 3.

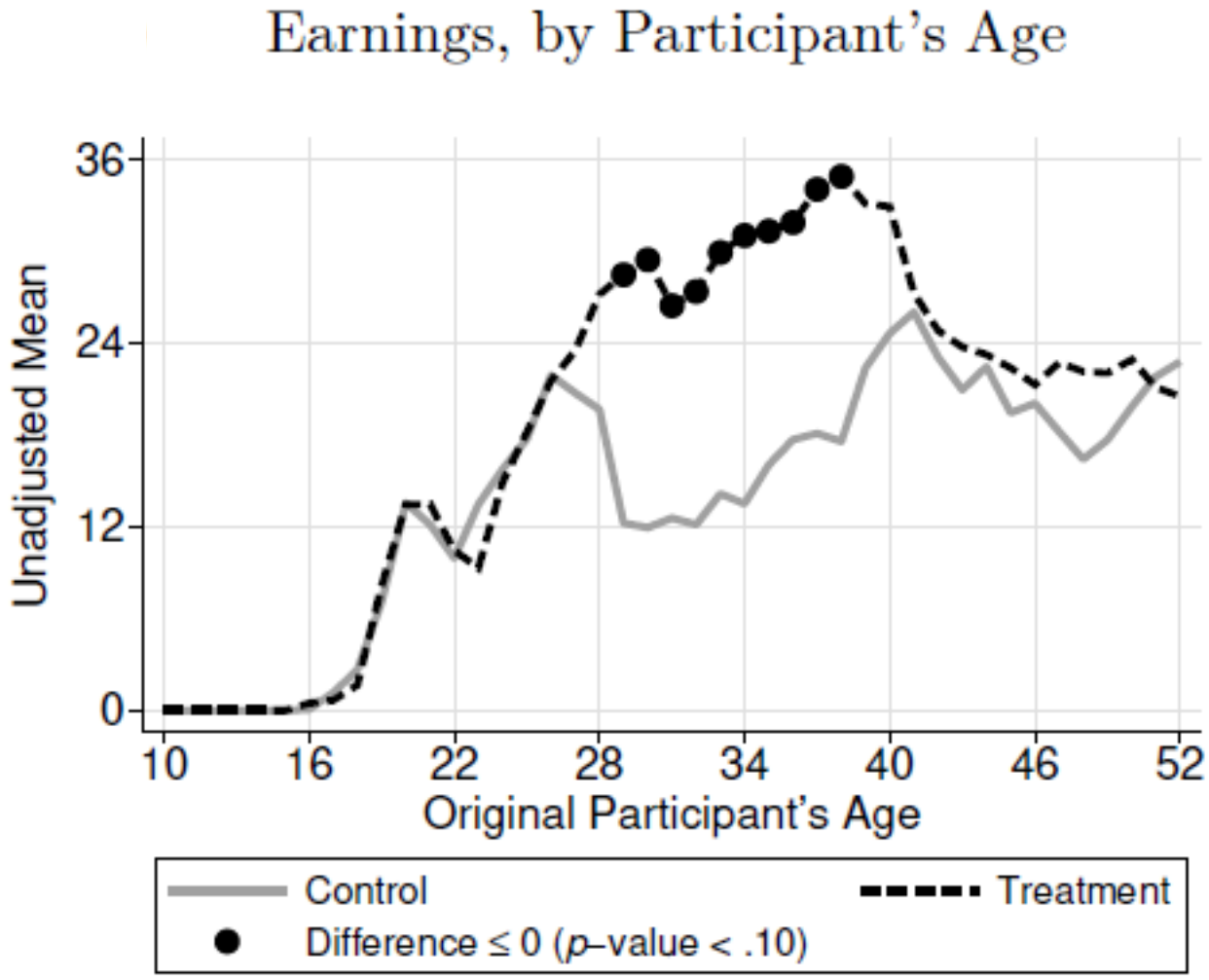
Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry



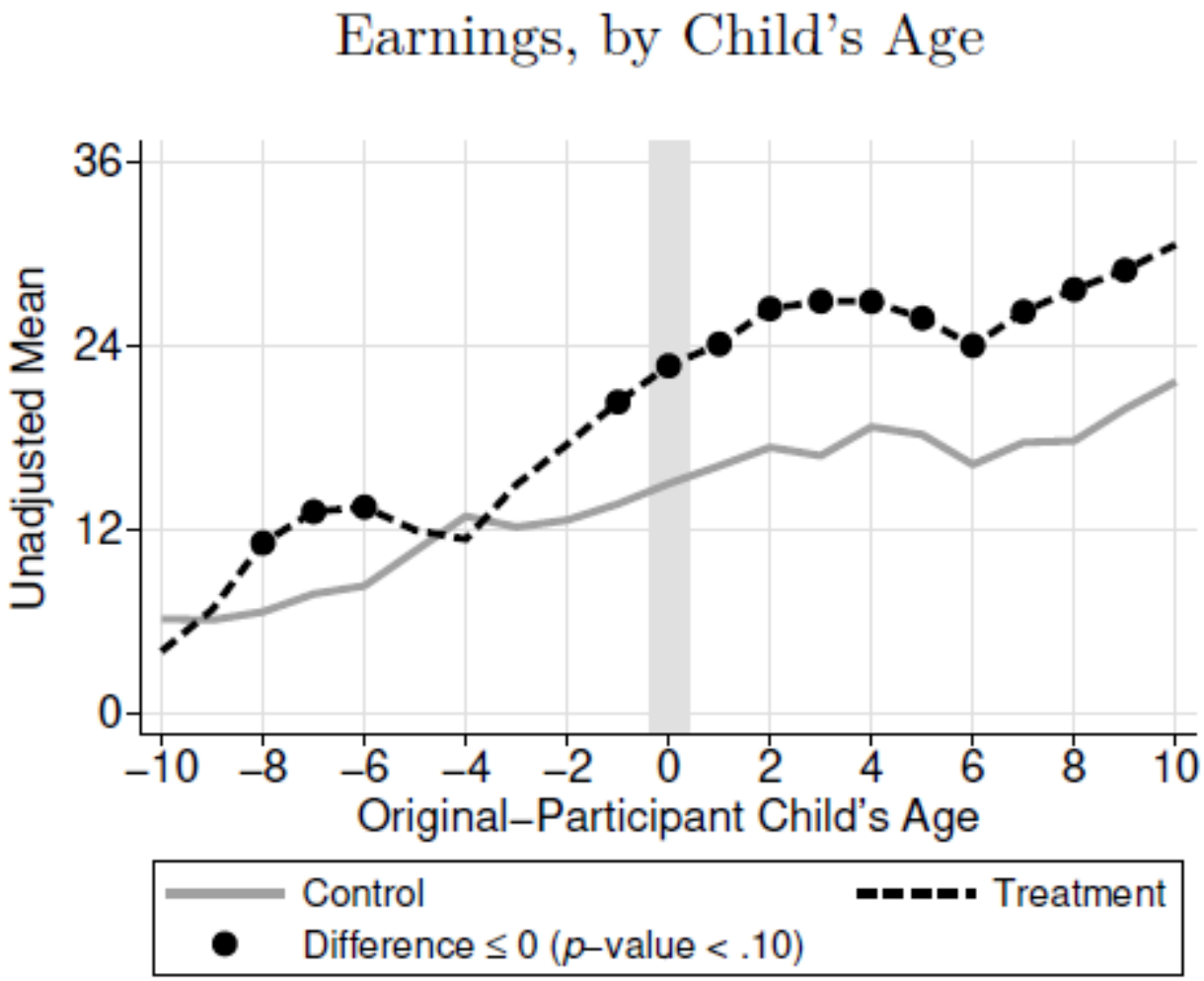
Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry, Cont'd



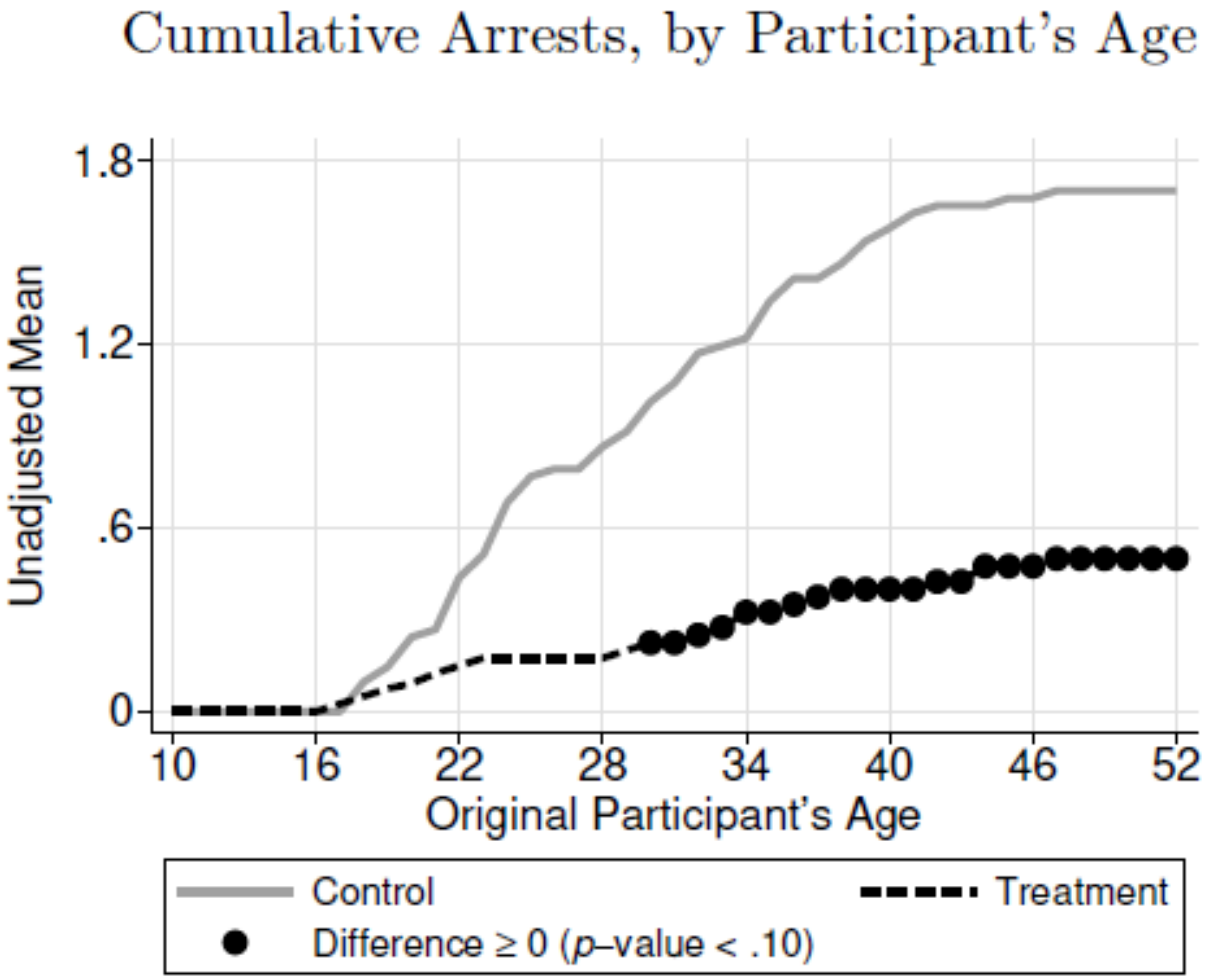
Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry, Cont'd



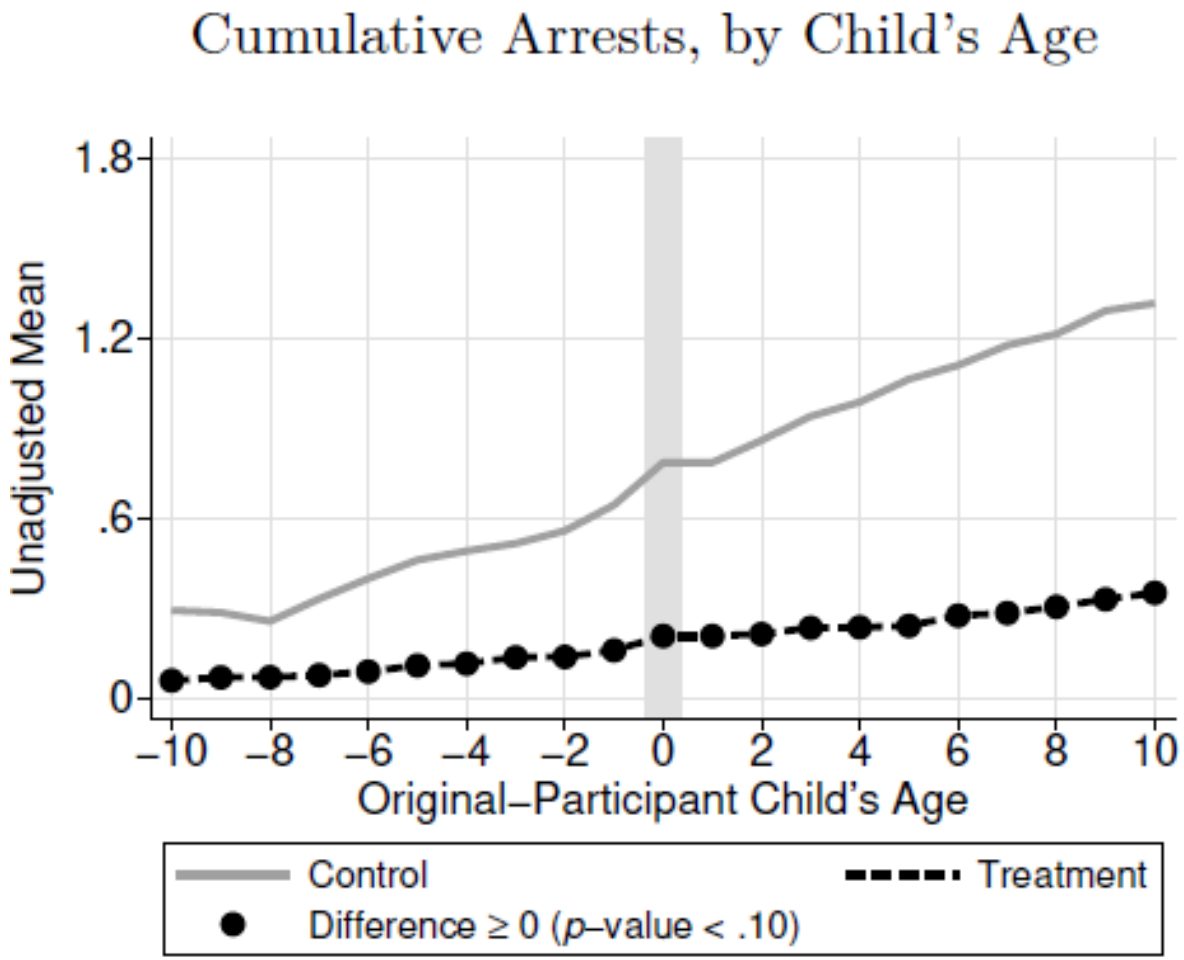
Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry, Cont'd



Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry, Cont'd



Original-Participant Marriage, Earnings, and Crime by their Age and by their Children's Age, Perry, Cont'd



Abecedarian shows benefits from a comprehensive approach.

Starting earlier (at birth) boosts IQ.

- Improved parenting practices and child attachment
- Positive effect on behavior and mental health
- Higher educational attainment
- Higher employment rate
- Reduced criminal activity
- Better child and adult health

Abecedarian Project, Health Effects at Age 35 (Males)

	Treatment Mean	Control Mean	Treatment p-value
Systolic Blood Pressure	125.79	143.33	0.018
Diastolic Blood Pressure	78.53	92.00	0.024
Pre-Hypertension	0.68	0.78	0.235
Hypertension	0.10	0.44	0.011
HDL Cholesterol	53.21	42.00	0.067
Cholesterol/HDL-C	3.89	4.69	0.057
Abdominal Obesity	065	0.87	0.136
Metabolic Syndrome	0.00	0.25	0.009

Source: Campbell, Conti, Heckman, Moon, Pinto, Pungello and Pan (2014).

Rate of return:

- Overall: 13.7% per annum
- Males: 14% per annum
- Females: 10% per annum

The enhanced income of mothers from the provision of childcare by itself pays for program costs.

Summary of Benefit-Cost Analysis of the Perry and ABC

	Perry	ABC
Benefits		
Parental Income	N/A	133,326
Education	303	-5,151
Labor Income	68,348	146,672
Crime	88,065	513,420
Health	54,048	63,794
Other	N/A	-21,408
Costs		
Total Program Cost	23,478	105,530
Net Social Benefit (Benefits Less Costs)		
Baseline Program Cost	187,287	725,124
Subtract Deadweight Loss	175,548	672,359
Benefit-Cost Ratio		
Baseline Program Cost	9.0	7.9
Subtract Deadweight Loss	6.0	5.2

Summary of ABC and Perry

Baseline Characteristics, Outcomes, and Fertility: Original Participants of Perry and ABC

	Perry			ABC		
	Control Mean	Mean Difference (MD)	MD p-value	Control Mean	Mean Difference (MD)	MD p-value
Panel a. **Baseline**						
IQ (Perry) or Mother's IQ (ABC)	78.54	1.03	0.387	83.49	1.83	0.399
Socioeconomic Index	8.62	0.17	0.530	21.82	-1.93	**0.089**
Mother Does not Work	0.69	0.22	**0.002**	0.39	-0.22	**0.010**
Mother's Year of Birth	1959.97	0.03	0.950	1974.35	-0.15	0.674
Panel b. **Midlife Skills**†						
Cognitive	0.00	0.48	**0.005**	0.00	0.34	**0.031**
Non-Cognitive	0.00	0.50	**0.011**	0.00	0.47	**0.031**
Panel c. **Midlife Education**‡						
High-School Graduate	0.52	0.20	**0.021**	0.53	0.20	**0.025**
College Graduate	0.05	0.02	0.453	0.09	0.21	**0.007**
Panel d. **Midlife Outcomes**•						
Married	0.25	0.09	**0.082**	0.42	0.01	0.486
Labor Income (2021 USD)	16,298.91	7,826.94	**0.018**	37,527.95	13,044.70	**0.098**
Household Labor Income (2021 USD)	25,121.43	13,243.21	**0.007**	37,247.62	14,632.67	**0.071**
Accumulated Days (Perry) or Times (ABC) in Jail or Prison	1,326.71	-380.83	0.237	0.14	-0.12	**0.027**
Never Arrested (Perry) or Accumulated Arrests (ABC)	0.46	0.18	**0.039**	0.61	0.26	0.151
Physical Health	0.00	-0.02	0.553	0.00	0.28	**0.096**
Mental Health	0.00	0.31	**0.072**	0.00	0.20	0.111
Panel e. **Midlife Fertility**†						
Any Children	0.80	-0.01	0.878	0.89	-0.03	0.748
Age at Onset	22.63	0.87	0.469	21.93	2.23	0.122
Number of Children	2.42	0.15	0.727	2.31	-0.19	0.524
> 5 Children	0.07	0.02	0.727	0.00	0.02	0.928
Panel f. **Sample Sizes**						
Original Participants at Baseline	65	-7		57	2	
Original Participants at Midlife Follow-up	50	2		45	6	

Summary of Intergenerational Outcomes: Children of Original Participants or Second-Generation Participants of the Perry Preschool and Carolina Abecedarian Projects

	Male Children			Female Children		
	Control Mean	Mean Difference (MD)	MD p-value	Control Mean	Mean Difference (MD)	MD p-value
***Panel a.* PPP**						
High School Graduate (Age 18 or older)	0.67	-0.01	0.582	0.74	0.13	**0.026**
College Graduate (Age 23 or older)	0.04	0.08	**0.063**	0.31	-0.09	0.846
Employed (Age 23 or older)	0.48	0.19	**0.040**	0.41	0.09	0.218
Never Arrested (Age 18 or older)	0.37	0.14	**0.089**	0.78	0.06	0.210
In Good Health (Age 18 or older)	0.82	0.12	**0.006**	0.85	0.10	**0.030**
Not a Parent (Ages 14 to 22)	1.00	0.00	1.000	0.83	0.12	0.234
Never Divorced (Age 23 or older)	0.93	0.07	**0.028**	0.86	0.11	**0.016**
***Panel b.* ABC**						
High School Graduate (Age 18 or older)	0.66	-0.06	0.718	0.28	0.18	**0.067**
College Graduate (Age 23 or older)	0.55	-0.08	0.683	0.18	0.25	**0.068**
Not Idle (Age 15 or older)	0.91	0.06	**0.083**	0.98	0.00	0.572
In Good Health (Age 18 or older)	0.83	0.18	**0.000**	0.88	0.10	0.133
Not a Parent (Ages 14 to 22)	0.63	0.17	**0.069**	0.94	-0.01	0.584

Note: Panel a. presents the control-group mean and treatment-control mean difference for the intergenerational outcome in the label for the Perry Preschool (PPP) project. Intergenerational outcomes are for the average child. We construct them by averaging within original program participants across up to their five eldest children. For each mean difference, we present the permutation p-value associated with the null hypothesis that the mean difference less than or equal to 0. We bold p-values when they are less than 0.10. Panel b. is analogous in format to Panel a. for the Carolina Abecedarian Project (ABC). Appendix A1 provides details of our data construction.

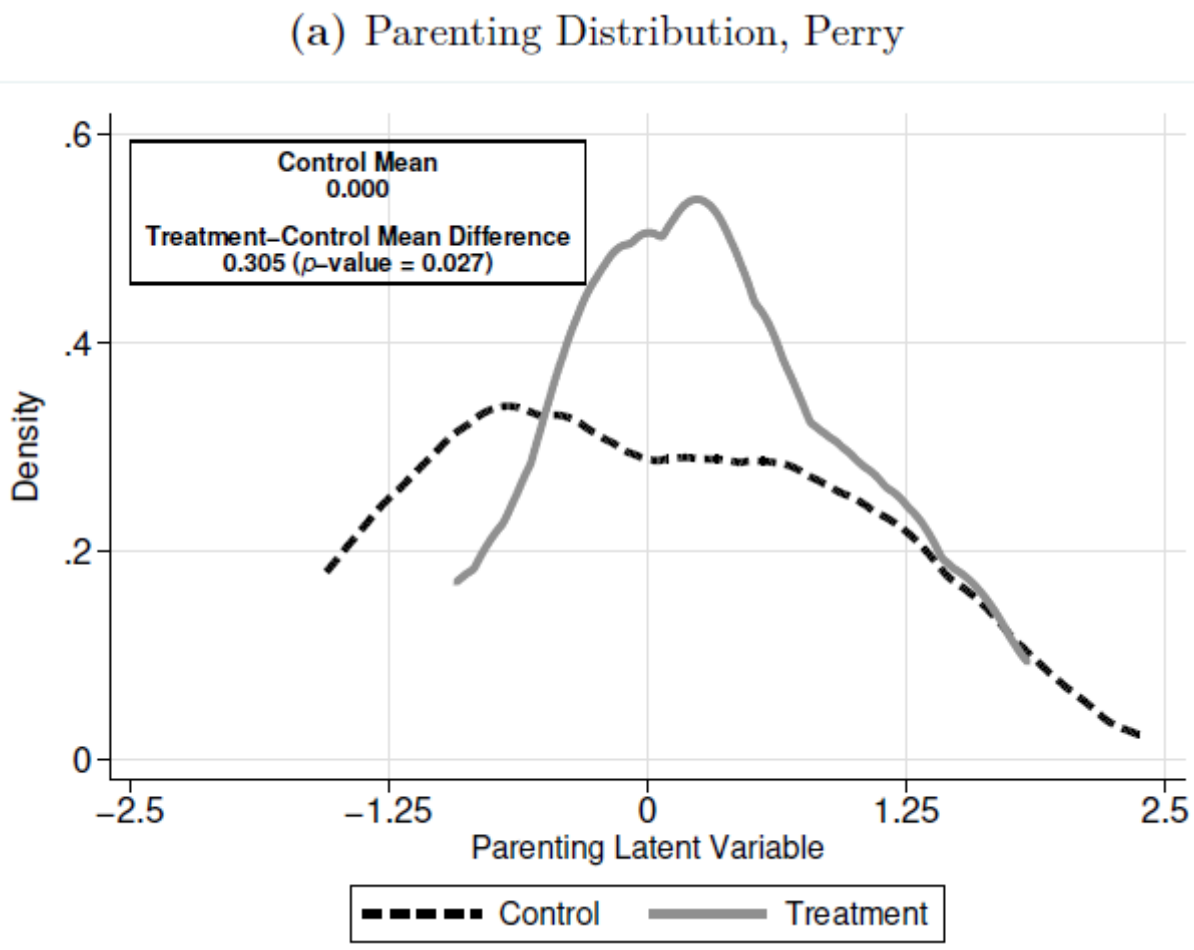
Mechanisms Underlying Effective Early Childhood Interventions

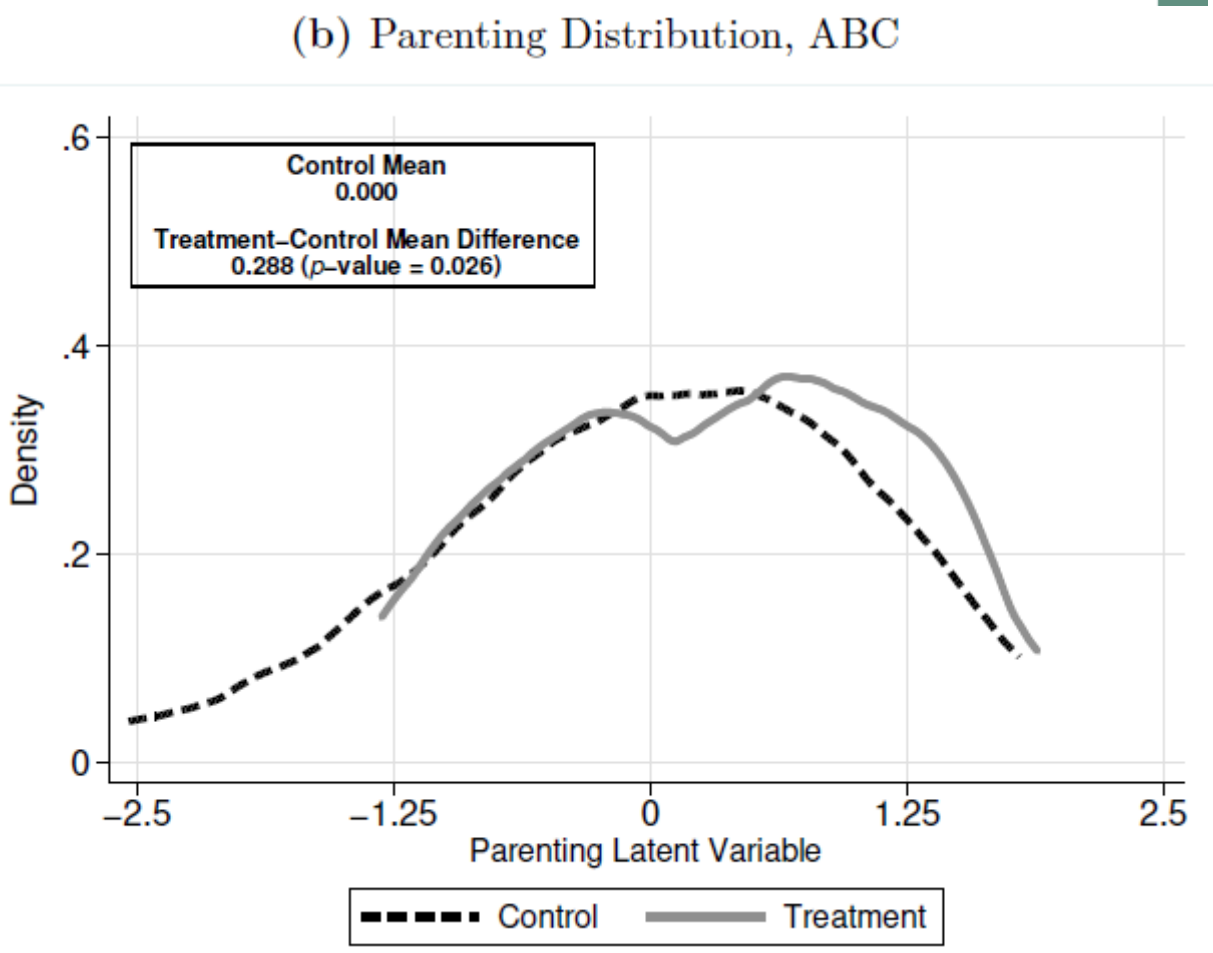
Enriches Home Lives of Children Outside of Childcare Center

Keeps Parental Engagement Active Long After the Children Leave Early Childhood Programs

- Parent-child interaction patterns were improved in both Perry and ABC

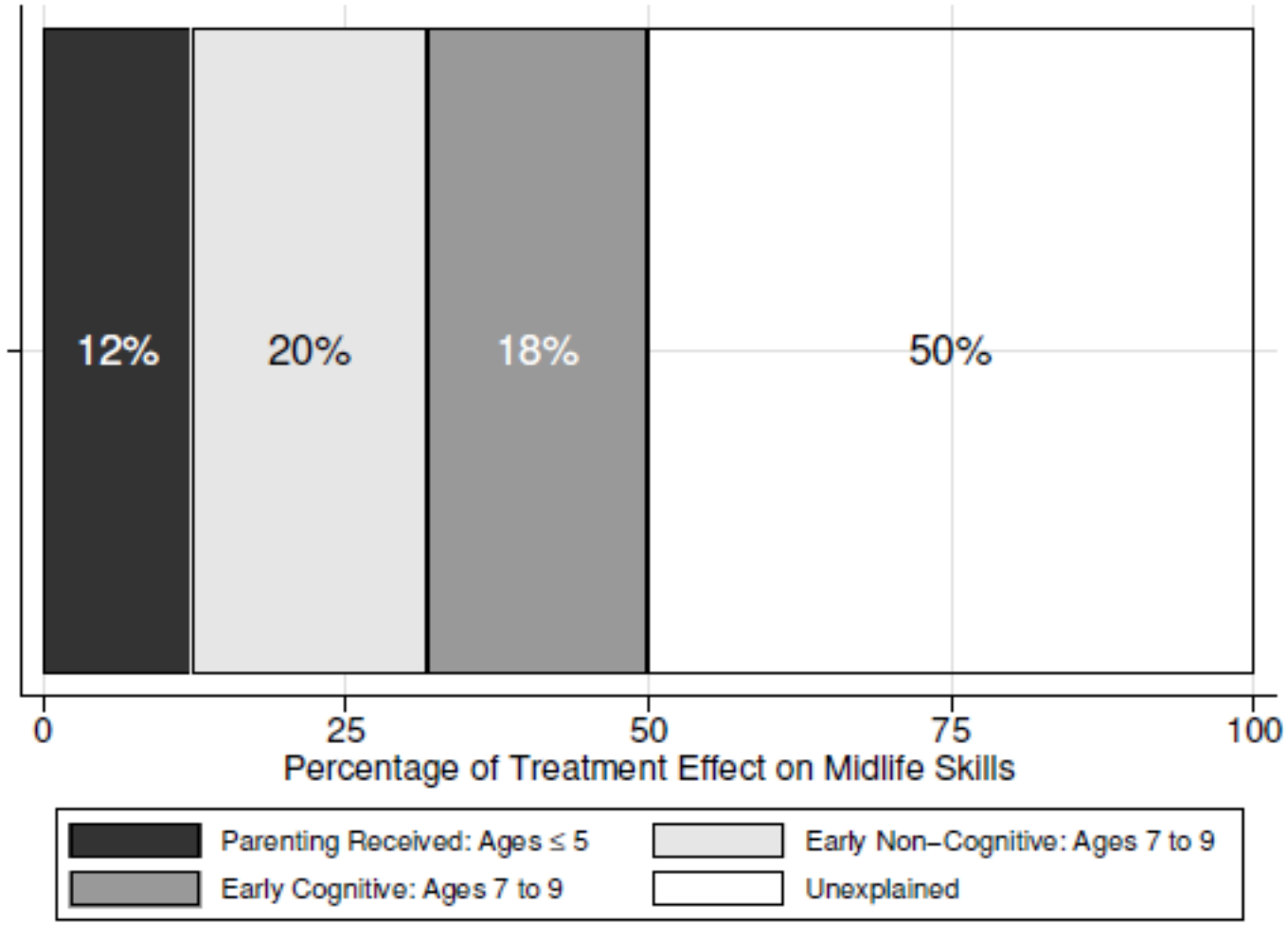
Parenting Received by the Original Participants of the Perry and ABC





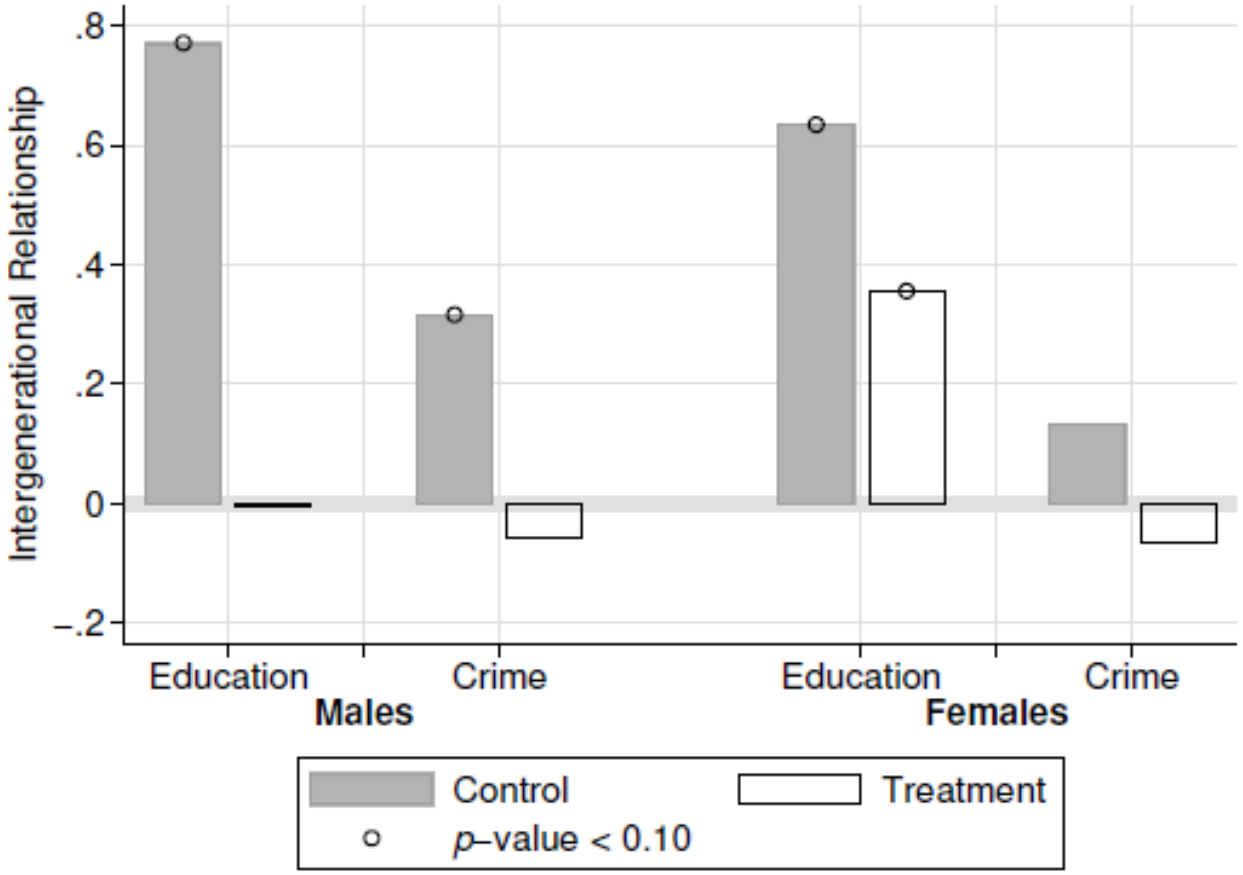
Note: Panel (a) shows the probability density function of a latent variable describing the parental investment (parenting) received by the original participants of the Perry Preschool Project (Perry) by treatment status. We also display the control-group mean and the treatment-control mean difference in the index together with the permutation p-value for this difference. The null hypothesis for the difference is that it is less than or equal to 0. Panel (b) is analogous in format to Panel (a) for the parental investment received by the original participants of the Carolina Abecedarian Project (ABC).

Decomposition of Treatment Effect on Midlife Skills into Treatment Effects on Parenting Received and Early-Life Skills, Perry



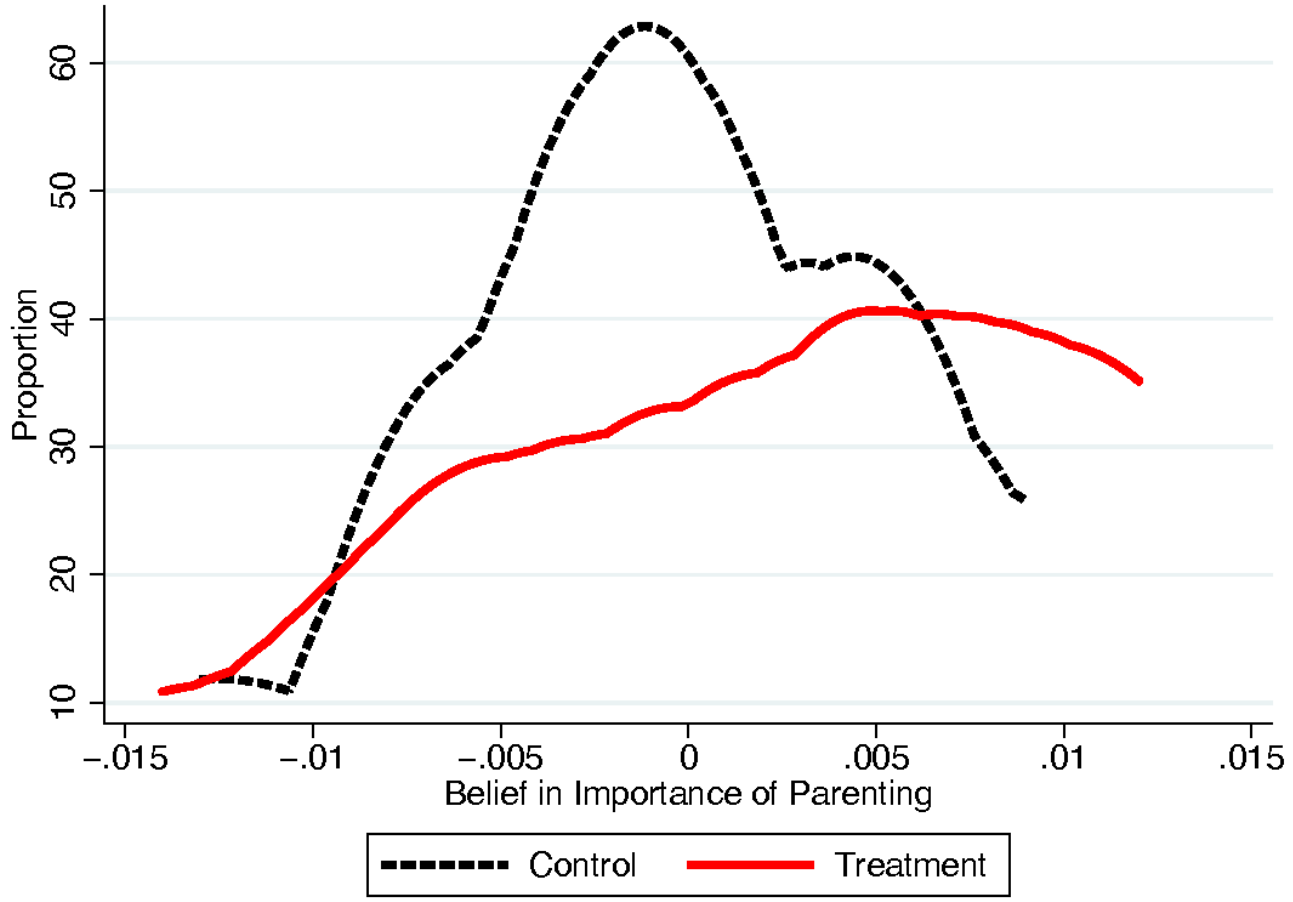
Note: This figure displays a decomposition of the treatment effect on the average of cognitive and noncognitive midlife skills at age 54 for the participants of the Perry Preschool Project displayed in Figure 3a into treatment effects on the parenting that they received (described in Figure 2a), as well as treatment effects on their early-life (ages 7 to 9) non-cognitive and cognitive skills. The decomposition is estimated using the methodology for mediation analysis in Heckman et al. (2013). The skill measures are described in Sections 3.4 and 5.

Intergenerational Relationships between the Second-Generation and Original Participants of the Perry Preschool Project

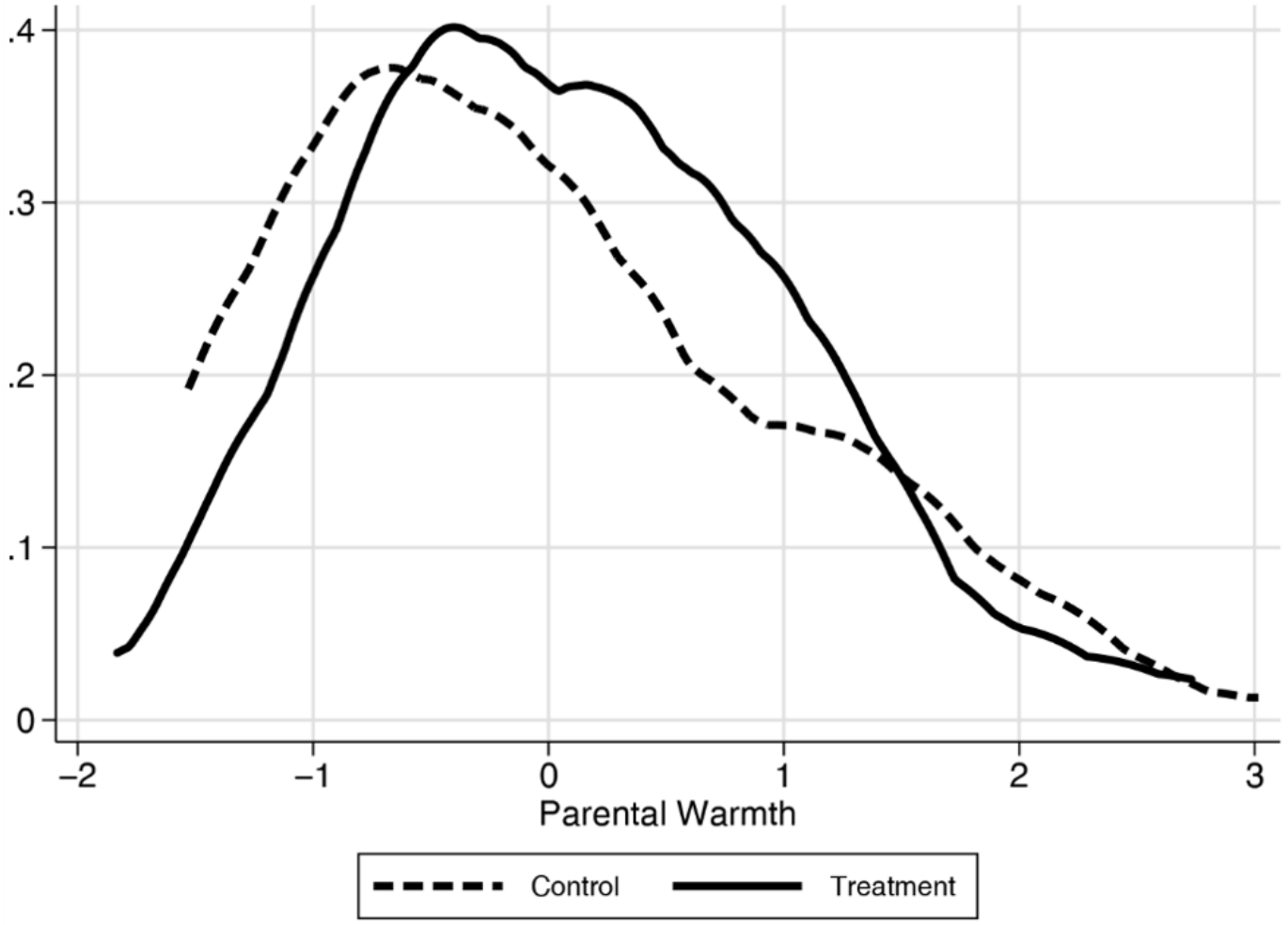


Note: This figure presents intergenerational relationships between first-generation (original participants) and second-generation (children of original participants) participants of the Perry Preschool Project. Each relationship is the slope of a regression of the outcome of the average children of the original participants on the outcome of the original participants. We estimate male-male relationships (average male children on original male participants) or female-female relationships (average female children on original female participants). We mark relationships when the permutation p-value associated with the null hypothesis that they are less than or equal to 0 is less than 0.10. Appendix A1 provides details of our data construction.

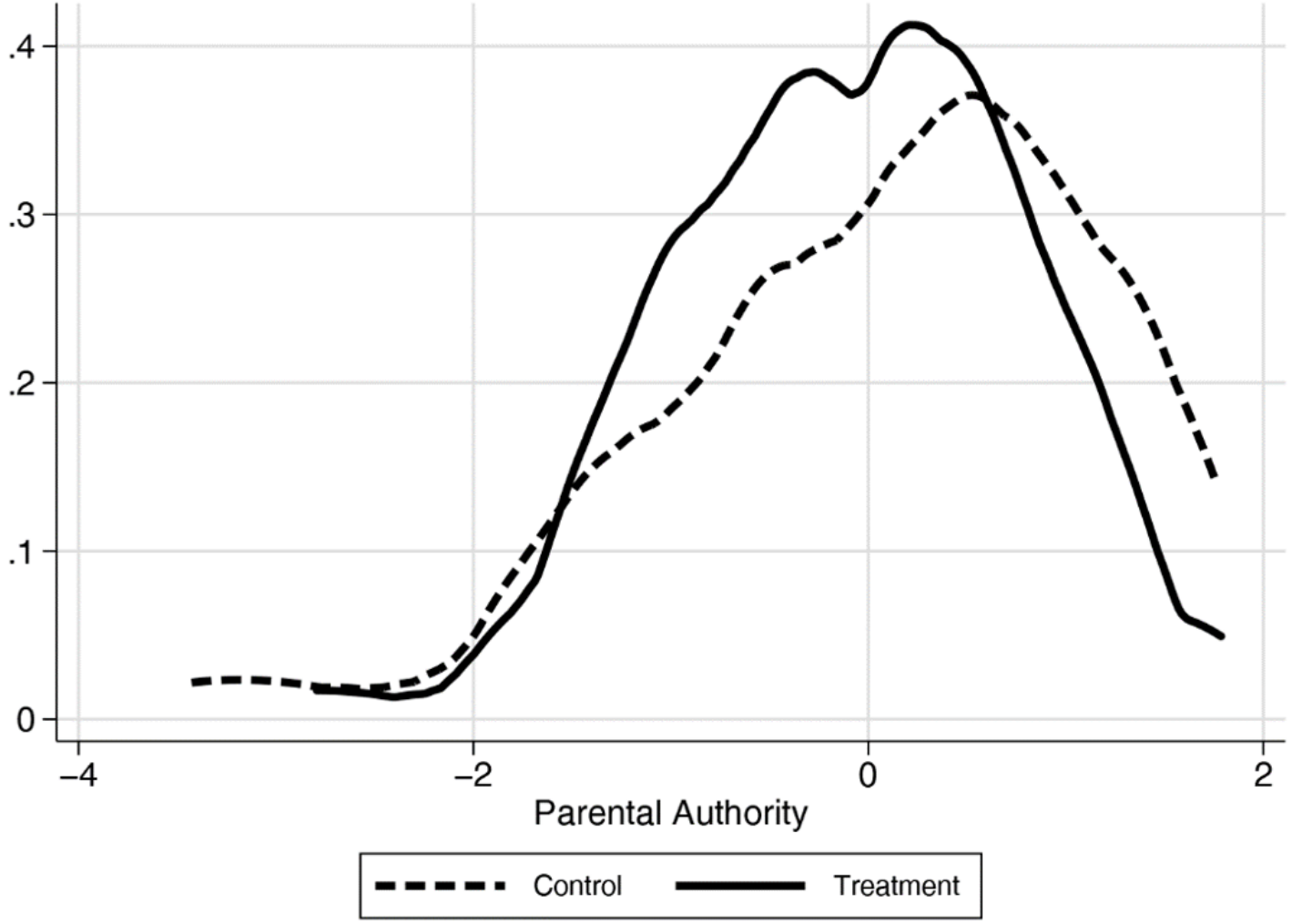
Parental response to Perry Preschool Program after 1 year experience of treatment:



Parental Warmth, Perry Preschool



Parental Authoritarianism, Perry Preschool



- They are the essential ingredient in the success of early childhood programs
- Do we need costly childcare centers to shape successful lives?
- Is there a more cost effective way to promote child development?

- Useful to examine programs that focus attention on this one aspect of child development

Home Visiting Programs

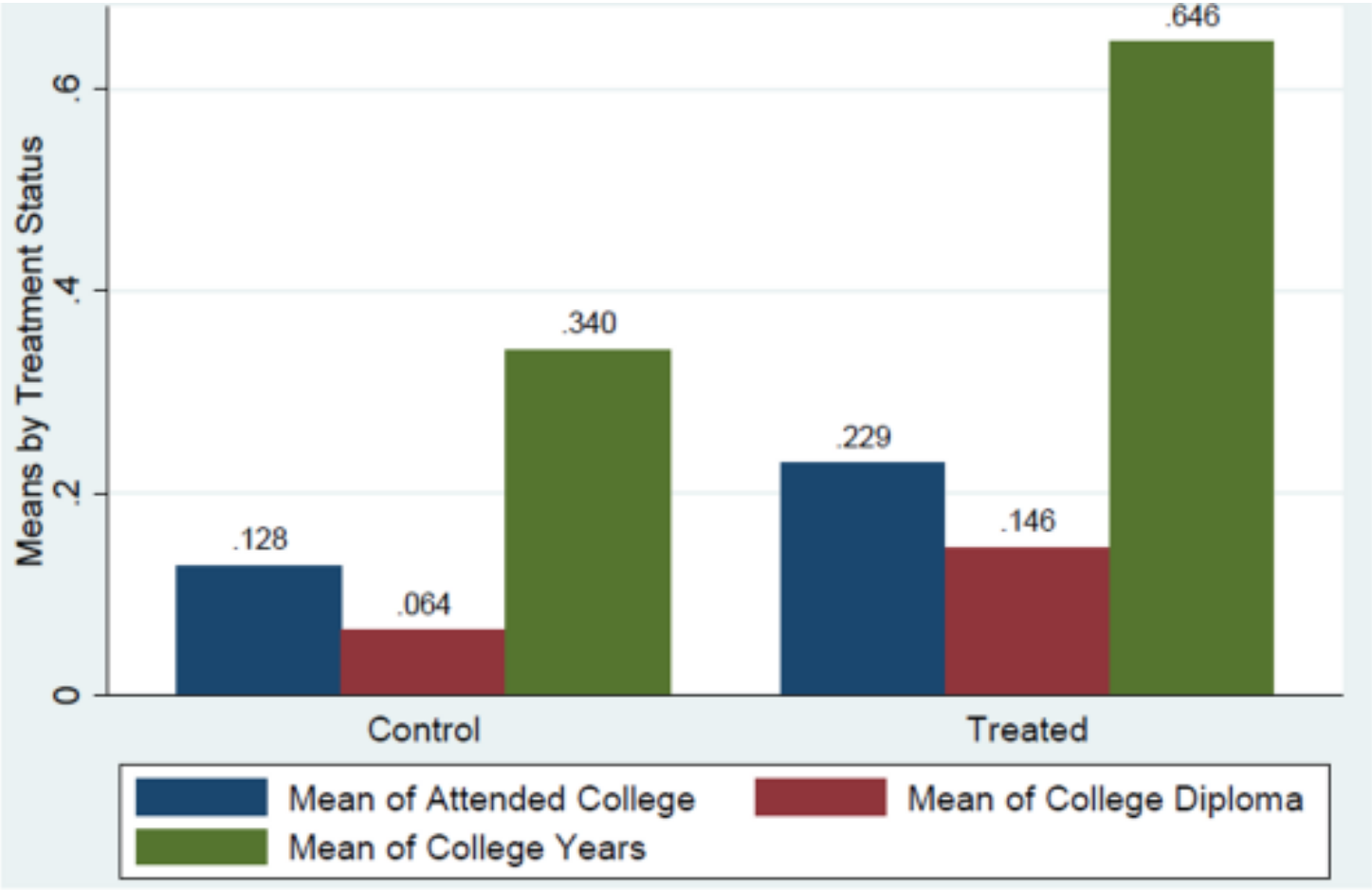
Jamaica Study

The Jamaican Intervention

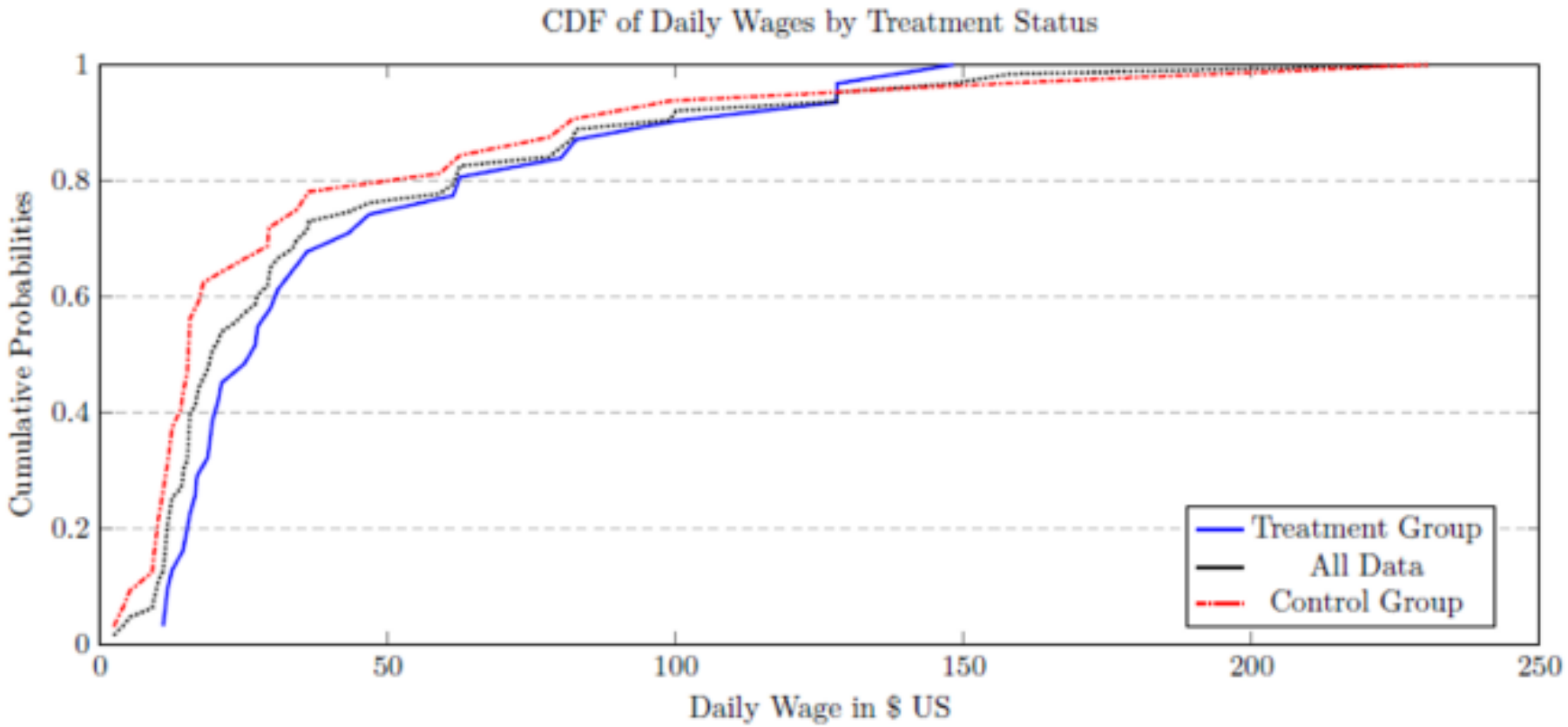
- Randomized intervention, sample of 129 children
- Stunted children between 9 and 24 months
- Designed to individualize the different effects of nutritional and cognitive stimulation
- Follow up to age 22; current study follows through age 30
- Four groups:
    1. No intervention
    2. Nutritional intervention only
    3. Cognitive stimulation intervention only
    4. Both cognitive and non-cognitive interventions

- Plus, a matched non-stunted group as a reference
- **The long-lasting effects were found for the cognitive/ socio-emotional components of interventions**

Schooling Outcomes



CDF of Wages by Treatment Status



Conditional Block Permutation Inference on Log of Economic Outcomes (Males and Females)

Variables	Sample # C	Sample # T	Control Mean	Treat. Effects	Effect Size	Assymptotic t-stat	Assymptotic Single p-val	Permutation Single p-val	Permutation Stepdown
Log of Wages & Earnings (Males and Females Employed)									
Daily Wage	32	31	2.92	0.61	0.78	2.76	**0.00**	**0.01**	**0.02**
Daily Wage (last job)	35	40	2.96	0.45	0.54	2.07	**0.02**	**0.02**	**0.05**
Total Earnings Last Month - no zeros	42	37	6.02	0.33	0.27	1.17	0.12	0.14	0.16
Total Earnings Last Job - no zeros	45	46	6.03	0.28	0.23	1.10	0.14	0.14	0.14
Rank Mean	45	46	0.42	0.12	0.42	1.80	**0.04**	**0.04**	**0.04**
Log of Wages & Earnings (Non-migrant Males and Females Employed)									
Daily Wage	27	25	2.72	0.46	0.62	2.08	**0.02**	**0.03**	**0.06**
Daily Wage (last job)	29	33	2.68	0.46	0.63	2.09	**0.02**	**0.02**	**0.05**
Total Earnings Last Month - no zeros	35	30	5.69	0.32	0.34	1.20	0.12	0.12	0.12
Total Earnings Last Job - no zeros	37	38	5.67	0.36	0.39	1.47	**0.07**	**0.07**	**0.09**
Rank Mean	37	38	0.40	0.13	0.49	1.75	**0.04**	**0.05**	**0.05**

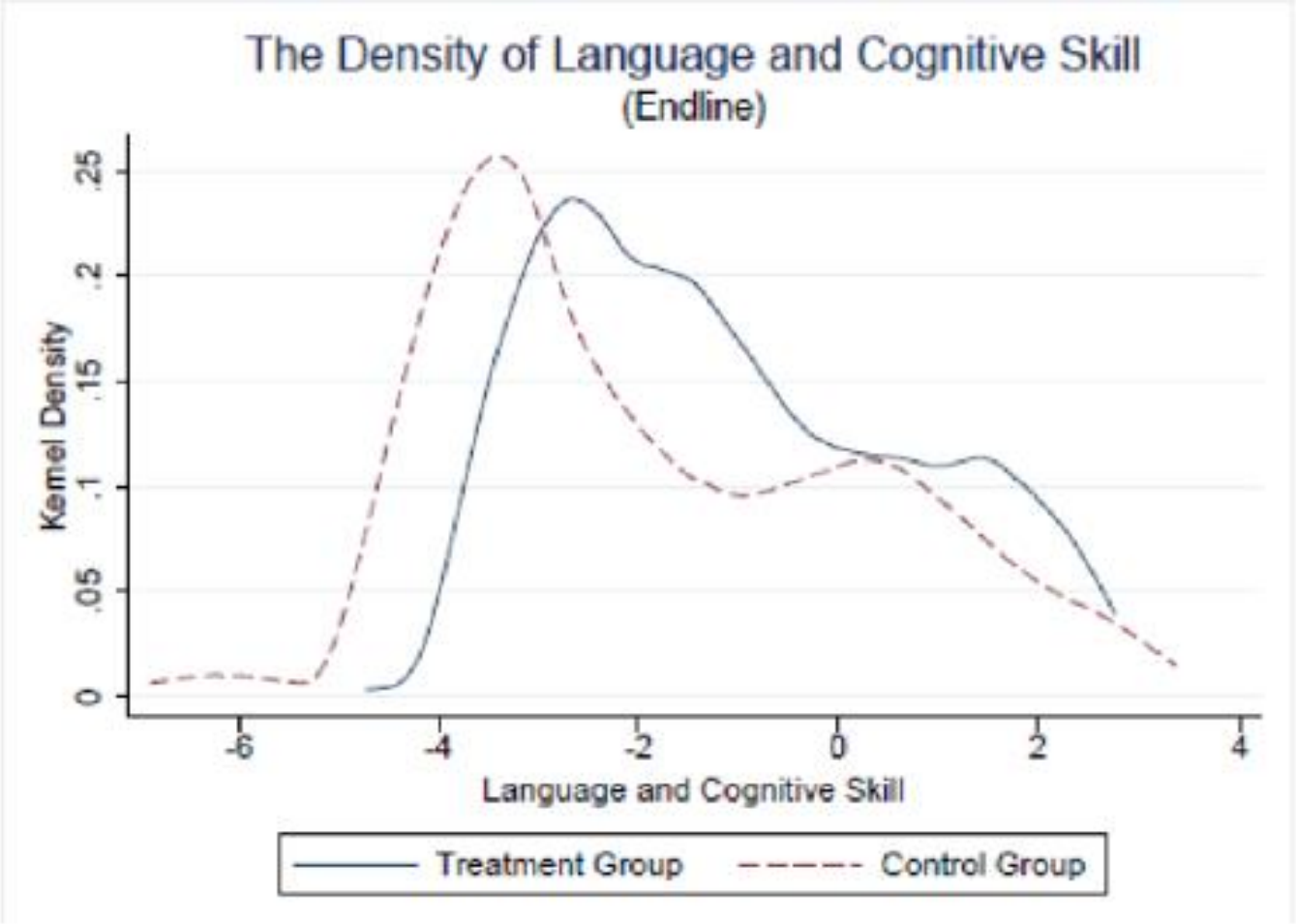
China REACH: A Replication of Jamaica

Treatment Effects on Standardized Scores

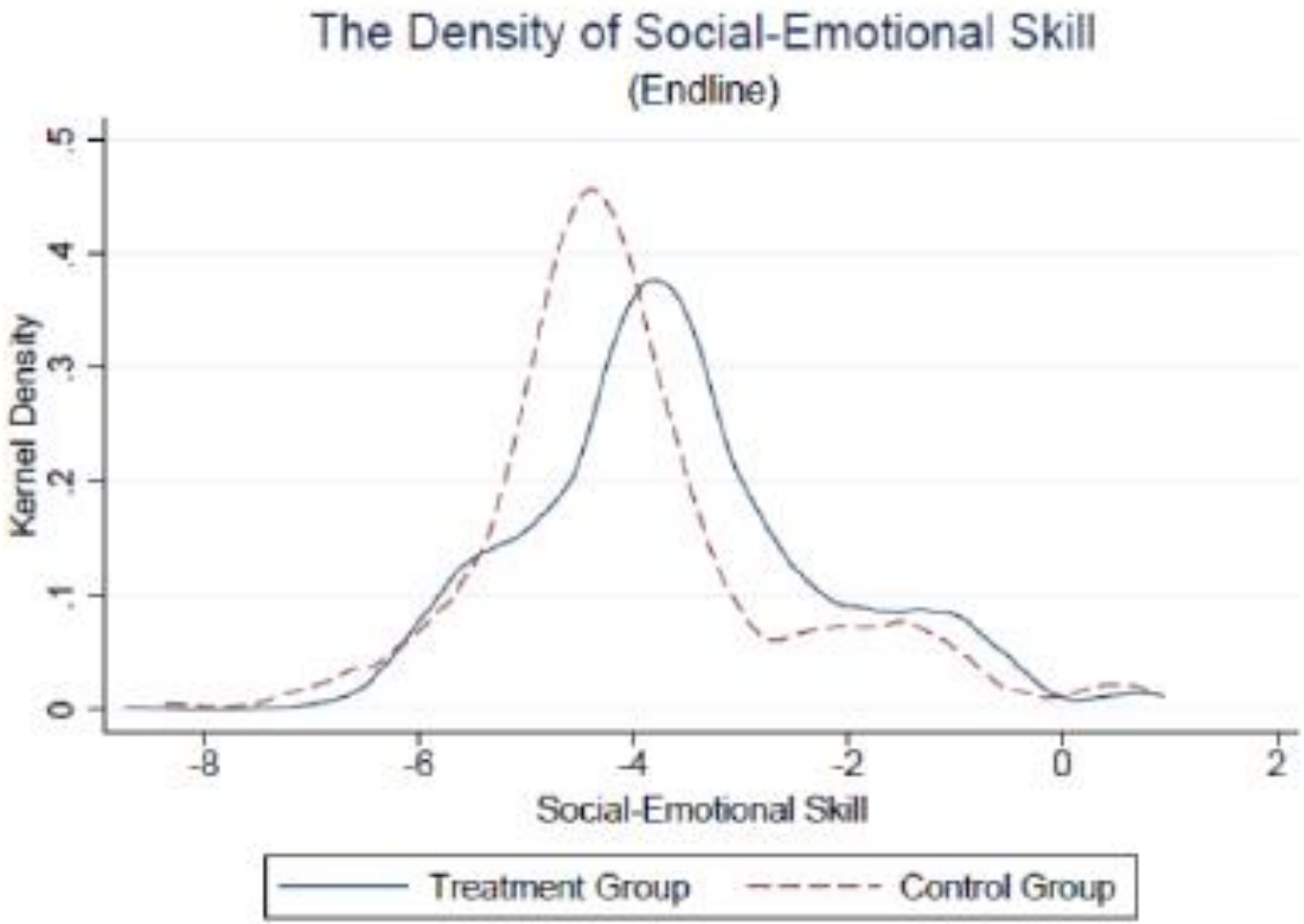
	All	Female	Male
		Midline	
Language and Cognitive	0.741***	0.534**	0.911***
	[0.350, 1.144]	[0.080, 0.990]	[0.329, 1.501]
Social-Emotional	0.620***	0.938***	0.280
	[0.204, 1.067]	[0.400, 1.431]	[-0.272, 0.842]
Fine Motor	0.703*	0.544	0.771
	[0.057, 1.375]	[-0.082, 1.189]	[-0.070, 1.747]
Gross Motor	0.010	0.019	-0.021
	[-0.559, 0.584]	[-0.605, 0.652]	[-0.682, 0.659]
		Endline	
Language and Cognitive	1.113***	0.893**	1.111***
	[0.723, 1.510]	[0.177, 1.598]	[0.625, 1.626]
Social-Emotional	-0.115	-0.291	-0.169
	[-0.491, 0.275]	[-0.820, 0.206]	[-0.701, 0.400]
Fine Motor	0.645**	0.855**	0.388
	[0.139, 1.158]	[0.117, 1.579]	[-0.355, 1.124]
Gross Motor	0.219	0.445	-0.138
	[-0.294, 0.775]	[-0.417, 1.326]	[-0.629, 0.359]
Pre-Treatment Covariates	Yes	Yes	Yes
IPW	Yes	Yes	Yes

China REACH

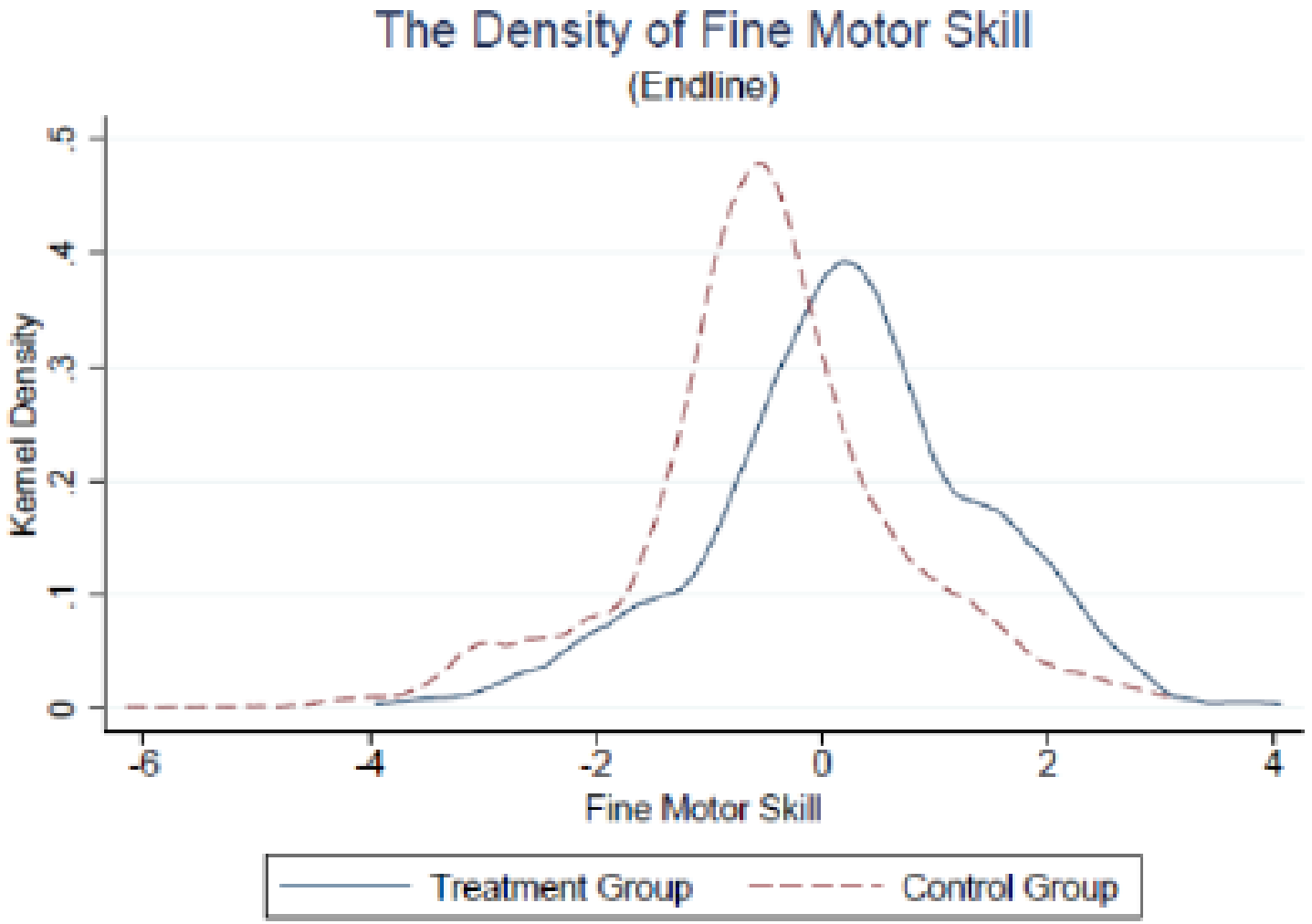
Language and Cognitive Skill Distribution and Dominance Curves



Social Emotional Skill Distribution and Dominance Curves



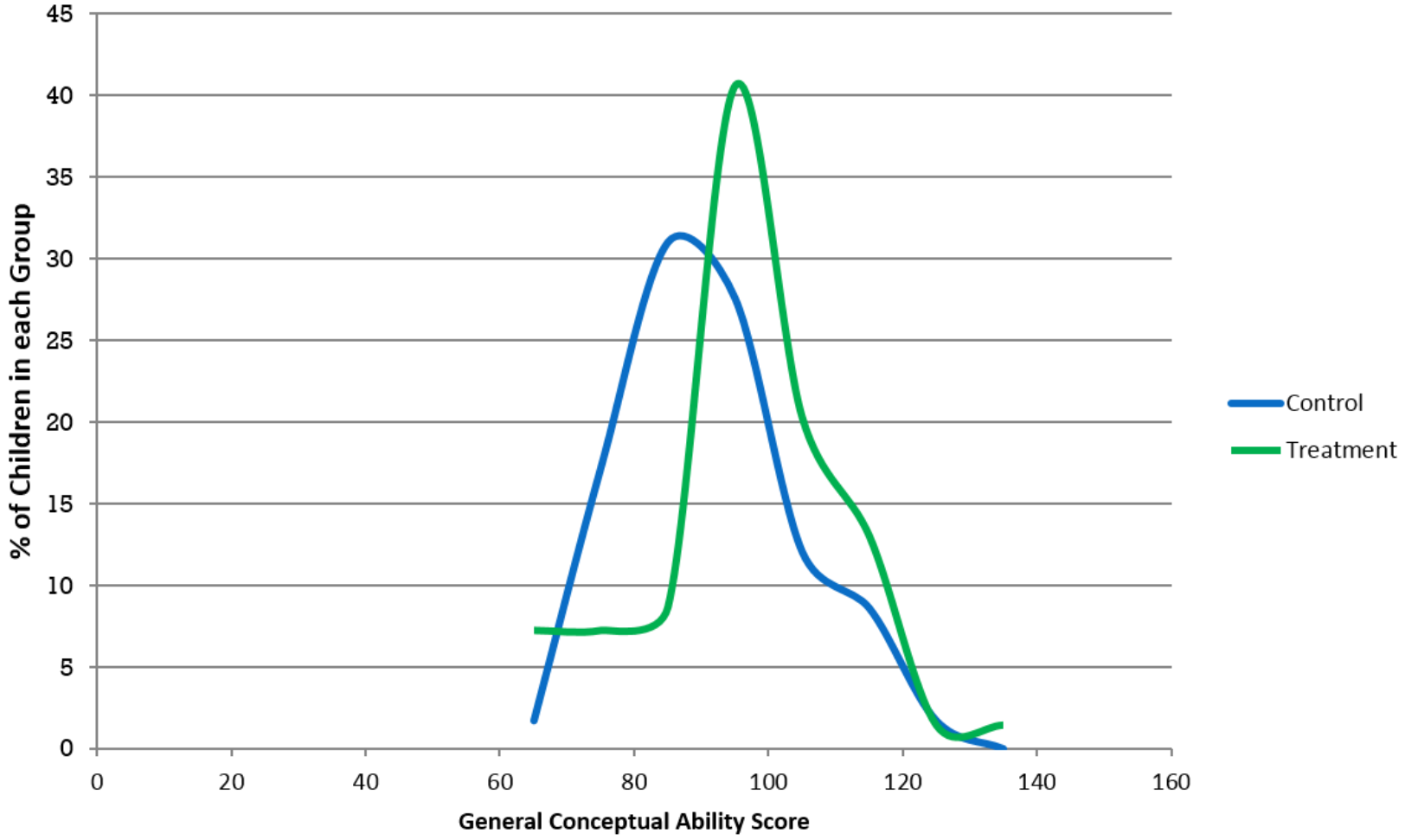
Fine Motor Skill Distribution and Dominance Curves



Preparing For Life (PFL, 2016)
Home Visiting in Ireland - Orla Doyle

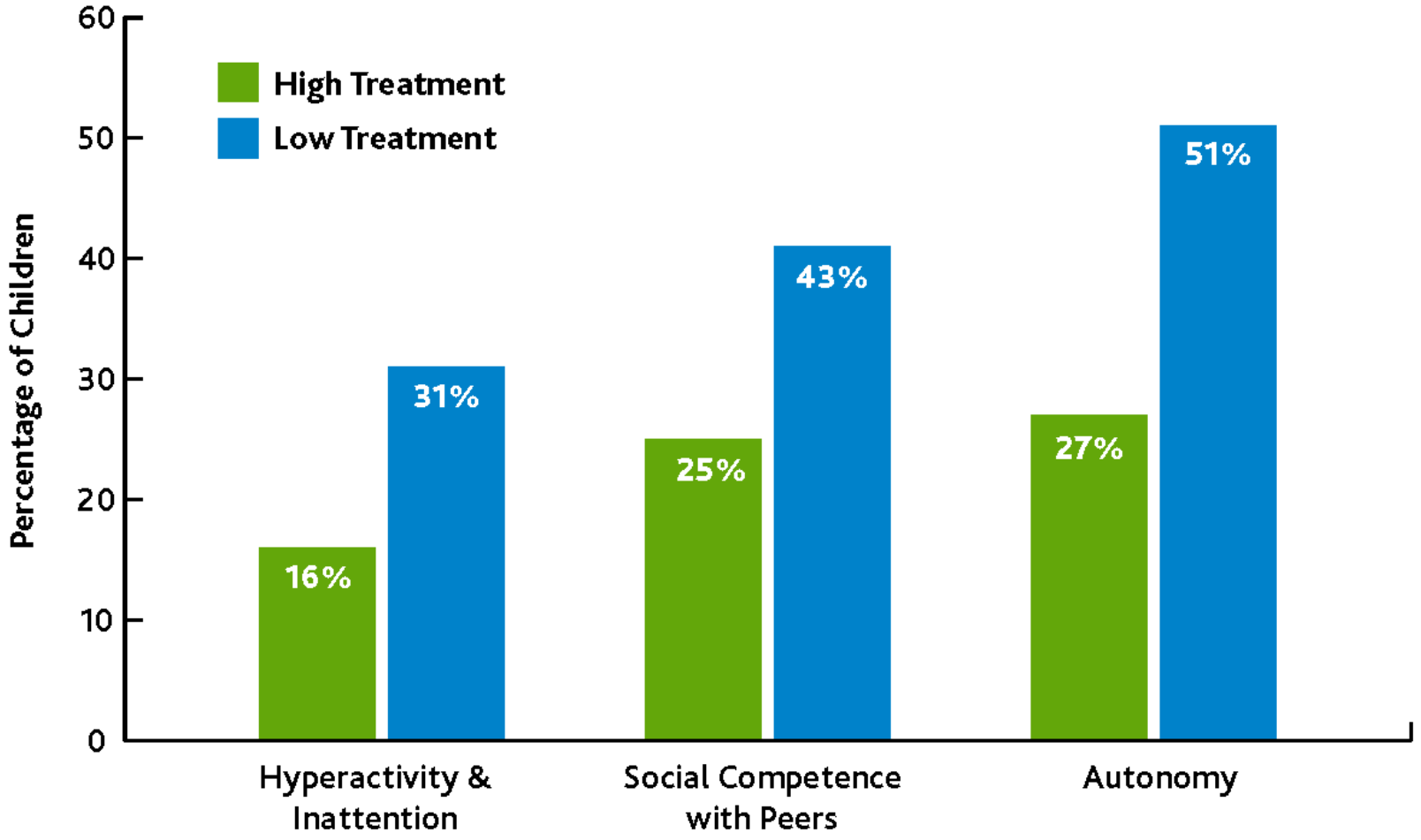
1. PFL: support and education to parents from pregnancy/ birth onwards
2. Based on theories of attachment, social learning, & ecological development
3. PFL: **Fortnightly home-visits** from trained mentor – pregnancy to school entry
4. Mentors came from **different professional backgrounds**
5. **Mentor's role:** support parents about child development & parenting using role play, modelling, demonstration, discussion, encouragement, and feedback
6. Low intensity – on average one hour per month; ~51 hours over 5 years for program

Distribution of BAS GCA Cognitive Scores at School Entry



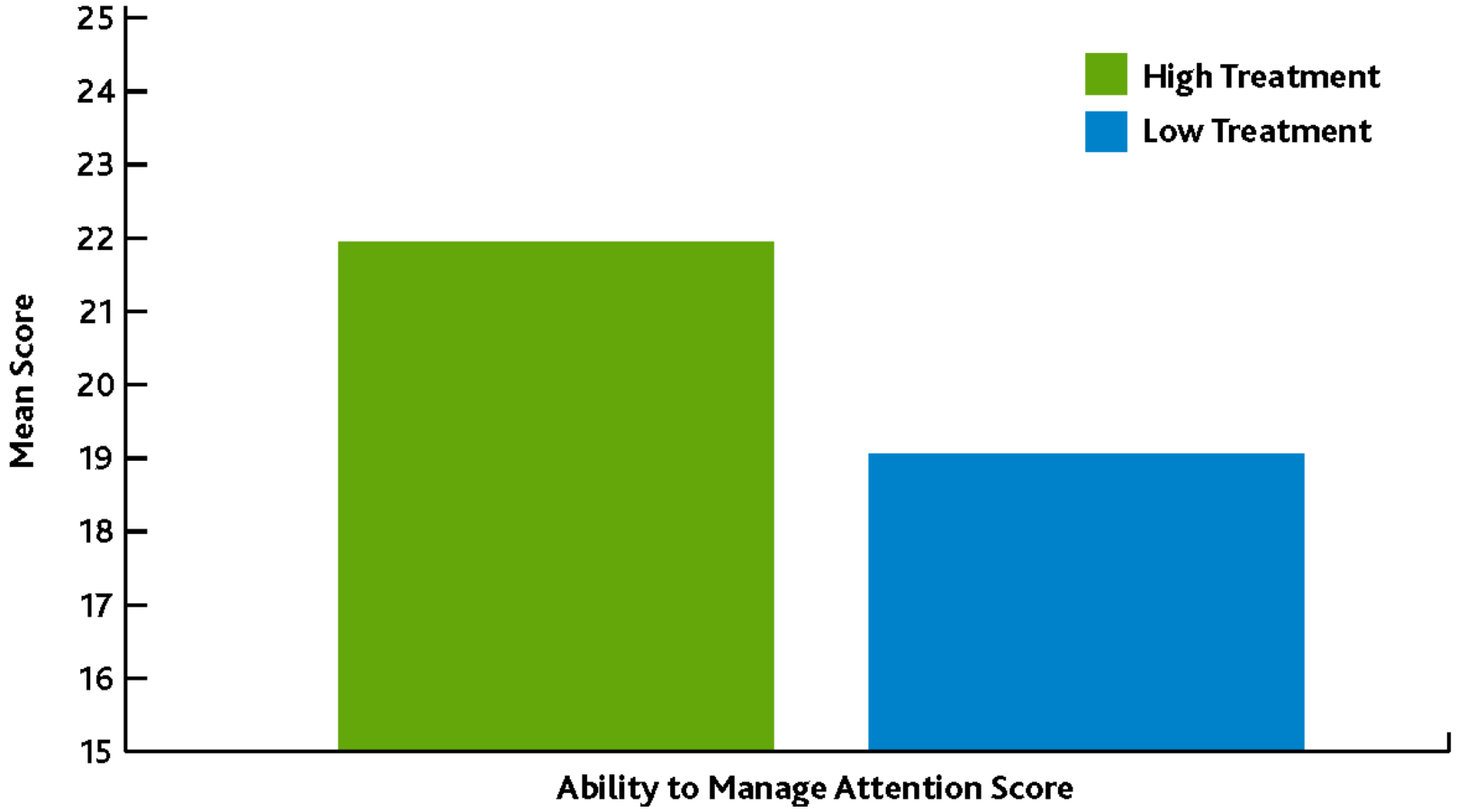
Source: Doyle (2017).

Percentage of Children `Not on Track' on Measures of Social and Emotional Development At School Entry



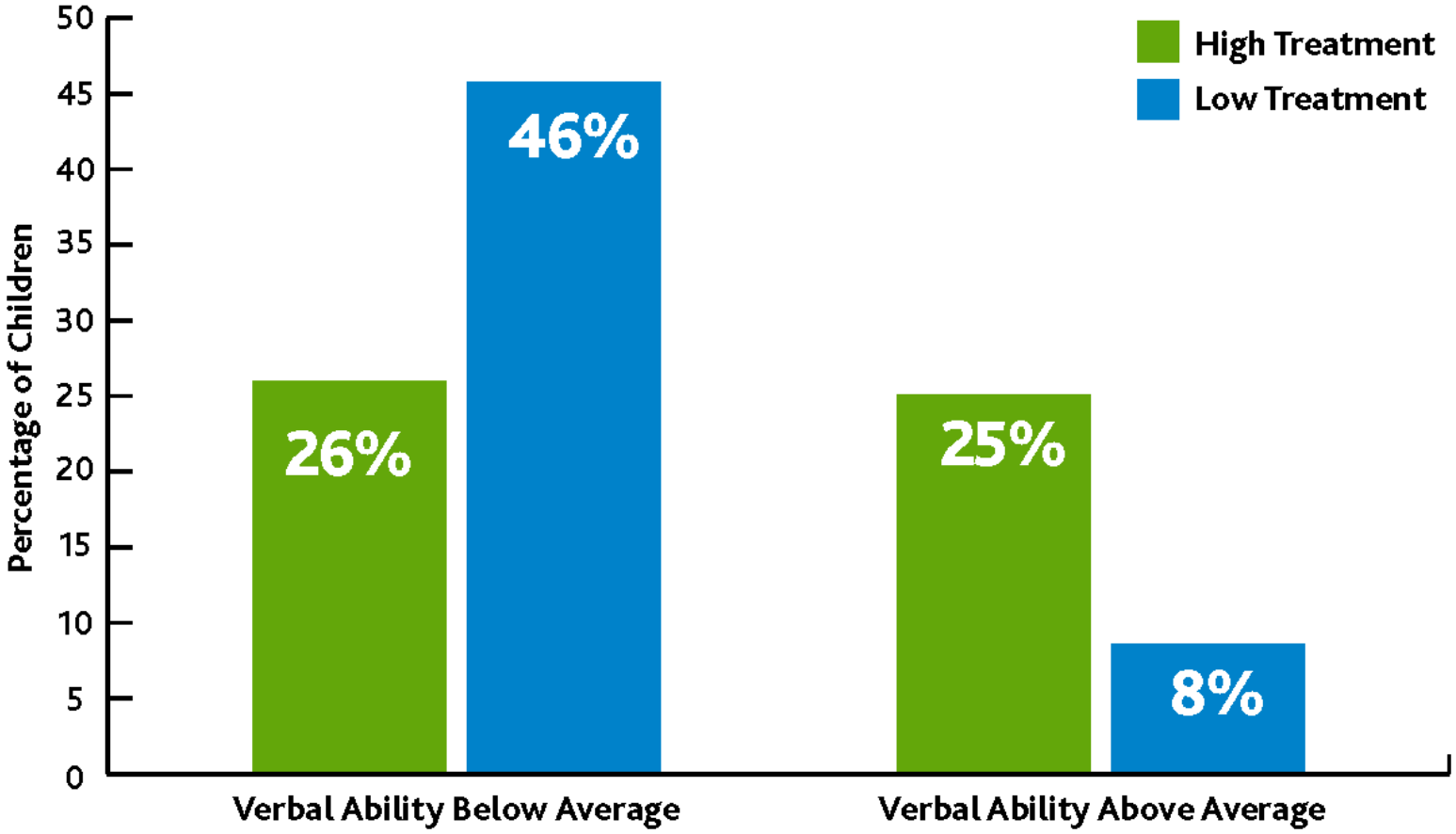
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Mean Scores of Children on Ability to Manage Attention Task At School Entry



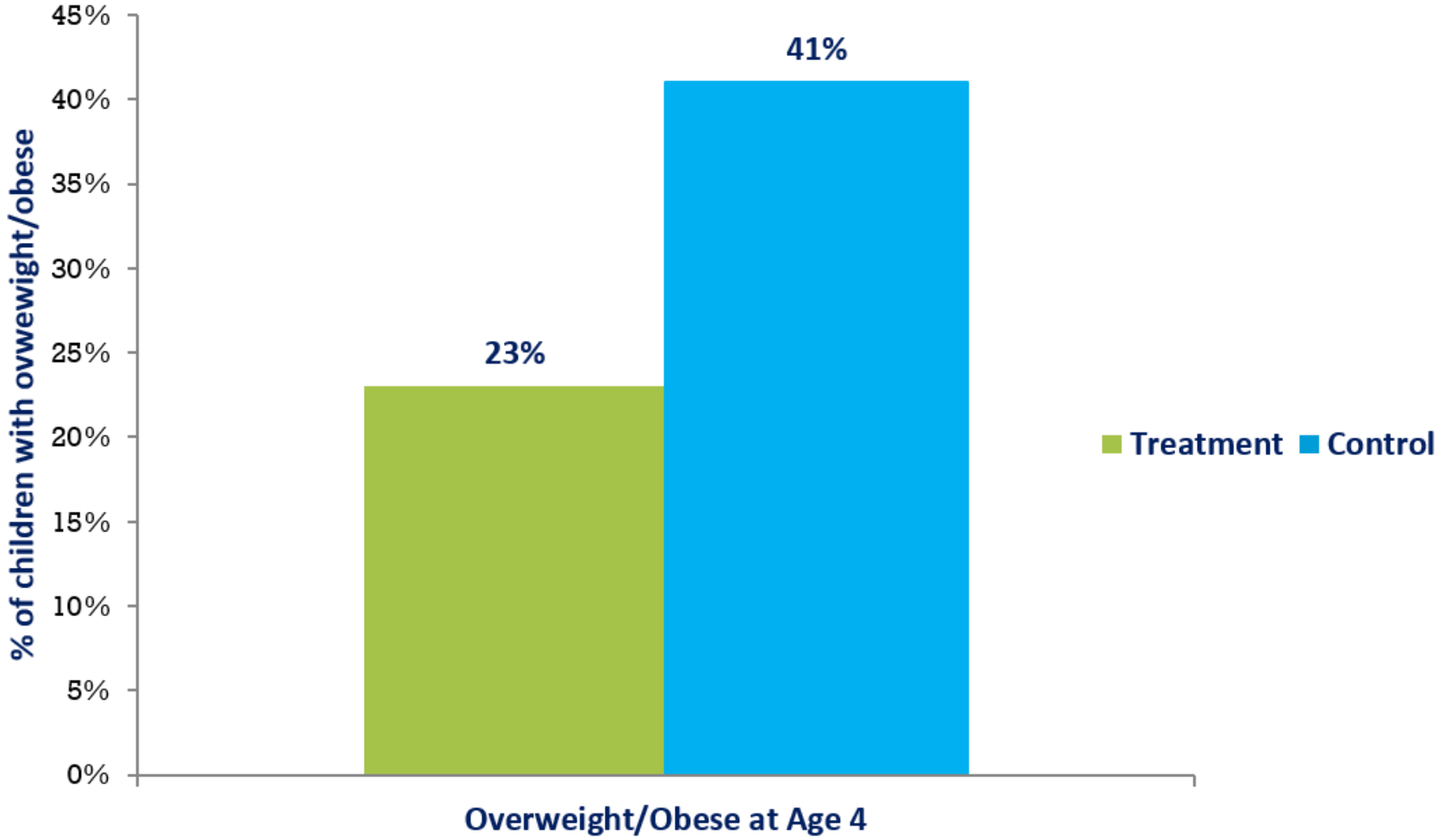
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Percentage of Children Scoring Above and Below Average in Verbal Ability At School Entry



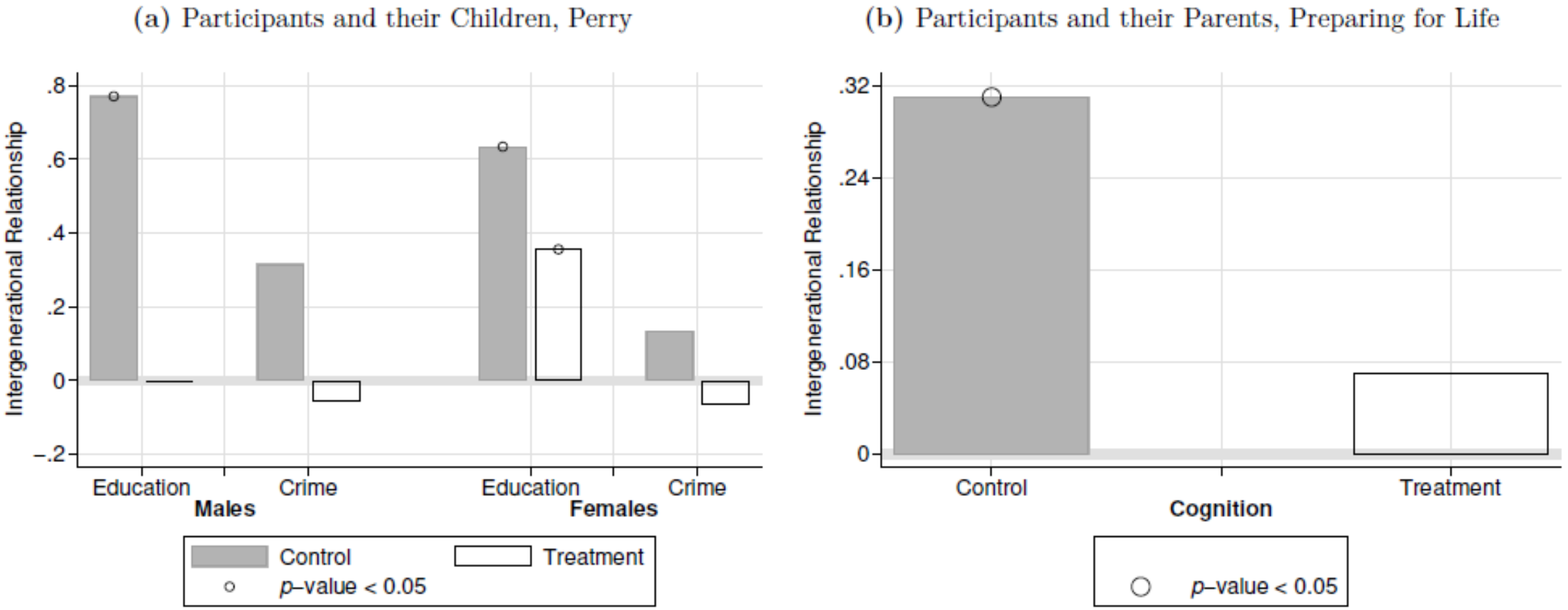
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Body Mass Index at Age 4*



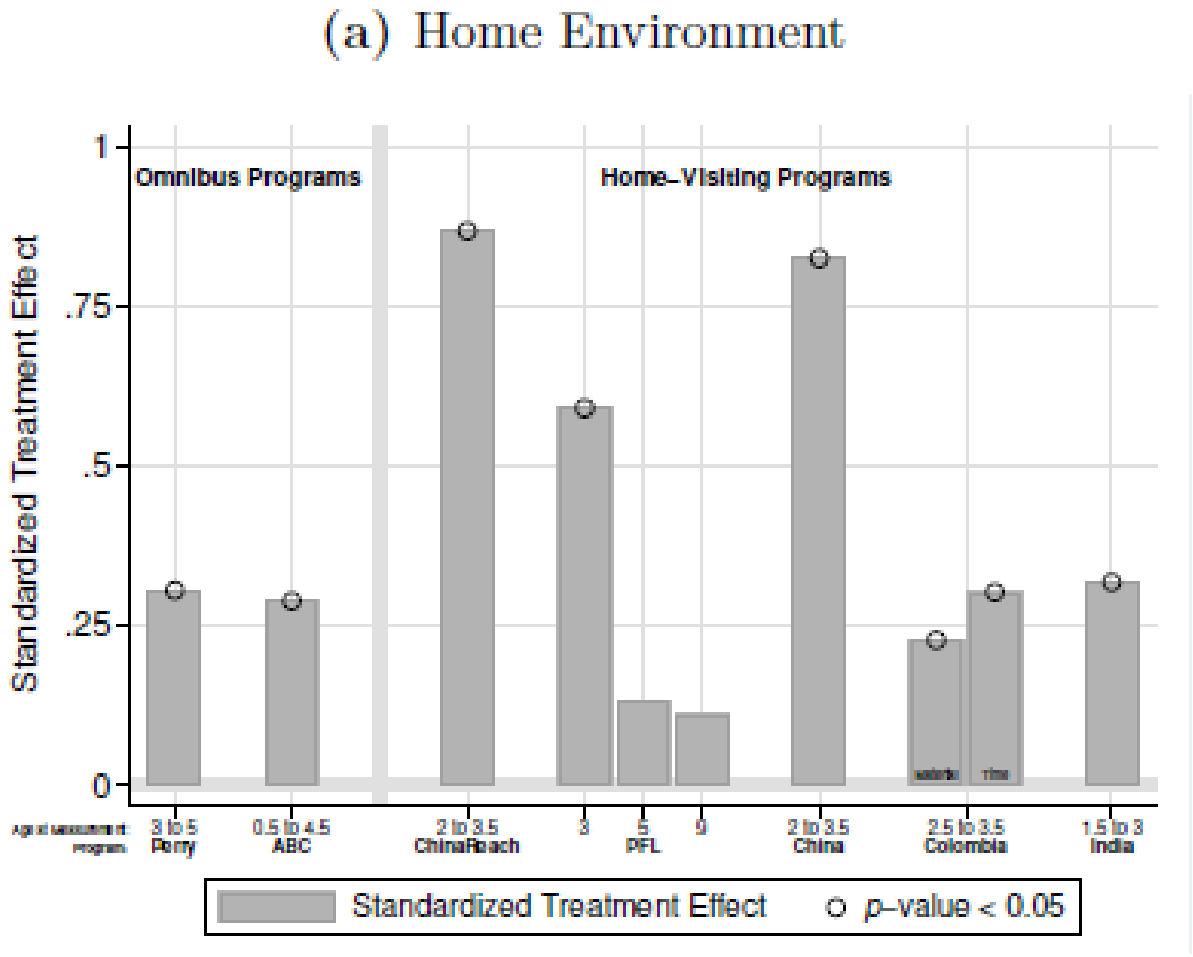
Source: Preparing for Life (Doyle et al., 2016).
*IPW-adjusted permutation tests with 100,000 replications controlling for gender. One tailed (right-sided) test.

Intergenerational Outcome Relationships, Perry and Preparing for Life

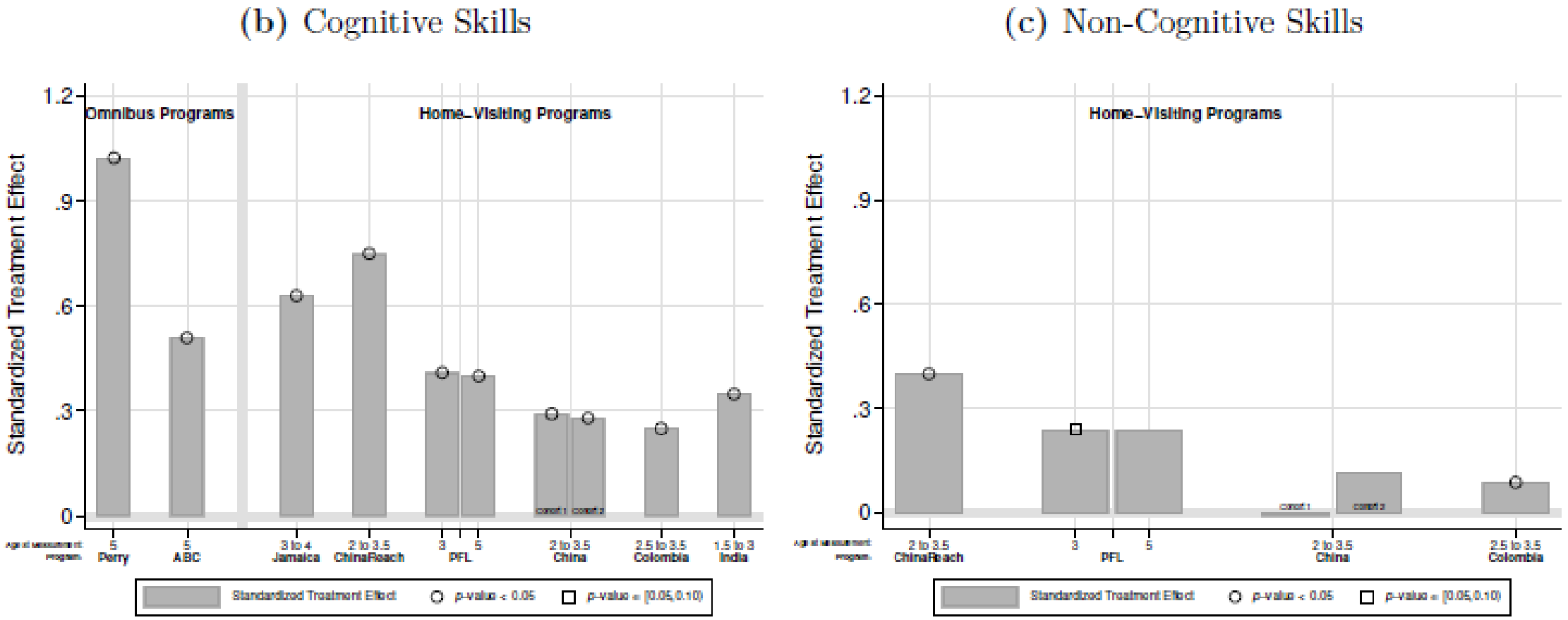


Note: Panel (a) displays intergenerational relationships between first-generation (original participants) and second-generation (children of original participants) participants of the Perry Preschool Project. Each relationship is the slope of a regression of the outcome of the average children of the original participants on the outcome of the original participants (i.e., β in $y = \alpha + \beta x + \varepsilon$, where standard notation applies). We estimate male-male relationships (average male children on original male participants) or female-female relationships (average female children on original female participants). We mark relationships when the permutation p-value associated with the null hypothesis that they are less than or equal to 0 is less than 0.05. Panel (b) is analogous in format to Panel (a). It displays the slope of a regression of a measure of cognition of the child participants of Preparing for Life on a measure of cognition of their mothers. For Panel (b) we use the

Impacts on the Home Environment and Very Early-Life Skills, Omnibus and Home-Visiting Programs

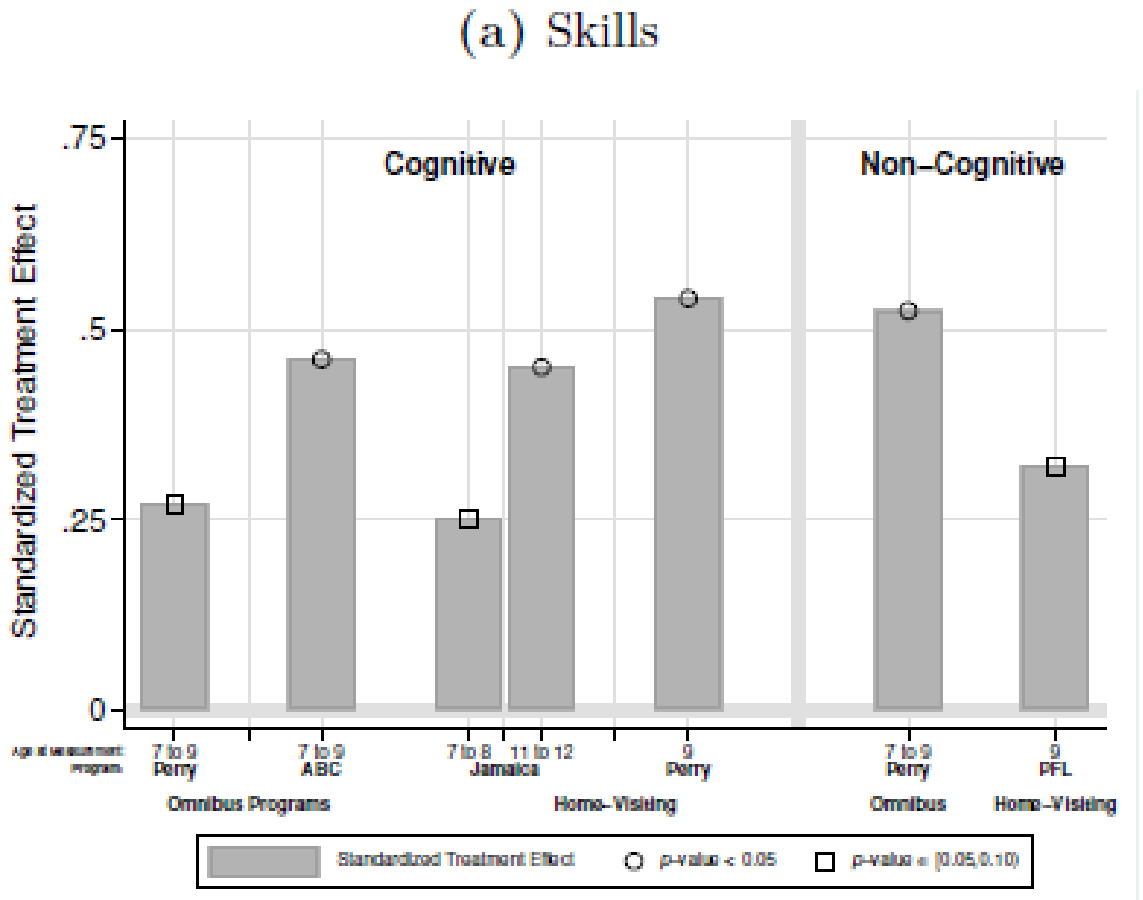


Impacts on the Home Environment and Very Early-Life Skills, Omnibus and Home-Visiting Programs, Cont'd

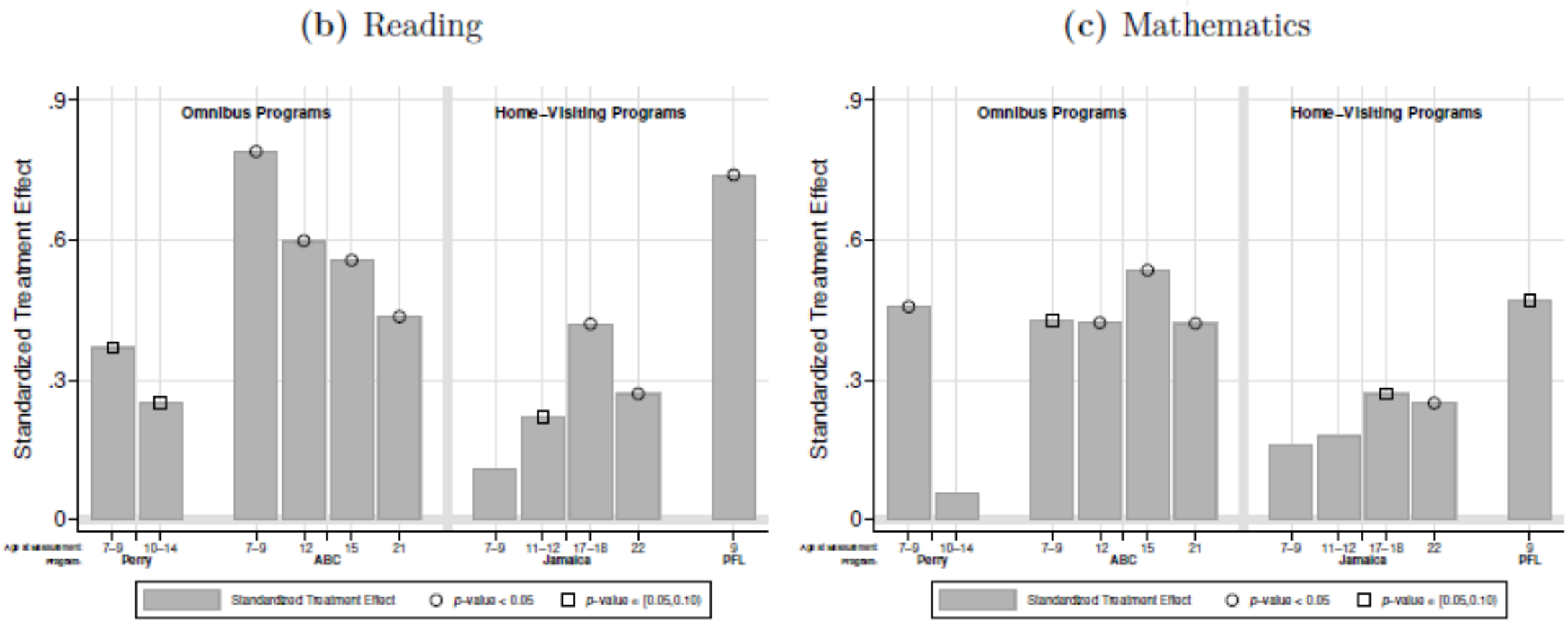


Note: Panel (a) displays program impacts on measures of the home environment. For Perry and ABC, the measures are described in Section 3. Recall that both measures are standardized by subtracting the control-group mean and dividing by the control-group standard deviation. The measures for the rest of the programs are standardized similarly. For all programs except for PFL, we report treatment effects (estimates of treatment-control mean differences). The impacts reported for PFL are effect sizes. We mark impacts when the p-value associated with the null hypothesis that they are less than or equal to 0 is less than 0.05. The measures are described in Tables 5 and 6. Panels (b) and (c) are analogous in format to Panel (a) for measures of cognitive and non-cognitive skills. Cohorts in "China:" For cognitive and non-cognitive skills, Sylvia et al. (2021) report separate results for two cohorts within their sample, while for the home environment they report

Impacts on Early-Life Skills and Achievement, Omnibus and Home-Visiting Programs

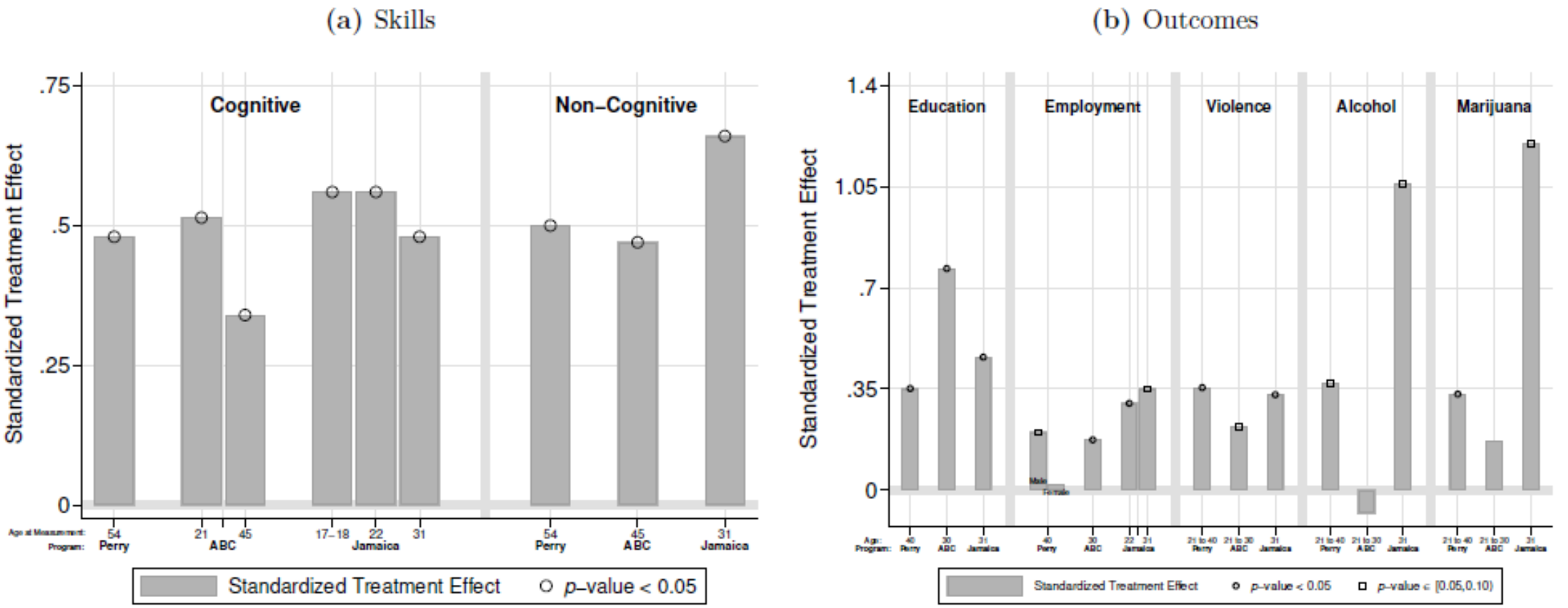


Impacts on Early-Life Skills and Achievement, Omnibus and Home-Visiting Programs, Cont'd



Note: Panel (a) displays impacts on measures of early-life cognitive and non-cognitive skills. For Perry and ABC, the measures are standardized as described in Section 3—by subtracting the control-group mean and dividing by the control-group standard deviation. The measures for the rest of the programs are standardized similarly. For all programs except for PFL, we report treatment effects (estimates of treatment-control mean differences). The impacts reported for PFL are effect sizes. We mark impacts when the p-value associated with the null hypothesis that they are less than or equal to 0 is less than 0.05 or between 0.05 and 0.10. The measures are described in Tables 5 and 7. Panels (b) and (c) are analogous in format to Panel (a), using the reading and math achievement measures.

Impacts on Adult Skills and Outcomes for Omnibus Programs and Jamaica



Note: Panel (a) presents program impacts on measures of cognitive and non-cognitive skills. For Perry and ABC, the measures are described in Section 3 for ages 54 and 45. Recall that both measures are standardized by subtracting the control-group mean and dividing by the control-group standard deviation. The other measures used for the plot are standardized similarly. We mark impacts when the p-value associated with the null hypothesis that they are less than or equal to 0 is less than 0.05. The measures are described in Table 7. Panel (b) is analogous in format to Panel (a) for adulthood outcomes. Employment is the treatment-control difference in the employment rate, except for Jamaica at age 31. For Perry, we report results for males and females. For Jamaica, employment at age 31 is the effect size for “being employed in a high-skilled job.” The violence, alcohol, and marijuana outcomes are latent factor variables based on reverse-coded

Universal ingredient of effective programs:

They promote parenting, mentoring, and parent-child interactions.

The early years are sensitive periods, but skill development occurs over the life cycle

Later skill development more effective the stronger the skill base at earlier ages

Human development continues through later childhood, early adolescence, and young adulthood.

In fact, it is a life cycle process.

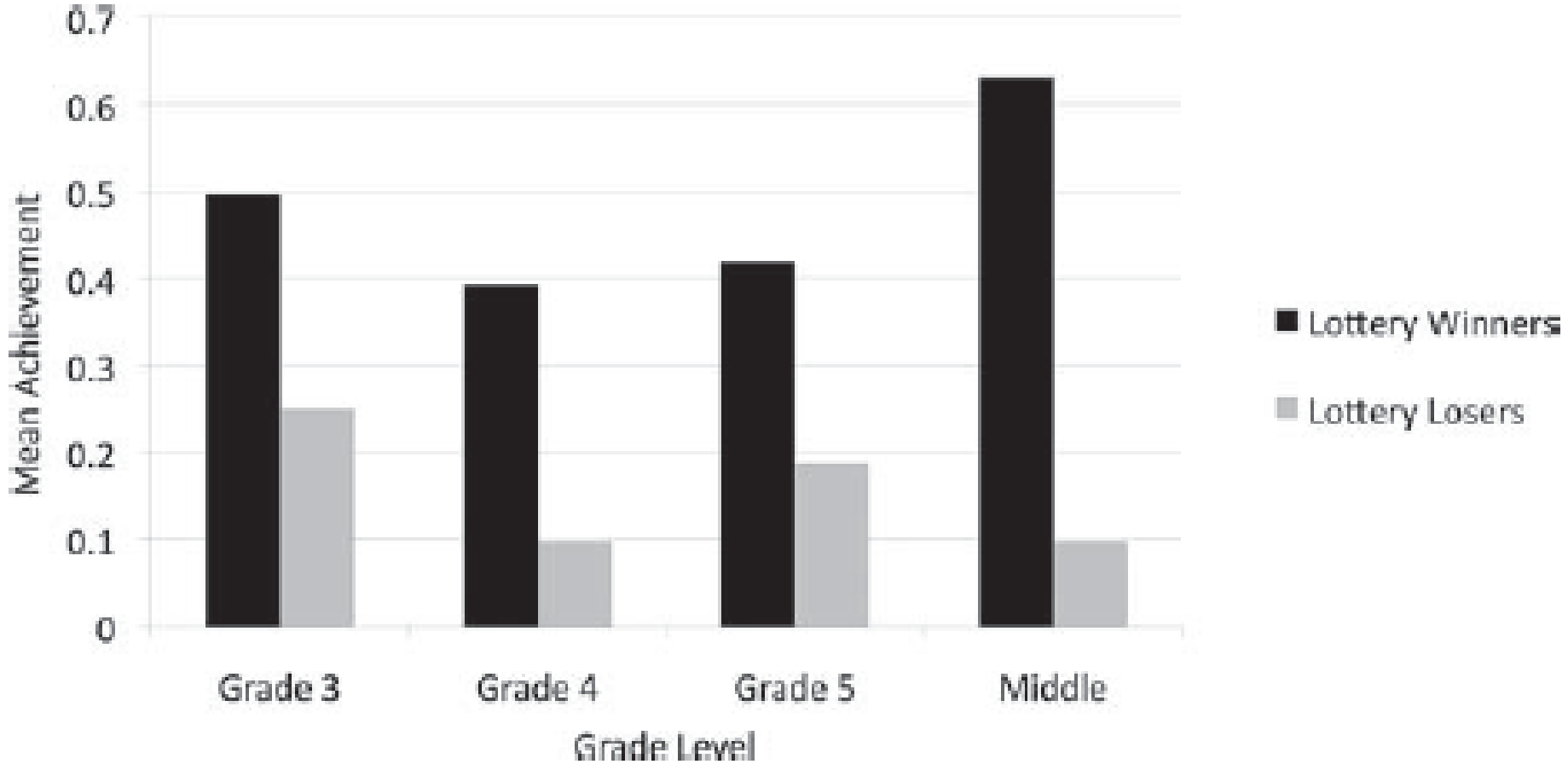
Enriched charter schools starting at age 4 feature mentoring through elementary school.

Achievement Outcomes for lottery winners and lottery losers: University of Chicago Enriched Charter Schools (UCCS)

	Grade 3	Grade 4	Grade 5	Middle Grades 6, 7, 8
Lottery winners[a]	.496	.393	.419	.631
Lottery losers[b,c]	.250	.098	.187	.098
Mean difference	**.246(.095)**	**.285(.114)**	**.232(.114)**	**.533(.159)**

Source: Hassrick, E. M., Raudenbush, S. W., & Rosen, L. S. (2017).
Notes: a n = 138 lottery winners produced 276 test scores.
b n = 319 lottery losers produced 778 test scores.
c Lottery losers produced slightly more test scores on average than did lottery winners because (a) the probability of winning the lottery declined sharply for lotteries for grades after kindergarten, as fewer seats are open in UCCS after kindergarten; and (b) these later lotteries produced more test scores because testing begins at grade 3 (see table 8.2).

Achievement Test Results by Grade (UCCS)



Source: Hassrick, E. M., Raudenbush, S. W., \& Rosen, L. S. (2017).

Adolescence is a major target of opportunity.

- Policies that are effective for disadvantaged adolescents provide mentoring and integrate schooling and work.
- At the core of effective mentoring is what is at the core of effective parenting: attachment, interaction, and trust.
- Effective policies focus on developing social and emotional skills, teaching conscientiousness.

Mentoring:

Age-Adjusted Parenting

Nurture the slowly-developing prefrontal cortex, which regulates decision making and judgement.

Skills Beget Skills
Understanding the Dynamics of Skill Formation
The Importance of the Early Years

Social-emotional Skills	→	**Cognitive Skills, Health**
(sit still; pay attention; engage in learning; open to experience)		
Health	→	**Cognitive Skills, Social-Emotional Skills**
(fewer lost school days; ability to concentrate)		
Cognitive Skills	→	**Produce better health practices; produce more motivation; greater perception of rewards, social-emotional skills**
(child better understands and controls its environment)		

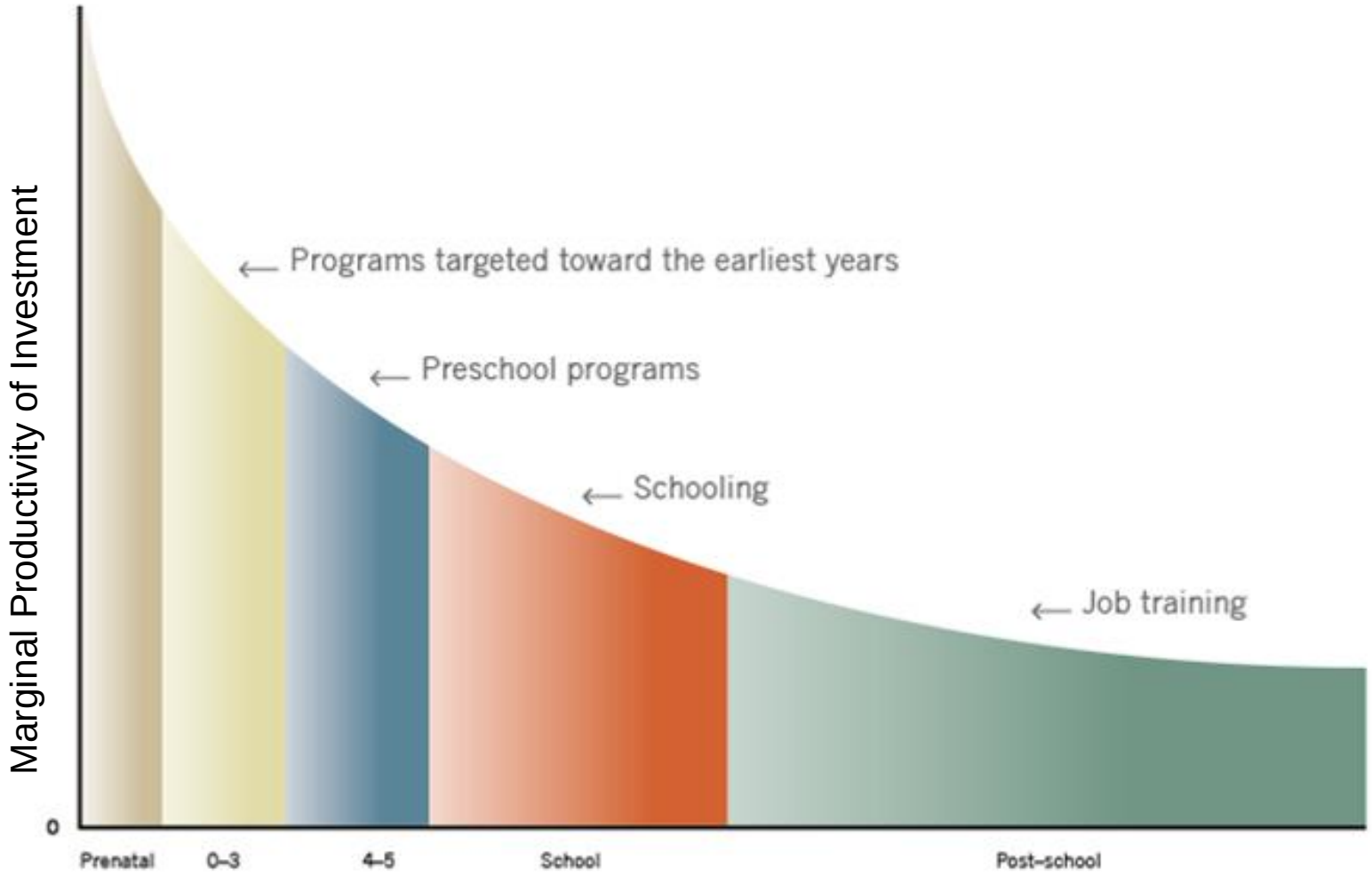
Outcomes: increased productivity, higher income, better health, more family investment, enhanced social mobility, reduced social costs.

Dynamic Complementarity:

- Investing early creates greater receptivity to investment in the future

- Accounts for higher future returns for children who are invested in early

Marginal Productivity of Investment



Source: Heckman (2008)

- This diagram and its policy message have to be carefully digested.

- It presents the rate of return (measured the perspective of the date of birth) to a first unit of investment in children at different stages of the life cycle.

- Returns to college education in the U.S. are very high for the most able and motivated students (22% for college education for the most capable).

- Substantial returns on high quality programs for *disadvantaged* children.
- Advantaged children have other resources often much better than those from public programs.

Summary

Skills Matter

Skill Gaps by Family Background *Are Real*

- They can be addressed by intervention

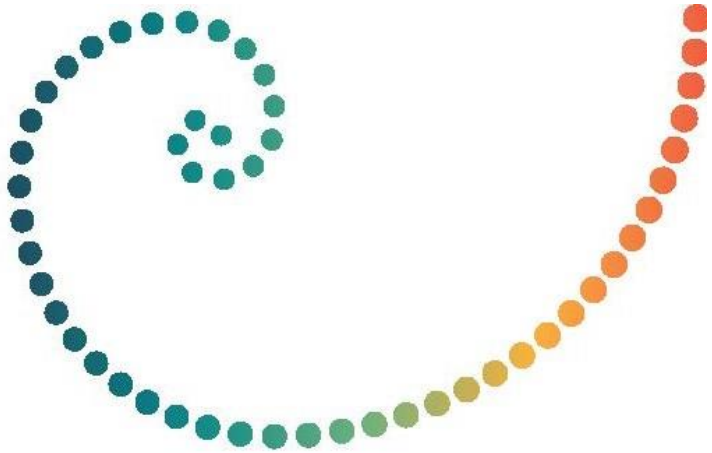
- Families are main producers of skills

Need a Comprehensive Approach to Skill Formation

- Recognize compromised nature of compromised nature of many families around the world.

- Have an empirically honest and open discussion about skill gaps and their sources

THANK YOU



CENTER FOR THE ECONOMICS
OF HUMAN DEVELOPMENT

THE UNIVERSITY OF CHICAGO