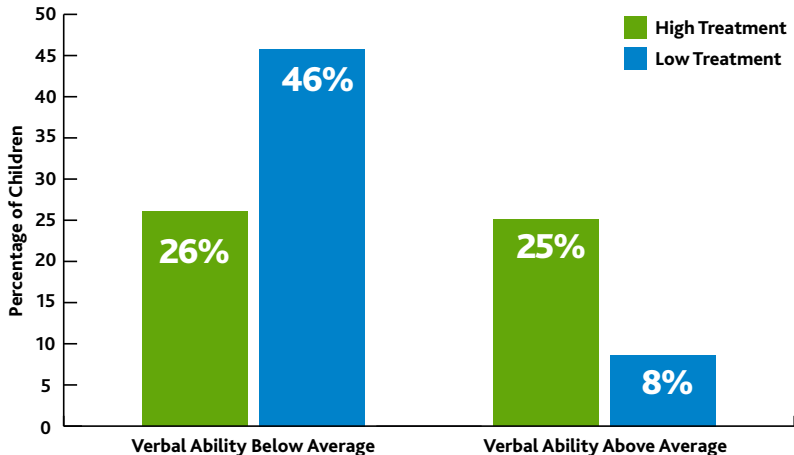
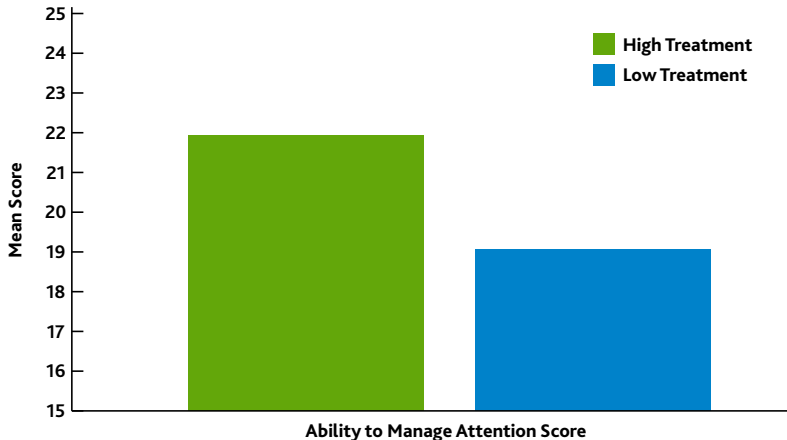


Figure 42: Percentage of Children Scoring Above and Below Average in Verbal Ability At School Entry



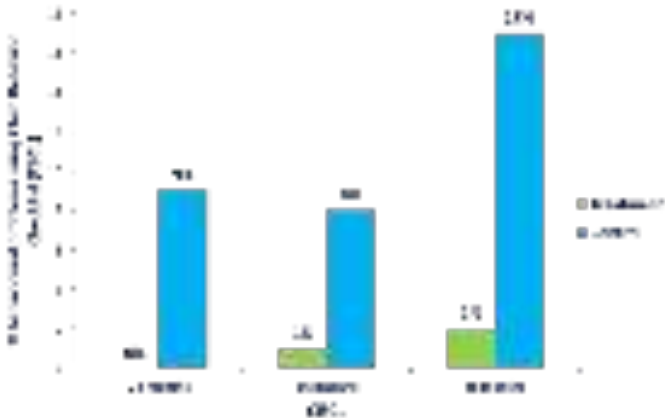
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Figure 43: 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).

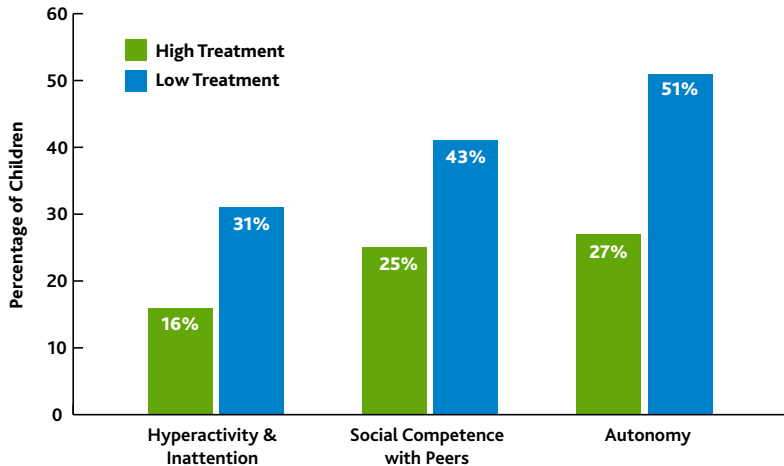
Figure 44: Behavioural Problems*



Preparing for Life (Doyle et al., 2016).

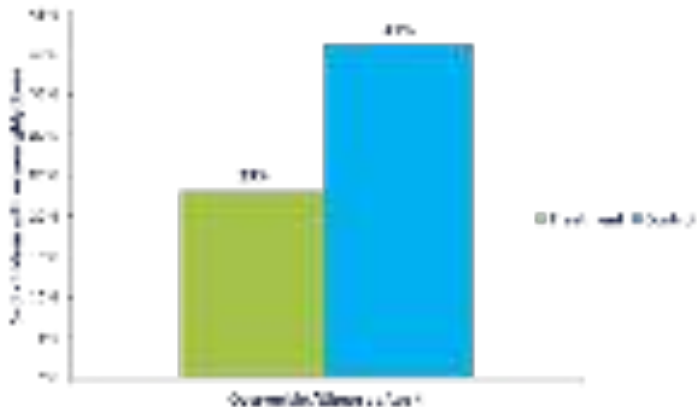
*IPW-adjusted permutation tests with 100,000 replications controlling for gender. One tailed (right-sided) test.

Figure 45: 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).

Figure 46: Body Mass Index at Age 4*



Preparing for Life (Doyle et al., 2016).

*IPW-adjusted permutation tests with 100,000 replications controlling for gender. One tailed (right-sided) test.

Jamaica-Inspired Programs

- a *Boa Vista Reach Up Program*
- b *Sao Paulo Saving Minds*
- c *China Reach*

**Joint Research with China Development Research
Foundation
China Reach in Huachi
with Lu Mai and Jin Zhou**

Table 7: Denver Test: Midline (Personal Social)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment Group	0.2469*** (0.0726)	0.2355*** (0.0662)	0.2430*** (0.0690)	0.2679*** (0.0734)	0.2278** (0.0721)	0.1999** (0.0744)	0.0939 (0.0760)	0.0933 (0.0784)
Monthly age at the Denver Test	0.3103*** (0.0063)	0.3113*** (0.0062)	0.3085*** (0.0067)	0.3073*** (0.0070)	0.3059*** (0.0060)	0.3046*** (0.0063)	0.3029*** (0.0056)	0.3016*** (0.0062)
Male	-0.3166*** (0.0708)	-0.3266*** (0.0710)	-0.3310*** (0.0671)	-0.3176*** (0.0690)	-0.2758*** (0.0680)	-0.2777*** (0.0679)	-0.2798*** (0.0714)	-0.2771*** (0.0751)
Ever Take YYB		0.2339 (0.1400)						
Months of Taking YYB			0.0099* (0.0048)	0.0109* (0.0044)	0.0085* (0.0042)	0.0081 (0.0043)	0.0089* (0.0043)	0.0102* (0.0043)
Constant	8.4929*** (0.1884)	8.2644*** (0.2451)	8.4201*** (0.1917)	8.4424*** (0.2116)	8.5048*** (0.1812)	8.5679*** (0.1828)	8.6531*** (0.1696)	8.6725*** (0.1907)
Pre-birth Factor	No	No	No	Yes	Yes	Yes	Yes	Yes
Nutrition Factor	No	No	No	No	Yes	Yes	Yes	Yes
Parenting Factor	No	No	No	No	No	Yes	Yes	Yes
Home Environment Factor	No	No	No	No	No	No	Yes	Yes
Health Factor	No	No	No	No	No	No	No	Yes
Observations	1301	1300	1279	1230	1143	1119	1060	1030

The dependent variable is the number of items the child passed.

Standard errors in parentheses, bootstrap at the level of the randomized paired villages.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- Treatment effects on personal social skill are significant
- Home environment may be the key mechanism

Table 8: Denver Test: Midline (Fine Motor)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment Group	0.1642* (0.0748)	0.1595* (0.0725)	0.1567* (0.0768)	0.1803* (0.0761)	0.1887* (0.0735)	0.1770* (0.0820)	0.0982 (0.0821)	0.1087 (0.0871)
Monthly age at the Denver Test	0.2828*** (0.0061)	0.2830*** (0.0062)	0.2833*** (0.0066)	0.2820*** (0.0071)	0.2805*** (0.0064)	0.2795*** (0.0067)	0.2778*** (0.0069)	0.2779*** (0.0068)
Male	-0.0255 (0.0718)	-0.0329 (0.0696)	-0.0377 (0.0743)	-0.0162 (0.0705)	0.0148 (0.0752)	0.0148 (0.0730)	0.0279 (0.0756)	0.0262 (0.0713)
Ever Take YYB		0.1302 (0.1422)						
Months of Taking YYB			0.0043 (0.0049)	0.0050 (0.0052)	0.0017 (0.0046)	0.0017 (0.0049)	0.0013 (0.0049)	0.0021 (0.0050)
Constant	11.7015*** (0.1966)	11.5816*** (0.2438)	11.6448*** (0.1906)	11.6971*** (0.1990)	11.7746*** (0.1861)	11.8091*** (0.1937)	11.8920*** (0.2008)	11.8779*** (0.2076)
Pre-birth Factor	No	No	No	Yes	Yes	Yes	Yes	Yes
Nutrition Factor	No	No	No	No	Yes	Yes	Yes	Yes
Parenting Factor	No	No	No	No	No	Yes	Yes	Yes
Home Environment Factor	No	No	No	No	No	No	Yes	Yes
Health Factor	No	No	No	No	No	No	No	Yes
Observations	1299	1298	1277	1229	1143	1119	1058	1027

The dependent variable is the number of items the child passed.

Standard errors in parentheses, bootstrap at the level of the randomized paired villages

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Denver Test: Midline (Language)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment Group	0.6620*** (0.1407)	0.6436*** (0.1486)	0.6599*** (0.1459)	0.7063*** (0.1488)	0.7348*** (0.1527)	0.6656*** (0.1508)	0.4294* (0.1690)	0.4664** (0.1668)
Monthly age at the Denver Test	0.6040*** (0.0116)	0.6052*** (0.0100)	0.6019*** (0.0119)	0.5973*** (0.0116)	0.6067*** (0.0117)	0.6043*** (0.0118)	0.5963*** (0.0132)	0.6015*** (0.0124)
Male	-0.1409 (0.1492)	-0.1625 (0.1407)	-0.1852 (0.1462)	-0.1701 (0.1532)	-0.0974 (0.1593)	-0.0795 (0.1441)	-0.1334 (0.1558)	-0.1463 (0.1568)
Ever Take YYB		0.4319 (0.2481)						
Months of Taking YYB			0.0177 (0.0095)	0.0189* (0.0095)	0.0133 (0.0100)	0.0109 (0.0099)	0.0139 (0.0099)	0.0151 (0.0100)
Constant	5.3467*** (0.3387)	4.9377*** (0.3794)	5.2071*** (0.3131)	5.3685*** (0.3097)	5.1670*** (0.3188)	5.3041*** (0.3182)	5.6165*** (0.3611)	5.4507*** (0.3435)
Pre-birth Factor	No	No	No	Yes	Yes	Yes	Yes	Yes
Nutrition Factor	No	No	No	No	Yes	Yes	Yes	Yes
Parenting Factor	No	No	No	No	No	Yes	Yes	Yes
Home Environment Factor	No	No	No	No	No	No	Yes	Yes
Health Factor	No	No	No	No	No	No	No	Yes
Observations	1295	1294	1273	1224	1137	1114	1055	1025

The dependent variable is the number of items the child passed.

Standard errors in parentheses, bootstrap at the level of the randomized paired villages

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Denver Test: Midline (Gross Motor)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment Group	0.1019 (0.0866)	0.0938 (0.0845)	0.0934 (0.0885)	0.1045 (0.0874)	0.0827 (0.0845)	0.0787 (0.0880)	0.0132 (0.0866)	0.0457 (0.0959)
Monthly age at the Denver Test	0.3331*** (0.0081)	0.3338*** (0.0078)	0.3312*** (0.0080)	0.3287*** (0.0082)	0.3267*** (0.0071)	0.3253*** (0.0072)	0.3226*** (0.0075)	0.3216*** (0.0079)
Male	-0.1211 (0.0820)	-0.1278 (0.0800)	-0.1479 (0.0881)	-0.1009 (0.0830)	-0.0656 (0.0846)	-0.0666 (0.0841)	-0.0765 (0.0870)	-0.0748 (0.0838)
Ever Take YYB		0.1637 (0.1497)						
Months of Taking YYB			0.0082 (0.0054)	0.0091 (0.0054)	0.0067 (0.0048)	0.0048 (0.0050)	0.0056 (0.0050)	0.0058 (0.0054)
Constant	12.3650*** (0.2447)	12.2043*** (0.2934)	12.3304*** (0.2345)	12.3991*** (0.2456)	12.4837*** (0.2081)	12.5590*** (0.2076)	12.6466*** (0.2274)	12.6564*** (0.2397)
Pre-birth Factor	No	No	No	Yes	Yes	Yes	Yes	Yes
Nutrition Factor	No	No	No	No	Yes	Yes	Yes	Yes
Parenting Factor	No	No	No	No	No	Yes	Yes	Yes
Home Environment Factor	No	No	No	No	No	No	Yes	Yes
Health Factor	No	No	No	No	No	No	No	Yes
Observations	1290	1289	1269	1220	1133	1110	1049	1020

The dependent variable is the number of items the child passed.

Standard errors in parentheses, bootstrap at the level of the randomized paired villages

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- There are no significant difference in the gross motor skill between the control and treatment groups

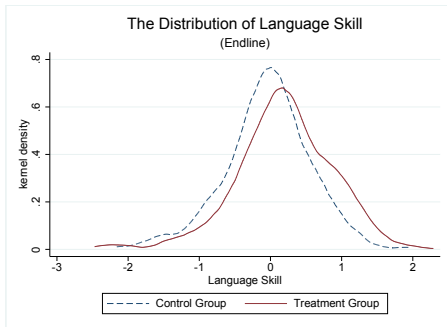
Table 11: Denver Test Score Treatment Effects with Individual Random Effects

	(1)	(2)	(3)	(4)	(5)
	Social	Fine Motor	Language	Gross Motor	Total Score
Control Group	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)
Treatment Group	0.9804***	0.5056⁺	1.0071*	0.2400	2.6182**
	(0.2271)	(0.2697)	(0.4837)	(0.2935)	(0.8735)
Control Group × Endline	0.0371	0.2031*	0.1749	-0.2444*	0.1655
	(0.0848)	(0.0959)	(0.1808)	(0.1061)	(0.3245)
Treatment Group × Endline	-0.3459***	0.0249	-0.0116	-0.3068**	-0.5989 ⁺
	(0.0802)	(0.1011)	(0.1926)	(0.1034)	(0.3445)
Male	-0.2665***	-0.0642	-0.1402	-0.1082	-0.5564*
	(0.0538)	(0.0607)	(0.1269)	(0.0661)	(0.2321)
Monthly Age	0.5561***	0.3902***	0.7707***	0.4029***	2.0945***
	(0.0170)	(0.0194)	(0.0361)	(0.0217)	(0.0656)
Monthly Age ²	-0.0045***	-0.0020***	-0.0030***	-0.0011***	-0.0103***
	(0.0003)	(0.0003)	(0.0006)	(0.0003)	(0.0010)
Constant	5.2440***	9.9617***	2.8306***	11.8059***	30.2515***
	(0.3205)	(0.3685)	(0.6752)	(0.4073)	(1.2105)
Observations	2299	2299	2280	2258	2248

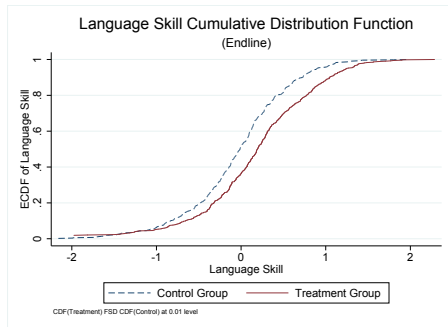
Standard errors in parentheses

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 47: Stochastic Dominance: Language Skill

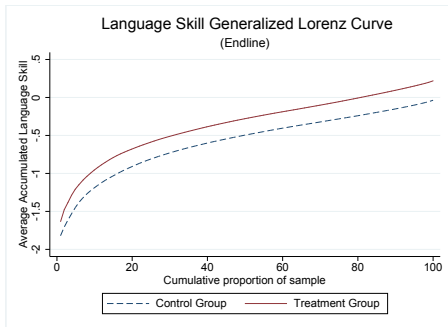


(a)

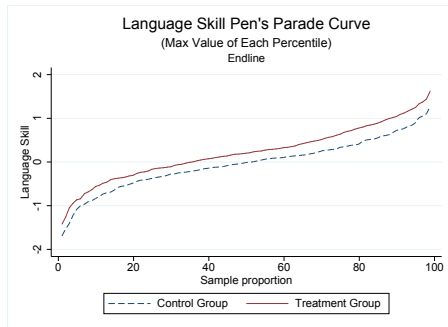


(b)

Figure 47: Stochastic Dominance: Language Skill



(a)



(b)

Summary

- Skills are multiple and measurement of program effects should recognize this
- Early family life a crucial determinant of skill and life outcomes
- Parenting is a central ingredient of successful interventions
- Cognitive and noncognitive skills shape adult health

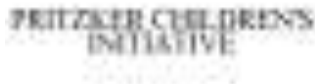
- **Early childhood interventions that stimulate parenting are effective**
 - a For children
 - b Their siblings
 - c The children of the children (intergenerational multiplier)

- **Essence of effective programs:**

- a Interaction with children (by parents and caregivers)
- b Jamaica “Reach Up” program is a valuable prototype widely emulated around the world
- c Effective, low-cost programs being implemented by CDRF: *“China Reach”*

Thank You

Funders:

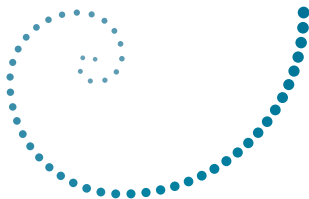


Partners:



Here are some proactive steps that you can take:

- Question program evaluations
- Use resources available at <https://heckmanequation.org/>
- Stay engaged with new research:
<https://cehd.uchicago.edu/>



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