

Thoughts on Programs to Reduce School Readiness Gaps

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Early Childhood Education as a Strategy

Access and attendance

- Low access for specific groups
- Head Start and access
- Most common child care arrangements
- Access and school readiness

Quality

- Quality indicators
- High quality programs
- Quality and school readiness

State Pre-K and Head Start Enrollment as Percentage of Total Population

	3-Year-Olds	4-Year-Olds
Pre-K	2.7	17.3
Head Start	7.3	11.3
Special Ed	3.9	6.2
Other	24.8	33.6
None	61.3	31.6

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School Readiness: Comparing Head Start and Other Care Arrangements

	OLS	Prop
PPVT-III	0.08	0.19
WJ-R Letter-Word Identification	0.11	0.16
Social Competence	0.10	0.14
Attention Problems	-0.11	-0.16

N=2803; OLS includes city- & child-fixed effects; Prop. indicates propensity matching
Bold indicated significance.
Fragile Families Study

School Readiness: Comparing Head Start, Parent, and Other Non-center Care

	Parent		Non-Center	
	OLS	Prop.	OLS	Prop.
PPVT-III	0.21	0.33	0.21	0.32
WJ-R	0.39	0.46	0.32	0.41
Social Competence	0.17	0.24	0.03	0.05
Attention Problems	-0.11	-0.10	-0.18	-0.19

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 Bold indicated significance.
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School Readiness: Comparing Head Start and Other Center-based Care

	Pre-K		Other Center	
	OLS	Prop.	OLS	Prop.
PPVT-III	0.06	0.09	0.04	0.09
WJ-R	-0.02	0.01	0.03	0.05
Social Competence	0.13	0.15	0.09	0.17
Attention Problems	-0.06	-0.05	-0.15	-0.18

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High Quality Preschool Education and School Readiness

1. Large effects for small-scale experiments (one-half to three-quarters of a SD)
2. Small to modest effects for federal programs (one-sixth to one-quarter of a SD)
3. Effects for mothers with a high school education or less, but not for mothers with BA
4. Effects sometimes larger for black than white or Hispanic children

Infant Health & Development Program Intervention Services

- Intervention Group
 - Home visiting in child's 1st – 3rd years of life
 - Day care center in child's 2nd and 3rd years of life
 - Transportation available
 - Center open all workday
- Intervention and Follow-up Only Groups
 - Free medical surveillance, referrals to specialists in child's 1st – 3rd years of life

Infant Health & Development Program: Impacts from Age 3 to 18

	IQ	PPVT
3 Years	14.3	9.4
5 Years	3.7	6.0
8 Years	4.4	6.7
18 Years	3.3	5.1

*Heavier low birth weight children only

*All impacts were significant

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Brooks-Gunn et al., 1994, *JAMA*; McCarton et al., 1997, *JAMA*; Table 3 & 4, McCormick et al., 2006, *Pediatrics*

Infant Health & Development Program: Impacts on Math Achievement

	WJ Math
8 Years	4.9
18 Years	3.6

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*All impacts were significant

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Infant Health & Development Program: IQ Impacts Based on Likely Care Situation

	Age 3	Age 5	Age 8
Maternal Care	20.2	12.3	8.2
Other Home Based Care	16.4	5.9	7.2
Center Based Care	11.6	2.0	1.7

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Hill, Waldfogel, Brooks-Gunn, 2002, *JPAM*

Infant Health & Development Program: Impacts As A Function Of Number Of Days Of Center-Based Care

	Total Sample	>350 days of treatment over 2 years
Age 3 IQ	14.3	16.7
Age 8 IQ	4.4	8.4

*Heavier low birth weight children only

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Infant Health & Development Strengths

Program

- 8 sites with the same intervention services
- Well-defined and previously tested curricula
- High fidelity to curricula
- Data collected on attendance as well as activities for each day at center
- Data collected on activities and engagement for each home visit

Infant Health & Development Strengths

Design

- Independent group doing the randomization, assessments, analyses
- Appropriate stratification (low birth weight group)
- Balanced randomization
- A priori set of outcomes (4 to 5 per age)
- A priori set of subgroups (4)
- Amazing (and tough) design scholars (Cronbach, Shapiro, Kraemer)

Infant Health & Development Strengths

Follow-up

- 4, 8, 12, 18, 24, 30, and 36 months
- 5, 8, and 18 years
- Great follow-up rates

Publications

- One major publication for each follow-up (age 3, 5, 8, and 18)

Infant Health & Development Wish List

Assessments

- Quality of out-of-home care in the control group
- Classroom quality in elementary school
- Child attention (beyond maternal and teacher report)
- Quality of care at age 4 (after intervention ended)

Follow-ups

- Age 12 to 13
- Age 22

Services

- Normal birth weight group comparison

Federal ECE Programs and School Readiness

- Head Start Impact Study
- Early Head Start National Evaluation
- Early Reading First
- Preschool Curriculum Evaluation Research Study (PCERS)

All randomized trials of center-based early childhood education programs

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Positive Impacts for Children at Age 3

- *Cognitive development* (higher scores & fewer in low-functioning group, Bayley)
- Larger receptive vocabularies
- Lower levels of aggressive behavior
- Greater sustained attention with objects, *engagement of parent*, and less negativity

Positive Impacts for Parents When Children Were 3

- ◆ More positive (and less negative) parenting observed in parent-child play: both mothers and fathers
- ◆ More stimulating home environments, support for learning
- ◆ More daily reading
- ◆ Less spanking: both mother and father report
- ◆ More hours in education and job training
- ◆ Probability of being employed (trend)

EHS Age 3 Impacts For Mixed-approach Programs: Earlier Versus Later Implementation

	Earlier Implementers		Later Implementers	
	Impact	Effect Size	Impact	Effect Size
Bayley MDI	3.7	.28	-1.0	-.08
Child Engagement	0.5	.43	0.2	.20
Child Attention	0.4	.42	0.2	.17
Mom Support Presence	0.6	.42	-0.1	-.04
Mom Read Daily (%)	23.1	.46	7.6	.15
Mom Detached	-0.4	.37	0.2	.14
Mom Education (%)	-16.6	.33	12.5	.25

N's= 261 to 355 in Earlier and 234 to 340 in Later or Incomplete Implementation
11 of 17 sites were mixed approach by the fall of 1999

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<http://www.mathematicamp.com/publications/PDFs/ehsfinalvol2.pdf>

EHS Impacts on Children Two Years After Early Head Start

- ◆ Decreased behavior problems
- ◆ Higher level of positive approaches to learning
- ◆ Larger receptive vocabularies for Spanish-speaking children, but not for English speakers
- ◆ No impacts on achievement-related outcomes: letter-word identification, applied problem solving

EHS Impacts on Parents and the Home Environment 2 Years After Early Head Start

- ◆ Higher percentage read to child daily
- ◆ Higher scores on HOME total scale and warmth scale
- ◆ Higher on summary of 8 teaching activities
- ◆ Lower risk for maternal depression
- ◆ Parent more likely to attend meetings or open houses at child's program (if child was in a program)

Early Head Start Program Strengths

Program

- 17 sites
- Implementation interviews

Design

- Independent group doing randomization, analyses
- Appropriate statistical approaches

Early Head Start Program Strengths

Assessments

- Repeated videotaped mother-child interaction (ages 1, 2, 3, 4 1/2)
- Attention measures (Leiter, observation via videotape)
- Challenge tasks (high chair, toy, clean-up)
- Language measures (CDI, book reading with mother)
- Enhanced HOME environment

Follow-ups

- Ages 1, 2, 3 and 4 1/2

Early Head Start Program Wish List

Program

- Number of days in program collected by program staff
- Curricula used/activities per day per child
- More frequent quality assessments in programs

Design

- Fewer subgroup analyses
- Fewer outcomes

Early Head Start Program Wish List

Follow-ups

- Better response rates at age 3 and 4 1/2
- Higher response rates for quality ratings of care settings
- Classroom quality assessments in elementary school

Challenges

- Sites vs. populations
- Dosage
- Timing and length of early childhood education
- Immigrants
- Curricula
- Training
- Planned variations