

# The Added Impact of Parenting Education in Early Childhood Education Programs: A Meta-Analysis

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# Today's Presentation

Background

Description of the present study

Study findings

Implications



# How do we best direct our investments in early childhood education?

## Two Generational Programs

Does the addition of parenting education services to early childhood education programs yield greater benefits for children and their families?

# Two Types of Parenting Education



1) Providing parents with information or encouraging parental involvement with the ECE program

2) Modeling and providing parents opportunities to practice developmentally appropriate adult/child interactions



## Examples of Parenting Education Without Modeling or Opportunities for Practice



- Encouraging parents to volunteer in the classroom without formal training
- General parenting information classes/ didactic information about parent-child activities

Examples: Abbot PreK evaluation, Bright Beginnings Pre-K, Michigan School Readiness Program

## Examples of Parenting Education With Modeling or Opportunities for Practice

- Parent trainers modeled responsive and/or cognitively stimulating interactions with child and parents practiced them (i.e. IHDP)
- Parent educators observed child in classroom with the parent and provided information about what the teacher was doing and why (i.e. Howard University, BEEP).
- Learning activities (often from school's curriculum) demonstrated to parent. In some programs parents practiced these during a visit or parent/ child class (i.e. Project CARE, Perry Preschool).



## Research Questions

1. Is the addition of parenting education of any type to early childhood education programs associated with larger program impacts?
2. Is the addition of parenting education that includes modeling or opportunities to practice to early childhood education programs associated with larger program impacts?



# Meta-analysis

- **Benefits:**
  - Integrates decades of research without picking and choosing among studies
  - Ability to model factors that might explain study to study variation in findings
- **Weakness:**
  - Less specificity than a single study
  - Correlation rather than causation
  - Relies on the available information





# National Forum on Early Childhood Policy and Programs Meta-Analytic Database

- ECE programs for children birth -5
- Studies conducted in U.S., 1960-2007

To be included, studies must have:

- A comparison group
- At least ten participants in each group
- Less than 50% attrition
- Used random assignment or high quality quasi-experimental methods
- Pre and posttest information for both groups if groups were equivalent at baseline on relevant indicators

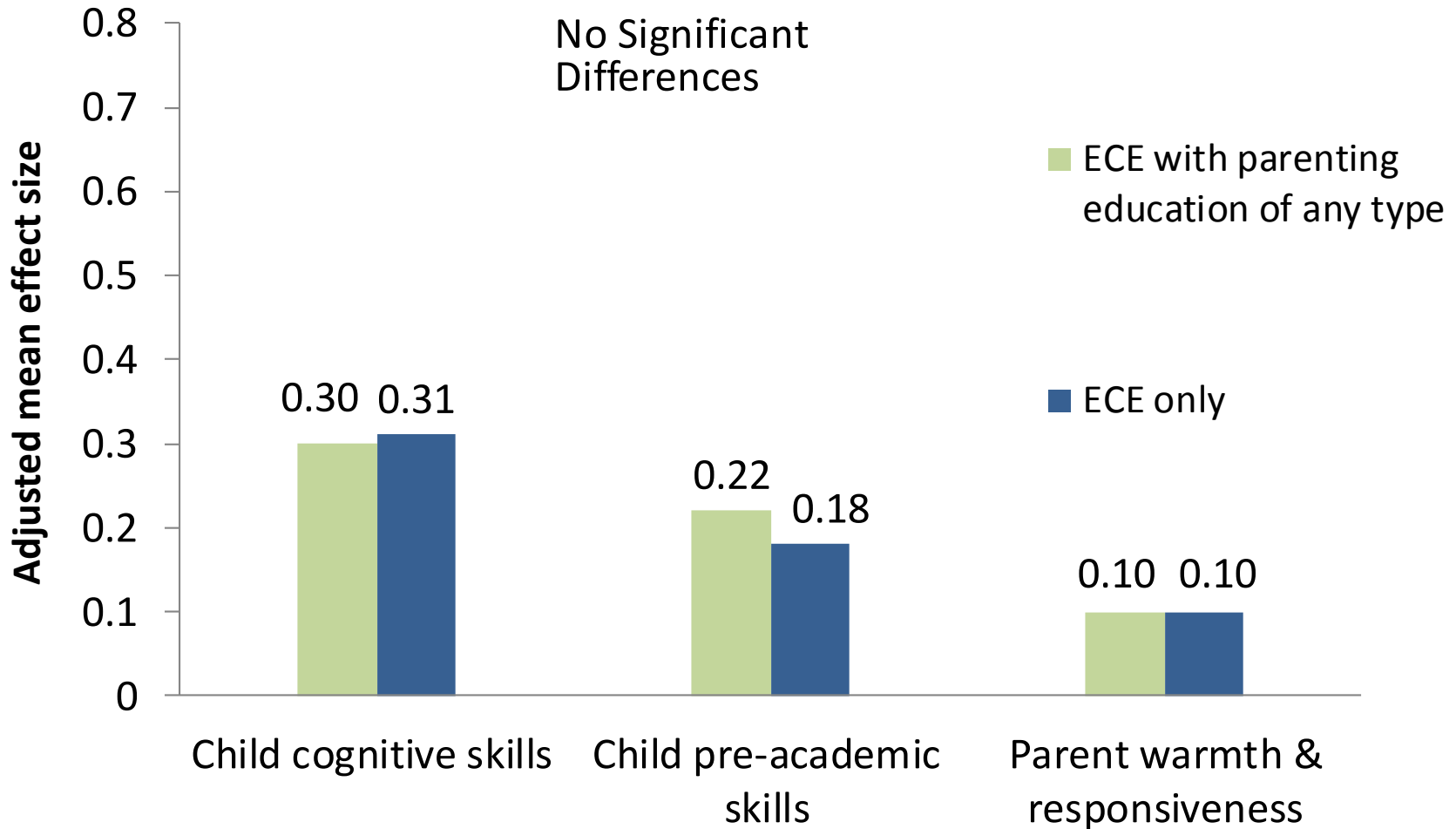
# Outcome Domains

- Two child cognitive domains (Christian, Morrison, Frazier, & Massetti, 2000)
  - **Child Cognitive skills** (e.g. vocabulary, IQ).
    - 72 studies, 116 contrasts, 739 effect sizes
  - **Child Pre-academic skills** (e.g. letter-word recognition, numeracy skills).
    - 37 studies, 70 contrasts, 368 effect sizes
- Parenting
  - **Parent warmth and responsiveness**
    - 12 studies, 16 contrasts, 109 effect sizes

## Research Question 1

Is the addition of **any type of parenting education** to early childhood education programs associated with larger program impacts on children's cognitive skills and pre-academic skills, and parents' warmth and responsiveness?

# RQ#1: Adjusted mean effect sizes of parenting education of any type services



## Research Question 1: Finding

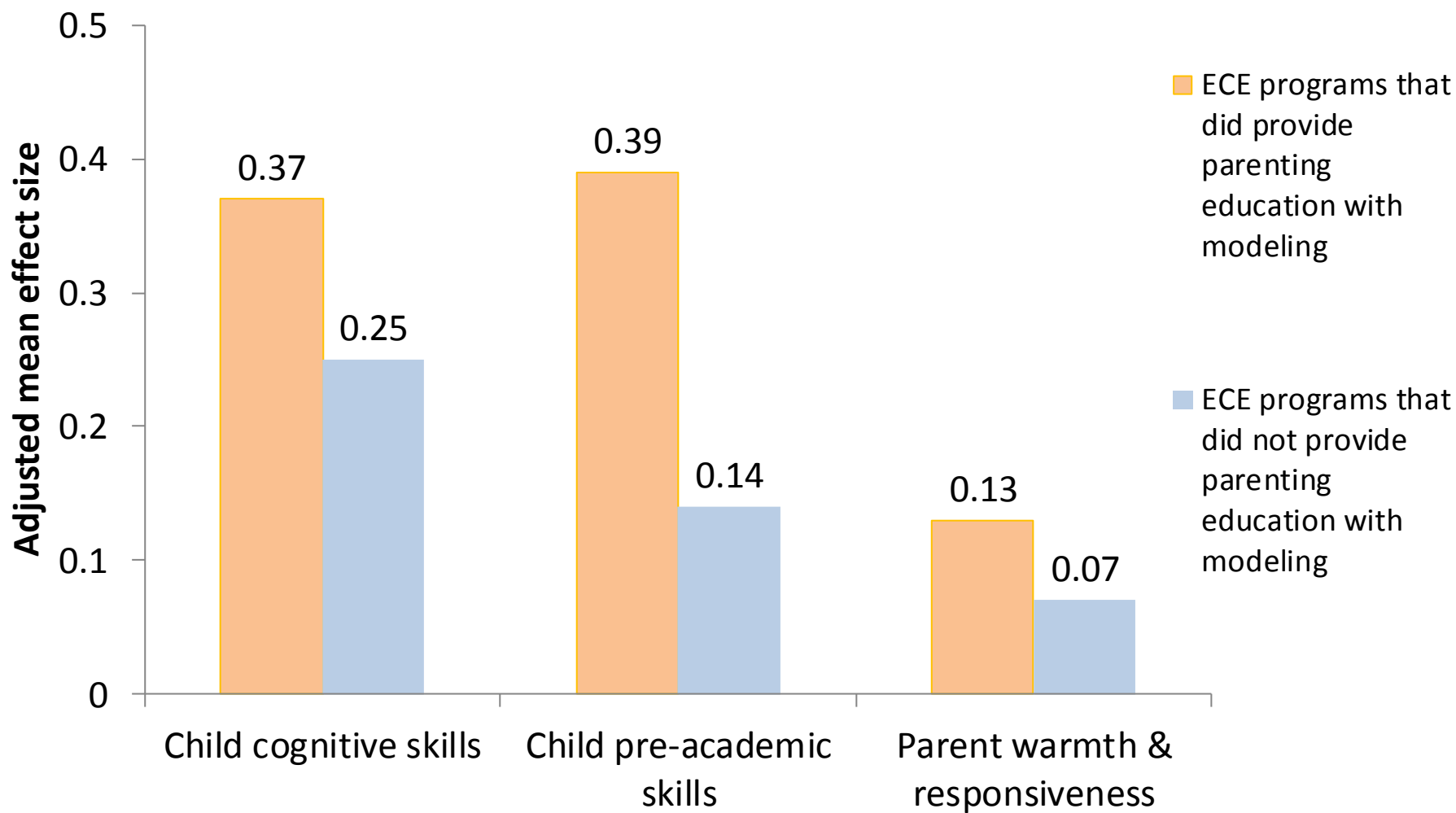
ECE programs that provided *parenting education of any type* **did not produce larger impacts** on children's cognitive skills and pre-academic skills or parent warmth and responsiveness when compare to ECE programs that do not provide these services.

## Research Question 2

Is the addition of **parenting education that includes modeling or opportunities for practice** to early childhood education programs associated with larger program impacts on children's cognitive skills and pre-academic skills, and parents' warmth and responsiveness than those that do not?

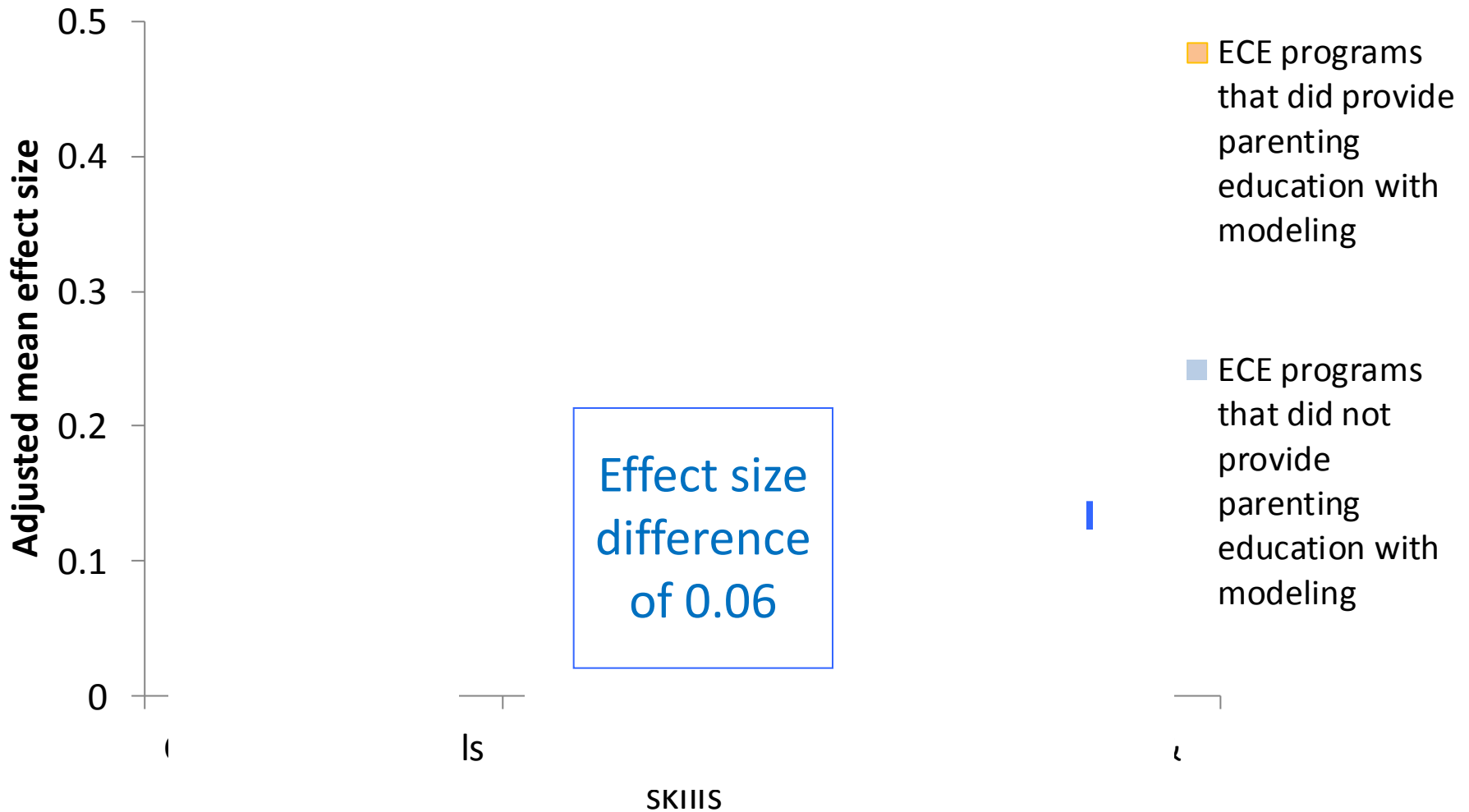


## RQ#2: Adjusted mean effect sizes for ECE programs that did and did not offer parenting education with modeling:





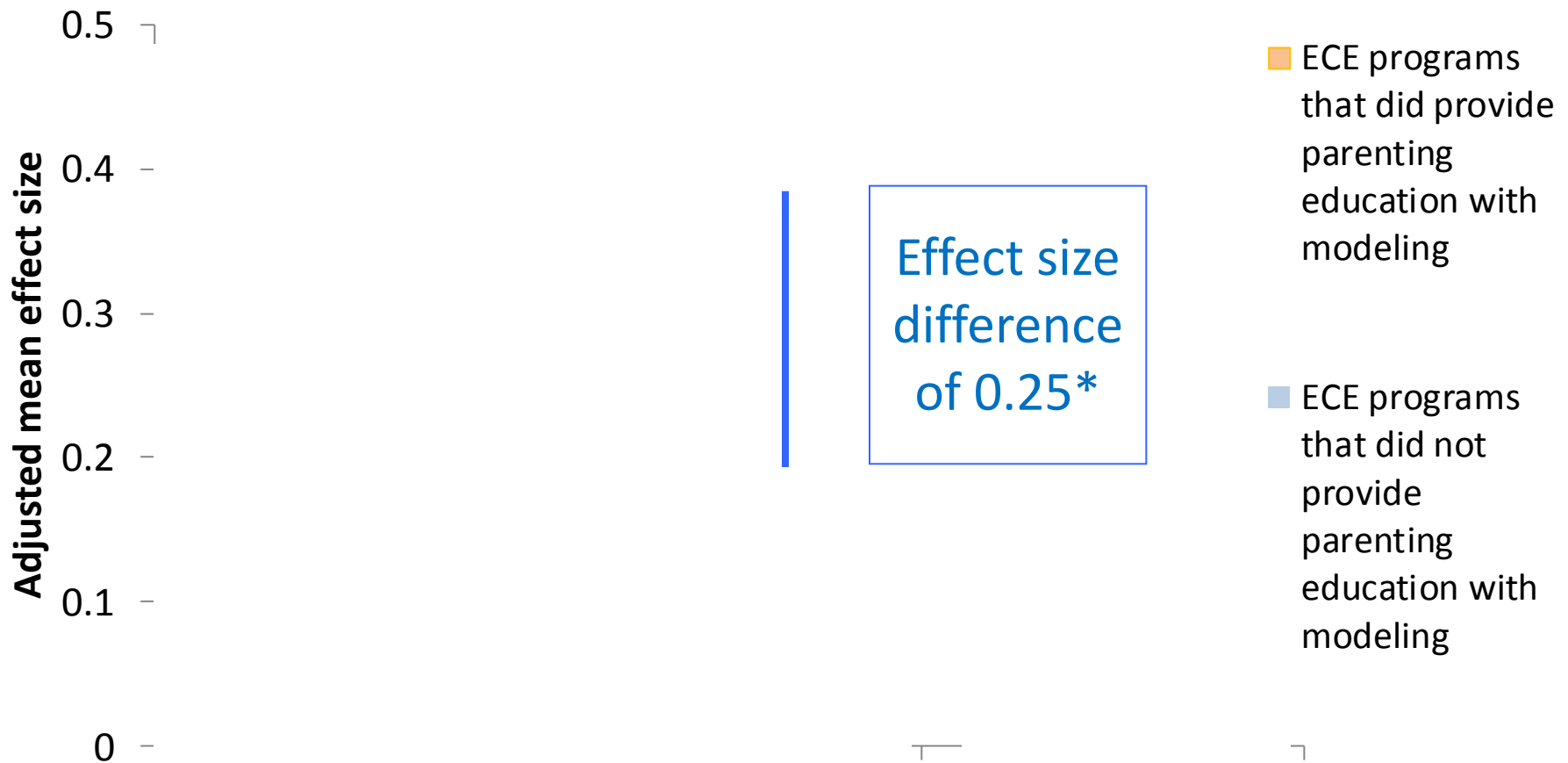
# RQ#2: Adjusted mean effect sizes for ECE programs did and did not offer parenting education with modeling:





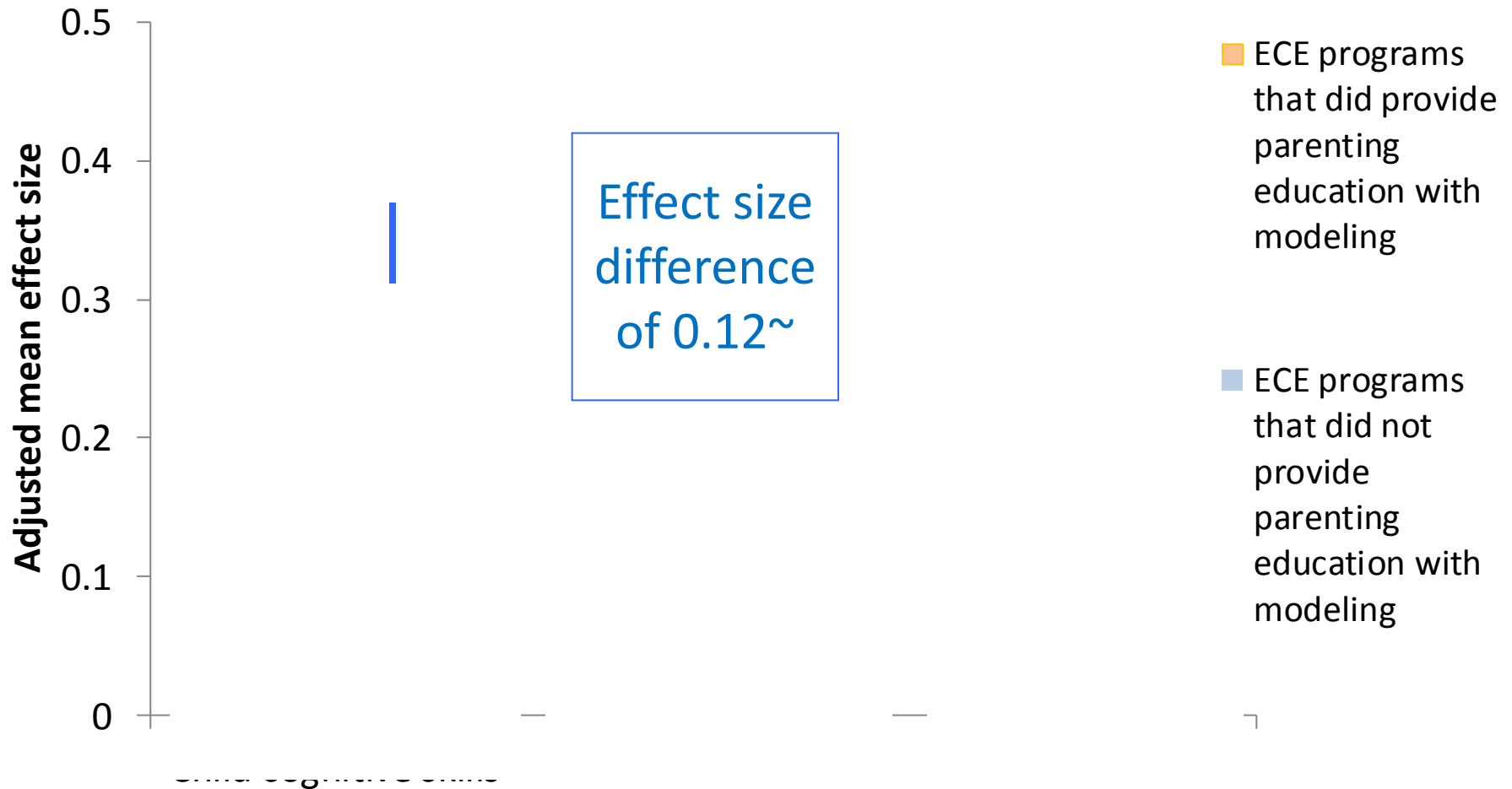


# RQ#2: Adjusted mean effect sizes for ECE programs that did and did not offer parenting education with modeling:





# RQ#2: Adjusted mean effect sizes for ECE programs that did and did not offer parenting education with modeling:



## Research Question 2: Finding

Early childhood education programs that provided parenting education with *modeling or opportunities to practice* **were associated with larger program impacts** on children's pre-academic skills than those programs that do not provide this type of parenting education.



# Follow up analyses

## Covariates

- Controlled for study-design, program, and participant characteristics
  - Findings hold for pre-academic skills but lose significance for cognitive skills

## Sample

- Excluded programs that provided either less than four months of services or fewer than ten hours per week of early childhood education
  - Consistent with the findings presented in the primary analysis

# Follow up analyses

## Length of follow up

- Limited the follow up period to one-year post treatment
  - Parenting education with modeling still associated with larger program impacts but effects are no longer statistically significant in either domain

## Measurement quality

- Limited to measures that were highly reliable (reliability  $>.9$ ) measures or normed on a nationally representative sample
  - Parenting education with modeling still associated with larger program impacts but effects are no longer statistically significant in either domain

## Follow up analyses

### The presence of other types of family support services

- Of the programs that offered parenting education with modeling
  - 42% offered parent human capital development
  - 36% helped parents access additional services
  - 32% offered some direct material support
- We conducted separate parallel analyses examining whether the addition of the relationship of each of these other types of parent-focused services on children's development
  - None of these services was significantly associated with larger effects on children or their parents



## Implications

- The addition of parent programming can increase the effectiveness of ECE programs, but not all programs do so.
- Parenting education that provides active modeling and/or opportunities for hands on practicing of parent-child interactions appear to yield stronger results.
- Recent evaluations support the benefits of integrating modeling and feedback in efforts to promote specific parenting behaviors (Dozier; Landry) have yet to be embedded in large-scale ECE systems.

# Limitations

- Findings are correlational rather causal
- Little information regarding intensity of parenting education components
- Relevance of older studies





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This database builds on previous meta-analytic databases created by Abt Associates and the National Institute for Early Education Research (NIEER)

- (Camilli et al., 2010; Jacob, Creps & Boulay, 2004; Layzer, Goodson, Bernstein & Price, 2001).



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# Appendices



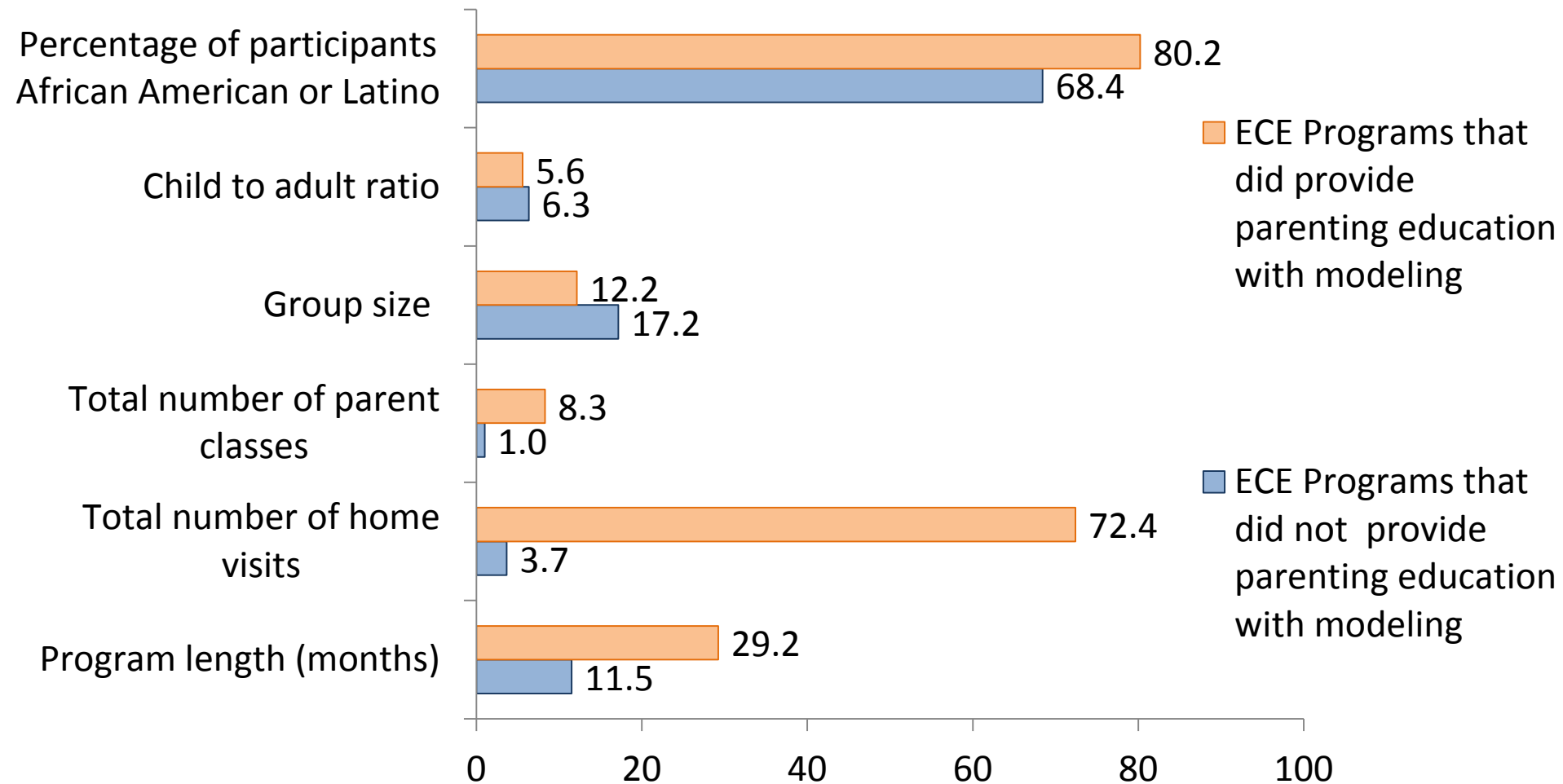
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# Additional descriptive information



## Controls used in full models

### Participant Characteristics

- Majority of participants African American or Latino

### Program Characteristics

- Intensity of early childhood education program
- Length of treatment

### Study Characteristics

- Random assignment
- Activity level of the control group
- Published in a peer refereed journal
- Level of attrition

Parenting education of any type: Sensitivity analysis with covariates

	Cognitive skills		Pre-academic skills	
	No Covariates	With Covariates	No Covariates	With Covariates
<b>Intercept</b>	0.312 *** (0.069)	0.617*** (0.210)	0.175 * (0.0693)	-0.512 (0.501)
<b><u>Any parenting education</u></b>	<b>-0.022</b> <b>(0.075)</b>	<b>-0.071</b> <b>(0.076)</b>	<b>0.040</b> <b>(0.102)</b>	<b>0.171</b> <b>(0.116)</b>
<b>15 hrs or more of ECE per week</b>		0.013 (0.080)		-0.070 (0.140)
<b>Home visits by a professional</b>		-0.043 (0.080)		-0.123 (0.170)
<b>High quality study index</b>		-0.014 (0.036)		0.016~ (0.070)
<b>Active control group</b>		-0.230* (0.074)		-0.086 (0.097)
<b>Program length</b>		0.007** (0.003)		0.016~ (0.007)
<b>Time elapsed since end of treatment</b>		-0.005* (0.002)		-0.012 (0.006)
<b>Peer refereed publication</b>		0.167* (0.062)		-0.166 (0.122)
<b>Treatment on the treated study</b>		0.033 (0.106)		0.019 (0.209)
<b>Child age at follow up</b>		-0.002 (0.002)		0.008 (0.006)
<b>Majority of participants African American or Latino</b>		0.006 (0.071)		-0.125 (0.115)

# Parenting education with modeling or opportunities to practice : Sensitivity analysis with covariates

	Cognitive skills		Pre-academic skills	
	No Covariates	With Covariates	No Covariates	With Covariates
<b>Intercept</b>	0.254* (0.042)	0.634* (0.211)	0.147*** (0.051)	-0.542 (0.492)
<b><u>Parenting education with modeling</u></b>	0.115~ (0.068)	-0.082 (0.079)	0.246** (0.099)	0.255~ (0.142)
<b>15 hrs or more of ECE per week</b>		-0.034 (0.088)		0.085 (0.157)
<b>Home visits by a professional</b>		-0.048 (0.079)		-0.159 (0.170)
<b>Study quality index</b>		-0.014 (0.036)		0.147 (0.072)
<b>Active control group</b>		-0.240* (0.075)		-0.065 (0.098)
<b>Program length</b>		0.007* (0.002)		0.013~ (0.007)
<b>Time elapsed since end of treatment</b>		-0.004 (0.002)		-0.014* (0.006)
<b>Peer refereed publication</b>		0.172* (0.062)		-0.147 (0.123)
<b>Treatment on the treated study</b>		0.037 (0.105)		-0.032 (0.202)
<b>Child age at follow up</b>		-0.002 (0.002)		0.011~ (0.006)
<b>Majority of participants African American or Latino</b>		0.004 (0.069)		-0.024 (0.113)





# Analysis Subsample

- Treatment v. Control
- Assessment between two-thirds of total treatment to five years after the end of treatment



## Our Analysis

### Multi-level models (random intercept)

- Level 1: Effect sizes (Hedge' s  $g$ )
  - Dependent-measure covariates
- Level 2: Contrasts
  - Program and research design predictors and covariates

Weighted by the inverse of the variance of each effect size and the inverse of the number of effect sizes per contrast

Effect sizes  $> 1.5$ ,  $< -1.5$  capped (2%)

## Question Predictors

Dummy variables for:

RQ#1: Parenting education of any type

Any type of parenting education

[**Reference category**, Early childhood education without parenting education]

RQ#2: Parenting education with or without opportunities for practice/ modeling

Early childhood education plus Parenting Education with modeling/practice

[**Reference category**, Early childhood education without parenting education with modeling/practice]



# National Forum on Early Childhood Policy and Programs Meta-Analytic Database

Effect Sizes

nested in

Contrasts

nested in

Studies

# Early Training Project (1962)

**Condition 1: Three years of ten week summer school + home visits**

**Condition 2: Two years of ten week summer school + home visits**

**Condition 3: No Treatment**

WISC SB Grad H.S

15 27 38 48 163

Months since the initiation of treatment

WISC SB Grad H.S

15 27 38 48 163

Months since the initiation of treatment

WISC SB Grad H.S

15 27 38 48 163

Months since the initiation of treatment



# Early Training Project (1962) Contrasts

Contrast 1

Condition 1: Three years of ten week summer school + home visits

Vs.

Condition 3:  
No Treatment

Contrast 2

Condition 2:  
Two years of ten week summer school + home visits

Vs.

Condition 3:  
No Treatment

Contrast 3

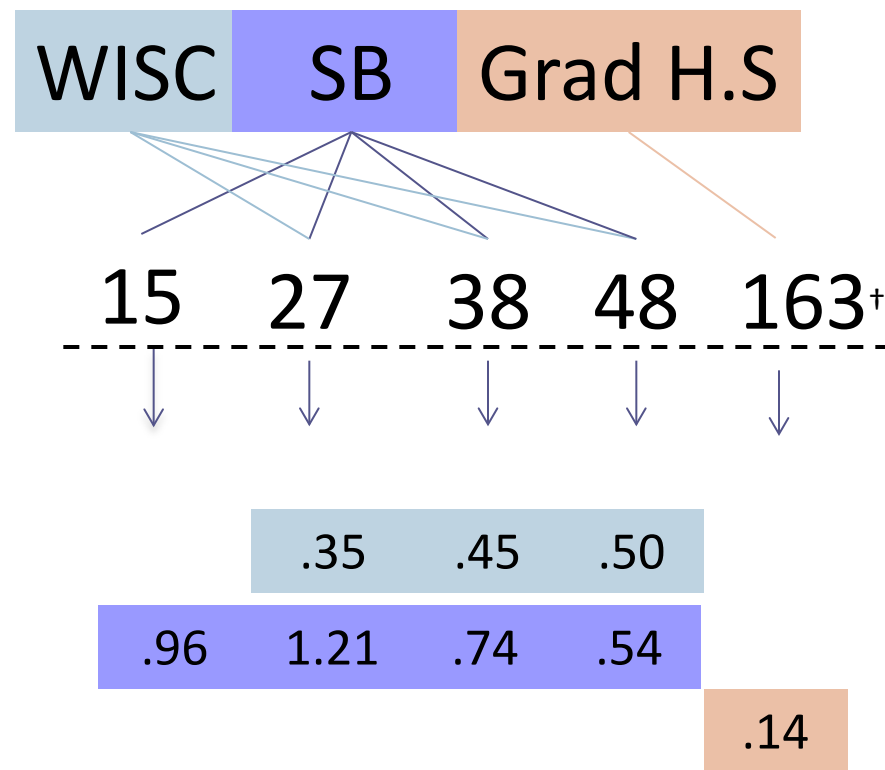
Condition 1: Three years of ten week summer school + home visits

Vs.

Condition 2:  
Two years of ten week summer school + home visits

Description of the present study

Early Training Project (1962): Sample Effect sizes for contrast 1



Effect Size=

<sup>†</sup>Months since the initiation of treatment



# Early Training Project (1962): Contrasts for the Analytic Subsample

Contrast 1

Condition 1: Three  
years of ten week  
summer school +  
home visits

Vs.

Condition 3:  
No Treatment

Contrast 2

Condition 2:  
Two years of ten  
week summer  
school + home visits

Vs.

Condition 3:  
No Treatment

Contrast 3

Condition 1: Three  
years of ten week  
summer school +  
home visits

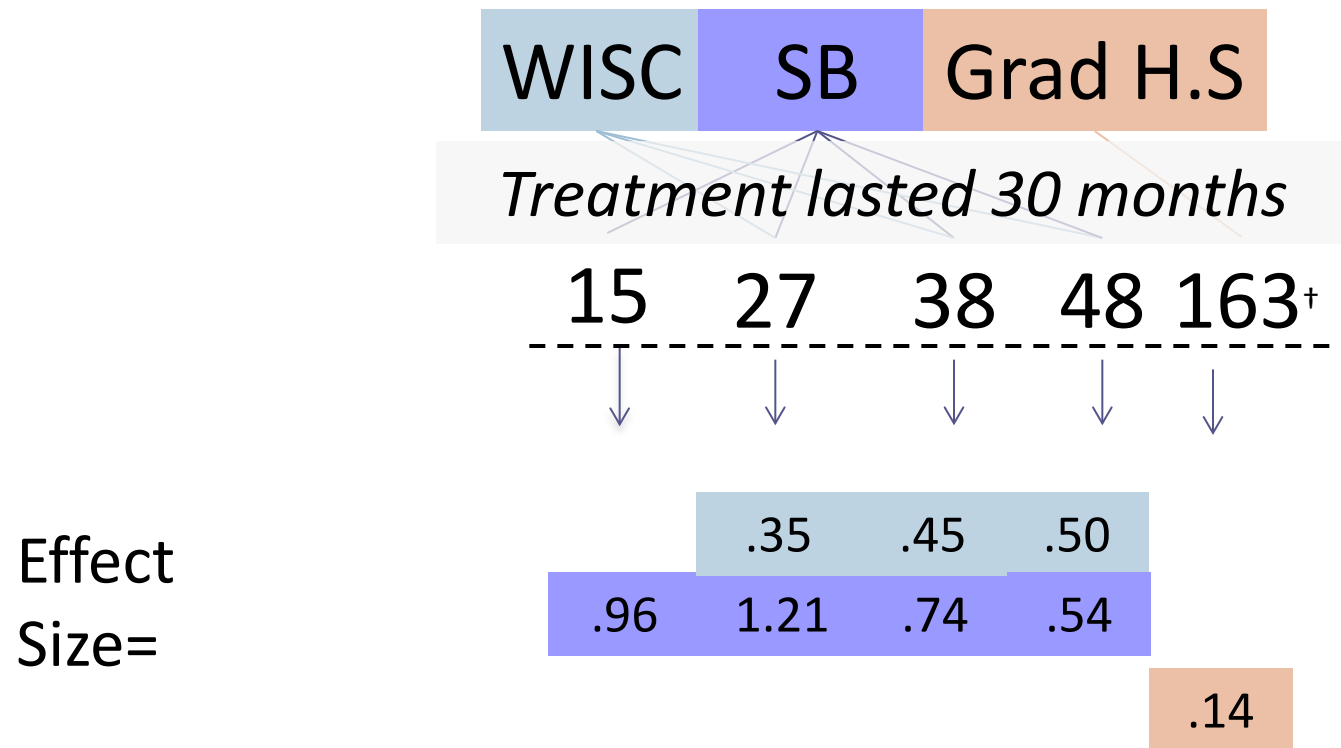
Vs.

Condition 2:  
Two years of ten  
week summer  
school + home visits

Description of the  
present study



## Early Training Project (1962): Dependent measures and effect sizes for the analytic subsample



<sup>+</sup>Months since the initiation of treatment



# Prior Meta-Analytic Findings

- Camilli et al. (2010)
  - Compared ECE programs
    - Found smaller effect sizes for programs that also provided family support services
- Blok et al. (2005)
  - Compared services provided in the home and the school
    - Found slightly smaller effects for programs that provided services at school and at home



# Quasi-experimental studies

## Methods

- Regression discontinuity
- Fixed effects (individual or family)
- Residualized or other longitudinal change models
- Difference in difference
- Instrumental variables
- Propensity score matching
- Interrupted time series
- Pre and posttest information for both groups
- Groups were equivalent at baseline on relevant indicators