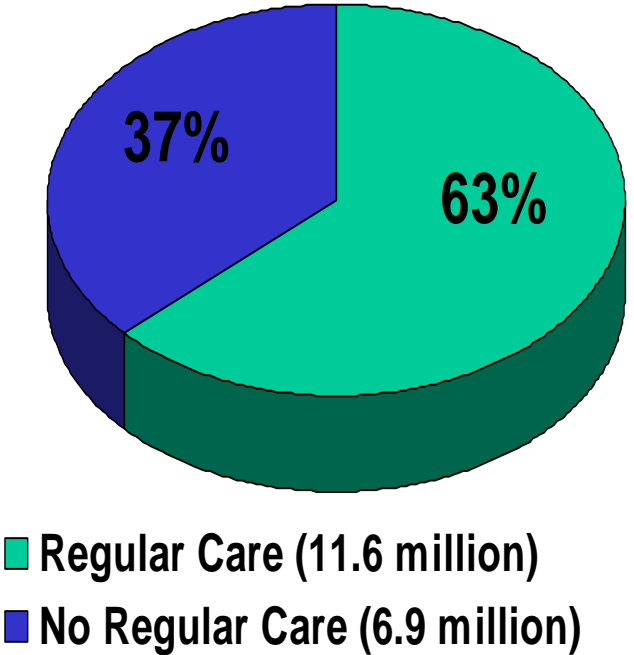


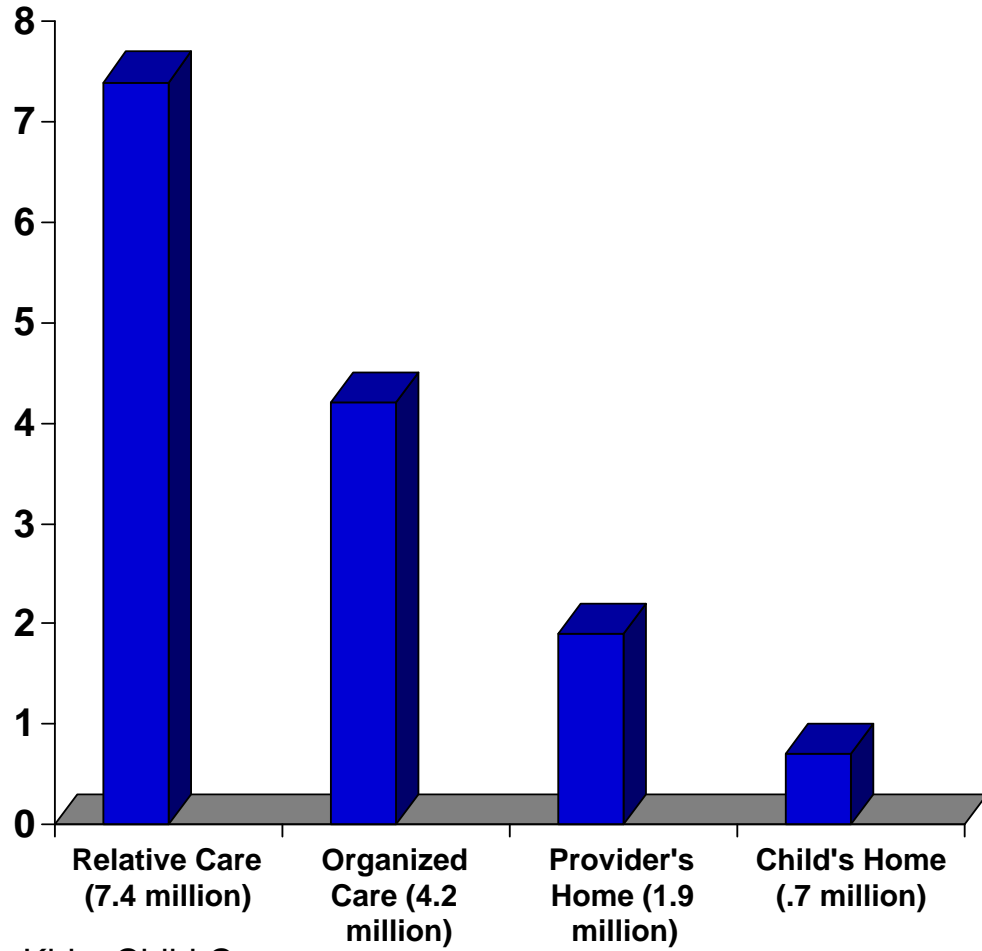
Early Child Care and Children's Development:
Results from the NICHD Study of Early Child
Care

Deborah Lowe Vandell, Margaret Burchinal, & Nathan Vandergrift
National Invitational Conference
Early Childhood Research Collaborative
December 2007
Minneapolis, MN

Most young children in the U.S. are in child care on a regular basis

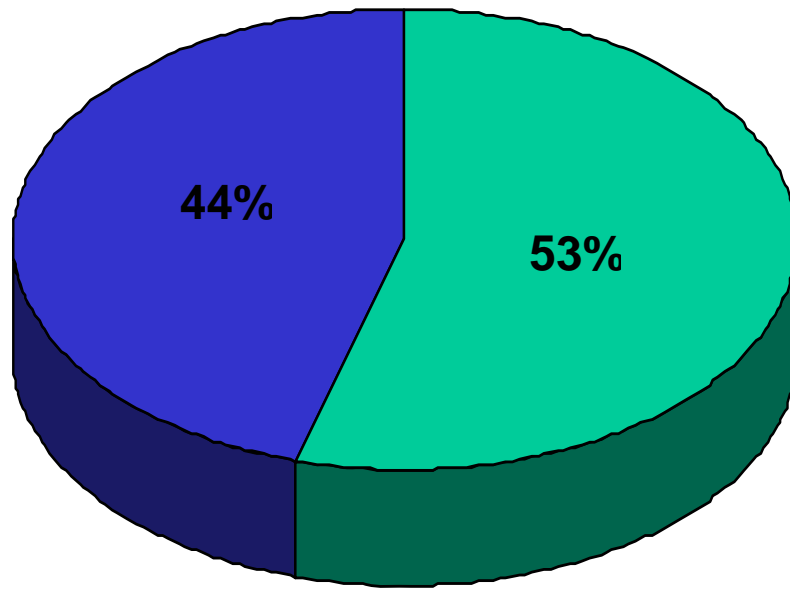


Types of Care



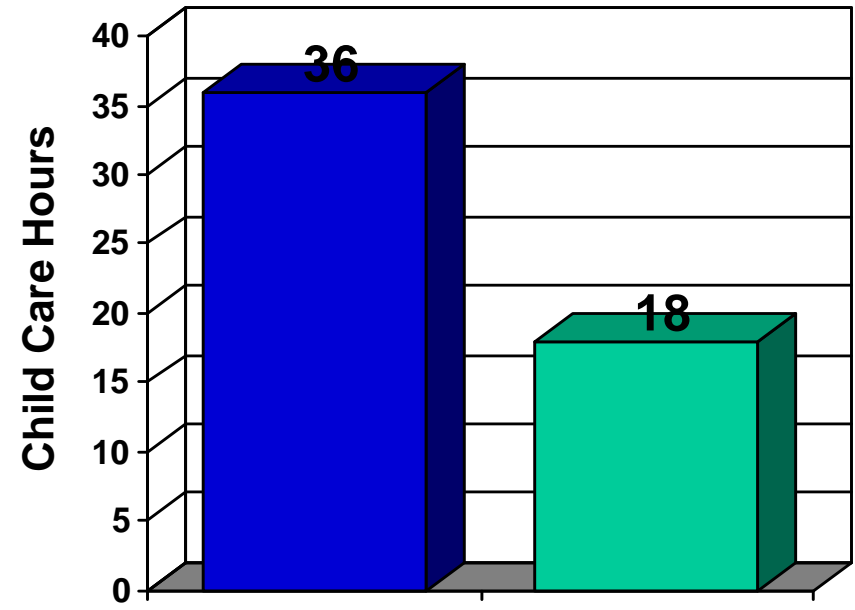
Who's Minding the Kids: Child Care Arrangements: Winter 2002

The majority of mothers of young children are employed. Children of employed moms spend, on average, twice as much time in child care



■ Employed Mothers (9.8 Million)
■ Not employed 8.2 Million

Hours in Child Care (\bar{M} =32)



■ Employed mothers ■ Not Employed

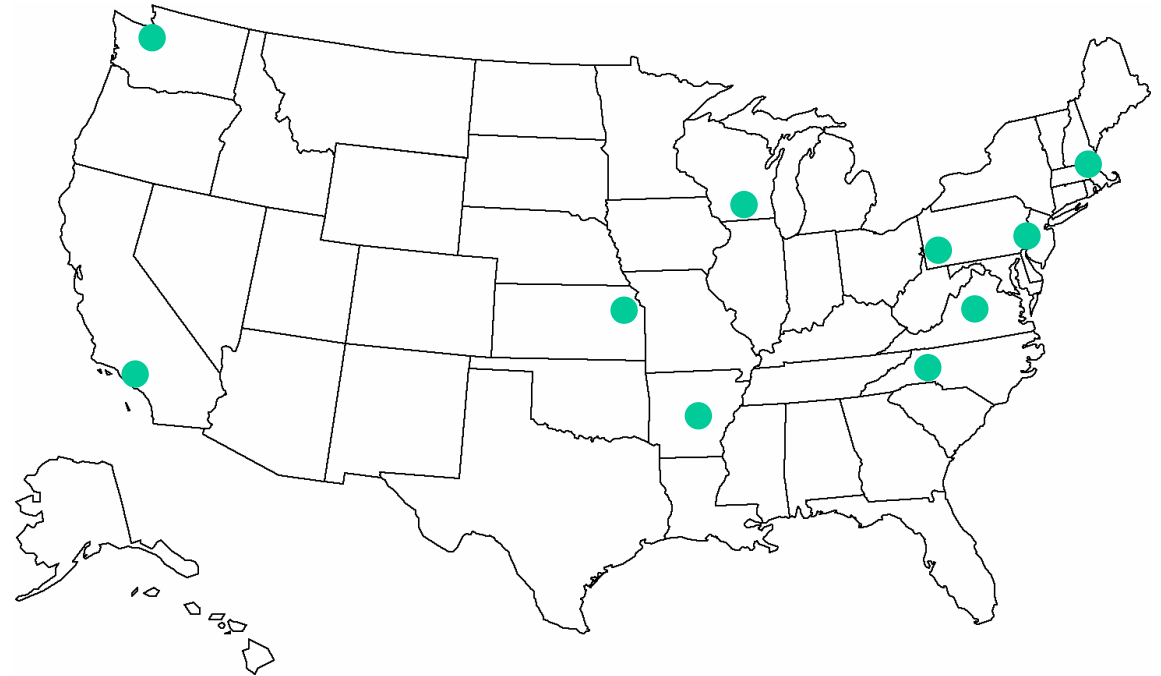
Challenges to Studying Effects of Child Care on Child Development

- Few random assignment experimental studies
- Selection bias
- Omitted variables
- Reliable measurement
- Truncated ranges of observed quality
- Difficulties in identifying appropriate controls for prior child functioning
- Multiple care arrangements

NICHD Study of Early Child Care and Youth Development- Sample

- 1,364 eligible births occurring during 1991
- Sampling designed to assure adequate representation of major socio-demographic niches
- Ten data collection sites
- 24 hospitals

Location of participating families



Data Collection Schedule

- Major early childhood assessments were conducted at 1, 6, 15, 24, 36, 54 months
- Major middle childhood assessment were conducted in Grades 1, 3, 4, 5, and 6 with additional data collected in kindergarten and Grade 2
- Age 15 assessments were collected in the home and lab
- Intervening phone contacts were made every 3 to 6 months with the families

Schedule of Assessments

Assessment Setting	Child Age (in months)													
	1	6	15	24	36	54	K	G1	Gr2	G3	G4	G5	G6	Age 15
Home	X	X	X	X	X	X		X		X		X		X
Child Care		X	X	X	X	X								
School								X	X	X		X		
Laboratory			X	X	X	X		X		X	X	X	X	X

Demographic Characteristics of the Sample

	At 1 Month	At 54 Months
Number of Families	N=1364	N=1078
Income-to-Needs	N=1274	N=1059
0-1 (poverty)	24.3%	11.6%
>1-1.8 (near poverty)	5.2%	26.0%
>1.8 (nonpoor)	70.4%	74.0%
Maternal Education	N=1363	N=1078
No HS Degree	10.2%	8.2%
HS Degree or GED	21.1%	20.1%
Some College	33.4%	33.2%
College Degree	20.8%	22.9%
Post-Graduate Education	14.5%	16.6%
Child Ethnicity	N=1364	N=1078
White, Non-Hispanic	76.4%	78.9%
Black, Non-Hispanic	12.7%	11.2%
Hispanic	6.1%	5.6%
Other	4.8%	4.3%

Continued

Demographic Characteristics of the Sample

(continued)

	At 1 Month	At 54 Months
Child Gender	N=1364	N=1078
Male	51.7%	50.3%
Female	48.3%	49.7%
Two-Parent Family	N=1364	N=1078
Yes	76.5%	83.5%
No	23.5%	16.5%
Hours/Week in Care		N=1075
0 – 9		18.1%
10 – 19		13.7%
20 – 29		12.4%
30 – 39		12.7%
40 – 49		26.0%
50+		17.1%
Type of Care		N=1075
Child Care Center		66.1%
Child Care Home		7.7%
Relative/In-Home Care		12.0%
Mother		14.2%

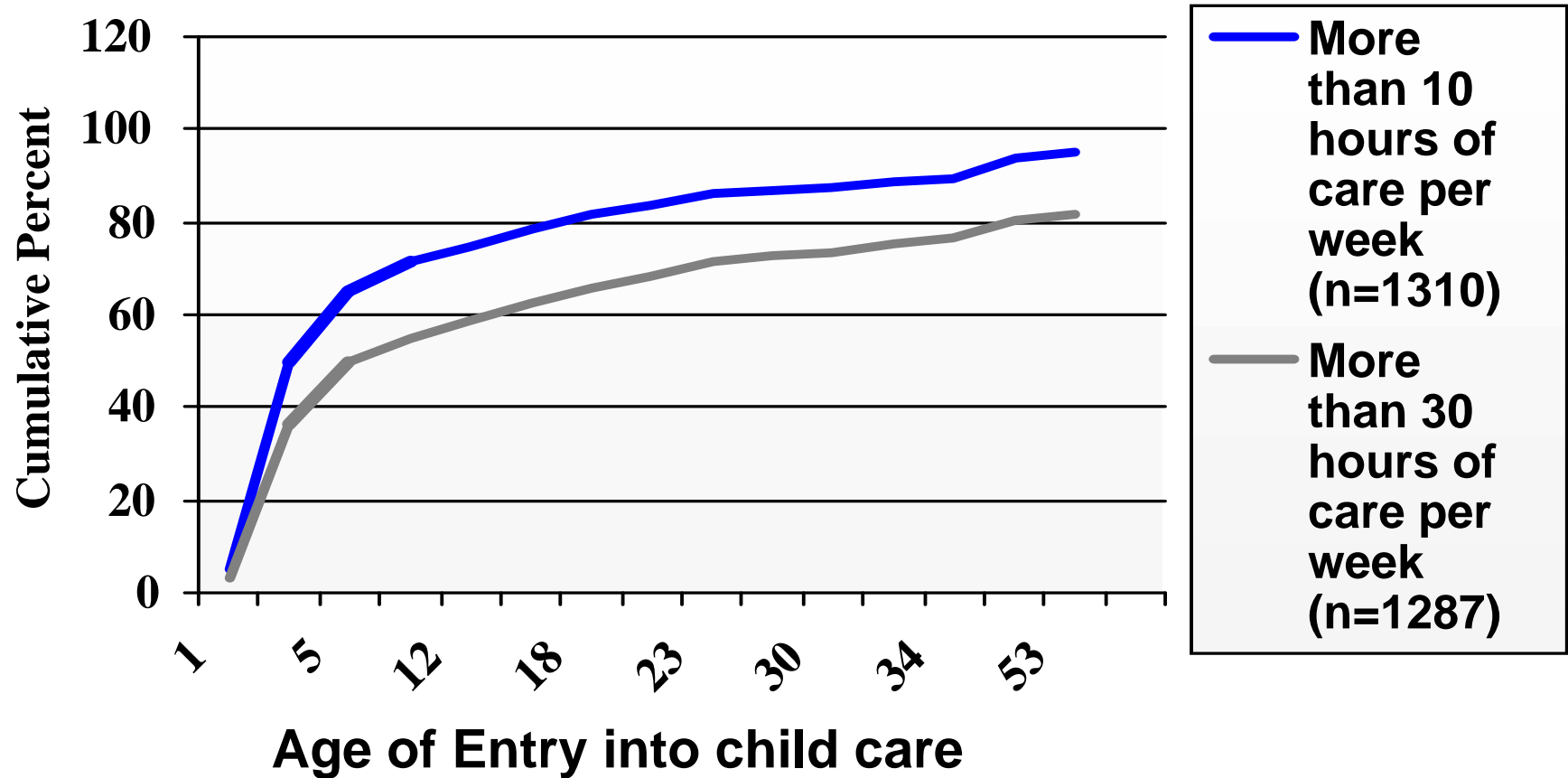
Child-Care Features

- Quantity of Care reported in phone or in-person interviews w/ moms every 3-4 months
 - Age of entry
 - Hrs/wk

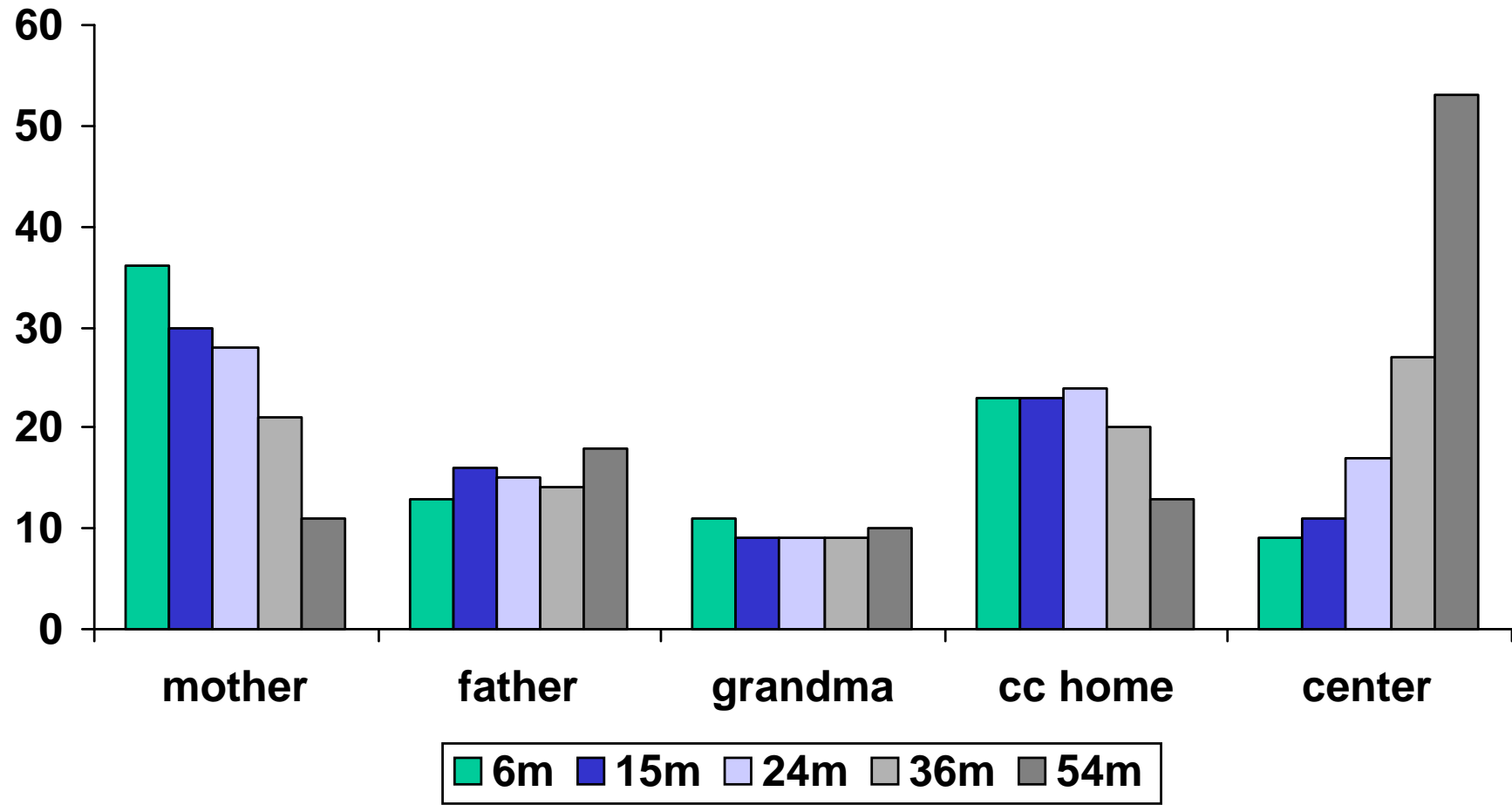
- Type of Care reported by moms every 3-4 months
 - Centers
 - Child-care homes
 - Grandparent
 - Sitters

- Quality of Care (observed at 6, 15, 24, 36, and 54 months)
 - Structural features & caregiver characteristics
 - Observed processes

Age of entry into child care for children who were reported to enter child care by 54 months



Type of Care by Child Age (1992-1997)



10 or more hours/week per setting aside from mother care, multiple settings per child

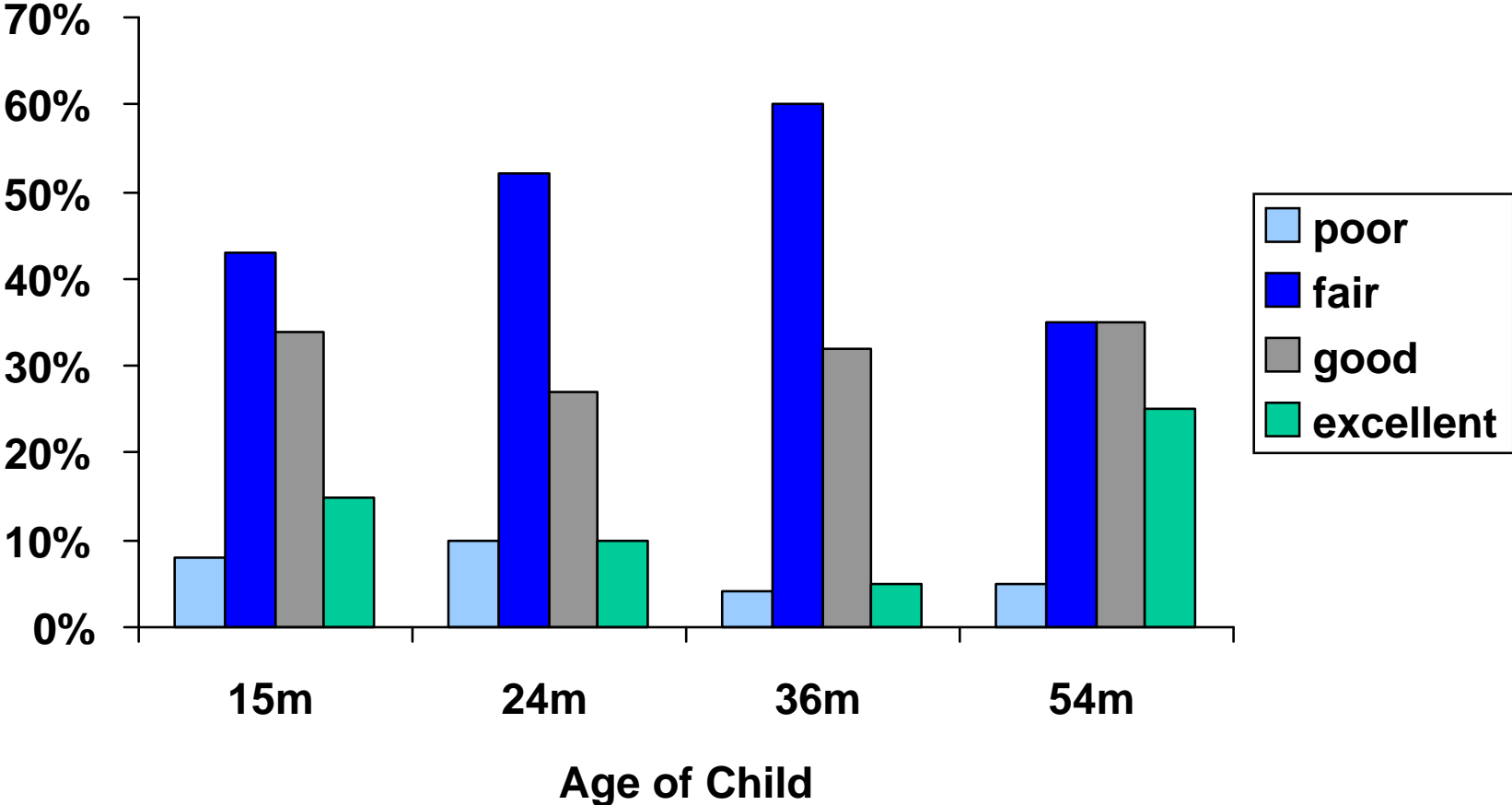
ORCE Ratings of Positive Caregiving

Ratings completed at the end of 5 44-minute cycles at 6, 15, 24, 36, & 54 months.

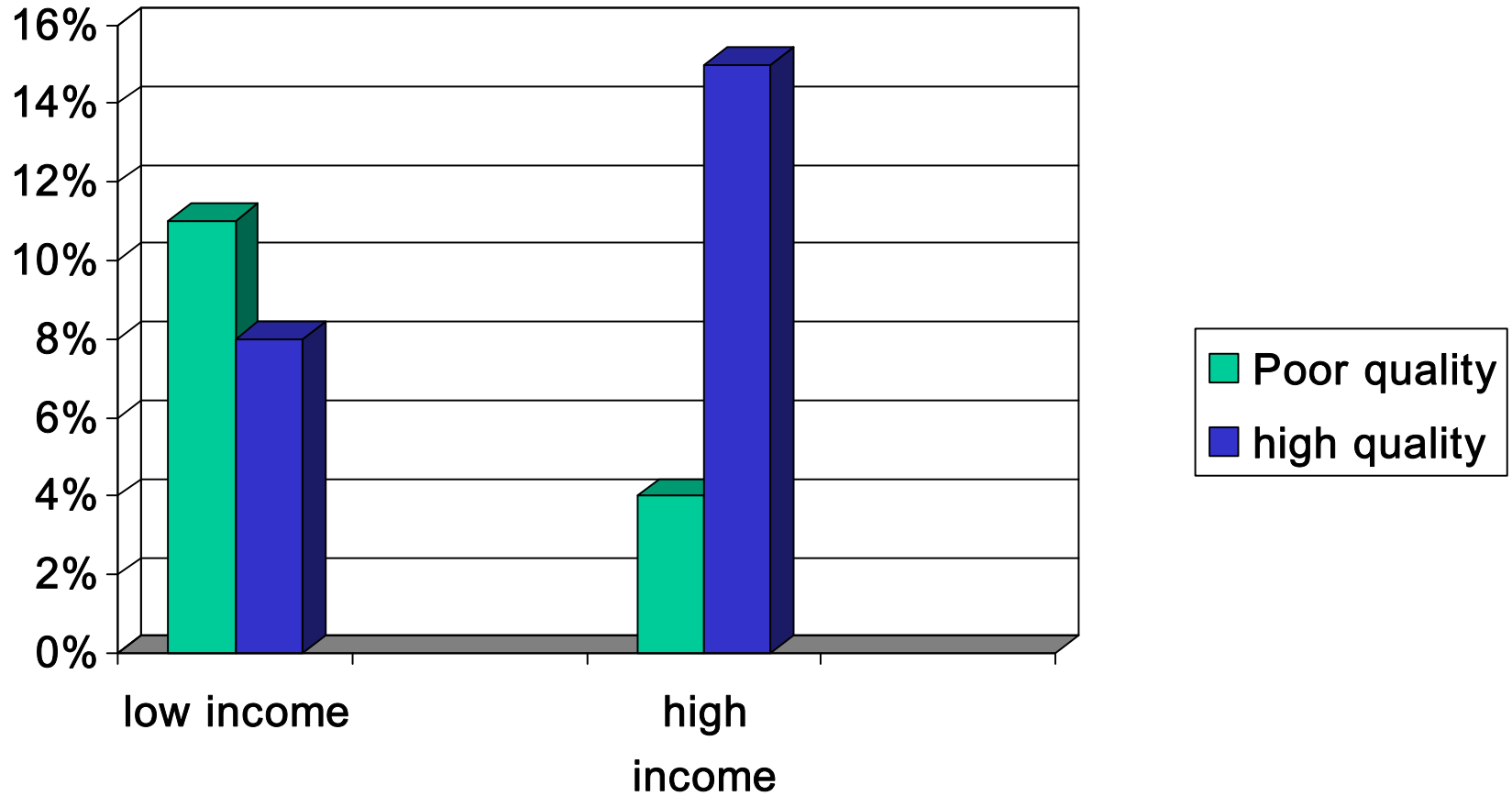
- Sensitivity/responsiveness to nondistressed communication
- Stimulation
- Positive regard
- Detachment/disengagement
- Flat affect
- Intrusiveness
- Fosters exploration

Composites were formed from ratings to create assessment of overall quality of care.

Observed Quality



Inequities in observed child care quality



Potential Associations

■ Short-term

- Assessed prior to kindergarten

■ Longer-term

- Assessed at G3, G5, age 15

Carry forward

Serve as a spring board

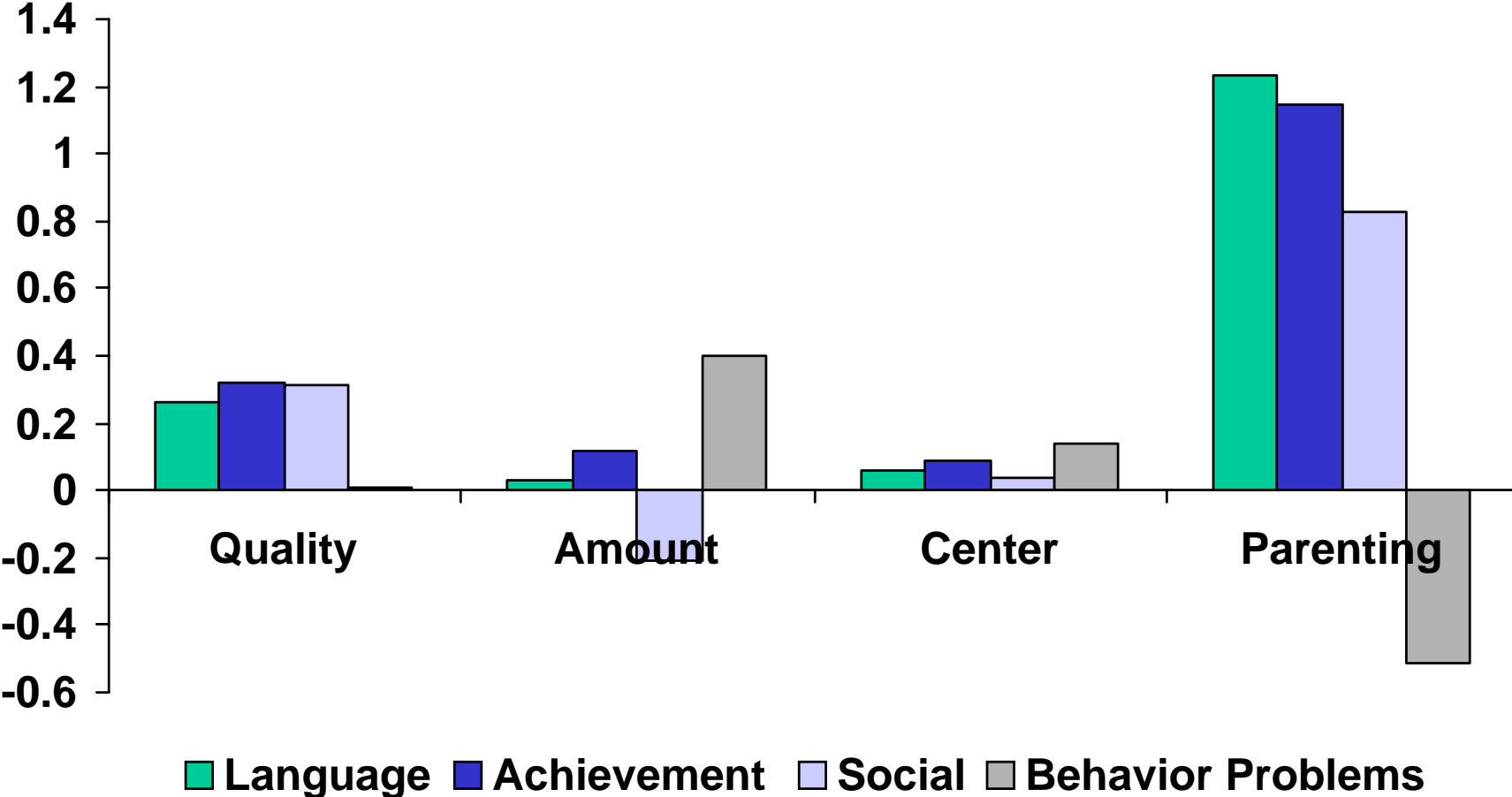
Fade

Emerge (sleepers)

Efforts to Reduce Selectivity and Omitted Variable Biases

- Extensive covariates for child and family background in infancy and early childhood
- Extensive covariates for concurrent experiences at home, school, or after school are included
- Growth curve analyses in which the child can act as his or her own control
- Fixed effects analyses

Child Care and 54m Outcomes - Standardized Mean Differences



Adjusting for site, gender, ethnicity, family income, maternal education and depression

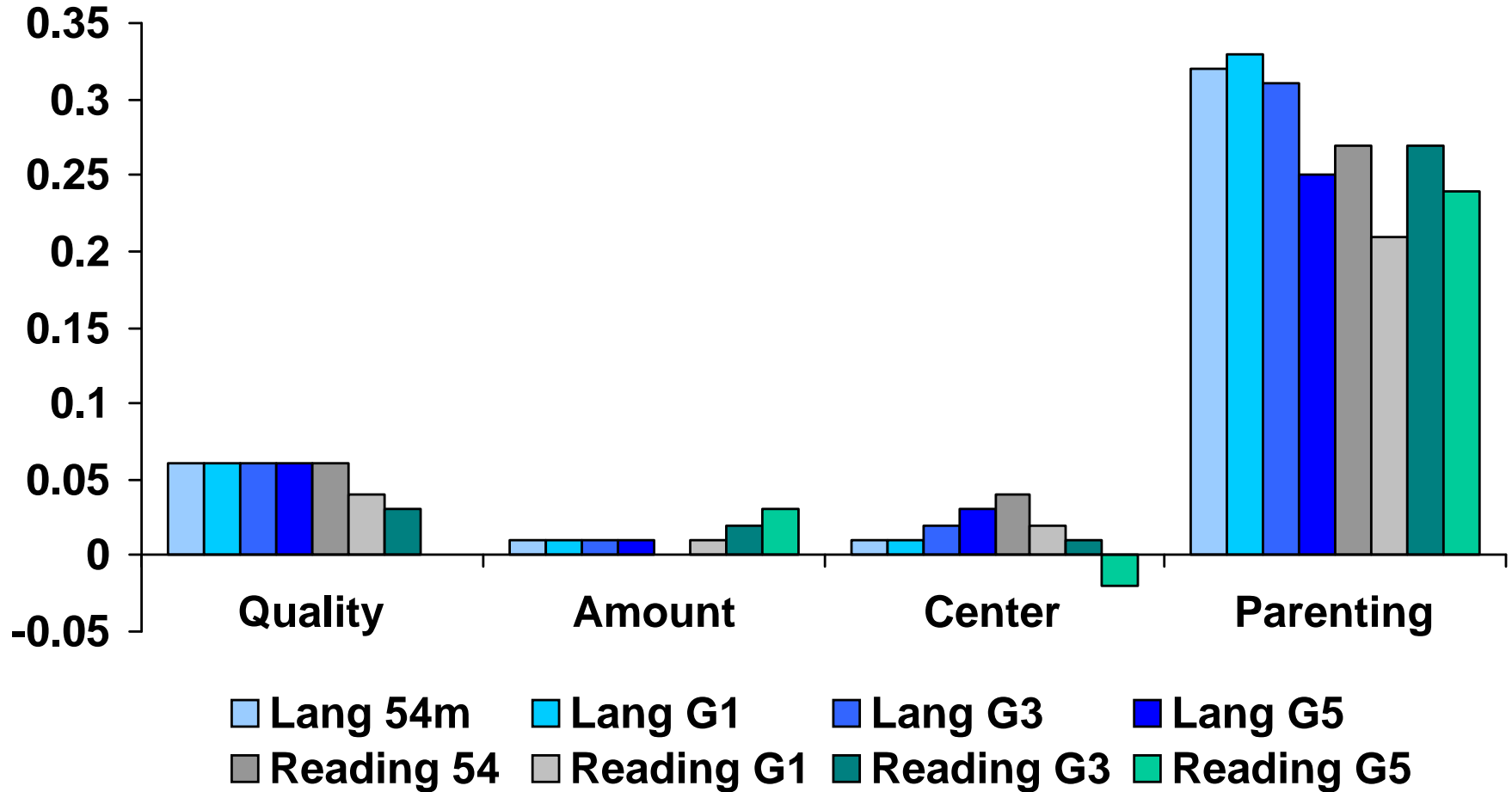
Evaluating the Significance of the Association between Hours and Behavior Problems

- 50 = norming sample mean for the CBCL
- 47.8 = \underline{M} for children in child care ≤ 9 hr/wk
- 49.0 = \underline{M} for children in child care for 10 to 29 hrs/wk
- 51.3 = \underline{M} for children in child care for 30 to 45 hrs/wk
- 53.1 = \underline{M} for children in child care for more than 45 hrs/wk (a third of a SD above the norm)

- 24% of the children in the more than 45 hrs/wk group scored 1 SD above the norm in behavior problems

Child Care and Longitudinal Outcomes

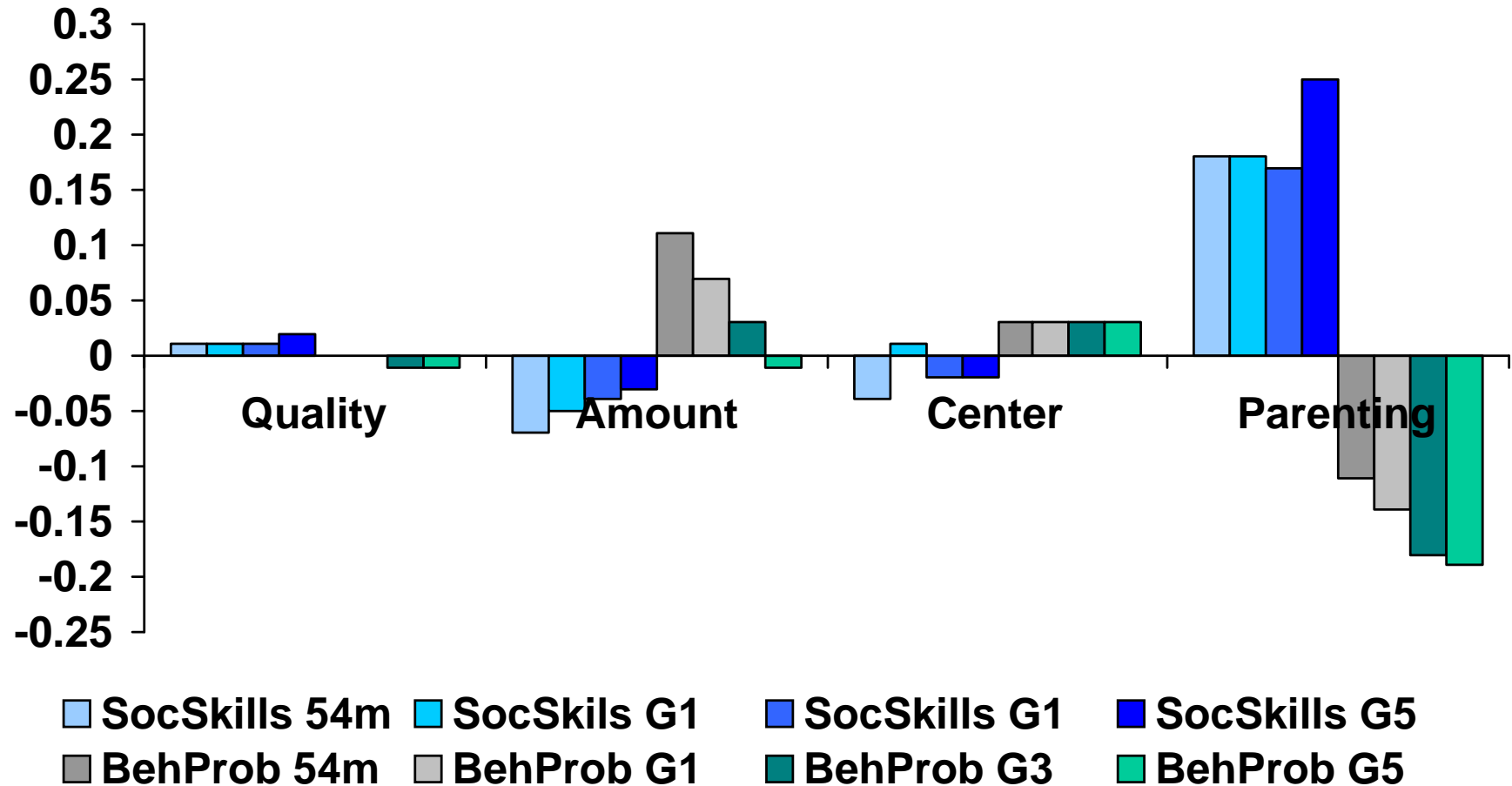
effect sizes computed from regression coefficients



Adjusting for site, gender, ethnicity, family income, maternal education and depression

Child Care and Longitudinal Outcomes

effect sizes computed from regression coefficients



Adjusting for site, gender, ethnicity, family income, maternal education and depression

Fixed Effects Analyses

■ Fixed effect models

- Dependent variables
 - ◆ Standardized cognitive composites at 24, 36, and 54 months
 - ◆ Caregiver ratings of externalizing behaviors at 24, 36, and 54 months
- Child care predictors
 - ◆ hours/wk, quality, whether in center care at 24, 36, and 54m
- Covariates
 - ◆ income, partner status, maternal depression at 24, 36, and 54m
- Fit using SAS GLM with ID in the absord statement as recommended by Allison

Missing Data

Two sources of missing data

- Failure to collect data (likely missing at random)
- Child not in child care (structurally missing)

Approaches for addressing missing data

- Multiple imputation for full data set
 - Reset to missing for children without child care
- Missing value dummy variables
 - Missing teacher ratings remain missing as dependent variable

Fixed Effect Analyses

	Quality	Quantity	Center
<i>Cognitive</i>			
Multiple Imputation (n=1237)	B= 1.33** se=.45	B= .02 se=.02	B= .62 se=.49
Missing Value Dummy Variables (n=904)	B=1.56*** se=.44	B= .03 se=.02	B= .40 se=.51
<i>T-rated Problems</i>			
Multiple Imputation (n=1237)	B= -.91 se=.45	B=.07* se=.03	B= -3.18**se=.77
Missing Value Dummy Variables (n=904)	B= -1.51** se=.58	B=.05 se=.03	B= -1.77* se=.81

Conclusions

- Important to place the findings in context
 - A cohort study of more than 1200 children studied from birth to age 15 years
 - The children were born in 1991 and their early child care experiences were pre-TANF
 - Observed children in whatever types of care the family selected
- Includes middle class children who have experienced lots of child care
- Much of the care was not horrible and not excellent. Most settings were characterized as **NOT** positive caregiving. There was much room for improvement
- Robust (but small) associations between quality of child care and child cognitive outcomes observed through Grade 5
- Robust (but small) associations between hours in child care & behavior problems observed through Grade 5

Possible Policy Implications

■ Strategies to Improve Child Care Quality

- Making ratings of child-care quality available to the public
- Publicly funded incentives to encourage appropriate caregiver training & education, group sizes, and child:adult ratios.

■ Develop employer & public acceptance of part-time and flex-time work that enable families to limit need for extensive (≥ 45 hrs/wk) child care hrs