

**Child Care for Low Income Working Families:  
The Relation between Quality and Child Outcomes**

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## **INTRODUCTION**

While the effects of child care quality on low-income children and parents have been documented, little is known about how local communities might vary in providing child care to low income working families, in the wake of the welfare reforms of the mid-1990's. This research addresses this issue by studying the child care experiences of low-income working parents and their young children (6 mos to 6 yrs). In this paper, we describe the quality level of care used in four communities, and we examine how the quality of child care low-income families use is associated with their child's developmental outcomes (cognitive and social).

Indiana is a state where a high proportion of child care programs are exempt from licensing and in which many child care spending decisions are made at the community level. Indiana child care regulations allow child care ministries (i.e., center-based programs sponsored by churches) to operate without a state license. Yet there has been no systematic investigation of the quality of this relatively unregulated type of care.

Our research employs an integrated design, including existing state- and county-level data, qualitative interview data, and quantitative data to describe and compare "child care landscapes" in four diverse Indiana communities, identifying community-level variables that potentially affect the type and quality of care selected and used by working poor families. In this presentation, we examine linkages between child care characteristics and children's developmental status. This presentation addresses two questions: (1) Does child care quality vary in regulation status (licensed vs. unlicensed)? (2) How is the quality level of child care that low-income working families use related to children's assessed cognitive and social outcomes?

## **SAMPLE**

- Participation criteria:
  - Annual family income less than \$35,000.
  - Head of the household was working at least half time (employed 20 hours per week or more, going to school 20 hours per week or more, or in job-training 20 hours per week or more).
  - Family had a child between 6 months to 6 years old, and the child was enrolled in out-of-home care at least 15 hours per week and for more than 2 months prior to data collection.
  - Family was not enrolled in TANF.
- Sample description:
  - Participants:  $N = 307$  low-income working families of young children (6 mos. to 6 yrs.) and their child care providers. (County sub-samples: St. Joseph,  $n = 78$ , Marion,  $n = 76$ , Allen  $n = 76$ , Lake,  $n = 77$ ).
  - Child's age:  $M = 40$  months (6 to 72 mos.).
  - Child's gender: boys = 152, girls = 153.
  - Child's race: African American (59.0%), European American (23.5%), Other (12.7 %).
  - Family income: two-thirds of the participating families fell below federal poverty level (\$18, 400/yr for four person family).
  - Virtually all children (96.4%) lived with their mothers but only 25.7% lived with

their fathers.

- The most frequent reason given by parents for using child care was allowing parents to work (60.3%).

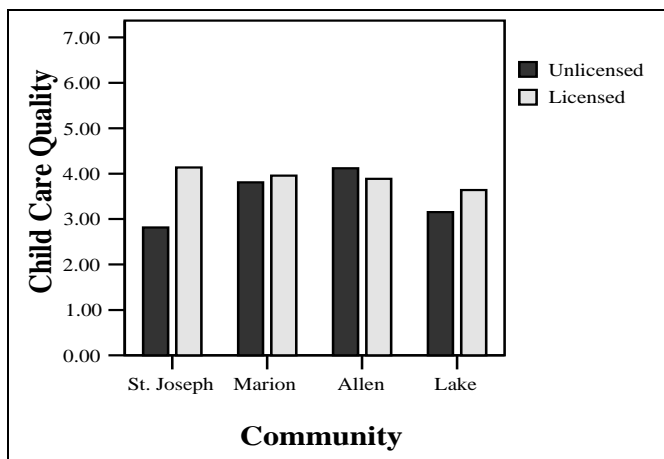
## **METHOD**

- The study was conducted in four urban counties in Indiana: St. Joseph (South Bend), Marion (Indianapolis), Allen (Fort Wayne), Lake (Gary, Hammond, E. Chicago).
- Participants were recruited through government agency offices (e.g., workforce development services, WIC, etc.), in public places (e.g., public libraries, community centers, etc.), and adult schools (vocational-technical, GED classes, state university, etc.).
- Data collection procedures:
  - Research assistants visited the provider and the child in the child care setting, observing for 2 1/2 hours to assess the process and structural quality of the child care setting and the child's social and cognitive development.
  - Parents completed a survey describing their employment, perceptions of child care and work, relationship with the caregiver, and an assessment of the child's social and emotional development.
  - Providers completed a survey describing their education, specialized training, experience in child care work, relationship with the parent and the child, and the provider also rated the child's social and emotional development.

## **RESULTS**

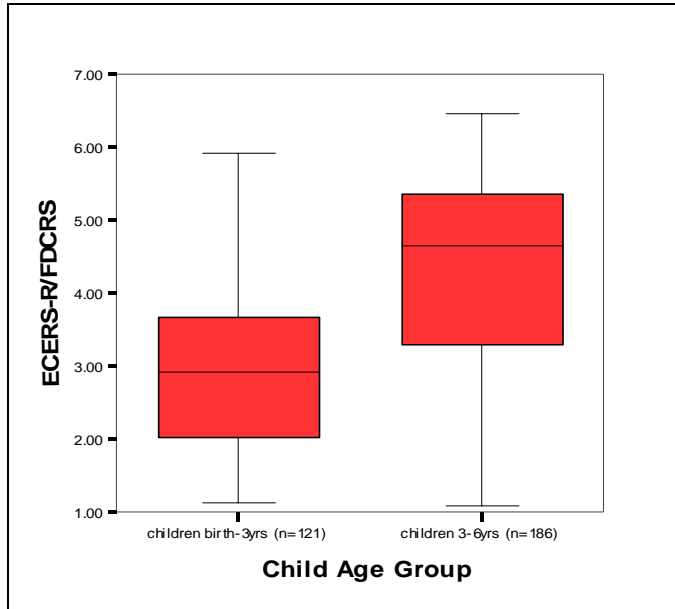
### **Global Child Care Quality-- Variations in Communities and Regulation Status (Licensed vs. Unlicensed)**

Overall, children in licensed child care settings received higher quality care than children in unlicensed settings ( $F(1, 299) = 5.59, p = .019$ ), and the child care quality was not significantly different across communities ( $F(3, 299) = 2.39, p = .069$ ). However, the interaction between type of child care setting (licensed vs. unlicensed) and communities was significant ( $F(3, 299) = 3.18, p = .024$ ). In St. Joseph County, children in licensed child care settings received higher quality care than children in unlicensed settings ( $F(1, 76) = 18.59, p < .001$ ).



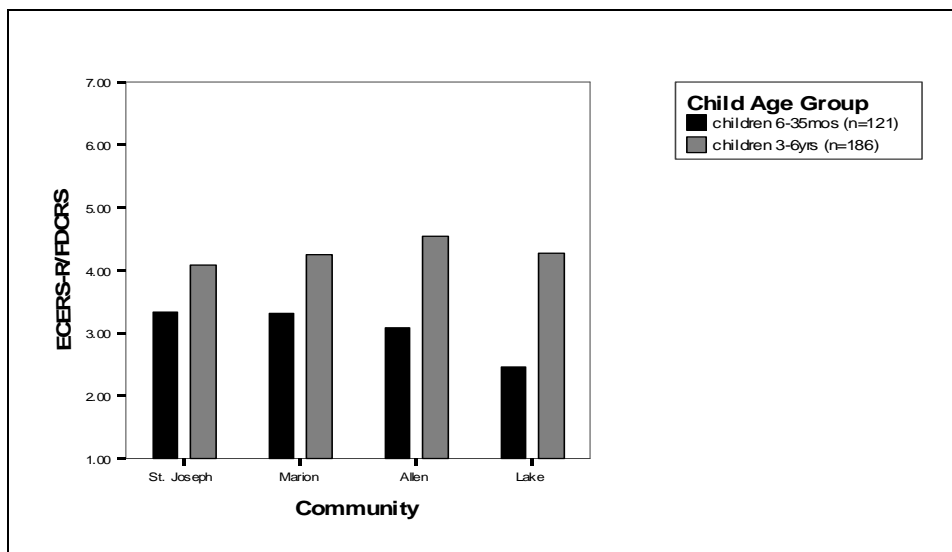
### Global Child Care Quality – Younger vs. Older Children

A significant age effect was found for global child care quality. Older children (3-6 yrs) received higher quality care ( $M = 4.30$ ) than infants and toddlers (6~36 months) ( $M = 3.06$ ,  $F(1, 305) = 67.163$ ,  $p < .001$ ).



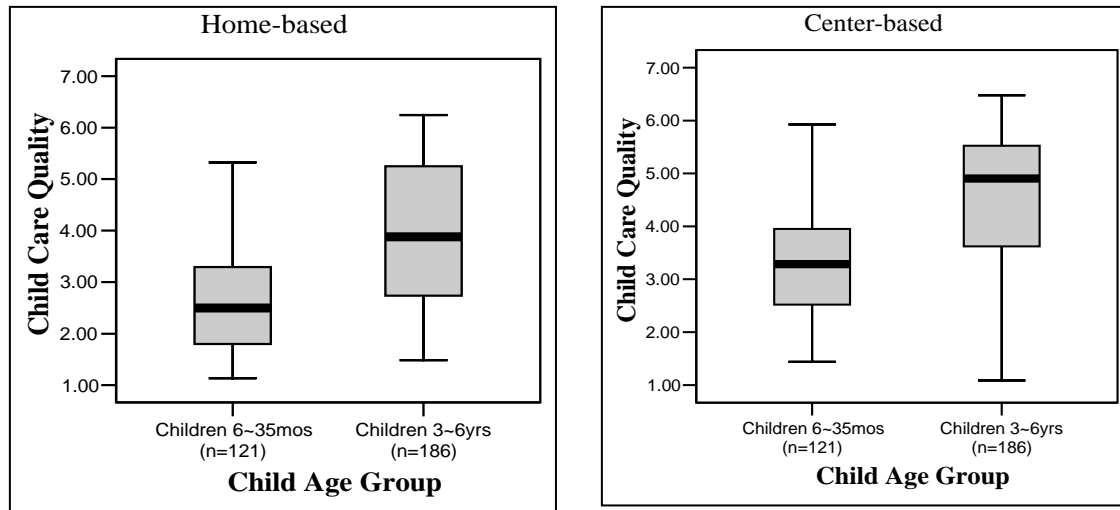
### Global Child Care Quality – Variation in 4 Communities (Younger vs. Older Children)

Older children received better quality care than younger children in all 4 communities. The interaction between child age and community was significant ( $F(3, 299) = 2.608$ ,  $p = .05$ ). There was a quality difference among communities for younger children ( $F(3, 117) = 3.996$ ,  $p = .009$ ), but not for older children ( $F(3, 182) = .869$ ,  $p = .458$ ). Infants and toddlers in St. Joseph and Marion ( $M = 3.33$  for both communities) received significantly better quality of care than infants and toddlers in Lake ( $M = 2.46$ ).

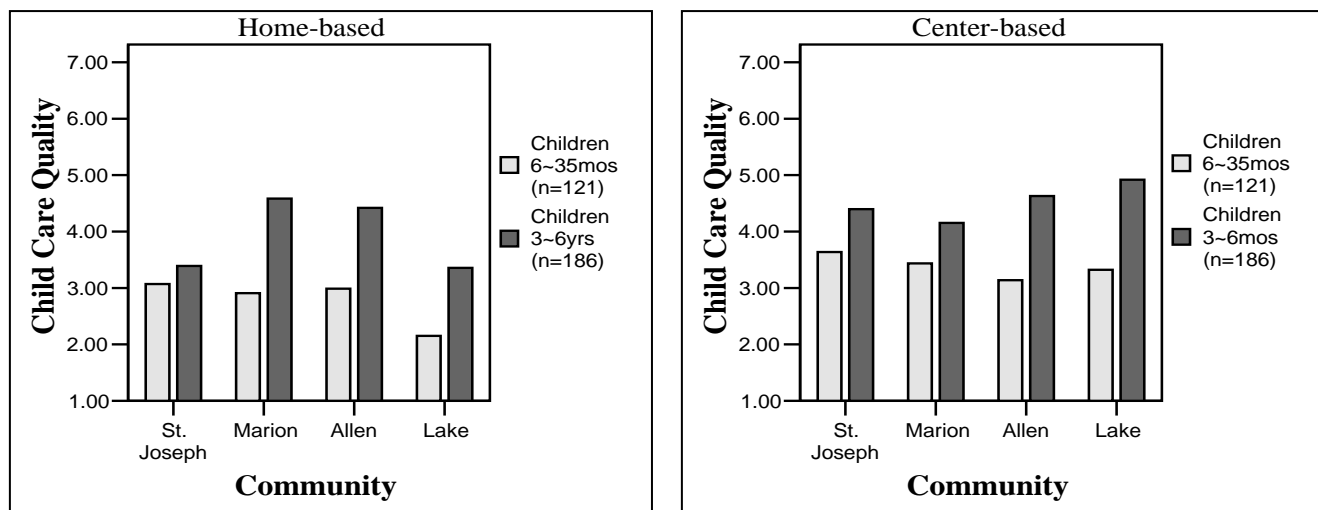


### Global Child Care Quality – Variations in Age Groups (ECERS vs. FDCRS)

There was a significant home-based vs. center-based main effect ( $F(1, 305) = 23.5, p < .001$ ). Children in center-based settings received better quality care than children in home-based settings ( $M = 4.11$  vs.  $3.31$ ). Significant younger-older differences in child care quality were found both within center-based care ( $F(1, 190) = 34.32, p < .001$ ) and within home-based care ( $F(1, 113) = 25.66, p < .001$ ).

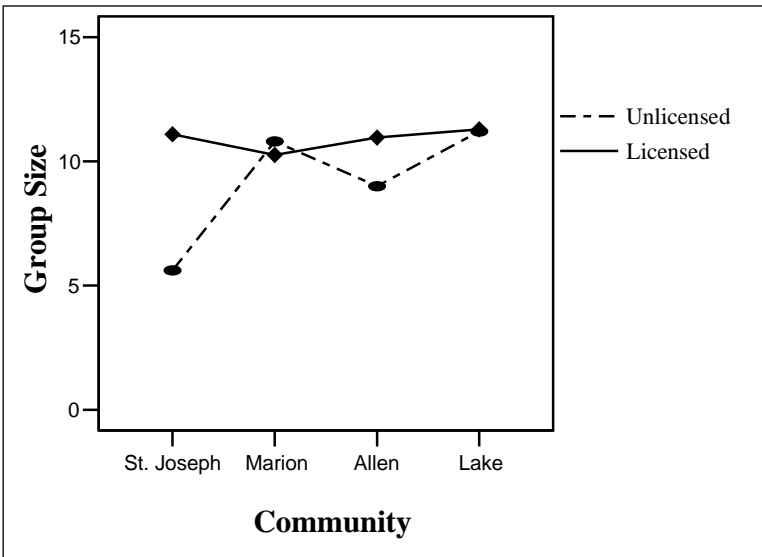


Within home-based child care settings, there were significant age and county main effects ( $F(1,107) = 22.17, p < .001$  and  $F(3, 107) = 4.2, p = .007$ , respectively), but the interaction between age and county was not significant. Post-hoc tests (Tukey) revealed that, for home-based settings, Marion ( $M = 4.03$ ) and Allen ( $M = 3.9$ ) Counties provided higher quality care than Lake County ( $M = 2.71$ ). In addition, older children received higher quality care ( $M = 3.88$ ) than younger children ( $M = 2.66$ ). Within center-based child care settings, there was a significant main effect of child age ( $F(1, 184) = 31.62, p < .001$ ). Older children received higher quality care in center-based settings ( $M = 4.5$ ) than younger children ( $M = 3.37$ ). County main effect and interaction effect between child age and county were not significant.



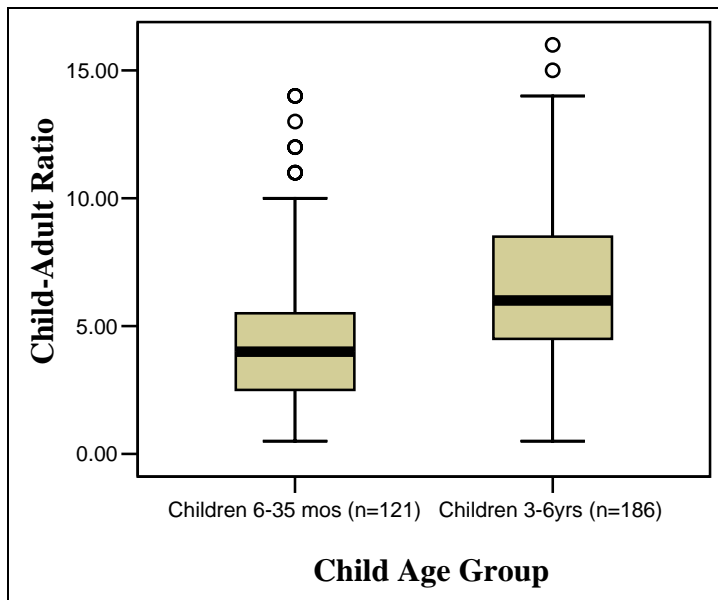
### Structural Quality--Group Size (Licensed vs. Unlicensed)

Group size did not significantly vary across counties ( $F(3, 287) = 2.33, p = .075$ ) but was significantly higher in licensed child care than in unlicensed child care ( $F(1, 287) = 5.10, p = .025$ ). The interaction between county and type of child care setting (licensed vs. unlicensed) was also significant ( $F(3, 287) = 3.19, p = .024$ ), with the greatest difference in group size between licensed and unlicensed care in St. Joseph and Allen Counties.



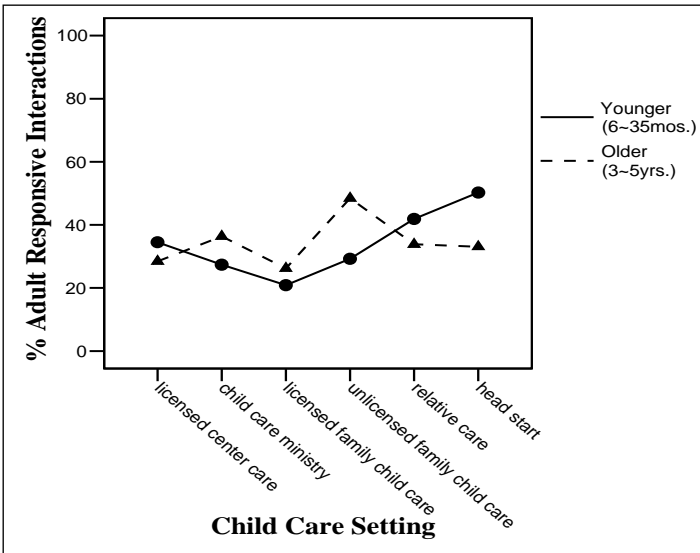
### Structural Quality – Child-Adult Ratio (Younger vs. Older Children)

There was an age difference in child-adult ratio ( $F(1, 280) = 21.501, p < .001$ ). The child-adult ratio for younger children (birth to 3 yrs) was significantly lower ( $M = 4.66$ ) than the ratio for older children (3 to 6 yrs) ( $M = 6.39$ ). The overall mean was 5.71. For child-adult ratio, there were no differences among communities.



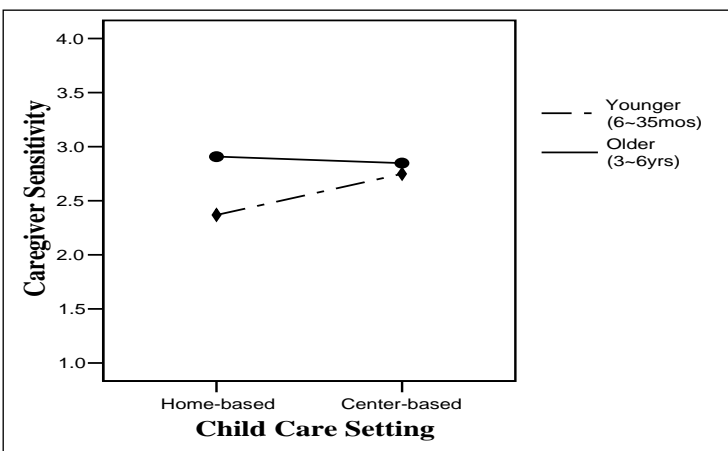
### Process Quality-- Adult Responsive Interactions (Younger vs. Older Children)

Overall, there was no difference in adult responsive interactions between age groups. However, within the sample of younger children (6 mos to 3 yrs) the proportion of adult responsive interactions was significantly different across child care settings ( $F(5, 115) = 2.48, p = .036$ ). Post-hoc tests (LSD) revealed that, for younger children, adults interacted significantly more responsively in licensed child care centers ( $M = 34.49\%$ ) and Head Start classrooms ( $M = 50.24\%$ ) than in licensed family child care homes ( $M = 20.87\%$ ) and also adults interacted more responsively in Head Start classrooms than in child care ministries ( $M = 27.37\%$ ). No significant difference was found for children older than 3 yrs.



### Process Quality-- Caregiver Sensitivity (Home-based vs. Center-based)

Overall, observed caregiver sensitivity (using the CIS) was significantly higher for older children than for younger children ( $F(1, 302) = 29.63, p < .001$ ) and higher in center-based child care settings than in home-based settings ( $F(1, 302) = 6.26, p = .01$ ). The interaction between child age and type of child care setting (home-based vs. center-based) was also significant ( $F(1, 302) = 11.81, p = .001$ ). Within the sample of younger children (6 mos to 3 yrs) caregiver sensitivity was significantly higher in center-based care than in home-based settings ( $F(1, 118) = 10.57, p = .001$ ), whereas no home-based/center-based difference in sensitivity was found for children older than 3 yrs.



## Child Outcome Measures

### Younger Children: 6 ~ 35 mos.

Question Domain	Measure	Source
Social-emotional competence and behavioral problems	Brief Infant Toddler Social and Emotional Assessment (BITSEA)	Briggs-Gowan, M. J., & Carter, A. S. (2001). The Brief Infant Toddler Social and Emotional Assessment (BITSEA).
Cognitive functioning	Mullen Scales of Early Learning	Mullen, E. M. (1995). Mullen scales of early learning. MN: American Guidance Service.

### Older Children: 3 ~ 5 yrs.

Question Domain	Measure	Reference
Social and cognitive skills	Classroom Behavior Inventory (CBI)	Schaefer, E. S., & Edgerton, M. (1978). <i>Classroom behavior inventory</i> . Chapel Hill: University of North Carolina.
Social competence, emotion regulation and expression, and adjustment difficulties	Social Competence and Behavior Evaluation (SCBE-30)	LaFreniere, P. J., & Dumas, J. E. (1996). Social competence and behavior evaluation in children ages 3 to 6 years: The short form (SCBE-30). <i>Psychological Assessment</i> , 8, 369-377.
Receptive vocabulary	Peabody Picture Vocabulary Test (PPVT-III)	Dunn, L. M., & Dunn, L. M. (1997). PPVT-III: Peabody Picture Vocabulary Test (3 <sup>rd</sup> ed.). MN: American Guidance Service.
Knowledge of social environment	Family And Child Experiences Survey (FACES): Social Awareness Task	FACES Research Team, modified from the Social and Communicative Competence tasks in: Jana M. Mason & Janice Stewart. (1989). <i>The CAP Early Childhood Diagnostic Instrument (prepublication edition)</i> . American Testronics.
Knowledge of colors and counting ability	Family And Child Experiences Survey (FACES): Color Name & Counting	FACES Research Team, modified from the Color Concepts and Number Concepts tasks in: Jana M. Mason & Janice Stewart. (1989). <i>The CAP Early Childhood Diagnostic Instrument (prepublication edition)</i> . American Testronics.



**Child Outcomes: Descriptive Statistics****Younger Children (6 ~ 35 mos.)**

			Mean	Median	SD	Min	Max
Social	BITSEA (0 ~ 2)	Parent report	1.68	1.68	.13	1.15	1.95
		Provider report	1.69	1.71	.15	1.03	1.95
Cognitive	Mullen Scales of Early Learning (T scores: M = 50, SD = 10)		85.14	87	15.97	56	143

**Older Children (3 ~ 5 yrs.)**

			Mean	Median	SD	Min	Max
Social	CBI (1 ~ 5)	Parent report	3.72	3.74	.39	2.5	4.62
		Provider report	3.62	3.64	.54	2.17	4.95
	SCBE (1 ~ 6)	Parent report	4.68	4.74	.48	3.2	5.77
		Provider report	4.69	4.77	.58	3.07	5.83
Cognitive	PPVT-III (Std. scores: M = 100, SD = 15)		87.49	89	17.2	29	132
	FACES Social Awareness Task (0 ~ 5)		3.46	4	1.38	0	5
	FACES Color Name (0 ~ 20)		14.5	18	6.88	0	20
	FACES Counting (1 ~ 5)		3.86	5	1.55	1	5

### Child Outcome Composite Variables

For older children, we had 6 cognitive outcome variables (i.e., PPVT-III, FACES social awareness task, FACES color name, FACES counting, CBI academic competence – parent & provider reports) and 4 social outcome variables (i.e., parent & provider reports of CBI extroversion, CBI considerateness, and SCBE). Using Principal Components Analysis, we created 4 composite variables (2 for cognitive competence and 2 for social competence).

Cognitive Competence	Composite 1	PPVT-III, FACES social awareness task, FACES color name, & FACES counting
	Composite 2	CBI academic competence – parent & provider reports
Social Competence	Composite 3	Parent reports – CBI extroversion, CBI considerateness, & SCBE
	Composite 4	Provider reports – CBI extroversion, CBI considerateness, & SCBE

### Significant Zero-Order Correlations between Quality Variables and Child Outcome Composite Variables

Only cognitive competence of both younger and older children was significantly associated with child care quality variables. For younger children, the global child care quality and adult responsive interactions were positively related to children's cognitive development. For older children, the global child care quality, group size, and adult responsive interactions were positively associated with children's cognitive development.

Quality Variable	Child Outcome						
	Younger Children (3~35 mos.)		Older Children (3~5 yrs.)				
	Cognitive Competence	Social Competence	Cognitive Competence	Social Competence			
	Mullen	BITSEA (parent)	BITSEA (provider)	Composite 1	Composite 2	Composite 3	Composite 4
ECERS/FDCRS	.33**			.39**			
Group Size				.25**			
Child-Adult Ratio							
Adult Responsiveness							
CIS (Arnett)	.28**			.18*			

\*  $p < .05$ , \*\*  $p < .01$

### Multiple Regressions Predicting Child Outcomes Using Quality Variables

For younger children, the global child care quality and child's age in months were significant predictors of children cognitive competence. The predictor variables explained 35% of the variance in younger children's cognitive competence. For older children, female head's educational level was a significant predictor of children's cognitive competence, and the global child care quality was marginally significant predictor ( $t = 1.88, p = .06$ ). The predictor variables explained 17% of the variance in older children's cognitive competence.

#### Younger Children's Cognitive Competence (Mullen)

	B	SE B	Std. Beta	t	R-square
Intercept	-3.48	.58		-6.06***	
Child Age in Months	.05	.01	.48	7.13***	
Mother Education	.07	.06	.07	1.13	.35
ECERS-R/FDCRS	.19	.07	.27	2.97**	
Group Size	-.01	.01	-.04	-.48	
CIS (Arnett)	-.02	.18	-.01	-.12	

\*\*  $p < .01$ , \*\*\*  $p < .001$

#### Older Children's Cognitive Competence (Composite 1)

	B	SE B	Std. Beta	t	R-square
Intercept	56.16	9.16		6.13***	
Child Age	-.06	.18	-.03	-.32	
Mother Education	3.87	1.57	.22	2.47*	.17
ECERS-R/FDCRS	3.3	1.75	.24	1.88	
Group Size	.25	.41	.06	.60	
CIS (Arnett)	3.28	3.22	.14	1.02	

\*  $p < .05$ , \*\*\*  $p < .001$

## **CONCLUSIONS**

- Overall, children from low-income working families in licensed child care settings received higher quality care than in unlicensed child care settings. This difference was most pronounced in St. Joseph County, in which more than 40% of our sample used unlicensed forms of care.
- Infants and toddlers received lower quality care than preschool-age children in overall, and particularly in center-based programs.
- The quality levels of home-based child care settings were generally lower than center-based settings, as assessed with the FDCRS and ECERS-R scales. However, this was not true for one measure of process quality, observed responsive adult-child interaction, where unlicensed family child care had the highest levels of all types of care.
- The quality of infant-toddler care was generally low in these samples.
- Within home-based settings, global quality was higher in Marion and Allen Counties than in Lake County.
- Average group sizes varied considerably across counties in unlicensed care settings, ranging from more than 10 children in one community to less than 6 in another.
- Group sizes in licensed care settings were generally higher than in unlicensed care settings.
- Overall, the relative frequency of adult responsive interactions did not differ between age groups. However, younger children experienced adult responsive interactions more often in licensed child care centers and Head Start programs than in licensed family child care and child care ministries.
- Caregiver sensitivity was significantly higher for older children than for younger children.
- Children's cognitive outcomes were significantly and moderately associated with quality variables for both younger and older children including global quality, group size, and caregiver sensitivity. Social outcomes were not related to any of the quality variables. Yet to be examined are cross-community variations in the correlation of child care quality with child outcomes.
- Community contexts and types of child care are potentially important variables when addressing child care quality and child outcomes. These are preliminary conclusions, by necessity somewhat speculative. The volunteer samples in each community do not necessarily represent the child care used by all low income working families. Therefore any conclusions should be considered hypotheses for further research and in policy discussions.