

The Relation Between Poverty and Maternal Sensitivity During

Interactions with 7-Month-Old Infants

Kajsa Kirby, University of Denver Department of Psychology



Background

Research suggests that chronic stress, such as living in poverty, contributes to maternal positive regard, intrusiveness, and responsiveness when interacting with their infants.^{1,2,4} Poverty is also believed to impact maternal stimulation of development, as mothers living in poverty have been observed to engage less in reading, conversation, and school activities with their children.³

Maternal Sensitivity Composite Score:

- *Positive regard*: A mother's positive expressiveness towards her child.
- *Intrusiveness*: A mother's prioritization of her own agenda regardless of the distress it inflicts on the child.
- *Responsiveness*: A mother's level of appropriate and prompt responsiveness to her infant's cues.

Stimulation of Development Score:

- *Stimulation of development*: A mother's effort to foster her child's development.

Research Question & Hypothesis

Research Question: How is Income-to-Needs Ratio (INR) associated with (1) maternal sensitivity during mother-child interactions and (2) stimulation of development during mother-child interactions?

Hypotheses: INR would be associated positively with maternal sensitivity measured as 1) a composite of maternal intrusiveness, positive regard, and responsiveness and 2) stimulation of development.

Methods

Table 1. Participant Demographics (Collected during Trimester 1)

Participants: 68 mother-child pairs who partook in the CARE project.

Child Characteristics	Mean or N	Standard Deviation (SD) or %	
Age	6.3 months	0.49	
Female	37	0.54	
Maternal Characteristics		Valid Percent (%)	
Ethnicity	Latinx	30.36	
Race	White, European, Middle Eastern, North African	65.7	
	Black, African American, Haitian	14.9	
	Asian	1.5	
	American Indian, Alaska Native	4.5	
	Native Hawaiian, Other Pacific Islander	1.5	
	More than one race	11.9	
Cohabitation Situation	Living with biological father of baby	80.6	
	Not living with a partner	19.4	
Maternal Characteristics	Mean	Median	SD
Age	30.33	30	5.26
INR	3.77	3.39	2.81
Income	89498.46	80000	64610.37

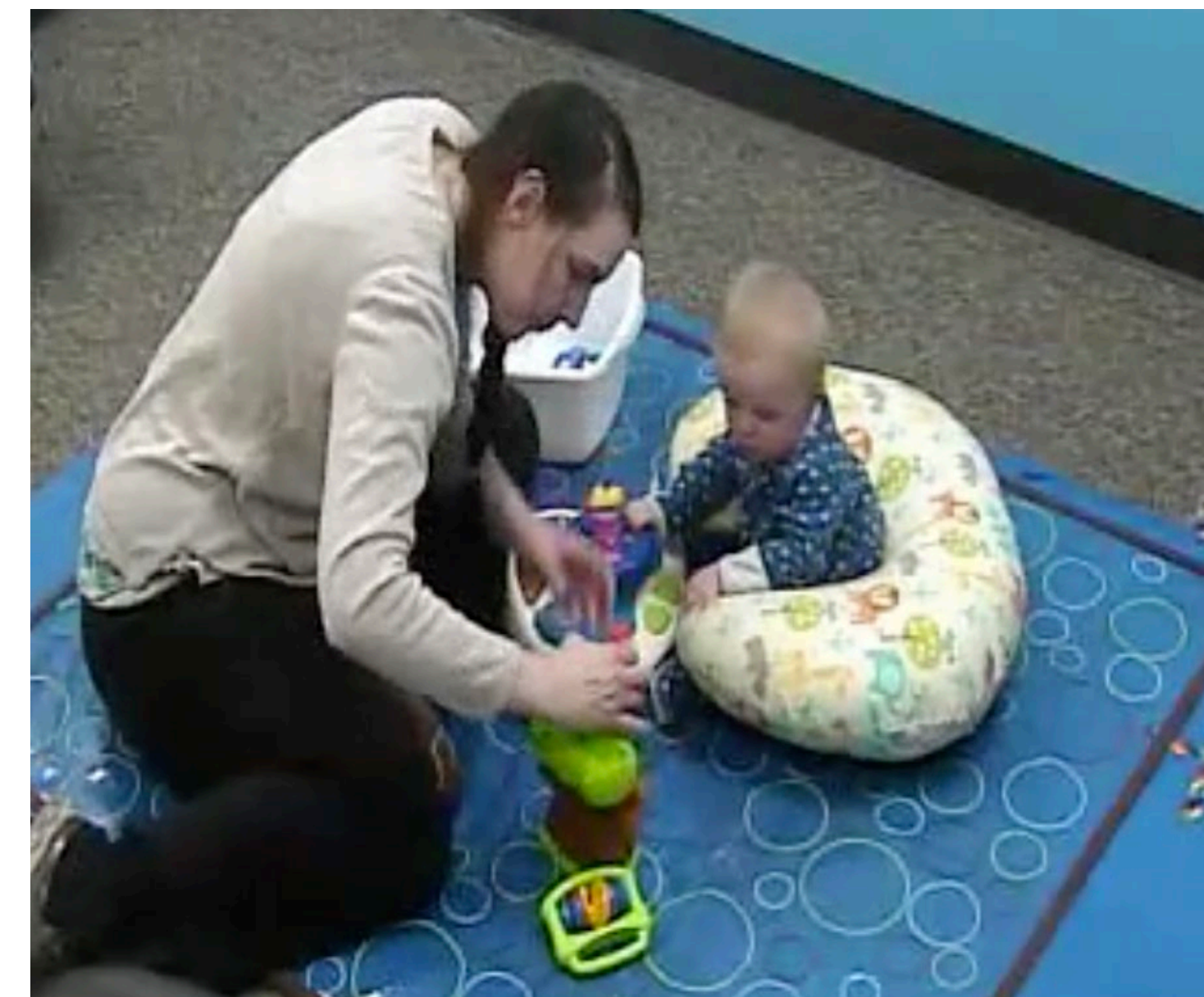


Figure 1: Mother-Child Interaction

Mother-Child Interactions.

- Mothers were instructed to play freely with their 7-month-old infants for 10 minutes without interruption (toys were provided).

Measures.

- INR: The percent of poverty line was calculated by dividing the income by the poverty guideline (based on the year and number of adults and children in the household). This value was then divided by 100 to determine INR.
- A composite score of responsiveness, positive regard, and intrusiveness (inverse coded), determined overall maternal sensitivity for each mother.

Data Analysis Plan.

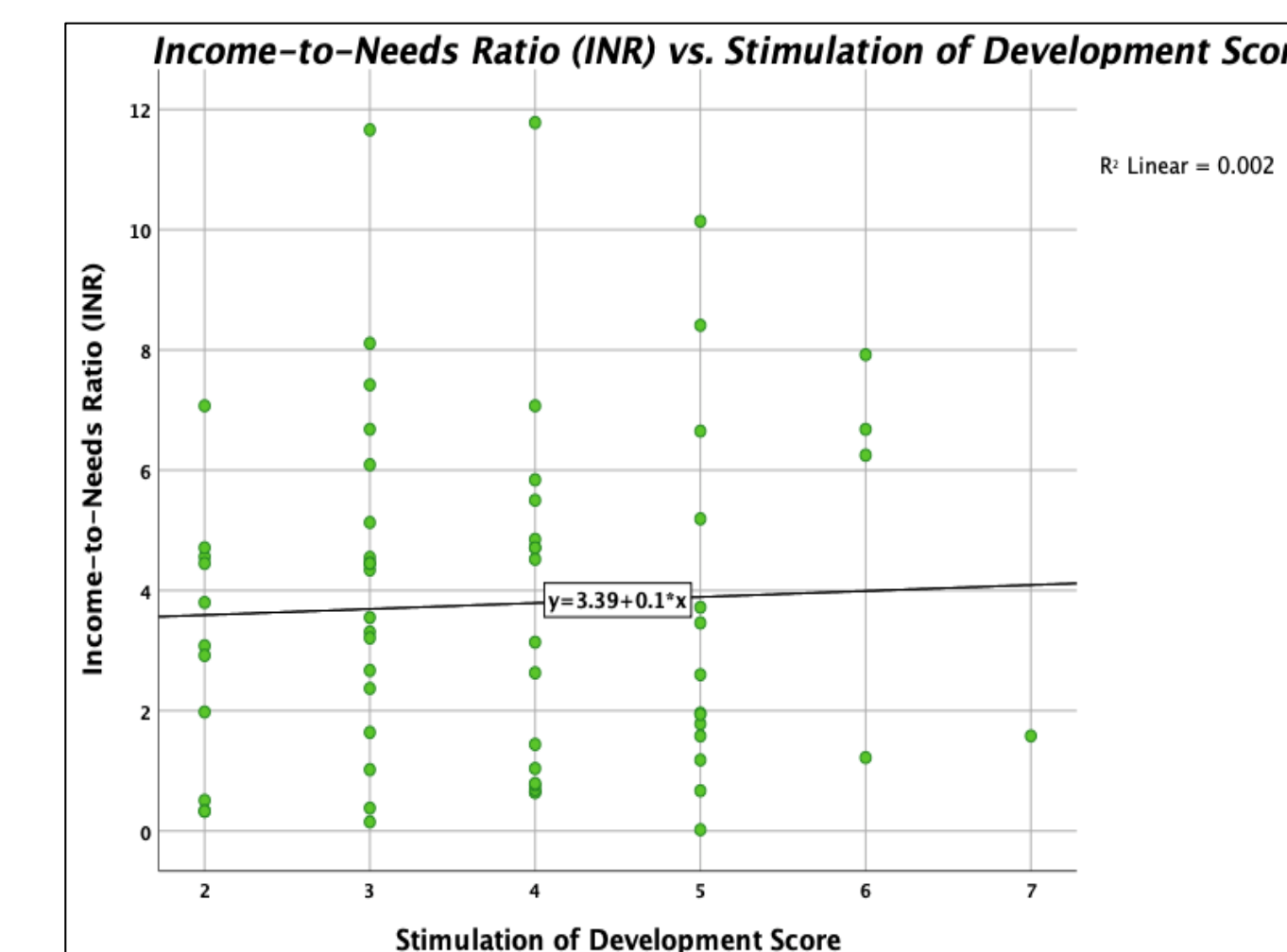
- The relation between poverty and maternal sensitivity during 7-month interactions was assessed. Bivariate correlation coefficients (r), and p -values were calculated to evaluate the relation between INR and composite maternal sensitivity scores ($\alpha < .05$).
- The same procedure was performed to examine the relation between INR and stimulation of development.
- Data analysis was completed using SPSS version 26.

Results

Table 2. INR vs. Composite Maternal Sensitivity and Stimulation of Development Scores

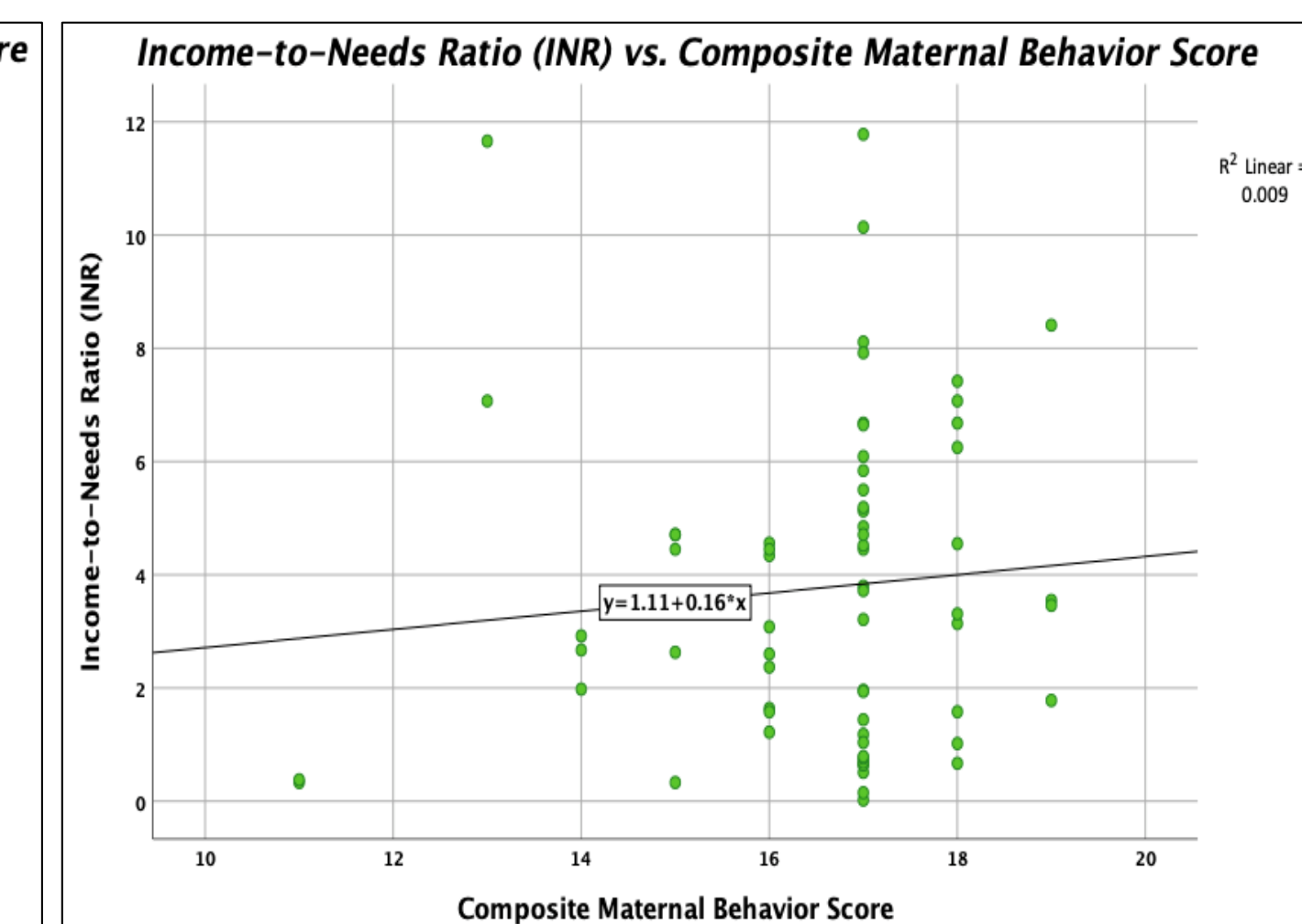
	Mean	SD
INR	3.77	2.18
Composite Maternal Sensitivity Score	16.58	1.64
Stimulation of Development Score	3.78	1.23

Figure 1. INR vs. Composite Maternal Sensitivity Score Scatterplot



The composite maternal sensitivity score was not correlated with INR ($r = 0.09$, $p = 0.46$).

Figure 2. INR vs. Stimulation of Development Score Scatterplot



The stimulation of development score was not correlated with INR ($r = 0.04$, $p = 0.73$).

Discussion

- Contrary to hypotheses, results indicate that there was no relation between INR and 1) composite maternal sensitivity or 2) stimulation of development. This may be because poverty is not one of the primary sources of chronic stress that is positively correlated with maternal sensitivity.
- Limitations include the small sample size, a sample that is not representative of the US population, and age of the child during interaction. Poverty has exhibited a negative impact on the cognitive and social abilities of children as young as 2 years old, but at 7-months of age the relation might not be apparent yet.⁴
- Future studies are necessary to understand the influence that poverty may have for mother-child interactions – Potential factors to examine include race, ethnicity, or cohabitation status. Studies have demonstrated that contextual factors, such as poverty leading to increased maternal stress and social support, are associated with parent responsiveness.¹
- Other potential influences to evaluate may include the effects of mental illnesses on maternal sensitivity (e.g., depression) as infants of depressed mothers are more likely to struggle with participating in social and object interactions, exhibited by behaviors such as looking less at the mother and playing less with toys as early as 2 months of age.⁴

Acknowledgements

Thank you to the CARE grant; the PINS committee for awarding me this grant; my fellow advisor, Sarah Dwyer Perzow, Ph.D.; and lab director Elysia Poggi Davis, Ph.D..

References

1. Evans, Boxhill, & Pinkava, 2008
2. Mcfadden & Tamis-Lemonda, 2013
3. McCandless, 2016
4. Petterson & Albers, 2001