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Maternal Sensitivity: from the child to the neighborhood



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ABSTRACT

- The purpose of this study was to explore the possible association between maternal sensitivity and distal factors such as neighborhood quality.
- 480 mother-child dyads were videotaped during a naturalistic interaction. Maternal sensitivity was assessed from video-tapes using the Maternal Behavior Q-sort (MBQS; Pederson & Moran, 1995).
- Results of a hierarchical regression showed that maternal sensitivity was associated with:
 - **child** characteristics (e.g. infant weight),
 - **maternal** characteristics (e.g. age and depression) and
 - **family** attributes (e.g. household income).
- Interviewers' ratings of **neighborhood challenge** and mothers' report of **neighborhood quality** were found to significantly relate to maternal sensitivity and explained additional variance.
- Results indicate that mothers' ability to parent sensitively is hindered in contexts where the neighborhood challenges are great. These findings have important implications for policy interventions at the neighborhood level to promote maternal sensitivity.

BACKGROUND

- Maternal behavior that is sensitive to infants' signals has been shown to foster positive outcomes in child development across multiple domains (e.g. Bornstein & Tamis LeMonda, 1989; Spangler et al., 1994) and to have enduring consequences (Cassidy & Shaver, 1999).
- While many investigators have shown associations between maternal sensitivity and proximal factors such as maternal depression (e.g. NICHD, 1999) and child characteristics such as temperament and neonatal health (e.g., Van Bakel & Riksen-Walraven, 2002), less is known about its association with more distal factors.
- The few studies that have examined distal factors focused on family characteristics such as the quality of the marital relationship (Grych, 2002), social support (Cutrona & Suhr, 1990) negative life events (Mertesacker et al., 2004) and maternal state of mind thereby implicating mothers' developmental history such as the experience of trauma (Bailey et al., 2007).

CURRENT STUDY

•The purpose of this study was to explore the possible association between maternal sensitivity and ecological factors and whether, after controlling for child, maternal and familial characteristics, this association explained additional variance in maternal sensitivity.

•To date no study has examined the association between maternal sensitivity and neighborhood quality.

Methodological Strengths:

Methodological strengths of this study include **observed ratings** of the neighborhood and of maternal behavior.

METHOD

Sample

•480 families were drawn from the full sample of the Kids, Families and Places Study which is an ongoing prospective study of newborns, older siblings and their families in Canada (Toronto and Hamilton). Families were recruited through the Public Health Units and were enlisted in the study if the newborn was full term, the mother spoke enough English to engage in a conversation, and the family had at least one other child. This study analyzed data from the completed wave 1 data collection.

•Infant age ($M= 2$ months, $SD= 1$ month); Infant gender: 50% boys

Measures

Outcome Variable:

•Maternal sensitivity: Maternal Behavior Q-Sort (MBQS; Pederson & Moran, 1995), coded from videotapes

Proximal Factors:

Child characteristics:

- Infant age, gender and weight at birth; mother report
- Infant temperament: Infant Characteristics Questionnaire (Bates et al., 1979), mother report

Maternal and Family characteristics:

- Maternal age at first pregnancy, educational attainment and household income: mother report
- Maternal depression: CESD (Radloff, 1977) mother report

Distal Factors:

Ecological factors:

- Neighbourhood challenge: Neighborhood Cluster Observation Schedule (McGuire, 1997), interviewers' observations
- Neighborhood safety, control, cohesion and trust: scales from the Project on Human Development in Chicago Neighborhoods (Sampson et al., 1997), mother report

RESULTS

Statistical analyses.

The data were analyzed using hierarchical regression to examine the amount of variance in maternal sensitivity attributable to proximal and distal factors.

Table 1. Descriptive statistics for all variables

	N	Min	Max	Mean	Std. Deviation
Maternal sensitivity	480	-.92	1	.32	.47
Infant temperament	480	1	6	3.5	.97
Infant weight (Kg)	480	1.6	6	3.4	.50
Age mom at first pregnancy	480	16	45	29	5.1
Years of education	480	8	22	15	2.7
Household income	480	2	16	12	4.5
Depression	480	.0	40	7.0	7.4
Neighborhood challenge	480	1	4	1.8	.58
Social control	480	1	5	3.7	.90
Social cohesion	480	1	5	3.8	.65
Neighborhood safety	480	.0	4	.35	.63

Table 2. Summary of hierarchical regression analysis predicting maternal sensitivity

Variables	B	SE _B	B	ΔR ²	Sig. ΔR ²	T
Step 1						
Constant	0.54	0.17		0.01	.05	0.4
Infant weight	0.10	0.05	0.10*			2.1
Infant temperament	-0.03	0.02	-0.06			-1.4
Step 2						
Maternal age – first pregnancy	-0.01	0.05	-0.07	0.07	.000	-1.7
Maternal education	0.02	0.01	0.09			1.7
Household income	0.03	0.10	0.23**			4.0
Maternal depression	0.004	0.003	-0.06			-1.1
Step 3						
Neighborhood challenge	-0.16	0.05	-0.2**	0.04	.000	-3.4
Neighborhood cohesion	-0.03	0.05	-0.05			-0.7
Neighborhood safety	0.11	0.04	0.14**			3.2
Neighborhood control/trust	0.00	0.03	-0.01			0.03

R² final model = 12%

F(1,468) final model = 6.40**

* $p < .05$; ** $p < .01$

DISCUSSION

• The current study examined the association between maternal sensitivity and distal factors such as neighborhood quality. Previous research that has examined distal influences on maternal sensitivity has focused on family-level factors while ecological factors, such as the quality of the neighborhood, have been neglected.

• Significant associations were found between maternal sensitivity and characteristics specific to the child, mother and familial environment. After controlling for these characteristics, observed neighborhood challenge was found to explain additional variance in maternal sensitivity.

• Maternal sensitivity was lowest ($M= .11$, $SD= .54$) in context of high neighborhood challenges (1 SD above the mean, $N=91$); while it was highest ($M=.37$, $SD=.44$) in context of low neighborhood challenge (1 SD below the mean, $N=389$).

• Findings from this study demonstrate that:

- attributes of the ecology explain variance in maternal sensitivity, above and beyond the influence of child, mother and familial characteristics.

• Findings of this research support further investigations on the influence of ecological factors on maternal sensitivity. Further research is needed to identify the causal mechanism that may mediate or explain the ways in which the quality of the neighborhood influence maternal sensitivity.

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