



SIP STUDY

Stress In Pregnancy

The Effects of Maternal Depressive Symptoms on Child Language Performance at 4 Years of Age

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Existing Queens College: SIP Study

Purpose of the study (in 2 phases):

- The levels of psychosocial stress mothers may experience during pregnancy
- How this may affect her feelings & behaviors during pregnancy
- Influence on the growth of her fetus & later on child during early infancy

Goals of the SIP Study

Better understand how life experiences, genetic makeup, and the environment influence the mental and physical well-being of child

Help healthcare providers and researchers identify risks to childhood development earlier and provide services to mothers and their newborns

- In addition, help determine which populations are more at risk for psychosocial stress during pregnancy

Methods: Existing Data from Previous Queens College Study

SIP 1: Antenatal/Perinatal

- Self Report Questionnaires
- Psychiatric Interview (SCID)
- Biospecimens
- Child History

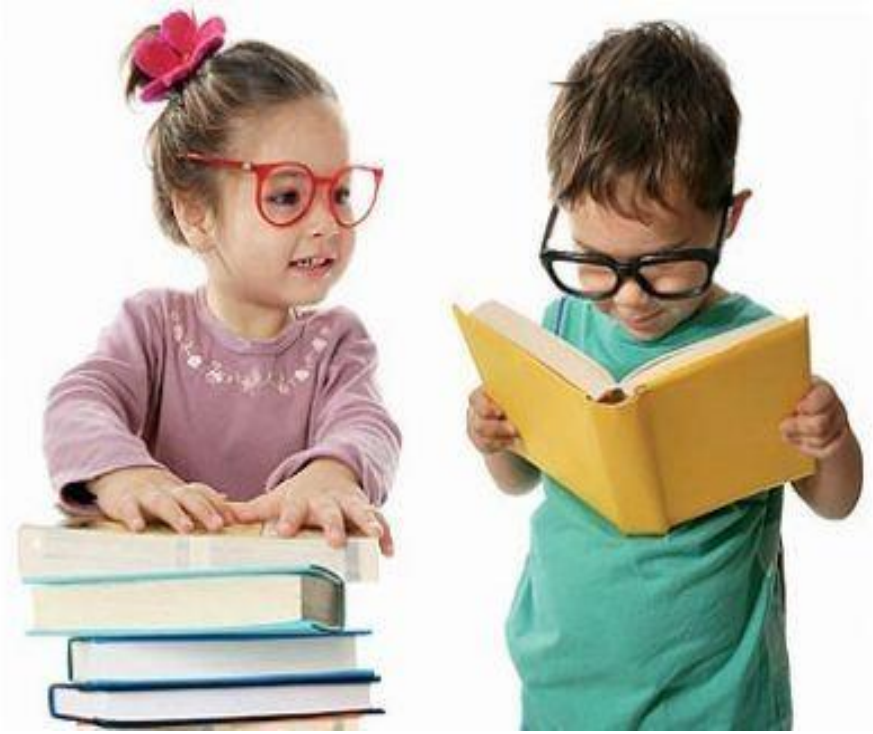


Methods: Existing Data from Previous Queens College Study

SIP 2: Postnatal

Yearly assessments starting at 24 months old

- Mother's self report packet
- Child direct assessment (intelligence test)
- Psychophysiological startle probe, biospecimen collection (saliva, hair, toenails)
- Psychiatric Interview (MINI)



SIP 2 - Child Direct Assessment (Clinical)

Wechsler Preschool and Primary Scale of Intelligence (WPPSI): 42 ≥ Months

- Provides primary index scales including the verbal comprehension index, working memory index and processing speed index



MINI

- Mothers assessed over the phone via Mini International Neuropsychiatric Interview. Short, semi-structured assessment for Axis-I Disorders of the DSM-IV (current v. past psychopathology
- Interviewer asks screening questions to rule out specific diagnoses.
  - Yes/No



A. MAJOR DEPRESSIVE EPISODE

(➡ MEANS: GO TO THE DIAGNOSTIC BOX, CIRCLE NO IN THE DIAGNOSTIC BOX, AND MOVE TO THE NEXT MODULE)

A1	a	Were you ever depressed or down, or felt sad, empty or hopeless most of the day, nearly every day, for two weeks?	NO	YES
		IF NO, CODE NO TO **A1b**: IF **YES** ASK:		
	b	For the past two weeks, were you depressed or down, or felt sad, empty or hopeless most of the day, nearly every day?	NO	YES
A2	a	Were you ever much less interested in most things or much less able to enjoy the things you used to enjoy most of the time, for two weeks?	NO	YES
		IF NO, CODE NO TO **A2b**: IF **YES** ASK:		
	b	In the past two weeks, were you much less interested in most things or much less able to enjoy the things you used to enjoy, most of the time?	NO	YES
		IS **A1a** OR **A2a** CODED **YES**?	➡ NO	YES

A3 IF **A1b** OR **A2b** = **YES**: EXPLORE THE **CURRENT** AND THE MOST SYMPTOMATIC **PAST** EPISODE, OTHERWISE IF **A1b** AND **A2b** = **NO**: EXPLORE **ONLY** THE MOST SYMPTOMATIC **PAST** EPISODE.

		Over that two week period, when you felt depressed or uninterested:	Past 2 Weeks		Past Episode	
	a	Was your appetite decreased or increased nearly every day? Did your weight decrease or increase without trying intentionally (i.e., by ±5% of body weight or ±8 lb or ± 3.5 kg, for a 160 lb/70 kg person in a month)? IF **YES** TO EITHER, CODE **YES**.	NO	YES	NO	YES
	b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES	NO	YES
	c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day? Did anyone notice this?	NO	YES	NO	YES
	d	Did you feel tired or without energy almost every day?	NO	YES	NO	YES
	e	Did you feel worthless or guilty almost every day?	NO	YES	NO	YES
		IF **YES**, ASK FOR EXAMPLES. LOOK FOR DELUSIONS OF FAILURE, OF INADEQUACY, OF RUIN OR OF GUILT, OR OF NEEDING PUNISHMENT OR DELUSIONS OF DISEASE OR DEATH OR NIHILISTIC OR SOMATIC DELUSIONS. THE EXAMPLES ARE CONSISTENT WITH A DELUSIONAL IDEA. Current Episode ☐ No ☐ Yes Past Episode ☐ No ☐ Yes				
	f	Did you have difficulty concentrating, thinking or making decisions almost every day?	NO	YES	NO	YES
	g	Did you repeatedly think about death (FEAR OF DYING DOES NOT COUNT HERE), or have any thoughts of killing yourself, or have any intent or plan to kill yourself? Did you attempt suicide? IF **YES TO EITHER, CODE YES**.	NO	YES	NO	YES
A4		Did these symptoms cause significant distress or problems at home, at work, at school, socially, in your relationships, or in some other important way, and are they a change from your previous functioning?	NO	YES	NO	YES

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Present Study

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Aim: Investigate affects of maternal depression specifically on child language performance at 4 years

Methods: Re-analyze existing data to examine language production level

Present Study's Significance

"Maternal depression is a major public health problem in the United States, with an estimated 1 in 10 children experiencing a depressed mother in any given year. Professionals who work with mothers and children should be aware of its prevalence and its detrimental effects" (Ertel, 2011)

Possible effects on language not typically considered

Background

Research shows:

- Maternal depression can have an impact on neurocognitive development of a child, including language development
- Mostly on 36 months or less
- Current study had data on four-year old's

Methods

Sub-Sample of Existing Subject Pool

- 119 women and their children (50% boys, n = 60)
- Longitudinal study of pregnancy
- Recruited at the OB/GYN clinics of NY Presbyterian Queens & Mount Sinai

NewYork-Presbyterian
Queens

Mount Sinai

Methods

Measures:

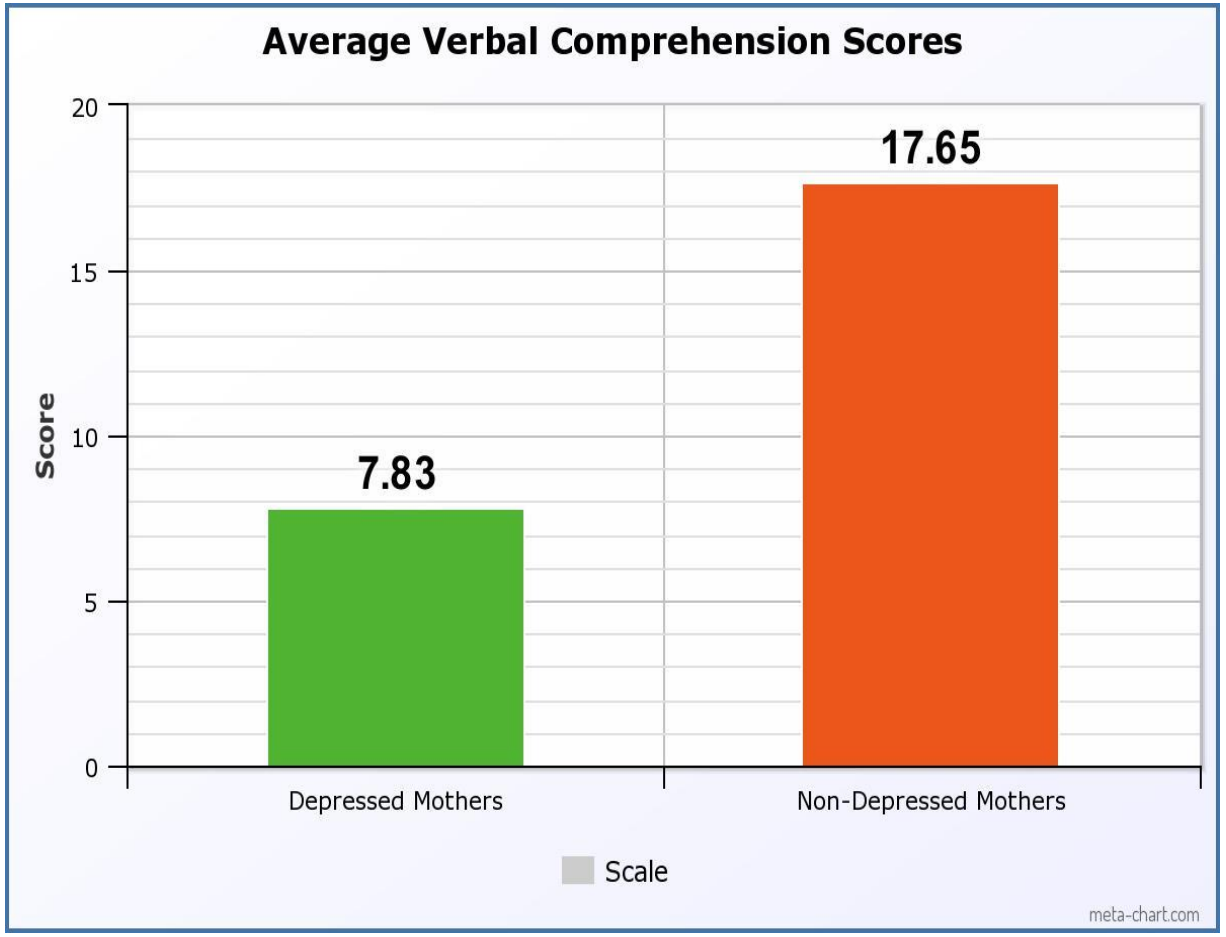
- Maternal depressive symptoms assessed using (MINI)
- Child language performance assessed using Verbal Comprehension scale of the Wechsler Preschool Primary Scale of Intelligence (WPPSI-IV)

Analysis:

- Using a general linear model, we measured the interaction effect of maternal depressive symptoms on child Verbal Comprehension (VCI) scores between genders

Results

- Correlation analyses showed that increased maternal depressive symptoms were associated with lower Verbal Comprehension scores (p=.008)
- More so in the Information subtest (p=.003) than the Similarities subtest (p=.185)

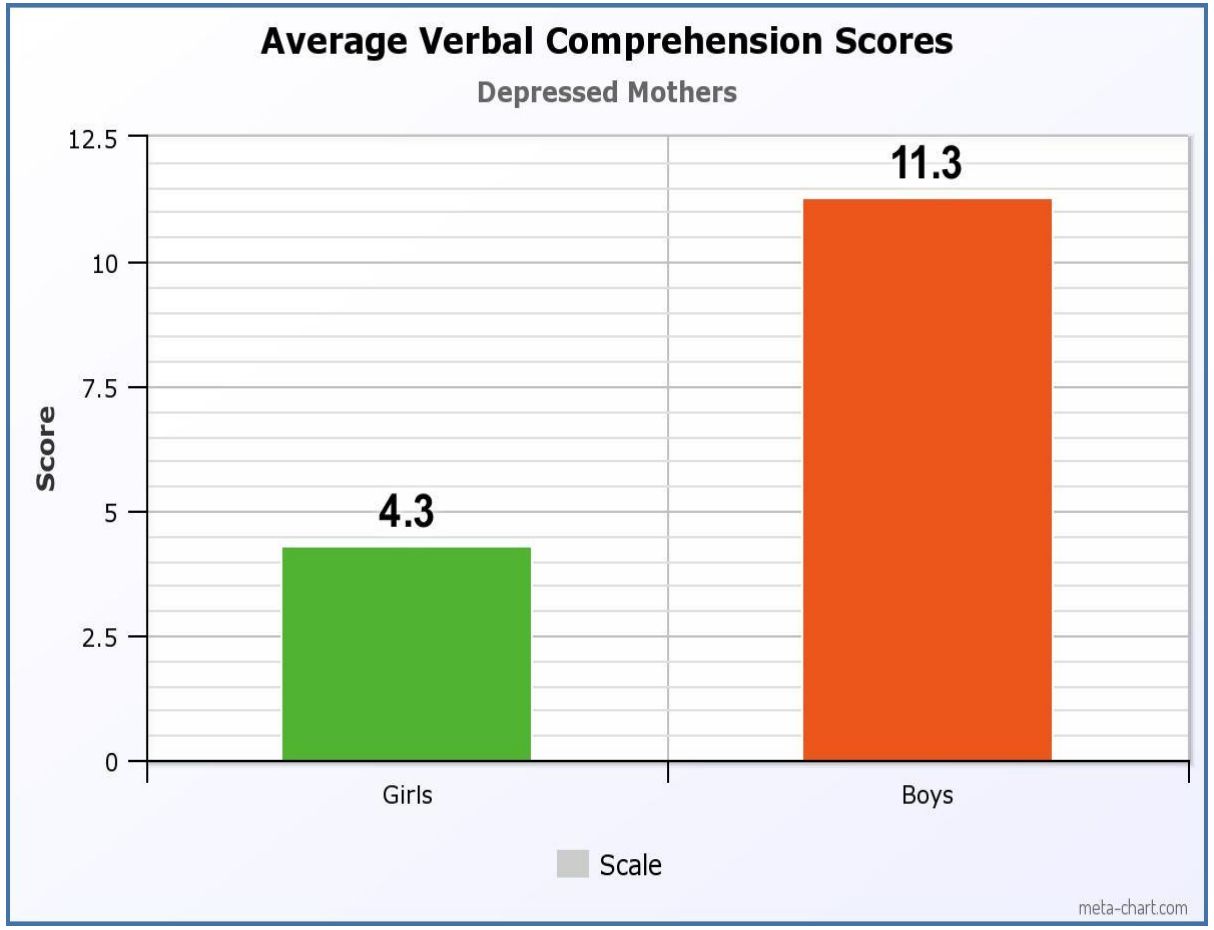


Results

Regression analysis:

- higher maternal depression remained a significant predictor for lower scores on the Information subtest (p=.050)
- Similarities subtest was controlled for

When controlling for gender, findings showed to be affect girls more



Discussion

Overall, maternal depression was associated with poorer child language performance

Children scored lower on the Information subtest as opposed to the Similarities subtest

This suggests:

- maternal depression decreases verbal comprehension
- not concept formation

Open Questions for Future Work?

Conclusions: Why does maternal depression affect language development in older children?

- Level of input directly affects child vocabulary size (lexical acquisition rate) (Hurtado et. al., 2008)
- Depression reduces talkativeness in mothers (Pan et. al., 2005)
  - Affects child vocabularies?
- Continue research existing literature

WPPSI Language specific testing (Receptive & Expressive)

Longitudinal follow-up

- Language performance at 5 years? 6 years?

Broader Impacts

Speech Language Pathology

Early Intervention

Teaching

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