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Effects of maternal depression on maternal ratings of child behavior problems.

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EFFECTS OF MATERNAL DEPRESSION ON MATERNAL RATINGS OF CHILD BEHAVIOR PROBLEMS

by

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A DISSERTATION

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ABSTRACT OF DISSERTATION
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This study introduced a within-subject, longitudinal, and experimental design to evaluate the effect that changes in maternal symptomatology level have upon ratings of child behavior problems. The findings of this study further our knowledge of the relationship between maternal psychopathology and maternal ratings of child behavior. By treating depressive symptoms with antidepressant pharmacotherapy, thereby manipulating the maternal mood state, findings revealed a strong relationship between improvements in maternal self-report of depressive symptomatology and improvements in maternal ratings of child behavior. General maternal perception of an unchanging environment did not contribute significantly to the correlation between the improvements in maternal depression self-reports and the maternal ratings of child behavior. Jointly, these findings support the theory that maternal psychopathology influences mother-child interactive patterns and child behavior, rather than the theory that maternal depressive symptoms lead to a maternal perceptual bias, which results in reporting higher levels of child behavior problems. This research suggests that the identification and treatment of depression in mothers of children seen for evaluation and treatment of behavior problems may both be necessary to treat these children optimally.

DEDICATION

Dedicated with love to my husband, Jack, and my son, Jason, and to my dearest friends, Bebs, Kathy, and Ron. And in memory of Ruth and Tippy Barker.

Sheheheyanu is the Hebrew blessing that is appropriate for special joyous occasions in one's life: "Blessed art Thou, Lord our God, King of the universe who has kept us in life and sustained us and enabled us to reach this season" (Donin, 1980, p. 328).

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Traditionally, researchers and clinicians have relied upon mothers as a primary source of information about their children's behavior and development (Friedlander, Weiss, & Traylor, 1986; Kazdin & Heidish, 1985; Richters, 1992; Sanger, MacLean, & Van Slyke, 1992). Although mothers remain knowledgeable and accessible sources, research findings have documented that maternal distress or psychopathology may influence maternal reports (Fergusson, Lynskey, & Horwood, 1993; Friedlander et al., 1986; Modell, 1997; Sanger et al., 1992; Webster-Stratton, 1988). Maternal ratings of children's behavior may be influenced by the mother's affective state (Friedlander et al., 1986), marital adjustment (Sanger et al., 1992; Webster-Stratton, 1988), child gender (Friedlander et al., 1986), and socioeconomic status (Dumas & Serketich, 1994). Studies also show that mothers who report depressive symptoms were found to rate their children with more depression, anxiety, inattention, hyperactivity, and internalizing and externalizing child behavior problems (Breslau, Davis, & Prabucki, 1988; Dumas & Serketich, 1994; Fergusson et al., 1993; Jensen, Traylor, Xenakis, & Davis, 1988; Modell, 1997; Webster-Stratton, 1988); academic difficulties (Billings & Moos, 1983); and poor peer social interactions (Billings & Moos, 1983). It has been unclear what accounts for these observed associations.

In studying this phenomena, researchers have compared mothers' reports to various criteria, including reports by fathers, teachers, children themselves, clinicians, and objective observers of children's functioning. These comparisons have documented

discrepancies between mothers' and criterion ratings (Fergusson et al., 1993; Jensen et al., 1986; Modell, 1997; Webster-Stratton, 1988). These findings relating the effects of maternal distress and psychopathology to maternal reporting of child behavior have been widely replicated and generally accepted (Fergusson et al., 1993; Friedlander et al., 1986; Modell, 1997; Richters, 1992; Sanger et al., 1992; Webster-Stratton, 1988). However, closer inspection of this research reveals shortcomings, which hinder choosing clear implications.

Most importantly, research designed to evaluate this relationship has used primarily cross-sectional and correlational designs to assess the naturally occurring maternal symptoms and child behavior reports at one specific time. What is missing from the literature are longitudinal and experimental studies designed to evaluate the possible effect that changes in maternal symptomatology level could have upon ratings of child behavior problems. Studies designed to test manipulations of the maternal mood state could suggest a causal relationship between changes in maternal self-report of psychopathology and changes in maternal ratings of child behavior problems.

One such manipulation occurring commonly in health care, with the goal of establishing a change in mood state, is the treatment of depression. A reasonable utilization of this manipulation is to determine whether treatment of maternal depression or reduction in symptoms thereof is associated with a change in maternal reports of child behavior problems. The finding of such an association could enhance our understanding why there is a relationship between maternal mood state and maternal ratings of child behavior problems.

Thase and Kupfer (1996) provide a review of pharmacotherapy of mood disorders. Pharmacotherapy is the most widely studied and validated treatment of mood disorders,

with antidepressants representing the first line of treatment for depression (U.S. Department of Health and Human Services, 1993; Olfson & Klerman, 1993; Thase & Kupfer, 1996). In outpatient clinical trials, about 50% to 70% of depressed patients responded positively to antidepressant treatment (Thase & Kupfer, 1996). By definition, a treatment response is a significant reduction (i.e., ≥50%) in symptomatic severity so that the patient no longer meets syndromal criteria for the disorder (U.S. Department of Health and Human Services, 1993; Frank et al., 1991; Thase & Kupfer, 1996).

The major classes of antidepressants currently in use are tricyclics, monoamine oxidase inhibitors, second-generation agents, selective serotonin reuptake inhibitors, and others including bupropion, venlafaxine, and nefazodone. All currently available antidepressants appear to have comparable efficacy and similar onset of action (U.S. Department of Health and Human Services, 1993; Thase & Kupfer, 1996). Antidepressants effect symptom reduction within the first two to four weeks of initiating treatment (Thase & Kupfer, 1996). The choice of appropriate antidepressant for treatment is based on the course of the illness, the severity of the index episode of depression, anticipated short- and long-term side effects, history of clinical response or nonresponse to earlier medication trials, possible drug-drug interactions, existence of comorbid psychiatric and medical conditions, and patient age. Antidepressant therapy for depression is advantageous both for its consistency of treatment and short time necessary to effect reduction of depressive symptoms including cognitive distortions and perceptions of self and others (Thase & Kupfer, 1996). Therefore, it provides an excellent opportunity to test experimentally the association between maternal mood and child behavior ratings.

The current study was designed to address the effect of maternal depression on maternal ratings of child behavior--specifically, to test the hypothesis that within subjects, changes in maternal ratings of child behavior will be positively correlated with changes in maternal depressive symptoms, and thus the symptoms will decrease with effective treatment of maternal depression. It was also designed to compare changes in maternal ratings of child behavior and maternal perceptual style change and to reveal any relationship effect.

METHODS

Subjects

Twenty-six women who had at least one minor child under their care at home and who were diagnosed with major depressive disorder and placed on antidepressant medication as their primary treatment modality at the time of their first evaluation were inducted into this study; twenty-four subjects completed the study and are included in the data analysis (Table 1). Permission to use human subjects for this study was obtained from the Institutional Review Board for Human Subjects at the University of Alabama at Birmingham (Appendix A). Subjects were recruited from the University of Alabama at Birmingham Outpatient Psychiatric Clinics after informed consent was obtained. Women with psychotic symptoms or requiring inpatient treatment were excluded from participation.

Measures

Maternal report of child behavior problems. The maternal report of child behavior problems was measured with the Conners Parent Rating Scale (CPRS; Conners, 1990; Goyette, Conners, & Ulrich, 1978), which is a parent report instrument used for assessing child behavior problems. It is designed to be used for children ages 3 to 17 years. The Conners consists of 48 items grouped by factor analysis into five syndrome subscales of problems: (a) conduct , (b) learning , (c) psychosomatic, (d) impulsive-hyperactive, and (e) anxiety. Symptoms are rated on a four-point scale (0-3; Sattler, 1992): "Studies indicate

Table 1

Demographics

Variable		Categorical *n* (%)	Continuous median (range)
Parent		*N* = 24	
Age			34 (25 - 48)
Education	≤ High school	3 (12%)	
	High school grad	4 (17%)	
	Some college	8 (33%)	
	College grad	5 (21%)	
	Postgraduate	4 (17%)	
Income	< $10,000/yr	0	
	$11k - $20k	4 (17%)	
	$21k - $35k	3 (12%)	
	$36k - $50k	8 (33%)	
	> $50,000/yr	9 (38%)	
Race	Black	7 (29%)	
	White	17 (71%)	
	Other	0	
Marital status	Divorced	14 (58%)	
	Married	10 (42%)	
Child		*N* = 24	
Sex	Male	12 (50%)	
	Female	12 (50%)	
Age			10 (4 - 15)
Grade			5 (preK - 10)

that the CPRS has adequate reliability and validity" (p. 393 Sattler, 1992) Age-by-sex normative data are available for children, ages 3 to 17 (Conners, 1990; Sattler, 1992).

Item-total correlations range from .13 to .65 (Conners, 1990; Goyette et al., 1978). The CPRS is generally accepted as a valid and reliable measure in research and clinical settings. The total and subscale raw scores were used in the data analysis of this study.

Maternal depression. Maternal depression was measured with the Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988). The BDI was developed from the symptoms of depression presented clinically by depressed patients, which were consolidated into 21 items of symptoms and attitudes. These items are self-rated on an 0-3 scale of intensity. A total score is computed by summing across items. Cut-off scores for a diagnosis of a depressive disorder are (a) none or minimal depression is < 10, (b) mild to moderate depression is 10-18, (c) moderate to severe is 19-29, and (d) severe depression is 30-63. Internal consistency estimates showed a mean coefficient alpha of 0.86 for symptomatology. Test-retest stability has been shown to be in the range of Pearson product-moment correlation coefficients for psychiatric patients from 0.48 to 0.86, and for nonpsychiatric college students and randomly surveyed adults from 0.60 to 0.83. Ample information to support the validity of the BDI has been provided by Beck, Steer, and Garbin in 1988. The BDI has been shown to correlate significantly with clinician's evaluations of depression and with objective behavioral measures of depressive symptomology. Concurrent validity has been established, for example, by showing significant correlations between the BDI and similar clinical ratings of the Hamilton Psychiatric Rating Scale for Depression. Construct validity studies have shown the BDI discriminates between (a) depressed and nondepressed samples, (b) depressed and dysthymic samples, (c) depressed and anxious samples, and (d) psychiatric, medical, and normal samples. For this study, the

BDI was modified for inclusion of depression-associated atypical changes in appetite (hyperphagia), and sleep (hypersomnia) to be in agreement with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition published by the American Psychiatric Association. The Manual serves as the official classification system for mental disorders within the United States. These additions allow subjects to self-report symptoms of increased sleep and appetite, which are not options of the original BDI. The total raw score was used in the initial data analyses.

General maternal perceptual style. The general maternal perceptual style was measured with a question to assess the level of her satisfaction with home environment. The question of "How satisfied are you with your home (your house or apartment) as a place to live?" required a response on a Likert-type scale from 1 *very unsatisfied*, to 7 *very satisfied.* This measure was included to determine the degree to which treatment of the depression affected the mothers' general perceptions, in as much as the home environment remains relatively invariant over 5 to 8 weeks.

Procedures

This experimentally designed study was a within subject, repeated-measure comparison of the effect of controlled manipulation of maternal depressive symptoms with antidepressant pharmacotherapy on maternal ratings of child behavior problems. Physicians treating the subjects prescribed the medically appropriate antidepressant treatment and provided routine patient care, including follow-up evaluations. All measures were administered at the time of the initial clinic evaluation and again after treatment with antide-

pressant medication for between 3 and 9 weeks later ($M = 5.2$, $SD = 1.6$) at a scheduled clinic follow-up (Appendixes B and C, respectively). A letter describing the study (Appendix D) was given to the prospective subject at the time of the initial evaluation, instructing the subject to rate whichever of her children she considered to have the most behavior problems. A demographic survey was also given at that time.

Rationale for Study Design

This study sought the correlation between maternally rated child behavior problems and maternal depressive symptoms as the latter was manipulated by clinical treatment. Therefore, it was not necessary that the rated child have an identified behavioral or emotional disorder or that maternal depressive symptoms abated completely at the time of the second evaluation period, only that depressive symptomatology was substantially reduced. The 3- to 9-week window between first evaluation and follow-up in this study allowed sufficient time for the majority of patients to achieve at least partial relief of depressive symptoms (Thase & Kupfer, 1996), without the time period between testings being so long that maturational or social changes might play a significant role in child behavior or that the subjects were lost to follow-up.

RESULTS

Treatment Effect

The mean initial BDI score in the study population was 27 (moderately severe depression), and the mean at follow-up was 13 (mild depression), a highly significant improvement in depressive symptoms (paired $t_{23} = 6.38, p < .0001$, mean $\Delta = 14.15$). On the CPRS, the mean initial and final scores were 36 and 28, respectively; this improvement is also statistically significant (paired $t_{23} = 3.73, p < .0001$, mean $\Delta = 7.94$; Table 2, Figure 1). The mean reporting period between initial and final ratings was 5.2 weeks (*SEM* 0.33). Maternal satisfaction with living environment also changed significantly over the reporting period, from an initial mean of 3.8 to a final mean of 4.3 ($t_{23} = 2.26, p < 0.035$).

Table 2

Outcome Variables

Variables	Pretreatment	Posttreatement	% Change
BDI	27 (2.1)	13 (2.1)	-53 (0.071)
CPRS	36 (3.7)	28 (3.1)	-20 (0.045)

Note. BDI = Beck Depression Inventory, CPRS = Conners Parent Rating Scale, % change = (final-initial) ÷ initial, Pre-Post Mean (*SEM*) change in depression and child behavior scores.

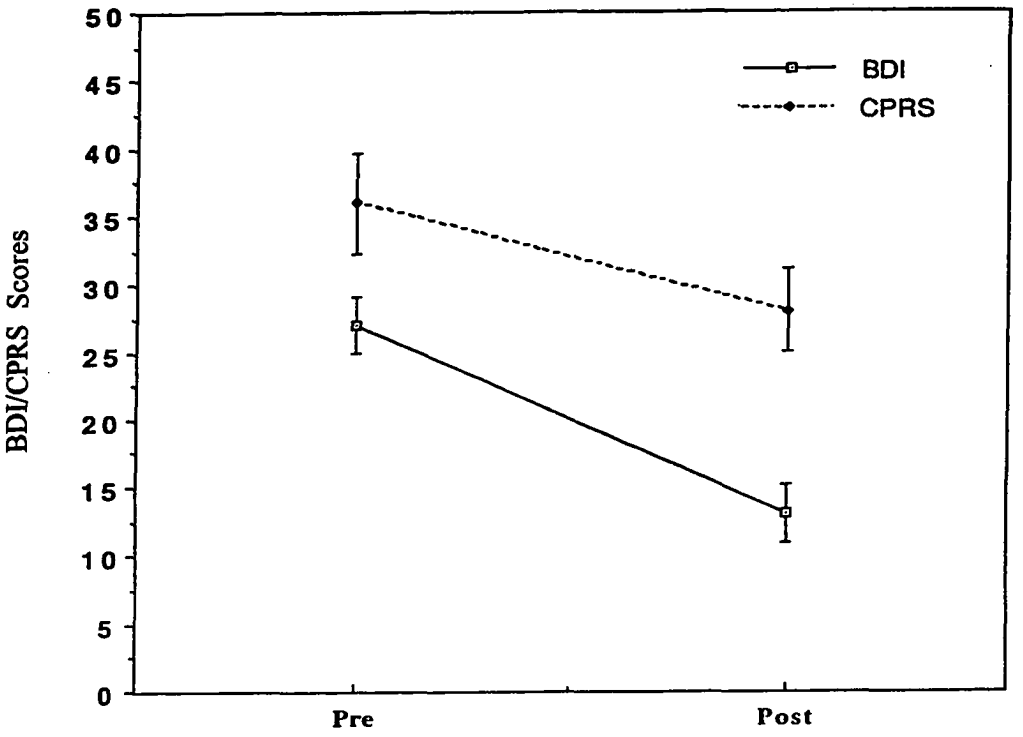

Figure 1. Pre- and posttreatment scores for Beck Depression Inventory, and Conners Parent Rating Scale total scores.

Association Between Changes

The research hypothesis was initially tested using linear regression of maternal depression change scores (BDI final ÷ initial) against child behavior change scores (CPRS final ÷ initial) before and after treatment. A strongly positive, statistically significant correlation between these was found ($R^2_{adj} = .41, p < .0005$). It is possible that the variable length of time between the two measurement periods or general perceptual changes occurring with treatment of depression may have contributed to the observed association between changes in maternal depression and child behavior ratings. To test for these possibilities, correlations between the duration of time and changes in satisfaction with

living environment between initial and final ratings, and changes in reported child behavior between ratings were also analyzed. Specifically, for the number of weeks between ratings, no significant correlation was found ($R^2_{adj} = .07, p$ = n.s.). Likewise, despite the increase in maternal satisfaction with living environment over the course of treatment, there was no correlation with rated behavior change ($R^2_{adj} = .04, p$ = n.s.).

Consistent with the above findings, multiple linear regression including the three potential contributors to rated behavior change--depression change, time between ratings, living satisfaction--strengthened the overall correlation only slightly, to $R^2_{adj} = .50$, with time between ratings a significant contributor ($p < .05$), but not living satisfaction (p = n.s.; Table 3). There were no significant associations between either BDI or CPRS change scores and any of the demographic variables (linear-regression models for continuous variables, ANOVA for categorical grouping variables are all $p > 0.30$).

Table 3

Multiple Regression

Parameter	Estimate	Sum of squares	F ratio	$p > F$	Cummulative $R^2_{non\text{-}adj}$	Simple R^2_{adj}
$B_f \div B_i$	0.40	0.44	18.49	0.0003	0.43	0.41
Weeks	-0.049	0.133	5.59	0.028	0.53	0.07
Δ Satisfaction	-0.040	0.046	1.90	0.18	0.57	-0.03

Note. Rated child behavior change as a function of rated changes in maternal depression ($B_f \div B_i$), time between ratings (weeks), and rated changes in living satisfaction (Δ satisfaction). Regression line intercept estimate = 0.88.

Exploratory Analyses

Three exploratory analyses were conducted. First, ANOVA was used to test for possible relationships between the demographic variables and initial ratings of depression and child behavior. This analysis revealed an association only between race and initial behavior ratings. More specifically, Black mothers rated their children an average of 21 points higher on the CPRS than did White mothers ($M = 51$ and 30, respectively; $t_{22} = 3.06, p < .01$); the number of subjects in this study was not sufficient, however, to separate possible effects of income or education on this finding.

The second exploratory analysis sought correlations between changes in BDI depression scores and the individual subscale scores of the CPRS (conduct problem, learning problem, psychosomatic, impulsive-hyperactive, and anxiety) from initial to final rating periods. This analysis revealed a significant positive correlation between improvement in depression (BDI) and ratings on the impulsive-hyperactive subscale ($R^2_{adj} = .21, p < .05$), but not between changes in depression and the other four CPRS subscales ($R^2_{adj} < .01$; Figure 2).

In the third exploratory analysis, simple linear regression was used to test for the possibility that the association between maternal depression and child behavior would be seen not only within subjects, but across subjects, as well. Although this analysis failed to show a correlation between maternal depression and child behavior across all subjects ($R^2_{adj} = .04, p = .18$), a modest across-subject correlation was observed when Black subjects (shown above to be a significant independent factor in maternal ratings of child behavior) were excluded from the analysis ($R^2_{adj} = .15, p < .10$).

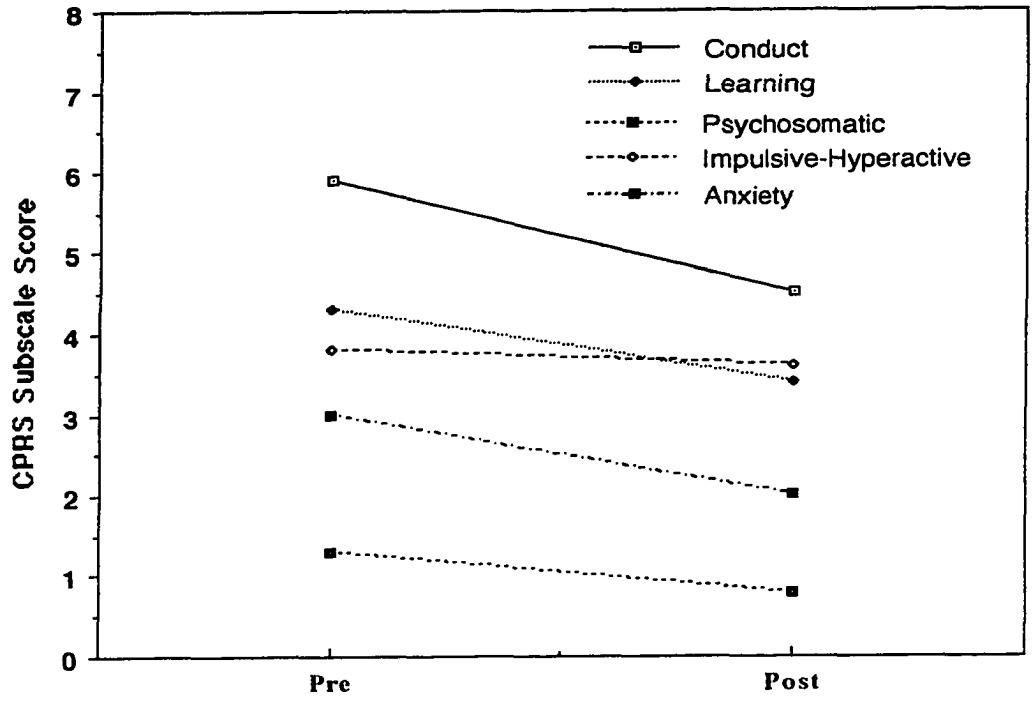

Figure 2. Pre- and posttreatment Conners Parent Rating Scale subscale scores.

DISCUSSION

The strong positive correlation between changes in maternal depressive symptomology and maternally rated child behavior over a 3- to 9-week course of antidepressant treatment supports the hypothesis that, within subjects, maternal ratings of child behavior are positively correlated with maternal depressive symptoms. Thus, these ratings will improve with effective treatment of maternal depression. Indeed, 41% of the change in maternally rated child behavior can be accounted for statistically by change in maternal depression alone. Interestingly, improvement in maternal depression correlated positively primarily with improvement in maternally rated impulsive-hyperactive behaviors in their children. The across-subject analysis showed a much weaker (marginally significant) association between initial ratings of child behavior and maternal depression, as might be expected given the many possible determinants of child behavior among different subjects and families. Of course, the within subject analysis controlled for these.

There were two independent variables that did not remain constant during the period of study and thus were considered most likely to confound the results. These were time between ratings and changes in general maternal perception. Whereas time between ratings contributed slightly (approximately 7%) to the association between changes in maternal depression and rated child behavior, general maternal perception as gauged by level of satisfaction with the relatively invariant current living situation did not. Consequently, the significant overall improvement in maternally rated child behavior during the course of antidepressant treatment suggests actual behavioral improvement as opposed

to simply reflecting changes as a function of time or of maternal perceptual changes. Additionally, unless there is reason to suspect that a general perceptual change would differentially affect perceptions of specific types of child behavior, it is unlikely that improvement in depression (and, hypothetically, perceptual style) would have correlated with only one of the five CPRS subscales.

Another issue to consider is that the observed correlations between maternal depression and child behavior simply reflect a regression-to-the-mean of these variables. This possibility is unlikely for at least three reasons. First, regression-to-the-mean occurs in a clinical sample because subjects usually present for treatment when symptoms are at or near their worst; in the absence of factors promoting worsening of the presenting illness, it is statistically more likely for the presenting symptoms to improve (toward the mean) than to remain the same or worsen. Thus, although some of the improvement observed in depressive symptoms may have been the result of such regression, this would not be expected to affect behavior problems since the subjects were chosen without regard to their presence or absence. Second, regression-to-the-mean is usually time-dependent; unless it is assumed that all such regression stopped by the fourth week of treatment, it would be unlikely that this would be a strong effect since only a minimal correlation between the dependent variable and time was observed. Finally, BDI and CPRS scores over time were not colinear ($p < .001$), and the positive correlation between changes in depression and child behavior scores persisted even when only those subjects whose CPRS scores remained essentially unchanged (final ÷ initial = 0.9-1.0) or worsened (final ÷ initial = 1.1-1.3) were included in the analysis ($R^2_{adj} = .46$, $p = .04$); neither of these outcomes is

consistent with the presence of a factor that exerted equal downward pressure on both of these outcome variables.

Sanger et al. (1992) discussed four explanations of mothers' levels of self-reported psychological distress correlating with their ratings of their child's behavior problems as seen in other studies: (a) the perceptual bias perspective (b) the behavioral perspective (c) the external factors perspective, and (d) the shared biological predisposition perspective (Dumas & Serketich, 1994; Fergusson et al., 1993; Jensen et al., 1988; Modell, 1997; Sanger et al., 1992; Webster-Stratton, 1988). The results of the present study do not support the perceptual bias perspective, which theorizes that mothers experiencing psychological distress may perceive higher levels of child behavior problems or have lower levels of tolerance for acceptable child behavior and that this is reflected in their ratings. If there is a perceptual bias, this should have been reflected in an association between general maternal perception and change in maternal ratings of child behavior problems. This was not found. The current study did not directly test the external factors interpretation, in which both maternal distress and child behavior problems result from common outside factor, since mothers were exposed to a powerful factor (antidepressant treatment) to which the children were not directly exposed. Likewise, the shared biological factors interpretation, which theorizes that both mother and child share a genetic predisposition for similar psychological disorders cannot be directly tested by this study.

The present study suggests support of the behavioral factors theoretical explanation of the observed effect of maternal behavior on maternal reporting. The behavioral perspective posits that maternal symptoms produce child symptoms through parent-child interactions. That is, mothers who are experiencing psychological distress may become a

source of anxiety for their children through their parenting style, and the children, in turn, express this with internalizing and externalizing behavior problems. The reported decrease in child behavior problems could be a reflection of a change in parenting style to one that is less anxiety-provoking for the child as the mother's depressive symptoms are alleviated and she is experiencing less distress. This is consistent with observations that depressed mothers display more negative comments and aversive, controlling behaviors toward their children than do nondepressed mothers and that the children of depressed mothers were observed to be more aversive towards their depressed mothers than towards other family members (Conrad & Hammen, 1989; Dumas & Serketich, 1994). The results of this study could support the behavioral perspective by representing a change in the behavior pattern specific to the mother and child interaction. The child could have been responding to the maternal symptoms of psychopathology with behavior problems at the time of the initial ratings and reacting to the relief of maternal distress from antidepressant treatment with reduced behavior problems at the time of the later ratings.

A limitation of the study was that the measure of living satisfaction may not adequately measure perceptual change. This study lacked a criterion or objective measure of child behavior with which maternal ratings of child behavior could be compared. This would be a logical next step. Another limitation was that the study did not inquire about any major life events in the rated child or family lifestyle changes during the study to control for external factors unrelated to treatment. Additionally, this study did not include parallel control groups of nondepressed or untreated mothers to determine how maternal ratings of child behavior might change upon reported measures in the absence of depressive symptoms or its treatment.

Future research might address the limitations of this study by examining the effects over time of untreated maternal depression on child behavior, and including objective criterion ratings of child behavior by an unbiased third party to help evaluate the mother-child interactions. Future studies could include questions about other perceptual experiences involving the mother's work environment and friends or acquaintances. Larger sample size could provide an opportunity for further evaluation of race as a factor in initial behavior given the findings herein (e.g., possible effects of income, education) In addition to replicating the findings of this study, future studies that address these limitations could better elucidate the demonstrated correlation between maternal depression and reported child behavior by assessing other factors that might influence the relationship between maternal mood and child behavior ratings.

Implications of this research suggest that mothers suffering with symptoms of major depressive disorder may be having an effect on their child's and family's environment and home life. It is likely that the identification and treatment of depression in mothers could provide a beneficial improvement in the quality of life to the patient and those interacting with them. Although not necessarily generalizable to other types of outpatient clinic populations, mothers of children seen for evaluation and treatment of behavior problems could be screened for levels of maternal depressive symptoms. Knowledge of the mother's mood could contribute to a better understanding and clinical interpretation of the maternal child behavior problems ratings. When a mother is identified as possibly depressed, consideration could be given to other informants, such as father and teacher. Thus, the identification of depression in mothers could optimize the child's evaluation, and treatment of maternal depression could optimize the child's treatment.

A general clinical application of these findings is to enhance the awareness of health care providers for the anxiety-provoking influence of maternal depressive symptoms upon the mother-child relationship and to realize that child internalizing and externalizing behavior problems could be an expression of this distress. Inclusive clinical evaluation of mother and child provides optimal treatment from which both could benefit and enjoy a better quality of life.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD FOR HUMAN USE APPROVAL

UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Office of the Institutional Review Board for Human Use

FORM 4: IDENTIFICATION AND CERTIFICATION OF RESEARCH PROJECTS INVOLVING HUMAN SUBJECTS

THE INSTITUTIONAL REVIEW BOARD (IRB) MUST COMPLETE THIS FORM FOR ALL APPLICATIONS FOR RESEARCH AND TRAINING GRANTS, PROGRAM PROJECT AND CENTER GRANTS, DEMONSTRATION GRANTS, FELLOWSHIPS, TRAINEESHIPS, AWARDS, AND OTHER PROPOSALS WHICH MIGHT INVOLVE THE USE OF HUMAN RESEARCH SUBJECTS INDEPENDENT OF SOURCE OF FUNDING.

THIS FORM DOES NOT APPLY TO APPLICATIONS FOR GRANTS LIMITED TO THE SUPPORT OF CONSTRUCTION, ALTERATIONS AND RENOVATIONS, OR RESEARCH RESOURCES.

PRINCIPAL INVESTIGATOR: **Jack G. Modell, M.D.**

PROJECT TITLE: **Analysis of the Association Between Maternal Depression and Behavior Problems in Their Children**

_____1. THIS IS A TRAINING GRANT. EACH RESEARCH PROJECT INVOLVING HUMAN SUBJECTS PROPOSED BY TRAINEES MUST BE REVIEWED SEPARATELY BY THE INSTITUTIONAL REVIEW BOARD (IRB).

__X__2. THIS APPLICATION INCLUDES RESEARCH INVOLVING HUMAN SUBJECTS. THE IRB HAS REVIEWED AND APPROVED THIS APPLICATION ON 05-28-98 IN ACCORDANCE WITH UAB'S ASSURANCE APPROVED BY THE UNITED STATES PUBLIC HEALTH SERVICE. THE PROJECT WILL BE SUBJECT TO ANNUAL CONTINUING REVIEW AS PROVIDED IN THAT ASSURANCE.

__X__ THIS PROJECT RECEIVED EXPEDITED REVIEW.

_____ THIS PROJECT RECEIVED FULL BOARD REVIEW.

_____3. THIS APPLICATION MAY INCLUDE RESEARCH INVOLVING HUMAN SUBJECTS. REVIEW IS PENDING BY THE IRB AS PROVIDED BY UAB'S ASSURANCE. COMPLETION OF REVIEW WILL BE CERTIFIED BY ISSUANCE OF ANOTHER FORM 4 AS SOON AS POSSIBLE.

_____4. EXEMPTION IS APPROVED BASED ON EXEMPTION CATEGORY NUMBER(S)_____.

DATE: 5/28/98

Marilyn Doss

MARILYN DOSS, M.A.
VICE CHAIR OF THE
INSTITUTIONAL REVIEW BOARD

The University of Alabama at Birmingham
1120A Administration Building • 701 South 20th Street
Birmingham, Alabama 35294-0111 • (205) 934-3789 • FAX (205) 975-5977

APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

Today's Date **Name (optional):**

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group that best describes the way you have been feeling the past week, including today. Circle the number beside the statement you picked. Be sure to read all the statements in each group before making your choice.

1. 0 - I do not feel sad
   1 - I feel sad
   2 - I am sad all the time and I can't snap out of it
   3 - I am so sad or unhappy that I can't stand it

2. 0 - I am not particularly discouraged about the future
   1 - I feel discouraged about the future
   2 - I feel I have nothing to look forward to
   3 - I feel that the future is hopeless and that things cannot improve

3. 0 - I do not feel like a failure
   1 - I feel I have failed more than the average person
   2 - As I look back on my life, all I can see is a lot of failures
   3 - I feel I am a complete failure as a person

4. 0 - I get as much satisfaction out of things as I used to
   1 - I don't enjoy things the way I used to
   2 - I don't get real satisfaction out of anything anymore
   3 - I am dissatisfied or bored with everything

5. 0 - I don't feel particularly guilty
   1 - I feel guilty a good part of the time

2 - I feel quite guilty most of the time

3 - I feel guilty all of the time

6. 0 - I don't feel I am being punished

1 - I feel I may be punished

2 - I expect to be punished

3 - I feel I am being punished

7. 0 - I don't feel disappointed in myself

1 - I am disappointed in myself

2 - I am disgusted with myself

3 - I hate myself

8. 0 - I don't feel I am any worse than anybody else

1 - I am critical of myself for my weaknesses or mistakes

2 - I blame myself all the time for my faults

3 - I blame myself for everything bad that happens

9. 0 - I don't have any thoughts of killing myself

1 - I have thoughts of killing myself, but would not carry them out

2 - I would like to kill myself

3 - I would kill myself if I had the chance

10. 0 - I don't cry anymore than usual

1 - I cry now more than I used to

2 - I cry all the time now

3 - I used to be able to cry, but now I can't cry even though I want to

11. 0 - I am no more irritated now than I ever am

1 - I get annoyed or irritated more easily than I used to

2 - I feel irritated all the time now

3 - I don't get irritated at all by the things that used to irritate me

12. 0 - I have not lost interest in other people
    1 - I am less interested in other people than I used to be
    2 - I have lost most of my interest in other people
    3 - I have lost all of my interest in other people

13. 0 - I make decisions about as well as I ever could
    1 - I put off making decisions more than I used to
    2 - I have greater difficulty in making decisions than before
    3 - I can't make decisions at all anymore

14. 0 - I don't feel I look any worse than I used to
    1 - I am worried that I am looking old or unattractive
    2 - I feel that there are permanent changes in my appearance that make me look unattractive
    3 - I believe that I look ugly

15. 0 - I can work about as well as before
    1 - I takes an extra effort to get started at doing something
    2 - I have to push myself very hard to do anything
    3 - I can't do any work at all

16. 0 - I can sleep as well as usual:
    a. 1 - I don't sleep as well as I used to
       2 - I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
       3 - I wake up several hours earlier than I used to and cannot get back to sleep

- or -

b. 1 - I sleep more than I used to
2 - I sleep 1-2 hours more than usual and my sleep is not very restful
3 - I sleep 2 or more hours than I used to and find it very difficult to get up

17. 0 - I don't get more tired than usual
1 - I get tired more easily than I used to
2 - I get tired from doing almost anything
3 - I am too tired to do anything

18. 0 - My appetite is no different than usual
a. 1 - My appetite is not as good as it used to be
2 - My appetite is much worse now
3 - I have no appetite at all anymore

- or -

b. 1 - My appetite is greater than it used to be
2 - My appetite is much greater now
3 - I have little control over my appetite anymore

19. 0 - I haven't gained or lost much weight, if any, lately
a. 1 - I have lost more than 5 pounds. I am purposely trying to lose weight
2 - I have lost more than 10 pounds by eating less.
3 - I have lost more than 15 pounds

- or -

b. 1 - I have gained more than 5 pounds. I am purposely trying to gain weight
2 - I have gained more than 10 pounds by eating more.
3 - I have gained more than 15 pounds

20. 0 - I am no more worried about my health than usual
    1 - I am worried about physical problems such as aches and pains, upset stomach, or constipation
    2 - I am very worried about physical problems and it's hard to think of much else
    3 - I am so worried about physical problems that I cannot think about anything else

21. 0 - I have not noticed any recent change in my interest in sex (or my interest has increased)
    1 - I am less interested in sex than I used to be
    2 - I am much less interested in sex now
    3 - I have lost interest in sex completely

APPENDIX C

PARENT'S QUESTIONNAIRE

Your Name:_____

PARENT'S QUESTIONNAIRE

Instructions: Please answer all questions. Beside each item below, indicate the degree of the problem with a checkmark.

Problem	Not at all	Just a little	Pretty much	Very much
1. Picks at things (nails, fingers, hair, clothing)				
2. Sassy to grown-ups				
3. Problems with making or keeping friends				
4. Excitable, impulsive				
5. Wants to run things				
6. Sucks or chews (thumb, clothing, blankets)				
7. Cries easily or often				
8. Carries a chip on his or her shoulder				
9. Daydreams				
10. Difficulty in learning				
11. Restless in the "squirmy" sense				
12. Fearful (of new situations; new people or places; going to school)				
13. Restless, always up and on the go				
14. Destructive				
15. Tells lies or stories that are not true				
16. Shy				
17. Gets into more trouble than others same age				
18. Speaks differently from others same age (baby talk; stuttering; hard to understand)				
19. Denies mistakes or blames others				
20. Quarrelsome				
21. Pouts and sulks				

Problem	Not at all	Just a little	Pretty much	Very much
22. Steals				
23. Disobedient or obeys but resentfully				
24. Worries more than others (about being alone, about illness or death)				
25. Fails to finish things				
26. Feelings easily hurt				
27. Bullies others				
28. Unable to stop a repetitive activity				
29. Cruel				
30. Childish or immature (wants help he or she should not need, clings, needs constant reassurance)				
31. Distractibility or attention span a problem				
32. Headaches				
33. Mood changes quickly and drastically				
34. Does not like or does not follow rules or restrictions				
35. Fights constantly				
36. Does not get along well with brothers or sisters				
37. Easily frustrated in efforts				
38. Disturbs other children				
39. Basically an unhappy child				
40. Problems with eating (poor appetite, up between bites)				
41. Stomach aches				
42. Problems with sleep (cannot fall asleep, up too early, up in the night)				
43. Other aches and pains				

Problem	Not at all	Just a little	Pretty much	Very much
44. Vomiting or nausea				
45. Feels cheated in family circle				
46. Boasts and brags				
47. Lets self be pushed around				
48. Bowel problems (frequently loose, irregular habits, constipation)				

APPENDIX D

LETTER OF INTRODUCTION
WITH
BACKGROUND INFORMATION FORM

July 1997

Dear Patient:

If you do not have a child between the ages of 4 and 17, please return this material to the receptionist.

If you have a child between the ages of 4 and 17, you are invited to participate in the following study.

We are currently conducting a study regarding depression in mothers and the behavior of her children. The study simply involves completing the attached two questionnaires now (before treatment) and one to two months from now (during one of your return appointments). Each set of questionnaires should require only five to ten minutes of your time.

One of the questionnaires asks questions about how you are feeling and doing now. The second questionnaire asks questions about the behavior of children between the ages of 4 and 17. If you have only one child between the ages of 4 and 17, we ask that you complete this questionnaire regarding this child. If you have more than one child in the age group, we ask that you complete the questionnaire regarding whichever child you consider to have the most problems (at home or school), even if these problems are not severe or of particular concern to you. Please be sure that you rate the same child at both times, now and when you return.

Your responses are strictly confidential; in fact, it is not necessary for you to put you name or your child's name on the questionnaires. Your answers will not be seen by your doctor and will not affect your treatment in any way. Likewise, there is no penalty whatsoever if you choose not to participate.

If you choose to participate, simple complete the two questionnaires and return them to the receptionist. The receptionist will be responsible for giving you the second set of questionnaires during one of your return visits in one to two months. Thank you very much for your help.

BACKGROUND INFORMATION

(complete at initial evaluation only)

1. Today's date: _____

2. My marital status is:

___ Married or living together with another person as if married

___ Divorced, separated, widowed, otherwise single

3. My age is: _____

4. The highest level of education I have completed is:

___ Did not graduate from high school

___ High school graduate - 12th grade

___ Partial college, community college, trade school training - Associate degree

___ Four year college degree - Bachelor degree

___ Graduate or professional degree - Masters or Doctoral degree

5. The total income of my family per year is about:

___ Less than $10,000

___ $10,001 - $20,000

___ $20,001 - $35,000

___ $35,001 - $50,000

___ More than $50,000

6. My race/ethnic background is:

___ Black/African-American

___ White/Caucasian

___ Other (which?) _____

7. First name of the child I am rating: _____

8. Sex (circle one): Boy Girl

9. Child's age: _____

10. Grade in school this fall: _____

Thank You

GRADUATE SCHOOL
UNIVERSITY OF ALABAMA AT BIRMINGHAM
DISSERTATION APPROVAL FORM
DOCTOR OF PHILOSOPHY

Name of Candidate Judith D. Modell

Major Subject Psychology

Title of Dissertation The Effects of Maternal Depression on Maternal Ratings of Child Behavior Problems

I certify that I have read this document and examined the student regarding its content. In my opinion, this dissertation conforms to acceptable standards of scholarly presentation and is adequate in scope and quality, and the attainments of this student are such that she may be recommended for the degree of Doctor of Philosophy.

Dissertation Committee:

Name		Signature
Jan L. Wallander	**, Chair**	
Bart Hodgens		
Linda W. Duke		
Dale W. Wisely		
Carol J. Dashiff		

Director of Graduate Program Elaine D. Cook Scott Richards

Dean, UAB Graduate School Joan F. Lorden

Date 8/26/99