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Chronicity of Maternal Depression, Child-Rearing Beliefs, and Child Problematic Behaviors at 54 months

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Using data from the NICHD Study of Early Child Care and Youth Development, the current study examined whether more progressive versus more authoritarian maternal child-rearing beliefs moderate the association between maternal depressive symptoms across the child's infancy and preschool years and child problem behaviors at age 4 ½. The Center for Epidemiology Scale of Depression (CES-D) was repeatedly administrated to 1364 women at their children's ages of 1, 6, 15, 24, 36 and 54 months to examine the chronicity of clinically significant levels of maternal depressive symptoms. Maternal child-rearing beliefs were assessed with the Parental Modernity Scale (Schaefer & Edgerton, 1985). Child behavior problems were measured with the Child Behavior Checklist collected from the children's mothers and childcare providers. More progressive (child-centered) child-rearing beliefs were found to moderate the association between chronic clinical levels of maternal depressive symptoms and caregivers' reports of child externalizing behavior problems. Higher externalizing behavior problems were reported for children of chronically depressed mothers but only when their mothers held more authoritarian (adult-centered) child-rearing beliefs, even after controlling for maternal education and income-to-needs ratio. In contrast, when mothers held more progressive, child-centered child-rearing beliefs, child externalizing behavior scores were unrelated to the chronicity of maternal depression.

Key words : maternal depression, progressive child-rearing beliefs, authoritarian child-rearing beliefs, child externalizing behavior, child internalizing behavior

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Introduction

Children of depressed mothers are at risk for an array of developmental problems. A number of studies have reported that maternal postnatal depression affects the quality of maternal care and predicts disturbances in children's social, emotional, language, behavioral, cognitive, and physical development (Mason, Briggs, & Silver, 2011; Fisher, Brock, O'Hara, Kopelman, & Stuart, 2015). In particular, emotional and behavior disturbance (Goodman, Rouse, Connell, Broth, Hall, & Heyward, 2011), delay in expressive language development (Cox, Puckering, Pound & Mills, 1987), and lower social competence (Gross, Conrad, Fogg, Wills & Garvey, 1995) are more prevalent among children of mothers with depression than children of mothers who are not depressed. In addition, children of depressed mothers have been found to be more passively noncompliant and less mature in expressions of age-appropriate autonomy (Kuczynski & Kochanska, 1990). Also, they were more likely to exhibit negative responses to friendly approaches and engage in low-level physical play (Murray et al., 1999).

A large volume of studies have found that the course of maternal depression over time is an important consideration in its links to problematic child development (Turney, 2012). Negative child outcomes are more pronounced when maternal depressive symptoms are chronically elevated than when they are intermittent. Cornish et al. (2005) examined infant cognitive psychomotor, language, and motor development relating to the chronicity of maternal depression. They found that chronic maternal depression, lasting throughout the first 12 months postpartum or up to the first 15 months postpartum, was associated with lower cognitive and psychomotor development and higher motor development delay in infants assessed at 15 months of age; whereas brief periods of maternal depression which did not significantly impair infant performance. Field (1992) found that postnatal maternal depression, lasting for 6 to 12 months during the infant's first year of life, was associated with infants' significantly lower scores on developmental assessments at 12 months of age, compared to scores of infants of mothers with depression of less than 6 months' duration. Furthermore, Brennan et al. (2000) examined relations between the chronicity of maternal depressive symptoms and child behavior problems and cognitive functioning at age 5. Maternal depression had been measured 4 times from pregnancy through the child's 5^{th} year, and a continuous measure was operationally defined according to the total number out of 4times. Through the child's 5^{th} year, the mother reported either moderate or severe level of depressive symptoms against scoring guidelines for the Beck Depression Inventory. They found that more frequent occurrences of moderate or severe depressive symptoms were associated with

higher levels of child externalizing and internalizing behavior problems and lower scores on a receptive vocabulary test.

Evidence from several observational studies suggests that parenting plays an important role in the link between maternal depression and poor child outcomes. Observational studies of depressed mothers interacting with their children have found that, compared to non-depressed mothers, depressed mothers displayed less positive affect and responded less rapidly and consistently to their children, aged 2, 4, and 6 months (see Burt et al., 2005). This, in turn, might place children at risk for problematic development. Similarly, Campbell, Cohn, and Meyers (1995) reported that mothers who had depression throughout the first 6 months of the infant's life were less positive (e.g., less smiling, less exaggerated facial expression) and less sensitive with their infants during feeding, face-to-face interaction, and toy play compared to mothers who were depressed for a shorter period of time or never depressed. In the NICHD Study of Early Child Care and Youth Development's report of relations between maternal depressive symptoms reported over the first three years of the child's life, maternal sensitivity, and child outcomes at age 3, the chronicity of maternal depression was related to a wide array of child outcomes. In addition, maternal sensitivity was related to the chronicity of maternal depression in comparisons between three groups of mothers: never depressed, sometimes depressed, and chronically depressed. In general, women who never reported depressive symptoms over the first three years of their children's lives were observed to be more sensitive in interactions with their children from 6 to 36 months of age than mothers who were categorized in sometimes and chronically depressed groups. Moreover, sometimes-depressed mothers, who reported clinical levels of depressive symptoms at least once, but fewer than four times, were observed to be more sensitive in interactions with their children from 15 to 36 months of age than were the chronically depressed group. Given the differential level of maternal sensitivity associated with chronicity of maternal depressive symptoms, maternal sensitivity was found to mediate associations found between maternal depression and poorer child outcomes (e.g., lower cognitive and linguistic functioning) (NICHD Early Child Care Research Network, 1999).

Maternal sensitivity not only mediated effects of maternal depression on child outcomes at age 3, but also moderated relations between the chronicity of mother's depressive symptoms and children's development. In the NICHD ECCRN report (1999), children whose mothers were depressed some of the time performed better on a measure of expressive language when they had more sensitive mothers. More sensitive mothers who reported depressive symptoms for some period of time or more chronically rated their children as showing more cooperation compared with less sensitive mothers who reported

depressive symptoms for the same period of time. These findings suggest that higher sensitivity alleviates the negative effects of maternal depressive symptoms on child development.

The present study seeks to examine the role of different maternal child-rearing beliefs in the link between maternal depression and child behavior problems. We expected that more child-centered, democratic beliefs about raising children will lessen the negative effects of maternal depression on child behavior. More child-centered, democratic beliefs have been associated with positive parenting qualities in mothers' interactions with their children (e.g., NICHD ECCRN, 2004; Owen, Ware & Barfoot, 2000), and with higher quality care from child-care providers (NICHD ECCRN, 1996). In a study predicting children's social-emotional behavior in the transition to school from maternal and paternal sensitivity, mothers' and fathers' child-rearing beliefs, and including numerous controls, greater father sensitivity with the child and more progressive-democratic child-rearing beliefs of mothers were unique predictors of better socio-emotional adjustment (e.g., greater social competence and fewer externalizing problems) in first grade, according to teachers' reports (NICHD ECCRN, 2004). Further, maternal sensitivity was not a unique predictor of these child outcomes, as it was not a significant predictor in models that included maternal and paternal sensitivity and mothers' and fathers' child-rearing beliefs. This evidence indicated the important role of mothers' child-rearing beliefs. Therefore, the present study focuses on maternal child-rearing beliefs as an important potential moderator of the effects of maternal depression.

Child-rearing beliefs reflect cognitions and attitudes parents hold about how they should relate to their child and how their child should relate to them. Child-rearing beliefs are a continuous concept of parenting attitudes which are reflected in the different styles of parenting first introduced by Baumrind (1971). Baumrind developed three models of parenting styles which were differentiated in the degree of parental warmth and parents' style of authority or control over their children. The most controlling parenting style was the authoritarian parenting style which includes punitive and directive discipline strategies placed on children and low levels of parental warmth. The least controlling parenting style delineated by Baumrind is the permissive parenting style which consists of few demands or restrictions placed on their children. The authoritative parenting style was shown to be most consistently related to positive child outcomes. It is comprised of parental emotional support, control over the child exerted through bidirectional communication between parents and child, and the parent providing rationales to the child for respecting the limits parents set (Baumrind, 1971).

These different orientations to parent-child

relations (e.g., authoritarian parenting style and authoritative parenting style) are thought to be based on opposing views of human nature: an authoritarian ideology regards human nature as evil, stressing subjection to nature rather than mastery over nature; a democratic ideology views human nature as good and emphasizes individual autonomy (Kluckhohn & Strodbeck, 1961).

This proposition that the opposite views of human nature (e.g., viewing human nature as evil vs. good) are embedded in different beliefs about child rearing found support in Shaefer and Edgerton's (1985) study of the factor structure of the Modernity Scale, a child-rearing and education beliefs scale developed to assess these differences in parenting beliefs. They found that parents holding authoritarian child-rearing beliefs were more likely to hold an ideology that children are born bad, misbehave if allowed to, and should obey parental authority absolutely. In contrast, progressive child-rearing beliefs were substantially correlated with ideas reflecting that children are basically good, children learn actively, school authority is not absolute, and a child's ideas need to be encouraged.

This conceptualization of child-rearing beliefs has been examined in relation to several child outcomes. Authoritative parenting beliefs were found to be associated with fewer child behavior problems for 3-to-6-year old children (Querido, Werner, & Eyberg, 2002) and were positively associated with children's academic competence (e.g., curiosity, verbal intelligence, language, and math) (Shaefer & Edgerton, 1985). Authoritarian beliefs, in contrast, were negatively correlated with child achievement in reading (Campbell, Goldstein, Schaefer, & Ramey, 1991), were negatively related to child competence in kindergarten (Shaefer & Edgerton, 1985), and were positively related to child conduct disorders at ages 5 and 10 (Thompson, Hollis, & Richards, 2003).

Given the associations between parenting behavior and child outcomes, more progressive, child-centered parenting beliefs are expected to buffer the negative effects of maternal depression symptoms because such beliefs should act as a filter on the mother's behavior. With cognitions about parenting that support a more child-centered approach to parenting, as opposed to authoritarian parenting beliefs, depressed mothers may work harder to shield their children from their negative affect or they are less likely to withdraw from parenting activities. More authoritarian mothers are less likely to take the child's feelings and responses into consideration when parenting their children (Schaefer & Edgarton, 1985) and may similarly be less oriented to "protecting" the child from exposure to or consequences of their depressive symptoms. By this reasoning, mothers with more progressive, child-centered child-rearing beliefs are more likely to be responsive to their children and share activities with their children even when they are depressed; depressed mothers with more authoritarian, adult-centered child-rearing

beliefs are expected to be less likely to communicate with and support their children (Shaefer & Edgerton, 1985).

The primary purpose of the present study is to examine whether associations between chronicity of maternal depression and child externalizing and internalizing problem behaviors at 54 months are moderated by maternal beliefs about rearing children. Demographic factors, including maternal education level and income-to-needs ratio, may confound these relations in that they are related both to child-rearing beliefs and to maternal depression. Chronically depressed mothers with higher income-to needs ratio were found to be more sensitive to their children than those with lower incomes (NICHD ECCRN, 1999), and mothers with more formal education held less authoritarian child-rearing beliefs (NICHD ECCRN, 1996). Given that higher family incomes buffered the effects of chronic maternal depression on poor child outcomes at age 3 in the NICHD SECCYD (NICHD ECCRN, 1999), it is possible that these demographic correlates of maternal depression and child-rearing beliefs of income and education might also confound the hypothesized moderating effect of child-centered child-rearing beliefs on relations between maternal depression and child social-emotional behavior. Therefore, these factors will be controlled in the analyses of relations among maternal depression, child-rearing beliefs, and child behavior problems.

In considering the association between more chronically depressed mothers and more pronounced negative child outcomes (Brennan et al., 2000; Cornish et al., 2005; Field, 1992), it is expected that children will be reported to have fewer internalizing and externalizing behavior problems when mothers are less chronically depressed.

Consistent with previous findings that have found associations between authoritarian attitudes and negative child outcomes (e.g., Campbell, Goldstein, Schaefer, & Ramey, 1991; Querido, Werner, & Eyberg, 2002), I predict that mothers who hold more authoritarian, adult-centered child-rearing beliefs will report more problematic behaviors of their children at 54 months than mothers who hold more progressive, child-centered child-rearing beliefs.

Finally, how child-rearing beliefs moderate associations between maternal depression and child behavior problems will be examined. Negative effects derived from maternal depression are expected to be moderated by maternal attitudes about rearing children: more child-centered rearing beliefs are expected to buffer the negative impacts of maternal depression on child behavioral functioning, even after controlling for demographic factors.

Methods and Measures

Participants

This study used archival data from the NICHD Study of Early Child Care, a longitudinal study of children and their families recruited from 10 sites across the U.S. Mothers and infants in the NICHD study of Early Child Care were recruited throughout 1991 from 31 hospitals in Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI. Eight thousands nine hundreds eighty six women who had given birth were visited in the hospital during selected 24 hour sampling periods. Of these mothers, 5,265 were eligible to meet criteria for the study. Using a conditionally-random sampling plan, recruited families were demographically diverse. When infants turned 1 month old, 1,364 families (58% of those contacted) were participated in the study. The recruited families were demographically similar to all the families giving birth at the hospitals during the 24-hour sampling periods. For additional details of the recruitment plan, refer to NICHD Early Child Care Research Network (1995).

Measures

Maternal depression

Maternal depressive symptoms were assessed at 1, 6, 15, 24, 36, and 54 months with the Center for Epidemiological Studies Depression Scale from 2001 through 2006 (CES-D; Radloff, 1997). The CES-D is a self-report scale (20 items) designed to measure depressive symptomatology in the general population. For each item describing a feeling ("I felt sad"), respondents choose one of four responses indicating the frequency with which they experienced the feeling in the past week (e.g., 1 = rarely or none of the time; 4 = very often). The total scores range from 0 to 55, with higher values indicating higher level of depressive symptomatology. A score of 16 or higher is considered to have clinical significance. Depression scores were moderately correlated over time (ranging from .40 to.58), and Cronbach alphas were high at each assessment (ranging from .89 to .91). Mothers who scored below the cut off score of 16 at every assessment were categorized as never depressed (ND) (n = 716). Mothers who scored 16 or above at least once, but fewer than 3 times out of 6 measurement times, were considered sometimes depressed (SD) (n = 439). Mothers who scored 16 or above at 3 times or more were considered chronically depressed (CD) (n = 209).

Child-rearing beliefs

Child-rearing beliefs were measured using the 30-item Modernity Scale (Schaefer & Edgarton, 1985). Mothers completed the questionnaire when the study child was 1 month of age during a home visit. The Modernity Scale

measures authoritarian or progressive child-rearing beliefs of parents. The scale yields a total score and two subscores, Progressive Beliefs (items reflecting child-rearing beliefs favoring self-directed child behavior) and Traditional Beliefs (items reflecting child-rearing beliefs favoring adult-centered behavior). The item "children should be allowed to disagree with their parents if they feel their own ideas are better" reflects the progressive child-rearing beliefs and the item "children should always obey the teacher" describes authoritarian child-rearing beliefs. The total score was strongly correlated with traditional beliefs, r = .99 and with progressive beliefs, r = -.39. In this study, the total scores which reflect mothers' overall beliefs about rearing children were used to categorize mothers into more authoritarian (adult-centered) or more progressive (child-centered) mothers. To form groups of mothers with relatively more progressive and relatively more authoritarian child-rearing beliefs, mothers scoring above the median score (a score of 75) formed the more authoritarian group and mothers who scored below 75 were considered more progressive.

Schaefer and Edgerton (1985) reported internal consistency reliability (using Cronbach's alpha) and split half (using Spearman and Brown correction) reliability ranging from .88 to .94. Test - retest (correlation between fall and spring) reliability was .84 and the alpha obtained with the current study's sample was .84. In addition, positive correlations between child competence (e.g., creativity and curiosity) and progressive belief scales were reported by Schaefer and Edgerton (1985).

Child behavior problem at 54 months

The Child Behavior Checklist (CBCL/4-18; Achenbach, 1991) was completed by 1055 mothers and by 4 fathers and 3 grandparents of children who were not living with their mothers to assess child problematic behavior at 54 months. The CBCL is a widely used measure to assess problem behavior of children 4-18 years. A series of behaviors (118 items for a version) are rated on 3 point scales from 0 (not true) to 2 (very true). Externalizing T-scores consisting of two syndrome scales (e.g., Delinquent Behavior and Aggressive Behavior) and Internalizing T-scores consisting of six syndrome scales (e.g., Withdrawn, Somatic Complaints, Anxious/ Depressed, Social Problems, Thought Problems, and Attention Problems) were used to assess child externalizing and internalizing problematic behaviors at 54 months.

Measurement of child behavior problems was also obtained from 759 non-parental caregivers using the Caregiver-Teacher Report Form (C-TRF) for Ages 2-5 of Achenbach's Child Behavior Checklist (Achenbach, 1991). Non-parental caregivers were asked to rate the problem items (0 = not true, 1 = sometimes true, 2 = very true). Externalizing T-scores consisting of the syndrome scales (e.g., Attention

Problems and Aggressive Behavior Syndromes) and internalizing T-scores consisting of the syndromes scales (e.g., Anxious/Obsessive, Depressed/Withdrawn, and Fears Syndrome) were used to evaluate child externalizing and internalizing problematic behaviors at 54 months.

Demographic information

Maternal education was measured as number of years in school at the time of recruitment. Maternal education differed significantly across the three depression groups, $F(2, 182) = 60.97$, $p < .0001$. Maternal education level was the lowest in chronically depressed group, followed by sometimes depressed and never depressed groups and it was significantly different across the three depression groups. An income-to-needs ratio at 54 months was computed from maternal interview data collected at each home visit. This ratio is used to measure income relative to number of members in the household. Total annual family income is divided by the appropriate poverty threshold determined by the year in which the income was earned, total household size, and number of full-time children in household. The income-to-needs ratio at 54 months in the three depression groups were significantly different, $F (2, 1520) = 43.29$, $p < .0001$, with the lowest income-to-needs ratio for the chronically depressed group followed by the sometimes and never depressed groups. Thus, more frequent periods of clinical levels of depressive symptoms were associated with less education and lower income.

Results

Analysis Plan

The associations of maternal depressive symptoms, maternal child-rearing beliefs, and their interaction with child behavior problems were analyzed in a series of 3 (depression groups) by 2 (child-rearing beliefs groups) ANCOVAs, with family income-to-needs and maternal education included as controls in the models because of their relations with both predictors and outcomes. Maternal education and income- to-needs ratio were significant predictors in the two of the models. Maternal education was significantly related to caregivers' reports of child externalizing behavior ($F(1, 739) = 9.42$, $P < .0022$), with higher maternal education related to caregiver reports of fewer externalizing behavior problems. In addition, there was a near-significant effect of maternal education for mothers' reports of child externalizing behavior ($F(1, 1466) = 3.71$, $p < .054$), with lower education related to more externalizing problems.

Between-subject factors were the maternal depression groups (never depressed-ND, sometimes depressed-SD, chronically depressed-CD), child-rearing beliefs (child-centered/more progressive beliefs versus adult-centered/more authoritarian beliefs), and the interaction of maternal

depression groups and parental beliefs. Four outcomes were examined: mothers' reports of child internalizing and externalizing behavior and caregivers' reports of child internalizing and externalizing behavior. Evidence for the hypothesized moderating effect of more progressive child-rearing beliefs on the effect of maternal depression would be shown by a significant interaction between depression groups and child-rearing beliefs and pattern of group means indicating a differential effect of the chronicity of depression on behavior problems depending on the nature of mothers' child rearing beliefs. Results of the analyses examining effects for mothers' ratings of child behavior problems are presented first, followed by the results of analyses examining effects for child behavior problems as reported by the children's child care providers.

Mothers' Ratings of Child Behavior Problems

Adjusted means for mothers' 1062 reports of child externalizing and internalizing behavior problems by chronicity of maternal depressive symptoms and child-rearing beliefs are shown in Tables 1 and 2.

Controlling for maternal education and income, there was a significant main effect for the chronicity of maternal depressive symptoms on mothers' ratings of child externalizing problems at 54 months ($F(2, 1466) = 28.62$, $p < .0001$). According to the DUNCUN post-hoc comparison of means, mothers in the CD group reported significantly more child externalizing problems than mothers in the SD and ND groups. However, there was not a significant main effect of maternal child-rearing beliefs ($F(1,1466) = 0.89$, $p > .347$). A significant

Table 1. Adjusted Means for Mothers' Ratings of Child Externalizing Behavior

Maternal Depression Level	Child Rearing Beliefs: More Progressive M	SD	N	More Authoritarian M	SD	N
Never	48.98[e]	8.56	482	50.60[d]	8.30	289
Sometimes Depressed	53.05[bc]	9.19	254	51.69[dc]	9.75	228
Chronically Depressed	54.16[b]	10.00	89	55.56[a]	10.13	159

Note. Means with different superscripts were significantly different ($p < .05$) in the DUNCUN post-hoc comparisons, which were examined when a significant interaction between chronicity of depression and child-rearing beliefs was found.

Table 2. Adjusted Means for Mothers' Ratings of Child Internalizing Behavior

Maternal Depression Level	Child Rearing Beliefs					
	More Progressive			More Authoritarian		
	M	SD	N	M	SD	N
Never Depressed	44.63	8.04	482	46.63	8.52	289
Sometimes Depressed	47.75	8.42	254	47.81	8.81	228
Chronically Depressed	51.31	8.46	89	51.93	10.36	159

interaction between maternal depression and child-rearing beliefs was found ($F(2, 1466) = 4.10$, $p < .016$). The pattern of child externalizing mean scores in each group did not, however, provide clear evidence indicating a buffering effect of more progressive child-rearing beliefs on the effect of maternal depressive symptoms (see Figure 1).

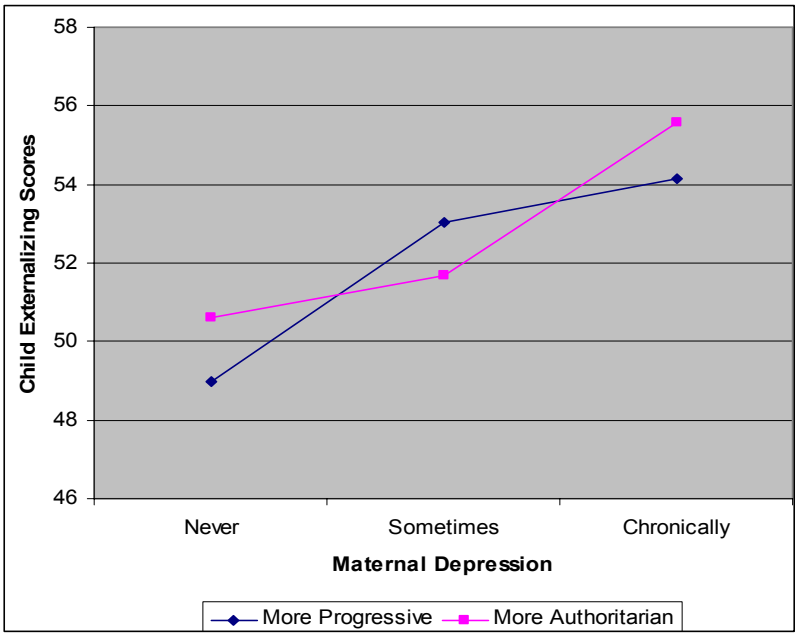

Figure 1. Mothers' reports of child externalizing behaviors (with means adjusted for income and education) as a joint function of maternal depression levels and mothers' child-rearing beliefs

Although child externalizing behavior reported by CD mothers having more progressive beliefs was significantly lower than child externalizing behavior reported by CD mothers having more traditional beliefs, other differences between the groups did not support the hypothesized pattern of a buffering effect of more progressive parenting beliefs on relations between maternal depression and child behavior problems.

For mothers' ratings of child internalizing problems, there was a significant effect of maternal depression on child internalizing behaviors ($F(2, 1466) = 39.99$, $p < .0001$).

Regardless of whether mothers had more progressive child-rearing beliefs or more authoritarian child-rearing beliefs, children of mothers who were depressed more frequently over their first four and a half years of life were reported that their children had more internalizing behavior problems (see Table 2). According to the DUNCUN post-hoc comparison of child internalizing mean scores, mean scores of chronically depressed group were significantly higher than sometimes or never depressed groups.

Controlling for maternal education and income, child-rearing beliefs were not significantly related to child internalizing behaviors ($F(1, 1466) = 2.56$, $p > .11$).

Caregivers' Ratings of Child Behavior Problems

Adjusted means for 759 caregivers' reports of child externalizing and internalizing behavior problems are shown in Tables 3 and 4. For caregivers' ratings of child externalizing problems, there were no significant main effects for the chronicity of maternal depression and for mothers' child-rearing beliefs, but there was a significant interaction between maternal depression and child rearing beliefs ($F(2, 739) = 3.90$, $p < .021$).

The pattern of means was consistent with the

Table 3. Adjusted Means for Caregivers' Ratings of Child Externalizing Behavior

Maternal Depression	Child Rearing Beliefs					
	More Progressive			More Authoritarian		
Level	M	SD	N	M	SD	N
Never Depressed	49.38[b]	8.70	252	49.66[b]	10.00	149
Sometimes Depressed	51.06[b]	9.02	139	49.86[b]	10.07	108
Chronically Depressed	47.61[b]	10.65	45	52.38[a]	10.04	73

Table 4. Adjusted Means for Caregivers' Ratings of Child Internalizing Behavior

Maternal Depression Level	Child Rearing Beliefs					
	More Progressive			More Authoritarian		
	M	SD	N	M	SD	N
Never Depressed	50.16	9.35	252	50.72	10.08	149
Sometimes Depressed	51.17	9.38	139	50.15	10.20	108
Chronically Depressed	50.61	10.96	45	52.42	9.18	73

hypothesis that the negative effects of maternal depression would be buffered when mothers' child-rearing beliefs were more progressive and child-centered. When mothers had more progressive child-rearing beliefs, caregivers' reports of children's externalizing behavior problems were unrelated to the chronicity of maternal depressive symptoms.

In contrast, children's externalizing behavior problems were related to the chronicity of maternal depressive symptoms when mothers had more authoritarian child-rearing beliefs (see Figure 2). The DUNCUN post-hoccomparison of means indicated that when mothers had more progressive child-rearing beliefs, caregivers' reports of child externalizing scores across three depression groups were not significantly different from one another. In contrast, when mothers had more authoritarian child-rearing beliefs, caregivers' reports of children in the CD group had significantly higher externalizing problems than children in ND and SD groups.

In fact, children of chronically depressed mothers who held more authoritarian child-rearing beliefs were reported to have more externalizing problems than all other groups. Note also that the buffering effects of more progressive child-rearing beliefs were further evident from a comparison of two mean scores: when mothers were chronically depressed, children of mothers having more progressive child-rearing beliefs exhibited the least problematic behaviors of all the groups. In contrast, children of mothers having more authoritarian child-rearing beliefs exhibited the most problematic behaviors (M = 47.61 for children in the CD group with more progressive child-rearing beliefs, M = 52.38 for children in the CD group with more authoritarian child-rearing beliefs). There were no significant effects found for the chronicity of maternal depression, child-rearing beliefs, or their interaction for

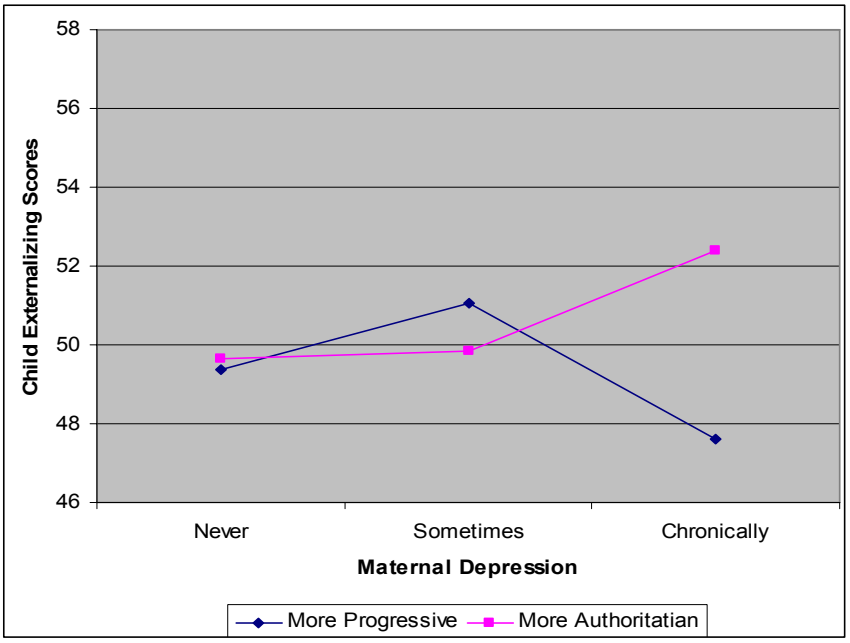

Figure 2. Caregivers' reports of child externalizing behaviors (adjusted means) as a joint function of maternal depression levels and child-rearing beliefs

caregivers' ratings of child internalizing problems.

Discussion

Using archival data from the NICHD Study of Early Child Care, I examined the impact of child-rearing beliefs on relations between maternal depressive symptoms over the first 4 and a half years of a child's life and child behavior problems at 54 months as reported by the children's mothers and by their child care providers. I hypothesized that more progressive child-rearing beliefs would alleviate the negative impact of maternal depressive symptoms on the development of child behavior problems. The findings provided some support of the hypothesis from caregivers' reports of children's externalizing problems. A buffering effect of more progressive child-rearing beliefs on the effect of maternal depression on child externalizing problems was found for caregivers' ratings of child externalizing problems. When mothers held more progressive child-rearing beliefs, child externalizing scores were not higher with more frequent periods of clinical levels of maternal depressive symptoms but when child-rearing beliefs were more authoritarian and adult-centered, more chronic maternal depression was associated with caregivers' reports of more

externalizing behavior problems for the children. In addition, children of mothers in the CD group were rated by caregivers as having significantly more externalizing problem behaviors when their mothers had more authoritarian child-rearing beliefs than when their mothers had more progressive child-rearing beliefs.

It is important to note that the tested models included controls for maternal education and family income. The current study found that higher maternal education and income-to-needs ratio were related to fewer time periods with clinical levels of maternal depressive symptom.

Accordingly, maternal and family factors were considered a potential confound of any associations found between the chronicity of depression and elevated child behavior problems. It was therefore important to include both maternal education and the measure of family income, income-to-needs ratio, as controls in examining relations between maternal depression, child-rearing beliefs, and child behavior problems (NICHD ECCRN, 1999). Even with these controls included in the models, the hypothesized buffering effect of more progressive child-rearing beliefs on effects of maternal depression was found for caregivers' reports of child externalizing behaviors.

The independence between mothers' reports and caregivers' reports makes the buffering effects of more progressive child-rearing beliefs particularly noteworthy. Previous study had examined the factors to explain the independence between mothers' reports and caregivers' reports. When mothers are depressive and anxious, they are likely to be negatively biased (Boyle & Pickles, 1997; Chilcoat & Breslau, 1997). The negative perspective may explain the higher child externalizing scores of chronically depressed mothers than those of caregivers' reports. In contrast to caregivers' ratings of child externalizing problems, no clear buffering effect of more progressive child-rearing beliefs was found in mothers' ratings of child externalizing scores. Although a significant interaction between maternal depression and child-rearing beliefs was found in relation to mothers' reports of child externalizing problems, the pattern of child externalizing mean scores did not indicate clear evidence of buffering effects of more progressive child-rearing beliefs.

Significant effects of maternal depression on child behavior problems were found only for mothers' ratings of child externalizing and internalizing behaviors, not for caregivers' ratings of child externalizing and internalizing behaviors. In mothers' ratings of child externalizing behavior, the more frequent occurrences of clinical levels of depressive symptoms were associated with the more child externalizing problems. When mothers had more authoritarian child-rearing beliefs, child externalizing scores of the CD group were significantly higher than those of sometimes depressed mothers, but mother-reported child externalizing problems did not differ significantly between sometimes and

chronically depressed mothers when they had more progressive child-rearing beliefs. A different pattern was found for differences in mother-reported child externalizing problems between never depressed and sometimes depressed mother groups related to mothers' child-rearing beliefs, indicating greater differences between never and sometimes depressed groups when mothers had more progressive beliefs than when they had more authoritarian beliefs. In mothers' ratings of child internalizing scores, significantly higher child internalizing scores were associated with more frequent occurrences of maternal depressive symptoms.

There were no significant main effects of maternal child-rearing beliefs on child externalizing and internalizing behavior problems according to both mothers' and caregivers' ratings.

The findings of present study provide some evidence for further benefits of more progressive child-rearing beliefs, indicating that such beliefs may moderate the negative impact of maternal depressive symptoms on child behavioral functioning. First, although many previous studies found relations between maternal depression and child outcomes moderated by exogenous factors such as maternal education, family income, and marital intimacy (NICHD ECCRN, 1999; Emery, Weintraub, & Neale, 1982), no study to date has provided evidence indicating a buffering effect of more progressive child-rearing beliefs on relations between maternal depressive symptoms and child functioning.

Limitations of the study should be noted. Mothers were categorized into one of two groups representing different child-rearing beliefs, using scores above and below the median score of the Modernity Scale. Using a split in a continuous score to designate groups reduces variability in scores. Mothers categorized into different groups may in fact differ in their child-rearing beliefs by only 1 or 2 scale point differences, which would be less meaningful than differences in mothers' scores at the extremes of the scale. Grouping of mothers' child-rearing beliefs into more progressive and more authoritarian beliefs in this way likely reduced the power to detect associations between child-rearing beliefs and child behavior problems and, more importantly, to test the hypothesized moderating role of child-rearing beliefs on the association between maternal depression and child behavior problems.

The findings have implications for intervention approaches that address cognitions and attitudes about parenting in efforts to alleviate the negative impact of depression for mothers and their children. More exploration of the components of child-rearing beliefs and associations between child-rearing beliefs and child behavior problems may provide insights for designing more effective interventions for mothers suffering from depression and their children.

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엄마의 만성우울증, 양육 신념, 그리고 54개월 된 유아의 문제행동

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본 연구는 NICHD 연구의 보육과 청소년 발달(Early Child Care and Youth Development)의 자료를 사용하여 엄마가 진보적인 양육 신념을 지녔을 경우 엄마의 우울증과 유아기의 문제행동 간의 연관성을 완화시키는 작용을 하는 지 검증하였다. The Center for Epidemiology Scale of Depression을 사용하여 유아의 연령이 1, 6, 15, 24, 36, 54개월인 1364명의 모를 대상으로 6회에 걸쳐 엄마의 만성 우울증에 대한 평가를 실시하였다. 또한 엄마의 양육 신념은 Parental Modernity Scale(Schaefer와 Edgerton, 1985)을 사용하여 평가하였다. 아동의 행동문제는 유아의 엄마와 유아원 선생님이 아동 행동 체크 리스트(Child Behavior Checklist)를 작성하여 측정하였다. 연구 결과에 따르면 엄마의 양육 신념이 진보적인 성향에 더 가까울 때 만성적 우울증을 앓고 있는 엄마의 우울 증상과 유아의 외현화 된 문제행동 간의 연관성을 완화시켜주는 것으로 나타났다. 즉 만성적인 우울증 증상을 나타낸 엄마의 유아 외현화 문제행동점수가 만성적인 우울증 증상을 보이지 않는 엄마의 유아 외현화 문제행동 점수에 비해 높은 것으로 나타났다. 엄마의 만성적 우울증에 따라 나타나는 더 높은 유아의 외현화 된 문제행동은 엄마의 양육 신념이 보수적인 성향에 가까울 경우에만 그런 것으로 나타났다. 엄마가 만성적 우울증을 앓고 있는 경우에도 진보적인 양육신념을 보유했을 경우 유아의 높은 외현화 문제행동점수와 연관성이 없는 것으로 나타났다.

주요어 : 만성우울증, 권위적인 양육신념, 진보적인 양육신념, 아동의 내현화된 문제행동, 아동의 외현화된 문제행동