

## Depressed Mothers' and Their Infants' Interactions with Nondepressed Partners

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**ABSTRACT:** Twenty depressed adolescent mothers were videotaped interacting with their own infant and with the infant of a nondepressed mother. In addition, nondepressed mothers were videotaped with their own infant as well as with the infant of a depressed mother. Depressed mothers showed less facial expressivity than nondepressed mothers and received less optimal interaction rating scale scores (a summary score for state, physical activity, head orientation, gaze, silence during gaze aversion, facial expressions, vocalizations, infantized behavior, contingent responsivity, and gameplaying). This occurred independent of whether they were interacting with their own infant versus an infant of a nondepressed mother, suggesting that depressed mothers display less optimal behaviors to infants in general. The infants of both depressed and nondepressed mothers received better head orientation and summary ratings when they were interacting with another mother, perhaps because the other mother was more novel. Infants of nondepressed mothers, in particular, had better summary ratings (state, physical activity, head orientation, gaze, facial expressions, fussiness, and vocalizations) than the infants of depressed mothers when interacting with depressed mothers. Thus, it may be that infants of nondepressed mothers are generally better interaction partners than infants of depressed mothers. Another related possibility is that they persist longer in trying to elicit a response from mothers less responsive than their own, given that they have learned to expect a response to their behavior.

**RÉSUMÉ:** Vingt mères adolescentes déprimées ont été filmées pendant leur interaction avec leurs propres nourrissons et avec les nourrissons de mères non-déprimées. De plus, les mères non-déprimées ont été filmées avec leurs propres nourrissons ainsi qu'avec les nourrissons d'une mère déprimée. Des mères déprimées ont fait état d'une expressivité faciale moindre que les mères non-déprimées et ont reçu des scores moins optimaux sur l'échelle d'évaluation d'interaction. Et cela indépendamment du fait qu'elles étaient avec leur propre nourrisson ou avec le nourrisson d'une mère non-déprimée, suggérant ainsi que

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les mères déprimées affichent en général aux nourrissons moins de comportements optimaux. Les nour-

rissons d'à la fois les mères déprimées et les mères non-déprimées reçurent une meilleure orientation de la tête et de meilleurs résultats aux scores lorsqu'ils étaient avec une autre mère, peut-être parce que l'autre mère était nouvelle. Les nourrissons de mères non-déprimées, en particulier, avaient de meilleurs scores généraux que les enfants de mères déprimées étant avec les mères déprimées. On peut peut-être ainsi établir que les nourrissons de mères non-déprimées sont généralement de meilleurs partenaires d'interaction que les nourrissons de mères déprimées.

RESUMEN: Se prepararon dos videos; el primero, de veinte madres depresivas en su trato con sus propios infantes y con infantes de madres no depresivas; el enfoque del segundo video fueron las madres no depresivas en su trato con sus propios infantes, así como también con los infantes de una madre depresiva. Las madres depresivas mostraron menos expresividad en su rostro que las madres no depresivas, y recibieron, por tanto, puntajes menos óptimos en la escala de evaluación de la interacción. Esto ocurrió independientemente de si ellas estaban en trato con sus infantes o con el infante de una madre no depresiva, lo cual sugiere que las madres depresivas les muestran a los infantes menos conductas óptimas en general. Tanto los infantes de las madres depresivas, como los de las no depresivas recibieron mejor orientación guía y promedios de evaluación cuando ellos estaban en relación con otra madre, quizás porque la otra madre era nueva para ellos. Cuando estaban en relación con una madre depresiva, los infantes de las madres no depresivas, en particular, tuvieron mejores evaluaciones en términos generales que aquéllos de madres depresivas. Por tanto, pudiera ser que infantes de madres no depresivas actúan por lo general mejor que los infantes de madres depresivas en su interacción con otros.

抄録: 20人の抑うつ的な青年期母が、自分の乳児、そして、抑うつ的でない母親の乳児と交流するのをビデオ録画した。また、抑うつ的でない母親が、自分の乳児、そして、抑うつ的な母親の乳児と交流するのもビデオ録画した。抑うつ的な母親は、抑うつ的でない母親に比べ、顔の表情表出が少なく、至適交流評価スケールスコアは低かった。この傾向は、交流が自分の乳児とか、あるいは抑うつ的でない母親の乳児とかにかかわらず見られたので、抑うつ的な母親は一般に、幼児に対し至適行動を示すことが少ないのだろうと推察された。抑うつ的な母親の乳児も、抑うつ的でない母親の乳児も、自分の母親ではない人と交流している時の方が、顔部オリエンテーションも総括的評価も良かった。これは、他の母親が目新しいことによるものと思われる。抑うつ的でない母親の乳児は、抑うつ的な母親との交流において、特に、抑うつ的な母親の乳児より全体評価が高かった。抑うつ的な母親の乳児に比べ、抑うつ的でない母親の乳児の方が一般に交流パートナーとして選んでいるのかもしれない。

Infants of depressed mothers often show a "depressed appearance," which is characterized by flat affect and low activity levels (Cohn, Matias, Tronick, Connell, & Lyons-Ruth, 1986; Field, 1984). Field et al. (1988) demonstrated that the depressed affect noted in infants of depressed mothers was not specific to interactions with the infant's depressed mother. In that study, infants of depressed mothers displayed depressed affect even when interacting with nondepressed females, who in this case were infant nursery teachers. The infants apparently were not simply mimicking their own depressed mother's behavior, but instead they seemed to have developed a "depressed" style of behaving.

Infants with a "depressed" style of behaving were also evident in studies on simulated maternal depression (Cohn & Tronick, 1983) and on real maternal depression (Field, 1984). The mothers and infants in these studies were videotaped in three different interactions: spontaneous play, mother being asked to look depressed, and reunion (return to spontaneous play). Infants of the nondepressed mothers showed distressed and disorganized behavior when their mothers "looked depressed." However, infants of "naturally" depressed mothers did not show distress when their mothers "looked depressed," suggesting that these infants had become accustomed to a depressed style of interacting. Field (1984) suggested that infants of depressed mothers had developed

a passive coping, depressed style of interacting in response to the affective and behavioral cues given by their mothers. In addition, depressed mood continued in the infants of nondepressed mothers when the mothers' depressed behavior simulation ended and the mothers had returned to their normal interaction style. This carry-over effect of the "depressed" behavior on the part of the nondepressed infants was interpreted as the temporary establishment of a mood produced by the emotional unavailability of the mother during the simulated depression condition.

In the study in which infants of depressed mothers acted depressed with nondepressed adults, the infants "depressed" style of interacting also had a negative effect on the nondepressed adult's (teacher's) behavior (Field et al., 1988). Even though the nondepressed teachers were unaware of the group classification of the infants, their behavior was less optimal with infants of depressed mothers. The mechanisms underlying this transfer of depressed mood to nondepressed adults are not clear.

One question raised by the Field et al. (1988) study was whether the teachers may have been less sensitive interaction partners because they were not mothers. For that reason, in the current study, other mothers were used as the nondepressed interaction partners rather than teachers. Accordingly, depressed and nondepressed mothers interacted with their own infant as well as with an unfamiliar infant of a depressed or nondepressed mother. The same measures employed in the Field et al. (1988) study were used here. Thus, the present study investigated whether infants of depressed mothers generalized their depressed style of behaving to interactions with mothers who were not depressed. In addition, the design of the study enabled us to examine how infants of nondepressed mothers respond in interactions with depressed mothers.

## METHOD

### *Sample*

The sample was composed of 40 mother-infant dyads recruited from a longitudinal study of depressed and nondepressed mothers. The infants were 3 months at the time of the study ( $M = 3.4$ ). The depressed mothers ( $N = 20$ ) had a mean age of 17.6 ( $R = 15-20$ ) and were 25% African American and 75% Hispanic. The socioeconomic status of the depressed mothers was low ( $M = 4.3$ ) based on the Hollingshead SES index. The nondepressed mothers ( $N = 20$ ) had a mean age of 17.1 ( $R = 14-19$ ) and were 35% African American and 65% Hispanic. Nondepressed mothers were also of lower socioeconomic status ( $M = 4.4$ ). The groups were not different on these demographic variables. Mothers were designated depressed if they received a diagnosis of dysthymia on the Diagnostic Interview Schedule (Robins, Melzer, Croughan, & Ratcliff, 1981) and had a Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mach, & Erbaugh, 1961) score greater than 16. Mothers were designated nondepressed if they had no psychiatric diagnosis and a score less than 9 on the BDI. The depressed mothers' mean BDI score was 23.4, and the nondepressed mothers' mean BDI score was 5.0.

### *Procedures*

Mothers were interviewed on the Diagnostic Interview Schedule and the Beck Depression Inventory. The DIS is a standardized diagnostic interview that addresses

specific symptoms as well as their chronology, duration, and associated impairments. The DIS has a step structure that minimizes interviewing time, and the questions are precoded 0-1-2, corresponding to “no,” “somewhat or sometimes,” and “yes.” The BDI is a 21-item inventory with each item scored on a 4-point scale indicating the absence/presence and severity of depressed feelings, behaviors, and symptoms. Mothers who received a score of less than 9 were classified as nondepressed, and those receiving a score of greater than 16 were classified as depressed, in agreement with other investigators’ use of the BDI scale (O’Hara, Rehm, & Campbell, 1983). In addition, mothers who received scores of 0–2 on the BDI were removed from the sample because they have been noted to have less optimal interaction behaviors than mothers with high BDI scores (Field et al., 1991). The DIS and BDI were given before the videotaped interactions.

The dyads participated in two separate, 3-minute videotaped play interactions, one with their own infant and one with the unfamiliar infant. In forming the pairs for videotaping, the depressed and nondepressed mother–infant dyads were matched on ethnicity and age of infant. We elected to study the interactions of 3-month-old infants because this is the earliest age that infants show interest in face-to-face interactions (by 6 months of age infants typically show more interest in objects than in face-to-face interaction). Many conversation skills such as turntaking are learned during interactions at this age and most of the studies on depressed mother–infant interactions feature 3-month-old infants (Cohn et al., 1986; Field, 1992). For the videotaping, each infant was placed in an infant seat on a table approximately 15 inches from his or her own mother or the unfamiliar other mother who was seated across the table. Two videocameras and a split screen generator enabled simultaneous monitoring of the infant’s face and body and the mother’s face and torso.

Subjects were randomly assigned to either order one or order two. In order one, the depressed mothers were videotaped first, while in order two, the nondepressed mothers were videotaped first. The “waiting” dyad simply played together in an adjoining room. Thus, in order one, the sequence of interactions was depressed mother and own infant followed by depressed mother and infant of a nondepressed mother, then nondepressed mother with own infant and nondepressed mother with infant of a depressed mother. The random assignment to order was made to control for group differences on infant state. Analyses for order effects made on the pilot data yielded no significant effects. Regardless of the order assigned, each mother interacted with her own infant first. This decision was made to provide baseline data and avoid any stranger effects generalizing to the mother–own infant interactions. Mothers were instructed to play with the infants as they would at home.

The videotaped interactions were coded by coders who were unaware of the group status. They used the Interaction Rating Scale (IRS), which consists of mother behavior ratings and infant behavior ratings (Field, 1980). The mother behavior ratings include state (anxious or depressed vs. attentive), physical activity (high or low vs. moderate), head orientation (toward vs. away from infant), gaze (toward vs. away from infant), silence during infant gaze aversion, facial expressions (flat vs. smiling), vocalizations (minimal/excessive vs. moderate talking), infantized behaviors (imitative behaviors), contingent responsivity, and gameplaying. The infant behavior ratings include state (drowsy vs. alert), physical activity (squirming vs. relaxed), head orientation (toward

vs. away from mother), gaze (toward vs. away from mother), facial expressions (pouting vs. smiling), fussiness (fussing/nonfussing), and vocalizations (vocalizations vs. no vocalizations). Coders were trained to 90% agreement on the Interaction Rating Scale. Interobserver reliability was assessed by simultaneously coding 30% of the videotaped interactions. Kappa coefficients averaged .78.

### RESULTS

Repeated measures analyses of variance were performed with own mother/other mother as the repeated measure and depressed/nondepressed mother group as the between-groups measure. Because an analysis on order effects (depressed or nondepressed dyads being videotaped first) yielded no significant effects, the data were collapsed across order.

#### Mother Behaviors

Analyses of the mothers' behaviors yielded the following main effects: (see Table 1) (1) depressed mothers showed less facial expressivity (lower ratings) than the nondepressed mothers while interacting with the infants in general (their own infant as well as the infant of a nondepressed mother;  $F = 8.82, p < .01$ ); and (2) depressed mothers received less optimal summary IRS ratings than nondepressed mothers for their interactions, again independent of whether they were interacting with their own or with other mothers' infants ( $F = 4.37, p < .05$ ).

Table 1  
*Depressed Mothers and Infants Interacting with Nondepressed Partners*

Variables	Condition				Effect
	Own mother		Other mother		
	D Mom D's baby	ND Mom ND's baby	D Mom ND's baby	ND Mom D's baby	
<b>Mother</b>					
Mother facial expressions	2.3(.8)	2.7(.5)	2.0(.7)	2.9(.3)	D**
Summary	2.0(.3)	2.2(.4)	1.9(.3)	2.3(.3)	D*
<b>Infant</b>					
Infant head orientation	2.2(.6)	2.5(.7)	2.6(.7)	2.6(.5)	C**
Summary	2.3(.3)	2.5(.5)	2.6(.2)	2.4(.3)	C*; Dx C*

Note: D = Depression Effect  
C = Condition Effect  
DxC = Depression by Condition Interaction  
\* $p < .05$ ; \*\* $p < .01$ .

#### Infant Behaviors

Interaction effects suggested the following: (see Table 1) (1) infants received better head orientation ratings with the other mother versus their own mother ( $F = 8.22, p < .01$ ); and (2) infants received better summary ratings when interacting with the other mother versus their own mother ( $F = 6.12, p < .02$ ); and (3) infants of nondepressed mothers versus infants of depressed mothers received better summary scores for interactions with the depressed mothers ( $t = 3.63, p < .005$ ).

## DISCUSSION

Several of the interaction behaviors did not differentiate the two groups of mothers and infants. Only those that would be expected to differ based on previous literature were different including the mothers' facial expressions, usually noted to be more flat and less frequent and the infants' head orientation, usually noted to be more frequently averted in infants of depressed mothers. (See Field, 1992, for review.) Many of the other ratings, while not significantly different, favored the nondepressed dyads, thus contributing to the different overall summary ratings. However, for some behaviors, for example, mother head orientation and gaze behaviors, mothers seemed always to be focused on their infants, whether they were depressed or not. Thus, those ratings were routinely high. In contrast, ratings on other behaviors, for example, infantized behavior, contingent responsiveness, and gameplaying, were routinely low because they infrequently occur in samples of relatively young, low SES mothers (Field, 1992).

The significant differences noted in this study indicate that infants of depressed mothers received better ratings for their behavior during interactions with mothers other than their own. These findings differ from those of the Field et al. study (1988), which indicated that the nonoptimal behaviors of the infants of depressed mothers generalized to interactions with nondepressed adults (i.e., the teachers). Although the results are difficult to compare across studies, due to the different coding systems and the different types of interaction partners, the results of the present study suggest that infants of depressed mothers do not necessarily generalize their "depressed" behavior to their interactions with nondepressed mothers. Nonetheless, the interaction behaviors of "nondepressed" infants were consistently better than the interaction behaviors of "depressed" infants regardless of their interaction partner. Future research is needed on ways to help infants of depressed mothers improve their interaction behaviors.

The depressed mothers, in contrast, showed nonoptimal interaction behaviors whether they were with their own infant or with an infant of a nondepressed mother. Even though the infants of nondepressed mothers showed more optimal behaviors when interacting with depressed mothers (versus their own mother) and versus infants of depressed mothers (interacting with their own mother), the depressed mothers seemed unaffected by the infants' attempts to elicit more responsive behaviors. Thus, the infants of depressed mothers appear to be resilient and able to improve their interactions with good interaction partners, while the depressed mothers appeared to be unaffected by infants who were trying very hard to elicit more responsive maternal behavior.

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