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Touch by Intrusive and Withdrawn Mothers with Depressive Symptoms

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Interaction behaviours of 88 adolescent mothers with depressive symptoms and their 3-month-old infants were videotaped and coded for different types of touch. The 'depressed' mothers were classified as intrusive, withdrawm or good by one observer and another observer coded rough tickling, poking, tugging and pulling as negative touch behaviours and gentle stroking and rubbing as positive touch behaviours. The mothers with depressive symptoms were more likely to touch their infants in a negative way and more likely to be classified as intrusive.

Keywords: depressed mothers, infants, touch, coded

Most research on mother–infant face-to-face interaction behaviours has focused on facial and vocal behaviours. The mother's tactile stimulation has been virtually ignored (Stack and Muir, 1990). Recent studies (Pelaez-Nogueras *et al.*, 1996; Stack and Muir, 1990) highlight the importance of touch during early interactions. In the Stack and Muir (1990) study, infants whose mothers were 'still-face' (Tronick *et al.*, 1977) were less distressed by the still-face if the mother touched the infant during the still-face. Pelaez-Nogueras *et al.* (1996) conducted the same procedure with mothers who had depressive symptoms. Their infants also were less distressed when the mothers touched them during the still-face procedure. Some have suggested that depressed mothers touch their infants less often or more negatively (Lyons-Ruth *et al.*, 1986). However, systematic observations of depressed mothers' touch behaviours have not yet been conducted.

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The present study investigated the different types of touch that mothers with and without depressive symptoms used during mother–infant face-to-face interactions. Mothers were classified as intrusive or withdrawn independent of the type of touch they used or their depression classification. Negative touch has been associated with intrusive maternal behaviour, and maternal depression investigators are increasingly classifying depressed mothers as intrusive or withdrawn (Cohn *et al.*, 1986; Field *et al.*, 1990; Malphurs *et al.*, 1994).

METHODS

Subjects

Eighty-eight mother–infant dyads were recruited from a developmental follow-up clinic for a longitudinal study on maternal depression effects. The criteria were that they be less than 22 years of age and non-drug using as assessed by urine screens on the mothers and meconium on their infants at the neonatal stage. In this sample, 68% of the mothers were African-American, 33% Hispanic

and 9% were Caucasian. The mothers were low socioeconomic status (M=4.5), based on the Hollingshead two factor index of socioeconomic status, low education (M=10.2), single parents, and they averaged 19.6 years (R=16–21).

The mothers were administered the Beck Depression Inventory (BDI; Beck *et al.* 1961). This 21-item questionnaire uses a four-point scale (0–3) to indicate the presence or absence and severity of depressed feelings, behaviours and symptoms. The inventory has been frequently used for assessing non-clinically depressed populations and mothers with depressive symptoms (Coyne and Gotlib, 1983). Total scores on the BDI range from 0 to 60. Mothers with BDI scores from 3 to 9 were classified as non-depressed, and mothers with scores of 16 and higher (allowing a sufficiently wide difference between the two groups) were classified as moderately (scores of 17–24) to severely (>24) depressed. These classification criteria are commonly used in research studies on depressed adults (Coyne and Gotlib, 1983). Mothers with 0–2 scores (N=9) were omitted because they have been noted to look depressed more than high-scoring mothers (despite their low scores) and because they may be different from both the depressed and non-depressed mother groups (Field *et al.*, 1992). Because we were interested in the effects of current depressive symptoms, we classified the mothers according to their scores when their infants were 3 months old. We appreciate, however, that mothers who were currently depressed may interact differently from mothers who were depressed earlier in the infants' life. Infants were 3 months old (M=3.2 months, SD=0.3), full-term and healthy and evenly divided on gender. We selected 3-month-old infants for the study because that is an age when infants most enjoy face-to-face interactions. The depressed and non-depressed mothers and infants did not differ on sociodemographic characteristics.

Procedures

Mother–Infant Interactions

For the interactions the infants were placed in an infant seat on a low table, and their mothers sat on a chair approximately 18 inches from their infants. Video camera 1 was focused on the mother's face and upper body during the interactions. Video camera 2 was focused on the entire infant seated directly in front of the mother. Both video cameras were connected to a time–date generator, VCR and TV monitor in an adjacent room. The experimenter asked the mothers to play with their infants for 3 minutes just as they might normally do at home, without the use of toys or other objects.

Coding

Each 3-minute mother–infant interaction was coded by observer 1 for types of touch. The types of touch were negative, no touch and positive. Negative touch was defined as rough poking, tickling or shaking the infant or rough pulling or tugging of infant's arms and legs. No touch was defined as not touching the baby in any manner or inadvertent touching by adjusting baby's clothing, bib, etc. Positive touch was defined as gentle stroking on the arms, legs or torso region or playful touch.

The coders were blind to the mothers' group status. The touch coding was performed through time-sample unit coding sheets. Type of touch was determined for each 10-second time-sample unit of the 3-minute interaction session. Multiple kinds of touch could be coded during each time-sample unit. Percentage of time each touch occurred was then calculated. Reliability on touch coding was performed by an independent observer on one-third of the sample. Kappa coefficients (Bakeman and Gottman, 1986) on the touch codes were 0.69 for negative touch, 0.62 for no touch and 0.62 for positive touch, averaging 0.64.

The 3-minute interactions were coded by observer 2 for type of mother. The types of mother were intrusive, withdrawn or good. Intrusive mothers were defined as having staccato-like movements, looming behaviour, no contingent responsivity and non-contingent talking. Withdrawn mothers were defined as having little or no play interaction with the infant, and disengaged and flat facial and vocal expressions. Good mothers were defined as non-intrusive and non-withdrawn. This coder was asked not to include touch behaviours in her global assessment so that the coding of touch behaviours and the global assessment could be relatively independent.

The type of mother was determined by observing the entire 3-minute interaction and then assigning a type. Observer 2 was trained by watching exemplars of the interactions of each type of mother from other samples using the operational definitions as guidelines. Reliability on the global type of mother coding was also performed by a secondary observer trained in the same manner on one-third of the sample. Kappa coefficients (Bakeman and Gottman, 1986) calculated on the type of mother coding averaged 0.72. A third coder coded the infant's behaviour state (positive, neutral or

negative) to determine any differential response on the part of the infant to the mother's interaction style (intrusive/withdrawn). The time-sample unit coding procedure was used again here. The infants' behaviour state, whether it was positive (smiling, cooing), neutral (interested expression but vocally inactive) or negative (sad or angry faces, fussy vocalizations) was coded for each 10-second time-sample unit for the 3-minute interaction session. Percentage of time each behaviour state occurred was then calculated. Reliability on behaviour state coding was performed by an independent observer on one-third of the sample. Kappa coefficients (Bakeman and Gottman, 1986) on the behaviour states were 0.74 for negative, 0.71 for neutral and 0.83 for positive.

RESULTS

Demographic Variables

The group of mothers with depressive symptoms (N=52) was composed of 29 intrusive and 12 withdrawn mothers and the non-depressed group (N=36) was composed of 12 intrusive and eight withdrawn mothers. It should be noted that in these groups there were also 'good' mothers (non-intrusive and non-withdrawn) in each of the groups (N=11 or 20% in the depressed group and N=16 or 50% in the non-depressed group). However, we did not include the 'good mothers' in our analyses because of inadequate sample size for so many cells. Independent t-tests were first performed to compare depressed and non-depressed groups and intrusive and withdrawn groups on sociodemographic variables. No group differences were found on the sociodemographic variables and the BDI scores were the same for the intrusive (M=15.7) and withdrawn group (M=16.6) mothers, although the 'depressed' mothers group scored significantly higher on the BDI (M=27.1 vs 5.2, $p<0.001$).

Depressive Symptoms

Several group differences were noted on the behaviour measures. The depressed mothers had a higher percentage of negative touch during their interactions than the non-depressed mothers (t=2.61, $p<0.01$) and had less frequent positive touch (t=2.72, $p<0.05$) than the non-depressed mothers (see Table 1). The depressed and non-depressed mothers did not differ on the amount of time they were not touching their infants.

Moderate/Severe Depressive Symptoms

A comparison was also made between mothers who had moderate (17–24 BDI score) versus severe (>24 BDI score) depressive symptoms. The moderate group showed more positive touch (54.3 vs 26.6, $p<0.02$), but no differences were noted for no touch (18.5 vs 35.7, p=0.17) or for negative touch (33.3 vs 47.4, p=0.28).

Intrusive/Withdrawn Mothers

The intrusive depressed mothers were more negative in their touching of their infants than the withdrawn depressed mothers (t=9.49, $p<0.001$) and spent less time not touching their infants than

Table 1. Mean percentage of time different kinds of touch were shown by depressed and non-depressed intrusive and withdrawn mothers

Touch type	Groups	
	Depressed (N=52)	Non-depressed (N=36)
Negative	52.7 (31.8)$_a$	34.9 (31.2)$_b$[2]
No touch	29.5 (24.7)	27.7 (23.8)
Positive	27.2 (22.7)$_a$	42.8 (33.6)$_b$[1]

	Intrusive (N=29)	Withdrawn (N=12)	Good (N=11)	Intrusive (N=12)	Withdrawn (N=8)	Good (N=16)
Negative	75.8 (16.8)$_a$	21.8 (16.0)$_b$[3]	19.4 (4.1)	73.9 (17.0)$_a$	8.6 (8.1)$_b$[3]	7.1 (3.7)
No touch	20.1 (15.4)$_a$	48.3 (26.5)$_b$[2]	29.8 (4.1)	16.3 (12.6)$_a$	57.3 (32.4)$_b$[2]	9.2 (4.1)
Positive	14.5 (12.5)	21.7 (17.5)	49.1 (22.6)	15.3 (10.6)	20.1 (10.9)	87.1 (22.6)

Note: Subscript letters denote group differences. Superscript 1, $p<0.05$; 2, $p<0.01$; 3, $p<0.001$. The good groups were not included in data analyses. The columns do not total 100 because multiple types of touch could be coded during each time-sample unit and because some units could not be reliably coded.

the withdrawn mothers ($t=-3.36$, $p<0.01$). The non-depressed intrusive mothers spent more time negatively touching their infants than the non-depressed withdrawn mothers ($t=9.77$, $p<0.001$) and spent less time not touching their infants ($t=-3.33$, $p<0.01$). The depressed and non-depressed intrusive and withdrawn mothers did not differ on the amount of positive touch that they gave their infants during the interaction.

As can be seen in Table 2, the infants of intrusive mothers spent significantly more time in negative behaviour states ($t(40)=2.69$, $p<0.05$) than the infants of withdrawn mothers. They also spent significantly less time in positive behaviour states ($t(40)=2.19$, $p<0.05$) than the infants of withdrawn mothers.

A correlation analysis to determine the relationships between the BDI scores, the classification (withdrawn or intrusive) and the touch behaviours yielded no significant relationships between the BDI scores and type of touch by the mother. However, the amount of negative touch was significantly related to the intrusive classification ($r=0.76$, $p<0.001$).

DISCUSSION

These results suggest that there was more negative touch in the group of depressed mothers, and a greater proportion of the depressed mothers (versus non-depressed mothers) were classified as intrusive. This was unexpected given that most samples of depressed mothers are predominantly withdrawn (e.g. Field *et al.*, 1985), although both intrusive and withdrawn mothers have been noted in other samples of mothers with depressive symptoms (Cohn *et al.*, 1986; Field *et al.*, 1990). One possible explanation for these discrepant findings is that the earlier samples were adult mothers and the present sample was predominantly adolescent mothers. Depressed mothers, at least depressed adult mothers, have generally been described as providing less stimulation during early interactions with their infants. The depressed adolescent mothers in this sample predominantly showed overstimulating interaction behaviour. The overstimulating behaviour of the depressed, and particularly the depressed intrusive mothers, included negative touch, which was pervasive during their interactions. Similar levels of negative touching occurred in those mothers who were intrusive but not depressed, although mothers were not disproportionately classified as intrusive in the non-depressed sample.

Table 2. Mean percentage of time spent in different affective states by infants of intrusive and withdrawn mothers

Affective state	Group		
	Intrusive	Withdrawn	Good
Negative	15.6 (5.8)$_a$	6.2 (3.1)$_b$[1]	9.1 (4.6)
Neutral	53.6 (23.9)	58.7 (18.1)	31.9 (22.4)
Positive	20.8 (16.8)$_a$	35.1 (20.9)$_b$[1]	67.2 (31.7)

Note: Subscript letters denote group differences. Superscript 1, $p<0.05$.

In contrast, the withdrawn mothers in both the depressed and non-depressed groups compared to the intrusive mothers were most often coded as not touching their infants. Although depressed mothers have typically been observed to be 'withdrawn and disengaged' with flat affect, it appears from this study that maternal depression is also manifested by angry, controlling, negative behaviour during mother–infant interactions, as was noted earlier by Cohn *et al.* (1986). These findings suggest that the mothers' style of interaction may be more related to the type of touching the infant receives than their high or low scores on the BDI.

The present study also suggests that infant affect might be most negatively affected by a mother's intrusive style of interaction. Infants of intrusive mothers spent more time in negative behaviour states and less time in positive behaviour states than infants of withdrawn mothers. However, other negative effects not measured in this study may result from exposure to mothers' withdrawn behaviour.

The touch behaviours might have influenced the coder's classification of the mothers as intrusive or withdrawn even though the coders were asked to focus on facial and vocal behaviours and not touch behaviours. This direction to the coders may have subtly sensitized the coder in unknown ways. A future study should systematically vary the face, voice and touch modalities to determine whether these could be independently used to differentiate intrusive and withdrawn mothers. The point remains, however, that negative touch, whether it occurs in an intrusive or a negatively touching mother, has undesirable effects on the infants' behaviour, an effect that is less widely known because mother–infant interaction studies have focused primarily on facial and vocal behaviours of the mothers.

Future research might investigate other characteristics that differentiate these types of mothers. Additional research is also needed on possible interventions that might reduce the overstimulation of the withdrawn mothers in order to avoid the inevitable effects that inappropriate (too much or too little) stimulation has on infants' growth and development.

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