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Different amounts of protest in 4-month-old infants of depressed vs. non-depressed mothers

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Abstract

Amount of vocal protest was measured in 4-month-old infants of depressed vs. non-depressed mothers during 10 minute face-to-face interaction. The sample consisted of a two groups of mothers with their infants: depressed (n=17) and non-depressed (n=49), in total N=66. Vocal protest was measured using PRAAT phonetic software and manual coding. Results showed that infants of depressed mothers expressed a lower amount of vocal protest compared to infants of non-depressed mothers as measured in mean percentage of time (p < .001).

Background

A significantly heightened amount of protest has previously been reported for infants of depressed mothers during face-to-face interaction (Field, Healy, Goldstein, & Guttzitz, 1990). The other studies have also reported a heightened amount of protest in infants of depressed mothers on a tendency level (Murray, Furi-Crowley, Hooper, & Cooper, 1996; Friedman, Beebe, Jaffe, Ross, & Trigg, 1999). Previous studies have predominantly used composite multimodal measures, which measure several modalities together (Field et al., 1990; Murray, 1990). However, multimodal measures may cover up so-called dissociated affects (the infant is expressing converging affects through different modalities), which have been detected in infants of depressed mother (Beebe et al., 2009).

Aim

The aim of the present study was to measure amount of infant protest in infants of depressed vs. non-depressed mothers. As the measurement was through a single modality, the vocal modality, which has been found to be the most salient system through which both mother and infant communicate with each other for 4 months (Van Egeren, Barnett, & Roach, 2001).

Method

Participants

The sample consisted of 66 primiparous mothers and their infants from the urban Copenhagen area with PPD group (n=17) and non-depressed group (n=49). Inclusion criteria were: Primiparous mother, healthy infant, mother at least 18 years, living in the Copenhagen area, normal hearing and vision abilities. Exclusion criteria were: Psychosis and/or presence of co-morbid bipolar disorder and abuse of any substances.

Measures

Depression status was measured with the self-report measure Edinburgh Postnatal Depression Status (EPDS) and the standardized psychiatric interview Present State Examination (PSE). Wing, Cooper, & Sartorius, 1974, which was administered by a clinical psychologist at the Edinburgh Postnatal Depression Status (EPDS) and Depression status was measured using the maternal Edinburgh Postnatal Depression Status (EPDS) and Depression status was measured using the maternal Present State Examination (PSE: Wing, J. K., Cooper, J. E., & Sartorius, N. (1974). Van den Heuvel, Rutgers, & De Goede, 2005). Infants of under 6 months old were found between. The segments were identified based on intensity threshold levels. The segments were reliably separated into negative (protest) and neutral-positive vocalizations by blind coders. Coders were trained to achieve reliability at minimum kappa (K) = 0.60 for event and 0.80 for percentage agreement, which is considered acceptable (Cohen, 1988). Interrater-reliability was calculated for 20% of each recording. Time-based and event-based Kappa was calculated with sequential analysis software (Bakeman & Quera, 2011). For protest time-based K = 0.84 and the K = 0.84, % = 93. Seven files were consensus-coded because reliability could not be reached.

Ethics

All participants were thoroughly informed about the project and all signed a consent form. All participants in the depressed group were offered thorough feedback after all visits and were offered to participate in short-term cognitive behavioral group therapy.

Data Analysis

Data was analyzed performing an independent sample t-test using IBM SPSS Statistics 19.

Results

Maternal and infant characteristics

Basic characteristics of the mothers are presented in Table 1. No significant differences were found in maternal age, single status, maternal unemployment status, maternal years of education, infant gender or infant birth weight. The two groups only differed according to depression diagnosis.

Protost results

On average, infants of non-depressed mothers showed a higher percentage of time in protest (M = 11.56, SD = 14.65) than infants of depressed mothers (M = 2.31, SD = 4.78). This difference was highly significant (t(63.92) = 3.61, p < .001).

Discussion

Contrary to previous findings, the results of the present study showed a lowered amount of vocal protest in infants of depressed mothers. Possible interpretations will now be discussed. Figure 1 shows the results from the present and previous studies.

One possible explanation is the use of different measures. However, only across the depressed samples does the measure seem to largely impact the amount of protest: This could be explained by the presence of discordant affect in the infants of depressed mothers, which would result in different amount of protest when different modalities are measured.

Sample characteristics might have affected the results. The depressed women in the present sample can be considered low-risk (Table 1), while Field has often used particularly high-risk samples. Interactions of high-risk infant-mother dyads are quantitatively and qualitatively different (Murray & Cooper, 1997; Fiast, 1967). Furthermore, it has been argued that there are different types of depressed mothers characterized by different behavior patterns in mother and infant (Cohn, Malais, Trotsk, Comel, & Linna-Ruth, 1986; Trotsk & Weinberg, 1997; Field, Hernandez-Dei, & Dei, 2005). Infants of under 6 months old were found between. The segments were identified based on intensity threshold levels. The segments were reliably separated into negative (protest) and neutral-positive vocalizations by blind coders. Coders were trained to achieve reliability at minimum kappa (K) = 0.60 for event and 0.80 for percentage agreement, which is considered acceptable (Cohen, 1988). Interrater-reliability was calculated for 20% of each recording. Time-based and event-based Kappa was calculated with sequential analysis software (Bakeman & Quera, 2011). For protest time-based K = 0.84 and the K = 0.84, % = 93. Seven files were consensus-coded because reliability could not be reached.

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