

Physiological arousal in parent-child interaction paradigms commonly used in anxiety research

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Summary:

Background:

Parent-child interaction tasks are a commonly used methodology for measuring behavior in anxiety-affected families. A crucial assumption that underlies these tasks has not yet been tested: that these tasks are activating. While distinctive types of maladaptive parenting behavior are consistently found in these families, theory and empirical data suggest that these behaviors may be evident only when the family is activated emotionally. Therefore, an effective paradigm to measure dysfunctional parent-child interaction must activate the dyad. One way to measure activation is through physiological indicators such as heart rate (HR).

Aims:

Our aims are (1) to test the hypothesis that parents and children experience physiological arousal (indicated by increased HR) during the interaction tasks, and (2) to examine the effect of child anxiety disorder on changes in HR.

Method:

Using a sample of 30 mother-child dyads, (17 with a clinically anxious child; 13 with a non-anxious child), we collected mother and child HR data during a two-minute baseline, followed by a joke task designed *not* to be anxiety-provoking, "revealed differences" tasks (conflict and anxiety discussions), ambiguous situation tasks (discussing situations of potential physical or social threat), and a two-minute recovery.

Child anxiety disorder was assessed using the Anxiety Disorders Interview Schedule for Children (ADIS-C).

Data Analysis:

Repeated measures analysis of variance of HR data (difference scores from baseline value) was used. All differences noted below are statistically significant.

Hypothesis 1:

The hypothesis of physiological arousal was supported. Mothers and children showed increases in HR from baseline to the interaction tasks. The jokes task was somewhat less activating than the other tasks for children, while mothers responded with equal activation to the jokes task and the other tasks. Interestingly, maternal HR decreased during the ambiguous situations, although it was still significantly higher than baseline. At recovery, both mothers and children returned to their baseline HR.

Hypothesis 2:

Child anxiety disorder had an effect on child HR. Change in HR from baseline to jokes was negligible for anxious children; HR did not increase in this group until the revealed differences conversations. Non-anxious children, in contrast, showed an immediate rise in HR from baseline to the jokes task, which remained stable across the other interaction tasks (Figure 1).

Mothers of non-anxious children showed greater decreases in heart rate from baseline to recovery than did mothers of anxious children, who returned to their baseline heart rate at recovery (Figure 2).

Discussion

These tasks do seem to be physiologically activating for both parents and children. However, the *type* of interaction task is important for the children. While mothers responded with physiological arousal to all tasks, including the jokes, children had a lower arousal response to the jokes task. This response seems moderated by child anxiety: anxious children were not aroused by the non-threat task, while non-anxious children were.

This finding can help us understand the mixed findings in the literature on parenting behavior in anxious. Non-threatening tasks, such as free play or jokes, may not activate anxious children and therefore may not activate the dyad to exhibit dysfunctional interaction patterns that would be seen in more activating tasks.

These findings also support the continued use of these paradigms in research on anxious families.

Figure 1: Child heart rate across tasks

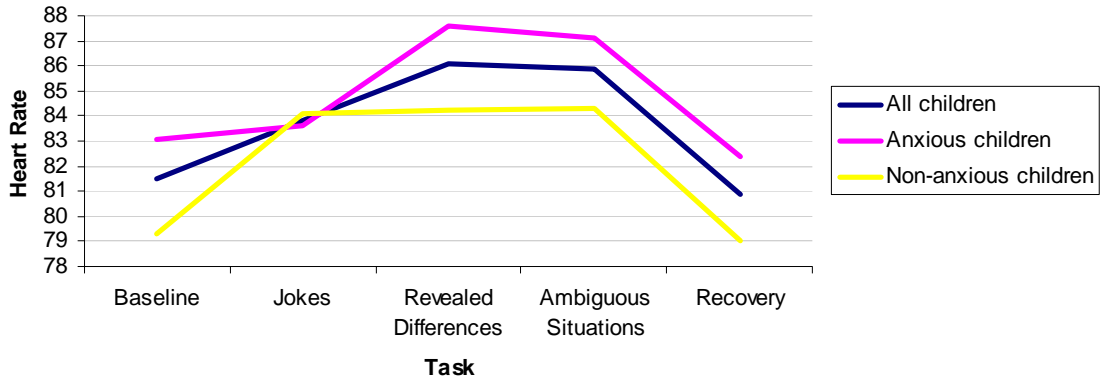


Figure 2: Mother heart rate across tasks

