

# Preliminary Validation of a Novel Measure of Parent Responsiveness

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## Background

### Parent Responsiveness (PR)

- Parent-infant interaction is reciprocal<sup>1,2</sup>
- Parents' responses to infant behavior can shape development across domains<sup>1-4</sup>

### PR to Sensory Reactivity and Regulation (SRR)

- Parent responses consisting of actions vs. vocalizations are associated with infant SRR<sup>5,6</sup>
- There is currently no well-validated measure of PR specifically to infant SRR cues

## Purpose

To examine the validity and reliability of a novel measure of parent responsiveness (PR) to their infant's SRR cues.

## Participants

**Table 1.** Descriptive data on demographic and clinical characteristics of the sample.

	TD (n=40)	EL-A (n=40)	EL-SDH (n=3)	Total (N=83)
Child's age (mo) <i>M(SD)</i>	13.6 (3.0)	14.0 (1.7)	13.3 (2.3)	13.8 (2.4)
Child's sex <i>n</i> (% male)	25 (62.5%)	27 (67.5%)	2 (66.7%)	54 (65.1%)
Parent race <i>n</i> (%)				
Amln/Alaska Native	0 (0%)	1 (2.5%)	0 (0%)	1 (1.2%)
Asian	3 (7.5%)	2 (5.0%)	0 (0%)	5 (6.0%)
Black	1 (2.5%)	3 (7.5%)	0 (0%)	4 (4.8%)
White	34 (85%)	21 (52.5%)	3 (100%)	58 (69.9%)
Multiple	1 (2.5%)	2 (5.0%)	0 (0%)	3 (3.6%)
Unknown	1 (2.5%)	11 (27.5%)	0 (0%)	12 (14.5%)
Parent ethnicity <i>n</i> (% Hispanic)	1 (2.5%)	3 (7.5%)	1 (33.3%)	5 (6.0%)
Parent education <i>n</i> (%)				
HS/GED	1 (2.5%)	4 (10.0%)	1 (33.3%)	6 (7.2%)
Some College	1 (2.5%)	6 (15.0%)	0 (0%)	7 (8.3%)
College Degree	17 (42.5%)	14 (35.0%)	2 (66.7%)	33 (39.8%)
Master's	13 (32.5%)	8 (20.0%)	0 (0%)	21 (25.3%)
Professional	7 (17.5%)	1 (2.5%)	0 (0%)	8 (9.6%)
SEQ Hypo	1.5 (.3)	2.1 (.6)	1.6 (.5)	1.7 (.6)
SEQ Hyper	1.7 (.3)	1.9 (.3)	1.6 (.4)	1.8 (.3)
SEQ SIRS	2.6 (.6)	2.5 (.5)	2.9 (.4)	2.5 (.6)

Note: TD = typically developing; EL-A = elevated likelihood of autism; EL-SDH = elevated likelihood of suboptimal development due to social determinants of health; Amln = American Indian; HS/GED = high school/General Educational Development; SEQ = Sensory Experiences Questionnaire, version 2.1; Hypo = sensory hyporeactivity; Hyper = sensory hyperreactivity; SIRS = sensory interests, repetitions, and seeking

Participants were drawn from two extant samples (TD and EL-A) and one new sample (EL-SDH) with varying degrees of SRR difficulties.

## Methods

### Measures:

*PR to SRR cues*: 9 dimensions based on a systematic review of PR literature and coded in response to infant approach, avoidance, and seeking behavior to yield proportional scores by dimension and a total score

*Maternal Behavior Rating Scale (MBRS)*<sup>7</sup>: well-validated scale yielding a single score (1-5) for parent sensitivity and responsivity

### Procedures:

Mothers and infants completed a video-recorded, standardized free-play and snack interaction (5 minutes each). One coder applied the new measure to all videos, a reliability coder completed 20% of the videos (n=17), and a subset (n=30) of the videos were coded with the MBRS.

## Results

**Table 2.** Reliability and validity of the new scale.

Internal Consistency: Cronbach's $\alpha$ (95% CI <sup>a</sup> )	
Free Play	.84 (.78, .89)
Snack	.80 (.73, .86)
Combined	.87 (.82, .91)
Inter-Rater Reliability – Total Scores: ICC <sup>b</sup> (95% CI <sup>a</sup> )	
Full Sample (n=17)	.61 (.18, .84) - .83 (.57, .94)
Partial Sample (n=8)	.86 (.49, .97) - .97 (.87, .99)
Inter-Rater Reliability: Number of Dimensional ICC <sup>b</sup> > .70	
Full Sample (n=17)	3
Partial Sample (n=8)	6
Convergent Validity: Pearson's <i>r</i> ( <i>p</i> )	
MBRS Sensitivity	.57 (.001)
MBRS Responsivity	.47 (.009)

<sup>a</sup>CI = confidence interval

<sup>b</sup>ICC = Intraclass correlation coefficient

Training for the coders was ongoing, so IRR was examined separately for the latter-coded videos (n=8) as a preliminary test of the role of more rigorous training in establishing reliability.

## Discussion

### Conclusions:

- Promising evidence for the reliability and validity of the novel tool to specifically address PR to SRR
- Development of rigorous training procedures is needed to improve inter-rater reliability
- Context for coding may need to be altered to increase opportunities for low-frequency dimensions of PR

### Limitations:

- Variable sample sizes across groups limited comparisons of measure performance by group
- Limited representation of individuals with low education and of minoritized racial/ethnic origin

### Future Directions:

- Examination of intercorrelations among dimensions on the new scale
- Factor analysis to establish dimensionality of the new scale
- Exploration of the longitudinal effects of specific dimensions of PR on various developmental domains, including SRR

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