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Citation: Vaillancourt, K., Alyousefi-van Dijk, K., Barlow, J., Barge, L., Kavia, H., Rosan, C., Sharp, H. & Ayers, S. (2026). A psychometric evaluation of the NICHD Parent-Infant Interaction Scales to inform clinical practice. *Frontiers in Psychology*, 17, 1773282. doi: 10.3389/fpsyg.2026.1773282

This is the supplemental version of the paper.

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Supporting Material

Table S1. *Summary Description of NICHD Mother-Infant Interaction Scales (compiled from Cox & Crnic, 2003)*

Parent Scales	
Sensitivity to Distress	How the parent responds to the child's cries, frets, or other expressions of negative affect. Considers: 1) proportion of signals responded to, 2) latency of response, 3) appropriateness of response.
Sensitivity to Non-Distress	How parent observes and responds to the child's social gestures, expressions and signals. The extent to which the interaction is well-timed and paced to child's responses and appears "in sync".
Global Sensitivity	Overall sensitivity to distress and non-distress signals during the interaction.
Positive Regard	The degree of positive feelings expressed towards the child (verbally and nonverbally).
Intrusiveness	The extent to which the interaction is adult-centred rather than child-centred (e.g., the parent imposing own agenda, failing to modulate behaviour in response to child's signals).
Negative Regard	The degree of negative feelings expressed towards the child (verbally or non-verbally).
Detachment/Disengagement	The extent to which the mother appears emotionally uninvolved or disengaged and unaware of the child's needs for appropriate interaction to facilitate involvement with objects or people.
Animation	The degree of energy, excitement or interest during the interaction.

Stimulation of Development The degree to which the parent tries to foster the child’s cognitive, motor or language development.

Child Scales

Positive Mood The extent to which the child is satisfied, content and pleased with the interaction. Includes positive affect and bodily enthusiasm.

Negative Mood The frequency and intensity of crying, fussing, frowns or other signals of discontentment.

Activity The degree of motor activity the child initiates during the interaction.

Sustained attention The degree to which the child is involved in and engagement with the physical world.

Dyadic Scale

Dyadic mutuality The synchrony (e.g., intimacy and co-ordination) of interaction and the degree of shared experience.

Table S2. *Length of observation by task*

	Freeplay	Booksharing	Clothing Change
	(N= 272)	(N= 270)	(N= 266)
Mean duration	2 minutes 44 seconds	2 minutes 55 seconds	2 minutes 27 seconds
Median duration	2 minutes 39 seconds	2 minutes 47 seconds	2 minutes 18 seconds

Table S3. Descriptive Statistics for the NICHD Parent-Infant Interaction Scales for each task

	Mean				Range				N			
	(SD)				Min, Max							
	Free-Play	Book Sharing	Clothing Change	Total	Free-Play	Book Sharing	Clothing Change	Total	Free-Play	Book Sharing	Clothing Change	Total
Global Sensitivity	3.90 (.93)	3.40 (1.03)	3.37 (1.07)	3.56 (.85)	1, 5	1, 5	1, 5	1.33, 5	272	270	266	274
3-scale composite	12.27 (2.17)	11.04 (2.49)	11.15 (2.48)	11.49 (2.04)	6, 15	4, 15	4, 15	6, 15	270	269	266	274

Note: †reverse scored ; higher scores indicate better interactional quality

Table S4. *Nonparametric inter-correlations*

	1	2	3	4	5	6	7	8
1. Global Sensitivity ^a	1.00							
2. 3-scale sensitivity composite ^a	.95**	1.00						
3. CORE-OM total mean score	-.16**	-.16**	1.00					
4. PBQ total score	-.20**	-.20**	.39**	1.00				
5. ASQ-3 Communication (z-score)	.06	.02	.10	-.10	1.00			
6. ASQ-3 Problem Solving (z-score)	.05	.05	-.09	-.03	.42**	1.00		
7. ASQ-3 Personal Social (z-score)	-.003	.02	-.02	-.05	.42**	.55**	1.00	
8. ASQ: SE (z-score)	-.10	-.13	.12	.23**	-.19**	-.08	-.09	1.00

^a measured across all tasks

* $p \leq .05$

** $p \leq .01$

Table S5. Age-specific non-parametric correlations between observed sensitivity and maternal mental health and bonding difficulties

	YOUNGER INFANTS (Under 12 weeks) N=75[†]	OLDER INFANTS (12 weeks or older) N=195^a
Total sensitivity (mean across all tasks)		
	CORE-OM	CORE-OM
Global Sensitivity	$r_s = -.21, p=.07$	$r_s = -.17, p=.02$
3-scale composite	$r_s = -.21, p=.08$	$r_s = -.15, p=.04$
	PBQ	PBQ
Global Sensitivity	$r_s = -.41, p<.001$	$r_s = -.10, p=.17$
3-scale composite	$r_s = -.40, p<.001$	$r_s = -.11, p=.12$
Free play		
	CORE-OM	CORE-OM
Global Sensitivity	$r_s = -.08, p=.51$	$r_s = -.05, p=.49$
3-scale composite	$r_s = -.20, p=.09$	$r_s = -.06, p=.43$
	PBQ	PBQ
Global Sensitivity	$r_s = -.29, p=.01$	$r = -.01, p=.87$
3-scale composite	$r_s = -.34, p=.003$	$r = -.04, p=.61$
Booksharing		
	CORE-OM	CORE-OM
Global Sensitivity	$r_s = -.20, p=.10$	$r_s = -.21, p=.004$
3-scale composite	$r_s = -.14, p=.24$	$r_s = -.15, p=.03$
	PBQ	
Global Sensitivity	$r_s = -.37, p=.001$	$r_s = -.12, p=.10$
3-scale composite	$r_s = -.31, p=.008$	$r_s = -.07, p=.33$
Clothing Change		
	CORE-OM	CORE-OM
Global Sensitivity	$r_s = -.25, p=.04$	$r_s = -.16, p=.03$

3-scale composite	$r_s = -.24, p = .05$	$r_s = -.18, p = .01$
	PBQ	PBQ
Global Sensitivity	$r_s = -.37, p = .002$	$r_s = -.09, p = .21$
3-scale composite	$r_s = -.41, p < .001$	$r_s = -.15, p = .05$

[†] *except for book sharing=73, clothing change=70*

^a *N for PBQ=194, free play= 193, book sharing and clothing change=192*

Table S6. Age specific results for linear regression of child development outcomes on total observed sensitivity (older infants only, N=177)

Predictor	ASQ-3				ASQ:SE			
	Communication		Problem Solving		Personal Social		Socio-emotional	
	B	p	B	p	B	p	B	p
	(BCa 95% CI)		(BCa 95% CI)		(BCa 95% CI)		(BCa 95% CI)	
Global sensitivity	.06 (-.13, .24)	.56	.004 (-.17, .18)	.97	-.08 (-.26, .10)	.37	-.07 (-.24, .11)	.46
3-scale composite	-.003 (-.08, .08)	.93	.000 (-.08, .08)	.995	-.03 (-.10, .04)	.40	-.04 (-.11, .04)	.33

Note: BCa CI: Bias corrected accelerated 95% bootstrap confidence interval (2000 resampling iterations); ASQ-3 = Ages and Stages Questionnaire- Third Edition, lower scores indicate poorer development; ASQ:SE = Ages and Stages Questionnaire: Socio Emotional, higher scores indicate greater socio-emotional problems

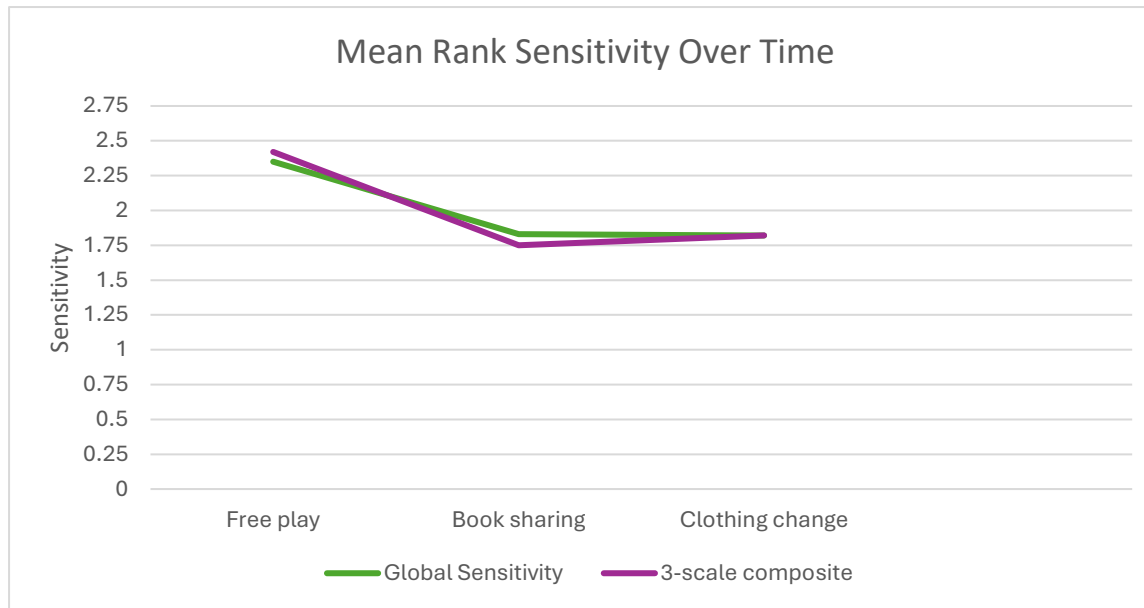
Table S7. Age specific results for linear regression of child development outcomes on observed sensitivity by task (older infants only)

	ASQ-3 (N=172 [†])				ASQ:SE (N=171 ^{††})			
	Communication		Problem Solving		Personal Social		Socio-emotional	
Predictor	B	p	B	p	B	p	B	p
	(BCa 95% CI)		(BCa 95% CI)		(BCa 95% CI)		(BCa 95% CI)	
Global sensitivity								
Free play	.06 (-.11, .23)	.53	.05 (-.13, .23)	.41	-.08 (-.24, .08)	.34	.04 (-.12, .23)	.67
Book sharing	-.08 (-.28, .11)	.42	-.08 (-.24, .07)	.41	-.09 (-.28, .11)	.36	.09 (-.08, .26)	.32
Clothing Change	.06 (-.11, .23)	.50	.05 (-.13, .22)	.58	.07 (-.11, .24)	.43	-.17 (-.33, -.03)	.03 ^a
3-scale composite								
Free play	.02 (-.06, .10)	.61	.03 (-.05, .11)	.43	-.02 (-.097, .06)	.58	.002 (-.07, .08)	.95
Book sharing	-.04 (-.11, .04)	.35	-.01 (-.09, .05)	.69	-.04 (-.11, .05)	.37	.05 (-.03, .14)	.18
Clothing Change	.01 (-.07, .09)	.82	-.003 (-.08, .07)	.95	.02 (-.06, .09)	.62	-.08 (-.15, -.01)	.03 ^b

Note: BCa CI: Bias corrected accelerated 95% bootstrap confidence interval (2000 resampling iterations); ASQ-3 = Ages and Stages Questionnaire- Third Edition, lower scores indicates poorer development; ASQ:SE = Ages and Stages Questionnaire: Socio Emotional, higher scores indicate greater socio-emotional problems; [†]169 for 3-scale composite; ^{††}168 for 3-scale composite; ^a predictor remains significant when maternal age, education, household

income, maternal mental health symptoms are entered into the model $B = -.22 (-.39, -.07)$, $p = .01$; ^b predictor remains significant when maternal age, education, household income, maternal mental health symptoms are entered into the model $B = -.08 (-.16, -.01)$, $p = .02$

Figure S1. Mean Rank Sensitivity Over Time



Results from a Friedman test show that there was a statistically significant difference in global sensitivity by task, $\chi^2(2) = 79.23, p < .001$. Post hoc analysis with Wilcoxon signed-rank tests indicate that there were no significant difference between global sensitivity during the book sharing and clothing change task ($Z = -.64, p = 0.52$) but there was a statistically significant reduction in global sensitivity observed between the free play and book sharing task ($Z = -7.92, p < .001$), and free play and clothing change task ($Z = -7.648, p < .001$).