

# A longitudinal study exploring the role of mindfulness and reflective functioning in the social interactions between mothers and babies.

Judy A. Pickard, Michelle Townsend, Peter Caputi,  
Brin F. S. Grenyer



## Rationale and previous research

- Attachment theory (Bowlby, 1982) identified the availability and accessibility of a sensitive caregiver in infancy as instrumental in the development of early understanding of self and others in the world, manifesting in distinct attachment styles.
- Further research has reported a propensity for attachment styles to cross generations, having ongoing effect on future generational developmental outcomes (Van Ijzendoorn et al, 1995).
- More recently research interest has begun to focus on the variables that may be influential in disrupting the cross-generational transmission. To this end, studies exploring the potential roles of mindfulness and reflective functioning; the ability to make sense of underlying mental states have shown promising influence (Siegel, 2007; Sharp & Fonagy, 2008; Rutherford et al, 2013).

## Participants.

- 32 pregnant females (m = 31.84 years, SD = 4.06 ) volunteered to participate in the Illawarra Born cross-generation health study.
- Of the 32 participants, 21 (65.6%) selected a secure attachment style as the category of 'best fit' on the Relationship Questionnaire (Bartholomew & Horowitz, 1991), 1 (3.1%) preoccupied, 3 (9.4%) fearful and 6 (18.8%) as dismissive. None of the participants selected the Profoundly Distrustful category.
- Mindfulness subscale mean scores were comparable to mean scores for a highly educated sample (Baer, 2008) which is higher than a community non-meditating sample.

## Measures

### Five facets Mindfulness Questionnaire (FFMQ), (Baer, et al., 2006)

- The FFMQ is a 39 item scale measuring five identifiable facets of mindfulness. They include: non reactivity, observing, acting with awareness, describing with words and non judging of experiences. It is rated on a 5 point Likert-type scale ranging from 1 (never or very rarely true) to 5 (very often or always true). The FFMQ demonstrated adequate to good internal consistency with alpha values ranging between .75 and .91.

### Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991)

- The RQ consists of four short paragraphs which describe relationship attitudes. Each paragraph is rated on a 7-point Likert-type scale ranging from 1 (does not describe me at all) to 7 (describes me exactly). Reliability estimates for the RQ scales have been reported to have classifications (kappas of approximately .35) and (alpha values of .50) (Crowell, Fraley & Shaver, 2008), p. 616.

### Parental Reflective Functioning Questionnaire - 1 (PRFQ-1)

#### (Luyten, P. et al 2009)

- The PRFQ-1 contains 3 subscales assessing 1. Parental interest and curiosity, 2. certainty about infant mental states and 2. Pre-mentalising parental modes. It consists of 39 items rated on a 7 point Likert type scale.

### NCAST Teaching Protocol

#### (Summer & Spiel, 1994)

- The NCAST Teaching Scale contains six subscales, four subscales are pertaining to the mother's behaviour: i. Sensitivity to cues, ii. Response to child's distress, iii. Social-emotional growth fostering and iv. Cognitive growth fostering. Two subscales describe the infant's behaviour: v. Clarity of cues and vi. Responsiveness to caregiver. The scale is indicated for use from birth to 3 years.

## Discussion

- The current study revealed that both **insecure attachment style and the mindfulness facet describing/ labelling with words measured prenatally predicted maternal response to infant distress at 6 months**, providing an indication of the variables affecting maternal sensitivity.
- Cross-sectional data revealed **that the mindfulness facets: observing, describing and acting with awareness were all associated with positive maternal behaviour**. This supports the role of mindfulness training as an important intervention in preventing the cross-generation transmission of insecure attachment patterns.

Further, **FFMQ observe was found to be related to Reflective Functioning: Interest and curiosity as well as total caregiver behaviour**, suggesting an important relationship in the mother/infant interaction.

The null findings from the mediation analysis was potentially influenced by the small sample size however the correlational data provided interesting results that were generally supportive of the hypothesis.

Further research exploring how mindfulness and attachment history affect maternal/ infant interaction is warranted.



The current study proposes that a mothers' ability to remain present (be mindful) to her infant will facilitate the process of reflective functioning and positively effect the maternal/ infant interaction, independent of attachment style.

## Hypothesis

**Hypothesis 1** – A secure attachment style will be associated with higher mindfulness levels and higher parental reflective functioning as well as higher response to distress.

**Hypothesis 2** – Higher response to infant distress will be associated with higher levels of mindfulness and parental reflective functioning independent of attachment styles, indicating a sequential mediating relationship

## Procedure

- Time 1 (30 weeks gestation) - Participants completed an online survey that included mindfulness and attachment style measures.
- Time 2 (6 months post-partum) – Mothers and infants completed a video observed teaching session. Mothers were asked to choose a developmentally appropriate task from a standardised list and teach it to their child. This was scored according to the NCAST protocol. Mothers again completed an online survey including mindfulness and parental reflective functioning measures.

## Analysis

- All data was analysed using SPSS 22. Spearman correlations were performed. Following this Mediation analysis was conducted using PROCESS macro for SPSS (Hayes, 2009).

## Results

- Preoccupied, Fearful and Profoundly distrustful attachment were negatively correlated to response to distress, whereas the FFMQ subscale *Acting with awareness* was positively associated.
- The FFMQ subscale *Describe* was associated with attachment style in the predicted direction. FFMQ *non-react* was associated with dismissive attachment.
- This was consistent at time 2.
- At time 2 the FFMQ *observe* subscale was significantly associated with the PRFQ-1 Interest and Curiosity subscale,  $r = .43$ ,  $p < .05$  and the FFMQ *acting with awareness* was negatively associated with PRFQ-1 *pre-mentalising*,  $r = -.38$ ,  $p < .05$ . Also, FFMQ *Aware* was associated with *response to distress*  $r = .36$ ,  $p < .05$ , whilst FFMQ *observe* was correlated with total caregiving behaviour,  $r = .41$   $p < .05$ .
- No indirect effect was found.

Table 1. Mean, SD and Spearman correlations between variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Secure	6.72	2.30	-													
2. Preoccupied	2.09	1.75	-.71**	-												
3. Dismissive	4.40	2.75	-.50**	.26	-											
4. Fearful	2.72	2.43	-.28	.65**	.45*	-										
5. Profoundly Distrustful	1.14	1.70	-.41*	.39*	.29	.57**	-									
6. Observe	28.19	6.00	.21	-.06	-.08	-.27	-.06	-								
7. Describe	30.93	5.14	.38*	-.47**	-.03	-.51**	-.06	.34	-							
8. Aware	27.75	4.18	.13	-.30	.03	-.14	-.23	-.06	.25	-						
9. Non-react	21.53	4.33	.19	-.13	.38*	-.14	-.02	.22	.31	.39*	-					
10. Non-judge	31.35	6.79	-.02	.16	.13	-.004	.16	.09	.13	-.11	.36*	-				
11. Pre-mentalize	1.35	0.31	-.35 <sup>1</sup>	.13	.16	.24	.41*	-.19	-.03	-.15	.19	.30	-			
12. Certainty	3.61	0.81	.21	-.14	-.27	-.47**	-.19	.10	.01	-.14	.004	-.20	-.17	-		
13. Interest & Curiosity	5.87	0.73	-.07	.25	-.07	-.36*	.17	.09	.01	.12	-.22	-.15	-.32	-.35*	-	
14. Response to distress	8.03	1.86	.20	-.50**	.09	-.37*	-.41*	-.14	.31*	.47**	.14	.10	-.28	-.04	-.16	-

N = 32, \* P < .05, \*\* p < .001, <sup>1</sup> p = .05