

EXAMINING PARENTAL REFLECTIVE FUNCTIONING  
AND BREASTFEEDING PATTERNS

by

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## **An Abstract of the Thesis of**

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Motherhood is an inimitable experience in one's life. It is viewed as a significant moment and is often considered to be the entry into adulthood. But, many women across the globe don't feel prepared. They often experience fatigue, tiredness, depression, loneliness, powerlessness, anger, and a sense of uncertainty. For many, incorporating breastfeeding as well as a myriad of other life changes (e.g., sleep patterns, work schedule, relationship changes, etc.) present serious challenges to coping and adjustment. Parental reflective functioning denotes one's ability to perceive self and child in terms of mental states, such as feelings, desires, and goals. It helps with the successful navigation of parent-child interaction. In this research, we investigate the extent to which parental reflective functioning is related to mothers' adjustment to their breastfeeding experiences and success, in conjunction with other factors, such as depression/stress/anxiety and level of social support. Our findings will offer altogether new insight into the struggles and achievements of motherhood.

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## Background

Being a parent is not easy. It comes with many struggles and much to learn regarding how to take care of a baby. Questions like: What do babies like? Does my lifestyle affect their wellbeing? Do the parenting decisions I make such as whether to breastfeed or not affect them? How hard do I need to work and how long should I do it? And does that reflect my general orientation toward parenting? A lot of thinking and time goes into deciding what's right for your baby. As a result, making the decision to breastfeed is difficult yet personal, even though one's friends and loved ones might have strong opinions about it. On the same note, The American Academy of Pediatrics strongly advises mothers to breastfeed exclusively for the first 6 months and not use any formula, water, or juice as a substitute. There are some possible benefits of breastmilk since it consists of a variety of vitamins, protein and fat. It is easily digested and has antibodies that protect the baby from viruses and infections. While there are many benefits of breastfeeding for the child, there are also some benefits of breastfeeding for mothers. The American College of Obstetricians and Gynecologists suggest that breastfeeding enables the burning of some extra calories. As well, breastfeeding induces the body to release oxytocin, which, among other things, reduces uterine bleeding after the baby is born and promotes feelings of well-being.

While it is recommended for women to breastfeed, many women choose not to breastfeed at all, or do so only briefly. There are many reasons for this, such as some women don't feel comfortable breastfeeding in public. Some women prefer the flexibility of knowing that their partner or caregiver will give the baby a bottle anytime they need to and the mother doesn't need to be there. This is a changing social

landscape since more women are entering into the workforce now. In addition, women occasionally get mastitis while they're breastfeeding and can have symptoms like flu, fatigue, fever, and sore throat that last for a long time.

At present, relatively little is known about what factors are influential in mothers' choice to breastfeed, and their success in achieving and maintaining successful breastfeeding when they choose to do so. One possibility is that mothers' general orientation toward parenting – their beliefs about the relevance of infants' emotions and internal mental experiences – plays a role in their breastfeeding choices and success. In recent years, psychologists have developed an instrument to measure these beliefs, the Parental Reflective Functioning Questionnaire (PRFQ). In this research, we investigate whether mothers' responses to the PRFQ predict their likelihood of choosing to breastfeed, and their success in doing so. Parental Reflective Functioning refers to the caregiver's capacity to apprehend his/her mental experiences and their child's mental experiences as well. In the past few years, researchers have determined that PRFQ is a significant mechanism in the growth of child attachment and lifelong mental and physical health benefits (Luyten, 2017). The Parental Reflective Functioning Questionnaire provides a multidimensional analysis of Parental Reflective functioning that also assesses socioeconomic and educational backgrounds.

Finally, there are many unexplored areas that give insight about social aspects of breastfeeding; thus, I'd like to explore if there is an association between parental reflective functioning and breastfeeding patterns. I'd also like to explore if parental reflective functioning predicts breastfeeding patterns over and above other possible factors, such as social support and depression/anxiety/stress.

## Literature Review

Parent-child interactions are key to the development of secure attachment (Benoit,2004). In particular, considerable evidence clarifies that parents' ability to provide responsive and sensitive care to infants plays an influential role in children's psychological development and long-term health and emotional well-being (Kiff,2011). Parents are better able to respond to their child caringly if they understand the meaning of their child's behavior (Peter et al,1997). Researchers (Peter et al,1997) explains this by stating that "A reflective parent is able to make sense of her child's behaviors in light of mental states, which is to understand, for example, that he is crying because he is angry, or clinging to her because he is afraid, or banging his spoon on his high chair because he wants more food." Thus, in the context of a parent-child relationship, a reflective parent might readily be understanding rather than punitive in response to a child's tantrum, inferring via reflective functioning that he/she may have had a long day at school and is tired.

Some studies have attempted to establish the reliability of measuring parental reflective functioning. For example, a study conducted by the Academy of Finland aimed to highlight the development work of a questionnaire to scrutinize PRF during pregnancy; in particular, the Prenatal Questionnaire of Reflective Functioning (PPRFQ). The validity of the PPRFQ was evaluated simultaneously with the Pregnancy Interview (PI) with a sample of 29 mothers. It was found that the three factors that captured important aspects of the parents' prenatal mentalization were: opaqueness of mental states, contemplation about the fetus-child, and the dual nature of mental states (Pajulo, 2015). Later, a further assessment was made with 600 mothers and fathers. This

survey seems to be cost-effective in nature and is effectively able to analyze the important aspects of early parenting. As a result, the 14-point P-PRFQ seems to be a favorable and appropriate tool to assess the capacity of parenting.

In this thesis, the PRFQ was employed to measure individual differences in mothers' tendency to interpret their own, and their child's behavior, in terms of feelings and mental states. Of particular interest was the extent to which mothers' parental reflective functioning might relate to breastfeeding choices and success, as well as other aspects of parental experience (e.g., depression/stress/anxiety, social support) and attitudes. Also of interest was whether similar relations might hold among some of these variables for non-mothers. To this effect, I also employed a different, but related scale – the Reflective Functioning Questionnaire – to investigate possible relations between reflective functioning, experience, and parental attitudes in non-mothers.

Since both the parental reflective functioning questionnaire and the reflective functioning questionnaire are fairly new measures, it is important to mention the process by which they were developed. For the validity of the reflective functioning questionnaire (Fonagy, 2016), researchers conducted three different studies. In study 1, the sample consisted of 108 individuals who had Borderline Personality Disorder and Eating Disorder, and 129 individuals in the control group. In study 2, there were 129 individuals with personality disorder and 281 in the control group. In study 3, researchers tried to analyze the relationship between reflective functioning, parental reflective functioning, and infant attachment with a sample of 136 mothers and infants. In the end, reflective functioning was linked with parental reflective functioning, which further predicted infant attachment behaviors.



Use of the RFQ and PRFQ in the present thesis provided the opportunity to gain additional information about these relatively new instruments and their relationship to other aspects of women's experiences, both as mothers and non-mothers. In addition to my particular interest in possible relations between parental reflective functioning and breastfeeding experiences, I was also interested in possible relationships between reflective functioning (as measured by both the RFQ and PRFQ) and parenting attitudes more generally, as measured by another relatively new instrument, the early parental attitudes questionnaire (Frank,2016).

While there are many factors that affect the success of breastfeeding in women, one of the factors that I have focused on in this study is social support. Women who lack a supportive social network, and especially, those who lack a supportive partner, are likely to have greater struggles in breastfeeding initiation or maintenance (Raj and Plichta, 1998). Another important factor is socioeconomic status. Studies have found a very strong association between maternal education and employment and breastfeeding duration (Flacking, 2007). In this thesis, I incorporated a demographics questionnaire to assess women's socioeconomic status, making it possible to analyze the extent to which socioeconomic status might be related to both social support and breastfeeding success in our sample, as well as any possible linkage that might arise between them. Finally, subjective feelings of anxiety, stress, and depression can also impact breastfeeding; in particular, increased stress or depression predicts less successful breastfeeding (Field, 2010). Thus, I included a well-validated questionnaire assessing anxiety, stress, and depression – the DASS-21 (Henry and Crawford, 2005), as well as a measure of Edinburgh Postnatal Depression Scale (Holden,1987).

## Methods

### Participants

Our sample consisted of 63 women between the ages of 18-36 ( $M=23.3$ ,  $SD= 6.16$ ). The entire sample consisted of 17 mothers and 46 non-mothers. All of the mothers were currently breastfeeding or had breastfed in the past. There were 63% of White participants, 15.83% Asian, 1.5% American Indian or Alaska Native, 11.11% Mixed, and 3.17% participants who chose not to respond. One mother's data was not used in analysis because she did not finish the entire survey, and for the parts she did answer, she chose the same answer for every question. We intended to recruit both mothers who breastfed and mothers who did not, but we were only able to recruit mothers who chose to breastfeed.

Participants were recruited using different resources. Some were recruited using the University of Oregon's Human Subjects Pool, some from the Peace Health Midwifery Centre, and some from the UO Team Duckling Database. Participants who were recruited using the Human Subjects Pool were reimbursed in the form of course-related research credit. Participants recruited from Team Duckling Database and the Peace Health Midwifery Centre were asked to participate in the study by receiving an email from the Baldwin Lab and reimbursed between \$3 to \$7 in Amazon Gift cards based on how long it took them to complete the study. All the cash reimbursements were available to them through online credit emailed after they successfully finished the study.

## **Procedure**

**Participants completed all surveys online after providing informed consent.**

Data were collected using Qualtrics, which is an online survey software platform.

Participants were asked to get access to a computer or to use one of the Computer Labs at the University of Oregon. The study took approximately an hour to complete. The order in which participants completed surveys was the following demographics questionnaire, reflective functioning questionnaire, depression anxiety scale questionnaire, multidimensional scale of perceived social support, and early parental attitudes questionnaire. Participants who indicated that they were a parent additionally completed several other questionnaires in the following order: parental reflective functioning, Edinburgh post-natal depression scale, and the breastfeeding questionnaire. Once all questionnaires were completed, participants saw a debriefing form and were redirected to the exit page. They were then either reimbursed in the form of Human Subjects Pool credit or \$3-\$7 in Amazon gift cards based on how long it took them to finish the study.

## **Measures**

### *Demographics Questionnaire*

The demographics questionnaire consisted of questions about age, ethnicity, race, socioeconomic status, occupation, primary caregiver, primary caregiver's occupation, and highest level of formal education, and whether they were currently

breastfeeding or had breastfed in the past.

#### *Depression Anxiety Stress Scale*

All participants (mothers and non-mothers) completed the Depression Anxiety Scale (Appendix A), which measures levels of depression, anxiety and stress. We used the DASS-21 (Henry & Crawford, 2005) comprising 21 questions in total, with 3 subscales probing depression, anxiety, and stress, respectively. All the items take the form of statements such as ‘I felt that life was meaningless’ and ‘I felt scared without any good reason.’ Participants were asked to think about how much each question applied to them over the past seven days. They had to use a four-point Likert scale ranging from “did not apply to me at all” to “applied to me very much or most of the time.” We used these data because it is known that depression/anxiety/stress tends to affect breastfeeding success (Sharifi, 2016).

#### *Multidimensional Scale of Perceived Social Support*

The Multidimensional Scale of Perceived Social Support (MSPSS) (Appendix B, Zimet et al., 1988) addresses an individual’s subjective feelings of social support. There are 12 questions wherein there are four related to family, four for friends and four for any significant other. Items include ‘My friends really try to help me’ and ‘I have a special person who is a real source of comfort for me.’ Participants were asked to indicate how much each statement applied to them using a seven-point Likert scale ranging from “very strongly agree” to “strongly disagree.” We used this questionnaire because we wanted to examine the degree to which perceived social support might be related to parental reflective functioning and breastfeeding experiences.

### *Reflective Functioning Questionnaire*

The Reflective Functioning Questionnaire (RFQ) (Appendix C, Fonagy, 2016) assesses attitudes about psychological functioning. We used the RFQ-46 to analyze the capacity to interpret both self and others in terms of mental states such as feelings and desires. There were 46 questions in the form of statements such as ‘People’s thoughts are a mystery to me’ and ‘I realize that I can sometimes misunderstand my best friend’s reaction.’ Participants were asked to assess how applicable the statement was to them from the scale of “strongly agree” to “strongly disagree.” We used this questionnaire to examine the extent to which parental reflective functioning is related to reflective functioning and to breastfeeding experiences.

### *Early Parental Attitudes Questionnaire*

All participants also finished the early parental attitudes questionnaire that was developed by Frank (2016) to assess adults’ beliefs regarding child development and parenting. There are 24 items in the questionnaire and three subscales such as early learning, affection and attachment, and rules and respect. Items such as ‘Parents do not need to worry if their child misbehaves a lot’ and ‘It is good to let children explore and experiment’ were used. Participants were told to assess how applicable each statement was to them from a scale of “strongly disagree” to strongly agree.” We used this questionnaire to understand more about the degree to which non-mothers hold similar or different attitudes about parenting styles relative to mothers.

### *Parental Reflective Functioning*

The Parental Reflective Functioning Questionnaire (PRFQ) developed by Fonagy (2016) assesses a parent’s general orientation toward parenting, and their beliefs

about the relevance of their infant's emotions or internal mental experiences. The PRFQ consists of 18 questions in the form of statements such as, 'The only time I'm certain my child loves me is when he or she is smiling at me' and 'I always know what my child wants.' There are three subscales such as pre-mentalizing modes, certainty about mental states, and interest in and curiosity about mental states. Participants were told to respond to statements based on how they felt about the statement using the scale ranging from "strongly agree" to "strongly disagree." We used this questionnaire to assess if there is a link between parental reflective functioning and breastfeeding patterns.

#### *Edinburgh Postnatal Depression Scale*

The Edinburgh Postnatal Depression Scale (EPAQ) was developed by Holden (1987) to assess postpartum depression in women after birth. There are ten questions in the questionnaire, items such as 'I have felt scared or panicky for no very good reason' and 'I have been anxious or worried for no good reason.' Participants respond to statements based on how they felt about the statement in the last seven days. We used this questionnaire to assess if there is a link between breastfeeding experiences and postnatal depression.

#### *Breastfeeding Experience Questionnaire*

The Breastfeeding Experience Questionnaire was developed by Acquiring Minds Lab for this study. It contains various questions such as "How long it takes to breastfeed?" "How often do you breastfeed?" "Are you supplementing with formula in

addition to breastfeeding?” and “Are there any community resources that you used during breastfeeding?” Some questions were taken from the Infant Behavior Questionnaire that was developed by Rothbart (1981) to assess an infant’s temperament across domains such as activity level. The main goal of the breastfeeding questionnaire is to assess if there is a link between parental reflective functioning and breastfeeding patterns. We also were interested in examining the degree to which breastfeeding experiences were related to parental attitudes, social support, and depression/anxiety/stress.

## **Results**

The aims of the thesis were to examine possible relations between breastfeeding experiences and depression/anxiety/stress, post-natal depression, social support, parental reflective functioning, and parental attitudes. As well, however, we were interested in investigating possible relations between reflective functioning, parental reflective functioning, parental attitudes more generally, social support, and depression/anxiety/stress. Lastly, we were curious whether relations among these factors might differ between mothers and non-mothers. All participants were asked to fill out an early parental attitudes questionnaire, and mothers were also asked to fill out the Edinburg postnatal depression questionnaire; however, findings from these instruments were beyond the scope of the thesis and were not included in the analyses.

Our sample of 63 mothers (17 mothers and 46 non-mothers) was unfortunately underpowered with respect to addressing our questions of interest. Thus our findings must be regarded as preliminary. We present the findings in terms of analyses designed

to address a series of questions about possible relationships among the variables under investigation. Preliminary descriptive analyses indicated that responses were generally normally distributed, enabling us to proceed with correlational analyses. Moreover, when testing for depression/anxiety/stress levels in the entire sample, we found a varied sample. Starting with depression, we found that there were 50 individuals in the normal category, 8 in mild, 8 in moderate, 5 in severe and 4 in extremely severe. The fact that we did get individuals in the severe and extremely severe category is a red flag to look into this more and hopefully create a plan to reach out to them with some community resources. Next, for the anxiety scale, there were 5 in the severe category and 8 in the extremely severe category, which is higher than the depression category. Lastly, for the stress scale there were 5 individuals in the severe category but zero in the extremely severe category. There were more people who had extreme anxiety as compared to extreme depression or stress.

#### Breastfeeding Experiences questionnaire

Question: Did mothers' breastfeeding experiences relate to other variables, such as demographic variables, parental reflective functioning, social support, depression/stress/anxiety, postnatal depression, and parenting attitudes?

We created a composite score to assess breastfeeding success (positive breastfeeding total), and assessed correlations between this score, as well as scores for breastfeeding support and breastfeeding community resources, with the other variables. Correlations between these breastfeeding experiences and the other variables appear in Table 1. As can be seen from the table, positive correlations emerged between positive



breastfeeding experiences and social support for breastfeeding; likewise, social support for breast feeding was positively related to use of community resources for breastfeeding support. Interestingly, positive breastfeeding experiences displayed a marginally positive relationship to one of the parental reflective functioning subscales; namely, interest and curiosity in child’s mental states. As well, positive breastfeeding experiences were marginally negatively related to mothers’ stress.

Table 1

*Correlational table for Breastfeeding Measures and Parental Reflective Functioning Subscales.*

*Correlations*

		Depression n_Total	Anxiety_To tal	Stress_tot al	POSITIVE BREASTF EEDING_ TOTAL	BFQ_SOC IALSUPP ORTTOTA L	BFQ_CO MMUNITY TOTAL	PRFQ Pre- Mentalizin g Modes	PRFQ Certainty about Mental States	PRFQ Interest and Curiosity in Mental States
Depression_Total	Pearson Correlation	1	.607**	.652**	-.082	-.117	-.103	.446	.231	.390
	Sig. (2-tailed)		.000	.000	.770	.368	.432	.083	.389	.135
	N	63	63	63	15	61	61	16	16	16
Anxiety_Total	Pearson Correlation	.607**	1	.663**	-.460	-.297*	-.291*	.269	.307	.274
	Sig. (2-tailed)	.000		.000	.085	.020	.023	.314	.247	.304
	N	63	63	63	15	61	61	16	16	16
Stress_total	Pearson Correlation	.652**	.663**	1	-.249	.054	.085	.499	.083	.101
	Sig. (2-tailed)	.000	.000		.371	.677	.516	.049	.759	.709
	N	63	63	63	15	61	61	16	16	16
POSITIVE BREASTFEEDING_ TOTAL	Pearson Correlation	-.082	-.460	-.249	1	.655**	.195	.109	.079	.445
	Sig. (2-tailed)	.770	.085	.371		.008	.485	.699	.781	.096
	N	15	15	15	15	15	15	15	15	15
BFQ_SOCIALSUP PORTTOTAL	Pearson Correlation	-.117	-.297*	.054	.655**	1	.992**	-.047	.334	.725**
	Sig. (2-tailed)	.368	.020	.677	.008		.000	.869	.224	.002
	N	61	61	61	15	61	61	15	15	15
BFQ_COMMUNITY TOTAL	Pearson Correlation	-.103	-.291*	.085	.195	.992**	1	.279	-.408	.112
	Sig. (2-tailed)	.432	.023	.516	.485	.000		.313	.131	.691
	N	61	61	61	15	61	61	15	15	15
PRFQ Pre- Mentalizing Modes	Pearson Correlation	.446	.269	.499	.109	-.047	.279	1	-.118	-.060
	Sig. (2-tailed)	.083	.314	.049	.699	.869	.313		.663	.826
	N	16	16	16	15	15	15	16	16	16
PRFQ Certainty about Mental States	Pearson Correlation	.231	.307	.083	.079	.334	-.408	-.118	1	.523*
	Sig. (2-tailed)	.389	.247	.759	.781	.224	.131	.663		.038
	N	16	16	16	15	15	15	16	16	16
PRFQ Interest and Curiosity in Mental States	Pearson Correlation	.390	.274	.101	.445	.725**	.112	-.060	.523*	1
	Sig. (2-tailed)	.135	.304	.709	.096	.002	.691	.826	.038	
	N	16	16	16	15	15	15	16	16	16

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

Question: To what extent did responses to the reflective functioning questionnaire bear relation to responses to the parental reflective functioning questionnaire?

As mentioned before, there are three main categories of parental reflective functioning, including pre-mentalizing modes, certainty about mental states, and interest and curiosity in mental states. As well, the reflective functioning questionnaire also has two different sub-scales, including reflective functioning certainty and reflective functioning uncertainty. These two categories measure hyper-mentalizing and hypo-mentalizing tendencies respectively. Hyper-mentalizing is the tendency to develop complex models of the minds of others and self, whereas hypo-mentalizing is the extreme difficulty in creating complex models of the minds of others and self. As predicted based on prior research, we found that there was a negative relationship between reflective functioning on certainty with pre-mentalizing modes on parental reflective functioning. (Table 2). In particular, when certainty on mental states of self and others increases, then uncertainty on mental states of self and others decreases. ( $r = -.58, p=0.02$ ). As well, a marginally positive correlation emerged between certainty in reflective functioning and interest and curiosity about mental states on the PRFQ ( $r = .47, p = .07$ ).

Table 2

*Correlational table of parental reflective functioning and reflective functioning.*

*Correlations*

		Current_Year	LRFc	LRFu	PRFQ Pre-Mentalizing Modes	PRFQ Certainty about Mental States	PRFQ Interest and Curiosity in Mental States
Current_Year	Pearson Correlation	1	-.082	-.079	-.027	-.008	-.343
	Sig. (2-tailed)		.525	.543	.921	.978	.194
	N	63	62	62	16	16	16
LRFc	Pearson Correlation	-.082	1	-.242	-.575*	.390	.468
	Sig. (2-tailed)	.525		.058	.020	.135	.067
	N	62	62	62	16	16	16
LRFu	Pearson Correlation	-.079	-.242	1	.155	-.427	.102
	Sig. (2-tailed)	.543	.058		.566	.099	.708
	N	62	62	62	16	16	16
PRFQ Pre-Mentalizing Modes	Pearson Correlation	-.027	-.575*	.155	1	-.118	-.060
	Sig. (2-tailed)	.921	.020	.566		.663	.826
	N	16	16	16	16	16	16
PRFQ Certainty about Mental States	Pearson Correlation	-.008	.390	-.427	-.118	1	.523*
	Sig. (2-tailed)	.978	.135	.099	.663		.038
	N	16	16	16	16	16	16
PRFQ Interest and Curiosity in Mental States	Pearson Correlation	-.343	.468	.102	-.060	.523*	1
	Sig. (2-tailed)	.194	.067	.708	.826	.038	
	N	16	16	16	16	16	16

\*. Correlation is significant at the 0.05 level (2-tailed).

Question: Did women’s level of education relate to their multidimensional support and/or depression/anxiety/stress?

While we did see a relationship between depression levels and anxiety levels, we did not see any relationship between current year of school/education background with Multidimensional support. (Table 3). This was a little surprising since we thought that there would be link between current year in school/education background and depression/anxiety/stress levels, especially in the first year of college and first year of the child being born.

Table 3

*Correlational Table of depression/anxiety/stress and MSPSS and Socio-economic*

*background*

*Correlations*

		Current_Year	Depression_Total	Anxiety_Total	Stress_total	MSPSS_Support
Current_Year	Pearson Correlation	1	.158	.107	-.109	.070
	Sig. (2-tailed)		.217	.406	.395	.587
	N	63	63	63	63	63
Depression_Total	Pearson Correlation	.158	1	.607**	.652**	-.150
	Sig. (2-tailed)	.217		.000	.000	.240
	N	63	63	63	63	63
Anxiety_Total	Pearson Correlation	.107	.607**	1	.663**	-.156
	Sig. (2-tailed)	.406	.000		.000	.221
	N	63	63	63	63	63
Stress_total	Pearson Correlation	-.109	.652**	.663**	1	-.146
	Sig. (2-tailed)	.395	.000	.000		.253
	N	63	63	63	63	63
MSPSS_Support	Pearson Correlation	.070	-.150	-.156	-.146	1
	Sig. (2-tailed)	.587	.240	.221	.253	
	N	63	63	63	63	63

\*\* . Correlation is significant at the 0.01 level (2-tailed).

When we explored relationships between these variables and more specific forms of social support (family, significant other, friends), we found a negative relationship between depression levels and social support received by family such that when social support received by family goes up depression level goes down. Moreover, we found a negative relationship between anxiety levels and social support and community support received during breastfeeding, such that when social support and community resources during breastfeeding go up, anxiety levels go down.

Table 4

*Correlational Table of Social support, depression/anxiety/stress and breastfeeding patterns*

Correlations

		Depression_Scale	Anxiety_Scale	Stress_Scale	MSPS_Family	MSPS_SigOther	MSPS_Friends	POSITIVE BREASTFEEDING_TOTAL	BFQ_SOCIALSUPPORTTOTAL	BFQ_COMMUNITYTOTAL
Depression_Scale	Pearson Correlation	1	.556**	.547**	-.295*	-.083	-.099	-.183	-.161	-.152
	Sig. (2-tailed)		.000	.000	.019	.516	.439	.513	.215	.243
	N	63	63	63	63	63	63	15	61	61
Anxiety_Scale	Pearson Correlation	.556**	1	.655**	-.044	.001	-.008	-.174	-.306*	-.300*
	Sig. (2-tailed)	.000		.000	.732	.991	.948	.534	.016	.019
	N	63	63	63	63	63	63	15	61	61
Stress_Scale	Pearson Correlation	.547**	.655**	1	-.133	.015	.010	-.247	.023	.058
	Sig. (2-tailed)	.000	.000		.300	.907	.936	.376	.859	.657
	N	63	63	63	63	63	63	15	61	61
MSPS_Family	Pearson Correlation	-.295*	-.044	-.133	1	.683**	.620**	.036	-.139	-.168
	Sig. (2-tailed)	.019	.732	.300		.000	.000	.899	.284	.195
	N	63	63	63	63	63	63	15	61	61
MSPS_SigOther	Pearson Correlation	-.083	.001	.015	.683**	1	.708**	.043	-.086	-.113
	Sig. (2-tailed)	.516	.991	.907	.000		.000	.880	.512	.387
	N	63	63	63	63	63	63	15	61	61
MSPS_Friends	Pearson Correlation	-.099	-.008	.010	.620**	.708**	1	.065	-.004	-.028
	Sig. (2-tailed)	.439	.948	.936	.000	.000		.818	.974	.832
	N	63	63	63	63	63	63	15	61	61
POSITIVE BREASTFEEDING_TOTAL	Pearson Correlation	-.183	-.174	-.247	.036	.043	.065	1	.655**	.195
	Sig. (2-tailed)	.513	.534	.376	.899	.880	.818		.008	.485
	N	15	15	15	15	15	15	15	15	15
BFQ_SOCIALSUPPORTTOTAL	Pearson Correlation	-.161	-.306*	.023	-.139	-.086	-.004	.655**	1	.992**
	Sig. (2-tailed)	.215	.016	.859	.284	.512	.974	.008		.000
	N	61	61	61	61	61	61	15	61	61
BFQ_COMMUNITYTOTAL	Pearson Correlation	-.152	-.300*	.058	-.168	-.113	-.028	.195	.992**	1
	Sig. (2-tailed)	.243	.019	.657	.195	.387	.832	.485	.000	
	N	61	61	61	61	61	61	15	61	61

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Moreover, something else of interest is to look at mean differences between a mother and a non-mother on different questionnaires such as depression/anxiety/stress, Multidimensional support and reflective functioning.(Table 5) We found that depression levels were much higher for non-mothers ( $M= 1.97, SD=1.40$ ) as compared to non-mothers ( $M=1.47, SD= 0.87$ ). Also, anxiety levels are much higher in non-mothers( $M=2.35$ ) as compared to mothers( $M=1.29$ ). Differences in stress levels are not that major in mothers( $M=1.64$ ) and non-mothers( $M=1.66$ ). When looking at multidimensional perceived support, on average mothers( $M=15.4$ ) rated low on

multidimensional perceived support as compared to non-mothers ( $M=16.42$ ). Lastly, looking at the two categories of reflective functioning we found that mothers( $M=8.05$ ) scored much higher on certainty than non-mothers( $M=5.270$ ). Such that they were more certain about perceiving mental states such as feeling, thoughts and desires. And, non-mothers( $M=3.79$ ) scored higher on uncertainty than mothers( $M=3.35$ ). Such that non-mothers were more uncertain about mental states.

Table 5

*Means of depression/anxiety/stress, perceived social support and reflective functioning between mothers and non-mothers*

*Report*

Are you a parent?		MSPS_Tot al	Depressio n_Scale	Anxiety_S cale	Stress_Sc ale	LRFu	LRFc	Age
Yes	Mean	15.4118	1.4706	1.2941	1.6471	3.3529	8.0588	32.235
	N	17	17	17	17	17	17	17
	Std. Deviation	5.82622	.87447	.58787	1.05719	2.73727	6.56192	2.7048
No	Mean	16.4222	1.9778	2.3556	1.6667	3.7955	5.2727	19.667
	N	45	45	45	45	44	44	45
	Std. Deviation	3.87328	1.40598	1.61182	.97701	3.93895	5.32813	1.8586
Total	Mean	16.1452	1.8387	2.0645	1.6613	3.6721	6.0492	23.113
	N	62	62	62	62	61	61	62
	Std. Deviation	4.46447	1.29556	1.48071	.99084	3.62731	5.78050	6.0303

Lastly, one major question we explored during this research process was to see if mothers and non-mothers differed on scales such as depression, anxiety, stress, social support and reflective functioning. While we didn't find any links with depression, stress, social support and reflective functioning we did find links between being a parent and stress levels. (Table 6) After running a correlational analysis between being a parent and these specific factors, we found a positive relationship between stress and being a parent. ( $r=.332$ ,  $N=63$ ,  $p=0.01$ )

Table 6

*Correlational Table of depression/anxiety/stress, social support, reflective functioning and being a parent*

Correlations

		Are you a parent?	Depression_Scale	Anxiety_Scale	Stress_Scale	MSPS_Family	MSPS_SigOther	MSPS_Friends	LRFc	LRFu
Are you a parent?	Pearson Correlation	1	.176	.322*	.009	.143	.098	.016	-.218	.055
	Sig. (2-tailed)		.171	.011	.945	.269	.449	.899	.092	.673
	N	62	62	62	62	62	62	62	61	61
Depression_Scale	Pearson Correlation	.176	1	.556**	.547**	-.295*	-.083	-.099	-.291*	.196
	Sig. (2-tailed)	.171		.000	.000	.019	.516	.439	.022	.127
	N	62	63	63	63	63	63	63	62	62
Anxiety_Scale	Pearson Correlation	.322*	.556**	1	.655**	-.044	.001	-.008	-.274*	.008
	Sig. (2-tailed)	.011	.000		.000	.732	.991	.948	.031	.948
	N	62	63	63	63	63	63	63	62	62
Stress_Scale	Pearson Correlation	.009	.547**	.655**	1	-.133	.015	.010	-.242	.109
	Sig. (2-tailed)	.945	.000	.000		.300	.907	.936	.058	.400
	N	62	63	63	63	63	63	63	62	62
MSPS_Family	Pearson Correlation	.143	-.295*	-.044	-.133	1	.683**	.620**	.211	-.071
	Sig. (2-tailed)	.269	.019	.732	.300		.000	.000	.100	.583
	N	62	63	63	63	63	63	63	62	62
MSPS_SigOther	Pearson Correlation	.098	-.083	.001	.015	.683**	1	.708**	.296*	.076
	Sig. (2-tailed)	.449	.516	.991	.907	.000		.000	.020	.559
	N	62	63	63	63	63	63	63	62	62
MSPS_Friends	Pearson Correlation	.016	-.099	-.008	.010	.620**	.708**	1	.229	.025
	Sig. (2-tailed)	.899	.439	.948	.936	.000	.000		.073	.848
	N	62	63	63	63	63	63	63	62	62
LRFc	Pearson Correlation	-.218	-.291*	-.274*	-.242	.211	.296*	.229	1	-.242
	Sig. (2-tailed)	.092	.022	.031	.058	.100	.020	.073		.058
	N	61	62	62	62	62	62	62	62	62
LRFu	Pearson Correlation	.055	.196	.008	.109	-.071	.076	.025	-.242	1
	Sig. (2-tailed)	.673	.127	.948	.400	.583	.559	.848	.058	
	N	61	62	62	62	62	62	62	62	62

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Discussion

The primary aim of this small-scale survey study was to investigate the extent to which parental reflective functioning might be related to mothers' breastfeeding experiences, while also taking into account possible relationships between depression/anxiety/stress and multidimensional social support more generally. Subsidiary aims were to examine possible relationships among these different variables, to compare relations among these variables between mothers and non-mothers, and to examine whether parental reflective functioning and reflective functioning more generally are related to one another. It is important to note that our relatively small sample overall, and particularly our small sample of mothers, precludes any definitive conclusions based on our findings. As well, our sample included only mothers who were breastfeeding or had done so in the past; we were unable to recruit any mothers who had opted not to breastfeed to participate in the study. Thus, an important comparison group was lacking in our analyses, underscoring the need for caution in drawing conclusions from this early set of findings.

In regard to our primary aim, we found that one of the parental reflective functioning subscales – interest and curiosity in mental states – was marginally positively related to mothers' reported positive breastfeeding experiences. As well, mothers' reported anxiety also showed a marginal positive correlation with positive breastfeeding experiences. However, a much stronger relationship emerged between mothers' report of support for breastfeeding and positive breastfeeding experiences. With such a small sample, further analyses (such as multiple regression to take multiple



variables into account simultaneously in the prediction of breastfeeding experience) seemed problematic. Suffice it to say that the presence of support for breastfeeding would seem to be a considerably more systematic predictor of breastfeeding experience than either interest and curiosity in mental states or maternal anxiety. Some of the subsidiary aims mentioned above about the study were expected but important to report. For example, we found a negative relationship between depression levels and social support received by family such that when social support received by family goes up, depression levels goes down. Moreover, we found a negative relationship between anxiety levels and social support and community support received during breastfeeding, such that when social support and community resources during breastfeeding go up, anxiety levels go down. Overall, our preliminary findings suggest that breastfeeding experiences are related to a range of other factors, including parental reflective functioning as well as depression/anxiety/stress, and most especially, social support.

#### Limitations and Future Considerations

There is a possibility that women of higher socio-economic status will be over-represented in our study sample, because in order to participate in the study, participants need to have access to a computer. As well, there might be limited generalizability since participants were recruited from organizations that are situated in Eugene and thus the sample was regionally restricted. Moreover, participants' responses to our questionnaires might reflect social desirability pressures to some difficult-to-assess degree, and thus be open to question. For this study, we need both mothers and non-mothers, but we got more non-mothers since this is a college town and the majority of the population was non-mothers. Another potential limitation was the time frame; we

included five different measures in this study, but were concerned about adding more as too burdensome on participants. Lastly, this research does not provide any opportunity to draw causal inferences. That is, significant relationships between measures such as parental reflective functioning and breastfeeding success can't be interpreted as indicating that PRF causally drives breastfeeding success, because correlation does not imply causation.

As described earlier, it will be important for future studies to recruit mothers who didn't breastfeed as well as those who did, for comparison purposes in relation to patterning of parental reflective functioning, parental attitudes, social support, depression/anxiety/stress, and postnatal depression. For future studies, it would be essential to recruit individuals from different income backgrounds since we found a link between Socio-economic background and breastfeeding patterns related to community resources and social support during breastfeeding. Moreover, there were differences in mean scales of depression/anxiety/stress, social support and reflective functioning between mothers and non-mothers. And the fact that the levels of depression/anxiety/stress were much higher could have something to do with the fact that all non-mothers were college students. Being a college student comes with a lot of challenges thus looking into that relationship more holistically is imperative in creating intervention plans to reduce those levels.

Another notable suggestion for future study would be to do a longitudinal study about whether there were group differences on the different tasks done by non-mothers and mothers but for a holistic and better understanding of the relationship between breastfeeding patterns and parental reflective functioning. It would be interesting to

analyze participants across time to get a well-rounded result. Exactly how and when postnatal depression emerges, and how that might related to breastfeeding experiences, is of great interest. As well, it will be of interest to track possible changes in parental attitudes and parental reflective functioning as women proceed through the transition to parenting. It would be better to ask parents to do the early parental attitudes questionnaire before birth and the parental reflective functioning after birth. This would help us track down differences if there are any between these items. Doing these various pre-birth and post-birth questionnaires would help us identify differences between attitudes about mental states about self and others. Recruiting women before they give birth and testing for their pre-natal depression if they have any along with learning and plasticity would give us some additional information about them.

Another area of research that could be added to our study would be tasks assessing learning ability and cognitive function more generally. Emerging evidence indicates that the cascade of hormones that presage birth have implications for cognitive processing (Mowery & Baldwin, 2016), with a possible impact on learning and executive functions such as working memory, inhibition, and task-switching. In particular, we hypothesize that these hormonal changes in fact improve learning abilities in post-partum women relative to women at other life junctures, and that breastfeeding sustains this improved learning facility during the period that breastfeeding continues (Mowrey & Baldwin, 2016). A small pilot study provided preliminary support for this hypothesis, setting the stage for a larger study utilizing the modified breastfeeding experiences survey created for the present research.

Lastly, our findings provide important additional information regarding relationships between two different questionnaires assessing reflective functioning: the Reflective functioning questionnaire and Parental Reflective functioning questionnaire. Given the fact that these two measures are fairly new questionnaires, our study lends support to the development and reliability of these measures. As predicted based on prior research, we found that there was a negative relationship between reflective functioning on certainty with pre-mentalizing modes on parental reflective functioning.

## **Conclusion**

To sum up, this small-scale pilot study provides some preliminary evidence that mothers' breastfeeding experiences may be related to their parental reflective functioning, to their mental health, and especially to their level of social support. As well, as a possible link between reflective functioning and the pre-mentalizing modes in parental reflective functioning; a negative relationship between the two such that if certainty on mental states of self and others increases then uncertainty on mental states of self and others decreases.

In the end, the ultimate hope this project is useful and plays a role in starting a ripple effect in more analysis into motherhood and better practices for improving parenting experiences, and breastfeeding experiences in particular. It would be beneficial for health-care policy makers to take note of this research in terms of making the breastfeeding process and early parenthood a little smoother for parents. At this point, lactation consults don't focus as much on the social aspects of breastfeeding since it is viewed as a biological process. However, as we found out in this study there are so

many social factors that tend to either impede or regulate effective breastfeeding.

Factors such as depression, anxiety, stress, parental mental states, social support play a role in determining the quality of experiences and success of breastfeeding.

Moreover, if this study is replicated in the future after considering some changes in the breastfeeding survey and gaining more knowledge about reflective and parental reflective functioning then that would give us a solid insight into deciding as to what areas of child-care or motherhood should be looked into even further so that we could come up with some kind of funding for that specific department.

## Appendices

### Appendix A: Depression Anxiety Stress Scale

Please read each statement and select the answer that indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

Scale points: Did not apply to me at all; Applied to me to some degree, or some of the time; Applied to me to a considerable degree, or a good part of time; Applied to me very much, or most of the time.

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

## **Appendix B: Multidimensional Scale of Perceived Social Support**

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Scale points: Very Strongly Disagree, Strongly Disagree, Mildly Disagree, Neutral, Mildly Agree, Strongly Agree, Very Strongly Agree.

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

*Appendix C: Reflective Functioning Questionnaire*

**Reflective Functioning Questionnaire – original 46 items**

**Please work through the next 46 statements. For each statement, choose a number between 1 and 7 to say how much you disagree or agree with the statement, and write it beside the statement. Do not think too much about it – your initial responses are usually the best. Thank you.**

**Use the following scale:**

Strongly disagree	1	2	3	4	5	6	Strongly agree
-------------------	---	---	---	---	---	---	----------------

1. \_ People's thoughts are a mystery to me
2. \_ I worry a great deal about what people are thinking and feeling
3. \_ My picture of my parents changes as I change
4. \_ I realise that I can sometimes misunderstand my best friends' reactions
5. \_ I believe that my parents' behaviour towards me should not be explained by how they were brought up
6. \_ Other people tell me I'm a good listener
7. \_ I often have to force people to do what I want them to do
8. \_ I always know what I feel
9. \_ I feel that, if I am not careful, I could intrude into another person's life
10. \_ I often get confused about what I am feeling
11. \_ I believe that people can see a situation very differently based on their own beliefs and experiences
12. \_ I believe there's no point trying to guess what's on someone else's mind



13. \_ I get confused when people talk about their feelings
14. \_ I believe other people are too confusing to bother figuring out
15. \_ I find it difficult to see other people's points of view
16. \_ I am a good mind reader
17. \_ I don't always know why I do what I do
18. \_ I pay attention to my feelings
19. \_ In an argument, I keep the other person's point of view in mind
20. \_ Understanding the reasons for people's actions helps me to forgive them
21. \_ I believe that there is no RIGHT way of seeing any situation
22. \_ When I get angry I say things without really knowing why I am saying them
23. \_ Those close to me often seem to find it difficult to understand why I do things
24. \_ I am better guided by reason than by my gut
25. \_ I usually know exactly what other people are thinking
26. \_ I can't remember much about when I was a child
27. \_ Strong feelings often cloud my thinking
28. \_ I trust my feelings
29. \_ When I get angry I say things that I later regret
30. \_ My intuition about a person is hardly ever wrong
31. \_ For me actions speak louder than words
32. \_ I frequently feel that my mind is empty
33. \_ I anticipate that my feelings might change even about something I feel strongly about
34. \_ I like to think about the reasons behind my actions

35. \_\_ If I feel insecure I can behave in ways that put others' backs up
36. \_\_ Sometimes I do things without really knowing why
37. \_\_ I can tell how someone is feeling by looking at their eyes
38. \_\_ Sometimes I find myself saying things and I have no idea why I said them
39. \_\_ In order to know exactly how someone is feeling, I have found that I need to ask them
40. \_\_ I can mostly predict what someone else will do
41. \_\_ I'm often curious about the meaning behind others' actions
42. \_\_ I have noticed that people often give advice to others that they actually wish to follow themselves
43. \_\_ I wonder what my dreams mean
44. \_\_ How I feel can easily affect how I understand someone else's behaviour
45. \_\_ I pay attention to the impact of my actions on others' feelings
46. \_\_ I know exactly what my close friends are thinking

## Appendix D: Breastfeeding Experience Questionnaire

### Breastfeeding Experiences Questionnaire

1. Do you have a child or children?

Yes No

If answer is **no**, please skip the rest of this questionnaire.

2. If yes, how many children do you have?

3. What are your child(ren)'s age(s) (in weeks, months, or years as appropriate)?

4. Have you breastfed, or tried to breastfeed, a child?

Yes No

5. Are you currently breastfeeding a child?

Yes No

If answer is to both questions 4 and 5 is **no**, please skip the rest of this questionnaire.

6. How long did you breastfeed your most recently breastfed child?

7. Please list the lengths of all previous breastfeeding experiences.

8. How long ago did you stop breastfeeding your most recent child?

#### Instructions for the next section:

Please answer as many of the following questions as possible, as honestly as possible.

The more information we receive from you, the greater our ability to conduct valuable and high-quality research.

Some questions ask for numerical answers, in which case, please write your best estimate of the exact number. Some questions ask that you select one of several options; it may be difficult to select one, but please try to select the most accurate and honest option you can. Some questions ask that you provide written information, or include space to provide further comments; please write any information you feel is relevant. Some questions may not apply to you, in which case please select N/A.

If you feel uncomfortable answering a question, you may skip it. Please bear in mind, however, that all of your responses are confidential and will be treated with great care.

Please answer the following questions as they relate to your first breastfeeding experience, regardless of whether or not you have breastfed other children since then. We are particularly interested in your experiences during the first several months of breastfeeding for the first time.

9. How long after birth did you initiate breastfeeding? Please estimate the number of minutes or hours:

10. How difficult was it for you to initiate breastfeeding?

1	2	3	4	5
Very difficult	Somewhat difficult	Neutral	Somewhat easy	Very easy

11. How successful do you feel your breastfeeding initiation was?

1	2	3	4	5
Very unsuccessful	Somewhat unsuccessful	Neutral	Somewhat successful	Very successful

12. Please comment on your experiences initiating breastfeeding:

13. How difficult has maintaining breastfeeding been for you? / How difficult was maintaining breastfeeding for you?

1	2	3	4	5
Very difficult	Somewhat difficult	Neutral	Somewhat easy	Very easy

14. How successful do you feel you've been at maintaining breastfeeding? / How successful do you feel you were at maintaining breastfeeding?

1	2	3	4	5
Very unsuccessful	Somewhat unsuccessful	Neutral	Somewhat successful	Very successful

15. Please comment on your experiences maintaining breastfeeding:

16. When did your breast milk (rather than colostrum) first come in?

17. On average, how many times a day do / did you breastfeed your child?

18. On average, how long is / was each breastfeeding session? Please estimate the number of minutes:

19. On average, how many times a day does / did your child drink breast milk from a bottle?

20. On average, how many times a day do / did you pump milk?

21. On average, what volume of milk do / did you pump per day?

22. How would you rate your child's behavior while nursing?

1	2	3	4	5
Very relaxed	Somewhat relaxed	Neutral	Somewhat active	Active

23. Please provide any further comments that seem relevant:

24. Does / did your child receive any supplements to breast milk (for example, formula or any other liquids) during the first several months after birth? Please select one:

Yes No

If yes:

25. On average, how many times per day does / did your child receive supplements to breast milk?

26. How old was your child when you began supplementing breast milk?

27. Please write what kind of supplementation your child receives / received:

28. Please write your reasons, if any, for supplementing:

29. Does / did your child use a pacifier regularly? Please select one:

Yes No

30. Further comments:

31. On average, how many times do / did you breastfeed your child during the night?

32. On average, how many times do / did you wake up in the night?

33. On average, how many hours of sleep do / did you get each night?

34. On average, what is / was the quality of your sleep each night?

1	2	3	4	5
Very poor	Poor	Fair	Good	Very good

35. On average, what is / was the quality of your child's sleep each night?

1	2	3	4	5
Very poor	Somewhat poor	Neutral	Somewhat good	Very good

36. Does / did your child sleep with you?

1	2	3	4	5
Never	Rarely	Sometimes	Usually	Always

37. Further comments:

The following questions are about your goals for breastfeeding, both in general and in terms of establishing a routine, as well as your success in attaining your goals.

38. How long do / did you plan on breastfeeding your child?

1	2	3	4	5	6
---	---	---	---	---	---

Less than one month	One to three months	Three to six months	Six months to one year	One to two years	More than two years
------------------------	------------------------	------------------------	---------------------------	---------------------	------------------------

39. How important is / was breastfeeding to you?

1	2	3	4	5
Very unimportant	Somewhat unimportant	Neutral	Somewhat important	Very important

40. What are (or were) your goals, if any, for successful breastfeeding (for example, breastfeeding exclusively, breastfeeding for a certain length of time, breastfeeding with ease, or establishing a breastfeeding routine)?

41. How successful do / did you feel you have been in attaining your breastfeeding goals?

1	2	3	4	5
Very unsuccessful	Somewhat unsuccessful	Neutral	Somewhat successful	Very successful

42. Further comments:

The following questions are about social, professional, and informal support for breastfeeding.

43. How supportive of breastfeeding is / was your partner?

1	2	3	4	5
Very unsupportive	Somewhat unsupportive	Neutral	Somewhat supportive	Very supportive

44. How supportive of breastfeeding is / was your extended family (for example, mother, sisters, aunts, or other close relatives)?

1	2	3	4	5
---	---	---	---	---

- |                      |                          |         |                        |                    |
|----------------------|--------------------------|---------|------------------------|--------------------|
| Very<br>unsupportive | Somewhat<br>unsupportive | Neutral | Somewhat<br>supportive | Very<br>supportive |
|----------------------|--------------------------|---------|------------------------|--------------------|
45. How supportive of breastfeeding are / were your close friends?
- |                      |                          |         |                        |                    |
|----------------------|--------------------------|---------|------------------------|--------------------|
| 1                    | 2                        | 3       | 4                      | 5                  |
| Very<br>unsupportive | Somewhat<br>unsupportive | Neutral | Somewhat<br>supportive | Very<br>supportive |
46. Do / did you feel that you have / had adequate social support to successfully breastfeed?
- |            |             |          |           |           |
|------------|-------------|----------|-----------|-----------|
| 1          | 2           | 3        | 4         | 5         |
| Not at all | Very little | Somewhat | Very much | Extremely |
47. Do / did you feel that you have / had adequate resources to successfully breastfeed (for example, access to lactation consultants, breast pumps, or support groups)?
- |            |             |          |           |           |
|------------|-------------|----------|-----------|-----------|
| 1          | 2           | 3        | 4         | 5         |
| Not at all | Very little | Somewhat | Very much | Extremely |
48. Do / did you feel that you have / had adequate information and knowledge to successfully breastfeed?
- |            |             |          |           |           |
|------------|-------------|----------|-----------|-----------|
| 1          | 2           | 3        | 4         | 5         |
| Not at all | Very little | Somewhat | Very much | Extremely |
49. Do / did you breastfeed in public?
- |            |             |          |            |              |
|------------|-------------|----------|------------|--------------|
| 1          | 2           | 3        | 4          | 5            |
| Not at all | Very little | Somewhat | Very often | All the time |
50. If yes, how much do you focus on taking steps to cloak breastfeeding from others' view when breastfeeding in public?
- |            |             |          |           |           |
|------------|-------------|----------|-----------|-----------|
| 1          | 2           | 3        | 4         | 5         |
| Not at all | Very little | Somewhat | Very much | Extremely |



51. How comfortable do / did you feel breastfeeding in public?

1	2	3	4	5
Not at all	Very little	Somewhat	Very much	Extremely

52. How comfortable do / did you sense that others feel / felt with breastfeeding in public?

1	2	3	4	5
Not at all	Very little	Somewhat	Very much	Extremely

53. Please describe how you handle / have handled breastfeeding in public (for example, no adjustment whatsoever, wearing certain clothing, moving to a quiet room, using a cloth to cover baby at the breast, etc.)

54. Have / did you received / receive professional or informal support to initiate or maintain breastfeeding (for example, lactation consultants or breastfeeding groups)?

Please select one:

Yes No

55. If the answer to the previous question is yes, when did you first receive professional or informal support?

56. Please describe the professional or informal support you have received:

57. The following checklist is intended to assess problems or difficulties you may have encountered that would affect breastfeeding. Please check any and all items that have applied to you during breastfeeding:

- premature child or other birth complications
- unable to start breastfeeding until more than 24 hours after birth
- child disinterest in breastfeeding
- child only wants to nurse on one breast
- problems with latch
- difficulty with milk supply
- child not gaining weight adequately
- child illness that interfered with breastfeeding
- illness that made breastfeeding difficult or painful
- illness related to breastfeeding (e.g., mastitis)

- cracked or bleeding nipples
- clogged ducts or milk doesn't flow properly
- inverted or flat nipples
- difficulty pumping
- lack of or inadequate support for breastfeeding
- work or life schedule interferes with breastfeeding
- other (please elaborate):

58. Further comments:

The following items are intended to assess your child's behavior. If your child is older than 2 months of age, please think back to your experiences in your child's first 1-2 months of life and complete these questions with that age in mind.

For each, a 1-7 scale is used:

1	2	3	4	5	6	7
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always

Feeding:

During feeding, how often did the baby:

- 59. lie or sit quietly?
- 60. squirm or kick?
- 61. wave arms?

Sleeping:

During sleep, how often did the baby:

- 62. toss about in the crib?
- 63. move from the middle to the end of the crib?
- 64. sleep in one position only?

Before falling asleep at night during the last week, how often did the baby:

- 65. show no fussing or crying?

After sleeping, how often did the baby:

- 66. fuss or cry immediately?
- 67. play quietly in the crib?
- 68. cry if someone doesn't come within a few minutes?

How often did the baby:

- 69. seem angry (crying and fussing) when you left her/him in the crib?
- 70. seem contented when left in the crib?
- 71. cry or fuss before going to sleep for naps?

Bathing and Dressing:

When being dressed or undressed during the last week, how often did the baby:

72. wave his/her arms and kick?

73. squirm and/or try to roll away?

When put into the bath water, how often did the baby:

74. splash or kick?

75. turn body and/or squirm?

When face was washed, how often did the baby:

76. fuss or cry?

When hair was washed, how often did the baby:

77. fuss or cry?

Play:

When something the baby was playing with had to be removed, how often did s/he:

78. cry or show distress for a time?

79. seem not bothered?

Daily Activities:

When placed on his/her back, how often did the baby:

80. wave arms and kick?

81. squirm and/or turn body?

82. fuss or protest?

When placed in an infant seat or car seat, how often did the baby:

83. wave arms and kick?

84. squirm and turn body?

85. lie or sit quietly?

86. show distress at first; then quiet down?

How often during the last week did the baby:

87. protest being placed in a confining place (infant seat, play pen, car seat, etc.)?

When the baby wanted something, how often did s/he:

88. become upset when s/he could not get what s/he wanted?

89. have tantrums (crying, screaming, face red, etc.) when s/he did not get what s/he wanted?

## Appendix E: Edinburgh Postnatal Depression Scale

As a mother, we would like to know about your feelings. Please read the following instructions carefully before you begin

Please answer the following questions as they relate to your experience with your most recent child, regardless of whether or not you have other children. If your child is 2 months old or younger, please answer questions as they relate to your current experience. If your child is older than 2 months, please recall as best you can your experiences in the first 1-2 months of your child's life, and answer questions with that time range in mind.

Please check the answer that comes closest to how you have felt in the past 7 days (or if your child is older than 2 months, in a typical week during their first 2 months of life), not just how you feel today.

For questions see below:

In the past 7 days:

1. I have been able to laugh and see the funny side of things
  - As much as I always could
  - Not quite so much now
  - Definitely not so much now
  - Not at all
2. I have looked forward with enjoyment to things
  - As much as I ever did
  - Rather less than I used to
  - Definitely less than I used to
  - Hardly at all
- \*3. I have blamed myself unnecessarily when things went wrong
  - Yes, most of the time
  - Yes, some of the time
  - Not very often
  - No, never
4. I have been anxious or worried for no good reason
  - No, not at all
  - Hardly ever
  - Yes, sometimes
  - Yes, very often
- \*5. I have felt scared or panicky for no very good reason
  - Yes, quite a lot
  - Yes, sometimes
  - No, not much
  - No, not at all
- \*6. Things have been getting on top of me
  - Yes, most of the time I haven't been able to cope at all
  - Yes, sometimes I haven't been coping as well as usual
  - No, most of the time I have coped quite well
  - No, I have been coping as well as ever
- \*7. I have been so unhappy that I have had difficulty sleeping
  - Yes, most of the time
  - Yes, sometimes
  - Not very often
  - No, not at all
- \*8. I have felt sad or miserable
  - Yes, most of the time
  - Yes, quite often
  - Not very often
  - No, not at all
- \*9. I have been so unhappy that I have been crying
  - Yes, most of the time
  - Yes, quite often
  - Only occasionally
  - No, never
- \*10. The thought of harming myself has occurred to me
  - Yes, quite often
  - Sometimes
  - Hardly ever
  - Never

## Appendix F: Parental Reflective Functioning Questionnaire

Listed below are a number of statements concerning you and your child. Read each item and decide whether you agree or disagree and to what extent. Use the following rating scale, with 7 if you strongly agree; and 1 if you strongly disagree. The midpoint, if you are neutral or undecided, is 4.

Strongly Strongly Disagree Agree	1	2	3	4	5	6	7
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1. \_The only time I'm certain my child loves me is when he or she is smiling at me.
2. \_I always know what my child wants.
3. \_I like to think about the reasons behind the way my child behaves and feels.
4. \_My child cries around strangers to embarrass me.
5. \_I can completely read my child's mind.
6. \_I wonder a lot about what my child is thinking and feeling.
7. \_I find it hard to actively participate in make believe play with my child.
8. \_I can always predict what my child will do.
9. \_I am often curious to find out how my child feels.
10. \_My child sometimes gets sick to keep me from doing what I want to do.
11. \_I can sometimes misunderstand the reactions of my child.
12. \_I try to see situations through the eyes of my child.
13. \_When my child is fussy he or she does that just to annoy me.
14. \_I always know why I do what I do to my child.
15. \_I try to understand the reasons why my child misbehaves.
16. \_Often, my child's behavior is too confusing to bother figuring out.
17. \_I always know why my child acts the way he or she does.
18. \_I believe there is no point in trying to guess what my child feels.

## Appendix G: Early Parental Attitudes Questionnaire (EPAQ)

How much do you agree with the following statements regarding infants and young children?

**Do Not Agree 0 1 2 3 4 5 6 Strongly Agree**

1. Parents do not need to worry if their child misbehaves a lot.
2. Too much affection, such as hugging and kissing, can make a child weak.
3. It is good to let children explore and experiment.
4. It is very important that there are consequences when a child breaks a rule, big or small.
5. Parents can prepare young children to succeed in school by teaching them things, such as shapes and numbers.
6. It is okay if young children boss around their caregivers.
7. It's important for parents to help children learn to deal with their emotions.
8. A child who has close bonds with his or her parents will have better relationships later on in life.
9. Parents can help babies learn language by talking to them.
10. Children don't need to learn about numbers and math until they go to school.
11. Parents should not try to calm a child who is upset, it is better to let children calm themselves.
12. Children and parents do not need to feel emotionally close as long as children are kept safe.
13. Reading books to children is not helpful if they have not yet learned to speak.
14. It is not helpful to explain the reasons for rules to young children because they won't understand.
15. It is very important that children learn to respect adults, such as parents and teachers.
16. Children should be comforted when they are scared or unhappy.

17. Young children should be allowed to make their own decisions, like what to play with and when to eat.

18. It is okay if children see adults as equals rather than viewing them with respect.

19. Children who receive too much attention from their parents become spoiled.

20. Children should be grateful to their parents.

21. Babies can learn a lot just by playing.

22. Babies can't learn about the world until they learn to speak.

23. It is very important for young children to do as they are told, for example, waiting when they are told to wait.

24. Parents should pay attention to what their child likes and dislikes.

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