



The relationships between maternal psychological state, breastfeeding difficulty and breastfeeding patterns

Forough Mortazavi¹, Seyed Abbas Mousavi², Reza Chaman³, Ahmad Khosravi⁴

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1. Assistant Professor in Reproductive Health, Department of Midwifery, Faculty of Nursing and Midwifery, Sabzevar University of Medical Sciences, Sabzevar, Iran

2. **Correspondence to:** Assistant Professor of Psychiatry, Research Center of Psychiatry, Golestan University of Medical Sciences, Golestan, Iran

Tel/Fax: +98

Email: mosavi19@yahoo.com

3. Associate Professor of Community Medicine Department, School of Medicine, Yasuj University of Medical Sciences, Yasuj, Iran

4. PhD Candidate of Epidemiology, Center for Health Related Social & Behavioral Sciences Research, Shahrood University of Medical Sciences, Shahrood, Iran

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Abstract

Breastfeeding difficulties and maternal psychological problems are known risk factors for breastfeeding discontinuation. This study assessed the relationships between breastfeeding difficulties, maternal psychological state and breastfeeding patterns. This longitudinal study carried out on 358 pregnant women. Psychological state and breastfeeding difficulties were assessed using the general health questionnaire-28 and the breastfeeding experience scale respectively. We assessed breastfeeding method during two months postpartum. Data analyses were performed using multiple, logistic regression, t-test, and ANOVA. Multiple regression controlling for education and previous breastfeeding experience revealed that maternal antenatal psychological state independently influenced breastfeeding difficulties. Multivariable logistic regression analysis showed that with each unit increase in breastfeeding difficulties score, the odd for developing postpartum psychological problems was 1.098. Mothers who were partially breastfeeding during the first two-month postpartum had higher breastfeeding difficulties score than mothers who were exclusively or predominantly breastfeeding. To promote exclusive breastfeeding, intervention in relieving breastfeeding difficulties especially for mothers with psychological problems is recommended.

Keywords: Breastfeeding, Psychological, Postpartum, Pregnancy

Introduction

Breastfeeding brings multiple health benefits for both mother and baby. World health organization emphasized on breast milk during the first 6 month of life [1]. Breastfeeding has been one of the most successful projects in Iran. It has been estimated that the rate of any breastfeeding until two years and exclusive breastfeeding until six month were 57% and 27% in 2007 respectively [2]. However, the rate of exclusive breastfeeding has been decreasing. According to reports released by Iran Ministry of health and education in 2010, it was cleared that exclusive

breastfeeding rate until 6 month was 23% in country [3].

Psychological state of mother has been an important factor on her breastfeeding experience. Results of some studies indicated that depressed mothers had more negative attitudes towards breastfeeding [4] and experienced lower breastfeeding satisfaction than non-depressed mothers [5]. In Denis's study, mothers who were depressed in the first weeks postpartum were more likely to interrupt breastfeeding at 8 weeks [6]. In addition, if the first breastfeeding experiences

were negative, mothers would likely experience postpartum psychological problems. Results of a study showed that mothers who suffered from nipple pain in the first day, first week, and second week postpartum were 1.96, 2.13, and 2.24 times more likely at risk of postpartum desperation respectively than mothers who did not [7]. In another study, mothers with unsuccessful breastfeeding attempts or those who worried about breastfeeding were more likely at risk of postpartum desperation than mothers who did not [8,9]. On the other hand, primary breastfeeding experiences were one of factors influencing breastfeeding continuation. Therefore, some mothers facing breastfeeding difficulties felt helplessness and decided to stop breastfeeding [10]. In studies conducted in Iran and other countries, some breastfeeding difficulties such as maternal worries about baby getting enough milk, colic baby [11-13], sore nipple and maternal fatigue [14] were factors associated with exclusive breastfeeding discontinuation [12].

So far, the relationship between breastfeeding difficulties and ante- and postpartum desperation has been investigated [7,15]. In previous studies, some breastfeeding difficulties were assessed separately. Breastfeeding difficulties are multidimensional and some difficulties have not been fully investigated yet. The Breastfeeding Experience Scale (BES) is an instrument, which assesses 18 different breastfeeding problems. Also, it can quantitate breastfeeding problems severity perception.

In addition, previous studies have mostly focused on the relationship between breastfeeding difficulties and breastfeeding discontinuation and aspects such as exclusive breastfeeding discontinuation or starting complementary feeding have not been assessed. Results of a study showed that breastfeeding discontinuation occurs a few weeks after the psychological problems [6], and this time is a suitable opportunity for supporting depressed mothers. These interventions may affect the incidence of postpartum desperation, too.

Because of high psychological problems in late pregnancy in Shahroud (46%) [16], the

aims of this study were 1) to investigate the prevalence of breastfeeding difficulties in the first month postpartum, and 2) examine its relationships with maternal psychological state in late pregnancy and two month postpartum, and breastfeeding practices in a participant group of Shahroudi mothers referring to public health care centers. According to our knowledge, this is the first study in Iran investigated the relationship between maternal psychological state in late pregnancy and two month postpartum, breastfeeding patterns, and breastfeeding difficulties using the BES, which assesses breastfeeding difficulties more multidimensional.

Method

This study is part of a larger longitudinal study, which conducted on 358 pregnant women referring to the health-care centers in 2011, Iran. Sampling was convenient. Inclusion criteria were gestational age more than 28 weeks and ability to read. Exclusion criteria were fetal or infant death and twin pregnancy. After considering parameters of prevalence of exclusive breastfeeding of 30% [2], power of 80%, significance error of 5%, and dropout rate of 10%, participant size was calculated. We could follow 340 pregnant women at two month postpartum. Women completed GHQ-28 at the third trimester of pregnancy and two months postpartum. They filled out the BES at the end of first month postpartum. Breastfeeding practices were assessed at two weeks, first month and second month postpartum. Ethics committee of Shahroud university of medical sciences approved the proposal (approval number 900.02).

It was consisted of personal and obstetrical information. Personal information included age, education, job, and income. Obstetrical information included parity, previous breastfeeding experience, desirability of pregnancy and mode of delivery. Breastfeeding practices were assessed using a detailed checklist in which all the fluids received by infant during the previous month such as water, sugar-water, herbal teas, tea, formula and

juices were written. We adopted World health organization (WHO) criteria for exclusive, predominant and partial breastfeeding [1].

General health Questionnaire-28 (GHQ-28): GHQ-28 was designed to screen for psychological problems [17]. GHQ-28 consisted of 28 questions in four domains including physical, anxiety, social dysfunction, and desperation. Each item was rated on a 4-point Likert scale, ranging from 0 to 3. The minimum and maximum scores were zero to 84 respectively. Higher scores indicated worse psychological state. A cutoff point higher than 23 was calculated in Iran to screen psychological problems which needed more assessment [18]. Validity and reliability of the GHQ-28 were demonstrated in previous study. The test-retest correlation coefficient after a one-week interval was .85. Results of psychological interviews showed that cut off 24 in GHQ-28 test makes it possible to identify 73.8% of participants who were detected as patient in the interview [19].

The breastfeeding experience scale (BES): The BES was developed and validated by Wambach in 1990. The scale consisted of 30 items and questions. The first 18 items assessed breastfeeding problems. Each item was rated on a 5-point Likert scale, ranging from 1(not at all) to 5 (unbearable). The minimum and maximum score were 18 to 90 and higher scores indicate more severe breastfeeding problems. The reliability of the instrument was 0.85 at 3 weeks postpartum [14] and 5 factors including breast problems, mechanic, insufficient milk, process, and social factors were identified which altogether explained 60% of variances [20]. Mothers completed the BES at the end of the first month postpartum. The BES was translated into Persian and validated. The alpha Cronbach coefficient for the first 18 items was 0.83. Results of exploratory factor analysis revealed 5 factors including baby and mother problems, process, insufficient milk, and breast problems. These five factors explained 58.6% of variances. Results of confirmatory factor analysis demonstrated the five factor model (RMSEA=0.067, CFA= 0.95, SRMR=0.067, chi-square/df = 3) [21].

Data analyses was done using SPSS-18. Descriptive tests, multiple regression analysis, Logistic regression analysis, Pearson correlation test, t test, and analysis of variance were conducted to determine the relationship between variables. The significance level was set at 0.05

Results

The means and standard deviations of age, years of education, and monthly family income were 26 ± 4.6 , 11.3 ± 3.7 , and 424 ± 150 million Rials respectively. Ninety one percent of mothers were housekeeper and 88% experienced planned pregnancy. The mode of delivery for 57% of mothers was cesarean and 59% of them were primiparous. Eighty percent of multiparas described their previous breastfeeding experience as excellent. Breastfeeding practices for 29% of infants were exclusive at two month postpartum. Breastfeeding difficulties. The mean score of breastfeeding difficulties was 31.4 ± 8.5 , ranging from 18 to 74. Table1 presented frequency of breastfeeding difficulties. Ten point one percent of mothers reported severe concerns about their insufficient breast milk. Severe concerns about infant's weight gain and receiving insufficient milk were reported by 9.8% and 7.2% of mothers respectively (Table 1).

Table 2 showed the correlation between maternal psychological state in late pregnancy and postpartum and breastfeeding difficulties. Multiple regressions analysis was conducted to assess the power of maternal psychological state in late pregnancy for predicting breastfeeding difficulties in the postpartum. After adjusting for years of education and previous breastfeeding experience, the score of GHQ-28 explained 10.9% of variances in breastfeeding difficulties scores ($R^2= 0.17$, $Beta = -0.116$, $F=6$, $P=0.01$). Results of Logistic regression analysis revealed that with each unit increase in breastfeeding difficulties score in the first month postpartum, the odd for developing postpartum psychological problems in the second month postpartum

Table1 Mean problem severity and percentage of different breastfeeding difficulties

Subscale	Item	Mean problem severity	Not at all†	Mild or moderate‡	Sever or unbearable§
Breast	1= Sore nipple	1.7	57.5	34.4	8.1
	2= Cracked nipple	1.5	68.2	25.7	6.1
	7= Breast infection	1.1	94.8	2.6	2.6
	3= Engorgement	1.8	56.6	34.4	9
Infant	4= Baby having difficulty latching on	1.6	65.3	28.9	5.8
	6= Baby reluctant to nurse due to fussiness	1.4	69.9	27.2	2.9
	5= Baby reluctant to nurse due to sleepiness	1.4	71.4	26.9	1.7
	11= Baby having sucking difficulty	1.4	75.1	20.5	4.3
Process	8= Leaking breasts	2.6	22.5	56.7	20.8
	9= Baby nursing too frequently	2.7	19.1	55.7	25.1
Mother	12= Feeling very tired/fatigued	2	42.5	48.9	8.7
	14= Difficulty positioning baby	1.4	76	21.4	2.6
	16= Feeling tense and overwhelmed	1.7	60.7	32.6	6.6
	17= Feeling embarrassed when nursing	1.4	76	21.7	2.3
	18= Difficulty combining work and breastfeeding	2.2	32.1	57.8	10.1
Insufficient milk	10= Worry about not having enough milk	2	52.9	37	10.1
	13= Worry that baby was not getting enough milk	1.9	49.4	43.3	7.2
	15= Worry about baby's weight gain	1.8	53.5	36.7	9.8

Item numbers refer to the item numbers in the Breastfeeding Experience Scale; †not at all (1), ‡mild or moderate (2 or 3), §severe or unbearable (4,5)

Table2 Correlation coefficients of breastfeeding difficulties and GHQ-28 scores

Breastfeeding difficulties	GHQ-28 subscales				
	Somatic symptoms	Anxiety & insomnia	Social dysfunction	Severe depression	Global
Pregnancy					
r	0.133*	0.193***	0.136*	0.154**	0.198***
P-value	0.013	0.001>	0.012	0.004	<0.001
Postpartum					
r	0.391***	0.485***	0.313***	0.270***	0.456***
P-value	<0.001	<0.001	<0.001	<0.001	<0.001

pearson correlation test, r = correlation coefficient, * P<0.05; ** P<0.01; *** P<0.001

was 1.098 ($P < 0.001$). In Table 3 breastfeeding difficulties according to maternal psychological state in late pregnancy and postpartum was presented. Mothers who had GHQ-28 scores more than 23 in late pregnancy ($P < 0.017$) and postpartum ($P < 0.001$) had higher breastfeeding difficulties scores than mothers who had scores < 24 . In table4, the mean scores of breastfeeding difficulties in three breastfeeding practices

at two month postpartum were presented. There were significant differences between partial breastfeeding group and both exclusive ($P < 0.001$) and predominant groups ($P < 0.01$) in terms of mean scores of breastfeeding difficulties.

Discussion

Results of this study showed that the severity

Table3 Breastfeeding difficulties mean scores according to GHQ-28 scores

	Score	N	Breastfeeding difficulties		
			Mean	S.D	P -value*
Antepartum	< 24	195	30.43	8.78	0.017
	$24 \leq$	145	32.66	8.04	
Postpartum	< 24	252	29.64	7.89	< 0.001
	$24 \leq$	88	36.48	8.35	

*t- test $p < 0.5$

Table4 Breastfeeding difficulties mean scores according to breastfeeding practices at 2 month postpartum

Breastfeeding practice	Breastfeeding difficulties						
	Mean	S.D	S.E	95% CI		F	P-value*
Exclusive	29.71	7.3	0.7	28.25	31.16	8.58	< 0.001
Predominant	31.42	8.3	0.6	30.36	32.61		
Partial	36.56	11.4	1.9	32.16	40.20		
Total	31.42	8.5	0.5	30.51	32.32		

*ANOVA

perception of breastfeeding difficulties in mothers who had psychological problems in pregnancy was higher than mothers who had not. Also, mothers who had psychological problems two month postpartum reported higher severity perception of breastfeeding difficulties at the first month postpartum than mothers who had not. In addition, mothers who practiced partial breastfeeding at two month postpartum had more breastfeeding difficulties than two other groups. Results were in agreement with Denis's study in which depression at the first week postpartum affected negatively on breastfeeding self-efficacy at 4 and 8 weeks postpartum. Depressed mothers at first week would more likely describe breastfeeding as a difficult process at 4 and 8 weeks postpartum

than non-depressed mothers. In addition, they were less satisfied with infant feeding method, and discontinued breastfeeding at 8 weeks postpartum. In this study, mothers who were less satisfied with breastfeeding were at risk of depression at 4 and 8 weeks postpartum [6]. Another study showed that mothers who disliked breastfeeding at first week postpartum were 1.42 times more at risk of postpartum depression than mothers who liked [7]. However, some researches did not find any relationship between maternal mood and breastfeeding difficulties perception [4,22]. Psychological problems may lead mother to interpret her infant behavior mistakenly at early postpartum. She may feel that her infant become unsatisfied following breastfeeding

and she may think her milk is not enough for the baby. This may lead her to introduce formula to complete infant nutritional needs [6]. Maternal perceptions of insufficient milk supply have been reported as the most important reason of exclusive breastfeeding discontinuation [11, 12, 23]. Also, she may put less effort to have a successful breastfeeding performance due to tiredness. In addition, she may not be interested to learn and apply breastfeeding techniques due to psychological problems. This can be led to sore nipple, cracked nipple, breast engorgement and infection [6].

Breastfeeding difficulties are common in early postpartum. In our study, severe breastfeeding difficulties were reported by 1.7% to 25.1% of mothers. The mean severity of each difficulty was 1.1 to 2.7, ranging from 1 to 5 indicated low breastfeeding difficulties severity perception and incidence in Shahroudi mothers. In Wambach's study, the mean severity of each difficulty in primiparas was 1.6 to 1.9 [14]. Since our participant consisted of both primiparas and multiparas, we expected lower mean score of perceived breastfeeding difficulties severity than Wambach's study.

This study increased our knowledge about early breastfeeding difficulties and its relationship with maternal psychological state in late pregnancy and postpartum. Considering the relationship between maternal psychological state and breastfeeding difficulties, it can be possible to use psychological state as a means to detect mothers who would face breastfeeding difficulties. So, screening for psychological problems in pregnancy and designing proper interventions to improve breastfeeding experience is recommended. Considering the relationship between breastfeeding difficulties and maternal postpartum psychological state, further studies for identifying the BES cutoff point for screening postpartum psychological problems are recommended. In this study, GHQ-28 was used alone and without applying any clinical interview to detect psychological problems. We recommended that in future studies clinical interview be applied to detect psychological problems.

Study participants were low risk women registered at urban health care centers to receive prenatal care. Therefore, they might be in lower social and economical situation that influenced maternal psychological state in comparison with mothers who were supervised by obstetricians during pregnancy. In addition, infant feeding practices were determined by previous month recall method. So, recall bias was probable. Despite the limitations, the large participant size and follow up method (from late pregnancy until two months after postpartum) were strength points of the study.

Conclusion

Psychological problems in pregnancy were related to the perceived severity of breastfeeding difficulties. The perceived severity of breastfeeding difficulties were related to breastfeeding practices and postpartum psychological problems. Identifying mothers with psychological problems in pregnancy not only helps to lower postpartum psychological problems by designing proper interventions but also helps in detecting mothers at risk of developing breastfeeding difficulties which is a risk factor for exclusive breastfeeding discontinuation.

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Contributions

Study design: SAM, RCH
Data collection and analysis: FM, AKH
Manuscript preparation: FM

Conflict of interest

"The authors declare that they have no competing interests."

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