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The role of maternal emotional cognitive strategies and newborn gender satisfaction in the postpartum depression in the primiparous women

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Abstract

Background: The Postpartum depression has a negative effect on the infant's developmental and behavioral performance, mother-child relationship and mother's health, and its etiology is also very complicated.
Objectives: This study was conducted to investigate the role of maternal emotional cognitive strategies and newborn gender preference in the postpartum depression in primiparous women.
Methods: This descriptive-correlational study was performed on 205 primiparous women referring to health centers in Kerman city the center of Kerman province of Iran from 1April to 31 June 2015. Primiparous women according to presence (n=103) or absence (n=102) of postpartum depression (PPD< 12: without depression) were selected using purposeful sampling. The measurement tools included the demographic questionnaire, Edinburgh postpartum Depression Scale (EPDS) and Cognitive Emotion Regulation Questionnaire (CERQ). The data were analyzed using SPSS software and the logistic regression method.
***Results*:** The results showed positive cognitive strategies including acceptance, positive re-focus and re-focus on planning have a negative relationship with the postpartum depression (P<0.001). Also, the strategies of self-blame, catastrophizing, rumination and blame for others have a positive relationship with the postpartum depression (P<0.001). There was no significant relationship between dissatisfaction with newborn gender and postpartum depression (P>0.05).
Conclusion: According to the results of this study, postpartum depression can be predicted by emotional regulation cognitive strategies.

Key words: postpartum depression, cognitive emotion regulation, newborn gender, primiparous

Introduction

Pregnancy and the postpartum period are accompanied by very important psychological and physiological changes that sometimes lead to changes that can result in mental disorders and affect the aspects of one's life and relationships with others [1]. One of these mental disorders (PPDs) is the postpartum depression [2]. The main symptoms are similar to major depression including poor mood, anorexia, sleep disturbances, feelings of sadness and suicidal thoughts. If these symptoms start in the first 4 weeks after delivery, they are known as the postpartum depression [3]. A mother with postpartum depression has trouble with sleeping, even when the baby is slept. Some women with this disorder even have horrific and timely thoughts about harming their child. These

thoughts are more frightening for the mother than it is for the child [4].

The results of the Visani and Sayeh Miri meta-analysis showed that the prevalence of post-partum depression in Iran is high and according to other similar studies results is higher than other parts of the world [5]. The depressed mothers feel less responsive to the infant and develop complex problems in their interaction with the infant [6], which seriously threatens the emotional and cognitive development of the baby and may lead to negligence and misconduct in the care of the baby [7,8].

One of the causes of depression is the difficulty in regulating excitement. Studies showed that the defect in the regulation of excitement such as depression is associated with intrinsic disorders [9]. Cognitive emotion regulation strategies are a kind of cognitive coping strategy. It is characterized by processes through which individuals can have control on what type of excitement they have and when they express it. The emotional cognitive regulation is the reservoir of the individual's response to stressors and includes all internal and external processes that are responsible for controlling, evaluating and modifying the emotional responses [10, 11]. The cognitive strategies of emotional regulation are categorized into two positive and negative groups. Positive strategies included: positive refocusing, refocus on planning, positive reappraisal and acceptance. Negative strategies included self-blame, blaming others, catastrophizing, putting into perspective and rumination or focus on thoughts [12]. In recent years excitement regulation has been targeted as a significant process in researching and treating psychopathology [13]. Studies also show that the use of adaptive strategies in adults with psychiatric disorders is at the lowest level [14]. Some authors have identified the depressive periods as the result of malfunction for the excitement [15]. According to the various research findings, the defect in cognitive management of emotions played a central role in exacerbating depression [16]. Also, the symptoms of depression and anxiety have a negative and significant relationship with problem-solving and re-evaluation strategies [17]. The previous research has shown that the adaptive cognitive coping strategies have a negative relationship with depression and other mental illnesses [14]. In a non-depressed state, when an increase in negative mood is moderate, these abnormalities may not interfere with everyday life; however, when deterioration in mood increases (for example, in response to stressful life events such as pregnancy) maladaptive strategies can lead to a continuation of negative mood and contribute to the development of a depressive period [13]. Other studies have also shown a negative relationship between depression and positive re-focusing and re-focus on planning strategies [18,19].

The prevalence rates of postpartum depression show that, apart from the psychological problems, cultural and environmental issues contribute to the etiology of postpartum depression [20]. Studies in this area in Iranian women indicate that mother's age [21,22], mother's education and satisfaction with the spouse [23], the type of delivery [24], unemployment, unwanted pregnancy and the history of depression [25] are associated with the postpartum-depression, while the number of pregnancies does not play such a role [26]. Satisfaction with the gender of a newborn is another issue that can be related to culture and affect the mother's spirit, because the gender of children is one of the oldest and the most important issues that has always been the subject of human thinking and the human desire to choose the gender of its children has a historical root [27], to the point where the ever-increasing technology has provided the opportunity for parents to determine the gender [28]. The desire to choose the gender of fetus through scientific and empirical methods has largely been met [29]. This illustrates the importance of the psychological role of the newborn's gender issue for parents. Some studies show that mothers who have a son have the lower quality of life and more depression [30]. These studies have been reported differently within the cities in Iran; while some studies have shown that satisfying the infant's gender does not play a role in the postpartum depression [23] some other studies have reported dissatisfaction with the infant's gender as an important risk factor for the postpartum

depression [25]. Although the role of emotional regulation cognitive strategies in the etiology of depressive episode has been confirmed, the role of this strategy in explaining the postpartum depression has not been determined.

Given that women tolerate a lot of mental changes during pregnancy and their impact on different stresses in this period increases day by day, and given that the pregnancy experience for the first time is a risk factor for the depression after birth [23], it is possible that there is a difference in the incidence of postpartum depression symptoms in this group of population. Therefore, the present study aimed to investigate the relationship between the cognitive emotion regulation strategies and satisfaction of the newborn gender with postpartum depression in the primiparous women.

Methods

This descriptive-correlational study was performed on 205 primiparous women referring to health centers in Kerman city the center of Kerman province of Iran in 2015. The study was conducted from 1 April to 31 June, 2015. The study was approved by the Ethical Review Board of Kerman University of Shahid Bahonar. Privacy and confidentiality were ensured and all participants signed an informed consent form. It was made clear on the consent form that refusal to participate would not affect patients' right to service.

Kerman has four urban regions. From each district, one health center affiliated to the social security organization was selected as study field according to clustering sampling method. The four regions and the number of health center and clients selected from each health center were respectively: North, Health Center No.1, N=60; South, Health Center No.4, N=49; East, Health Center No.2, N=50; and West, Health Center No.3, N=46. All 4 health centers are selected as study field. According to the reports provided by the authorities, the average number of clients in the postpartum care unit was 40 per day. The sample size was 205 according to the Kerjesy and Morgan tables [31].

Convenience sampling method was used to select 205 of the primiparous women who attended the the family-planning clinic during the study period, 102 with depression (PPD score <12) and 103 without depression (PPD score >12), were analyzed. It should be noted that the two groups were matched for the age and education. Women were recruited if they fulfilled the following criteria: being Iranian and resident of Kerman, the primiparous delivery, at least 4 weeks after childbirth, single delivery, having non-physical or mental illness, no history of infertility or irregular marital life such as divorced or separated couples, and having literacy in reading and writing.

For gathering data a questionnaire including the demographic characteristics form, the cognitive-emotional regulation cognitive strategies scale (CERQ) and the Edinburgh Depression Inventory (EPDS) was used. Also, the satisfaction of the newborn's gender was measured in the form of a closed-ended question (yes-no).

Edinburgh postnatal depression scale (EPDS) was developed by Cox et al. In 1987 includes 10 questions 4 answers that are rated 0 to 3. The minimum score in this tool is zero and the maximum score is 30. Women scored more than 12 were considered to be at risk for PPD [32]. According to the reports, the sensitivity of this questionnaire was 93.5% and its specifity was 87.9% [24]. The reliability of the test with the method of Cronbach's alpha was reported 0.75 [25]. In this study the Cronbach's alpha was equal to 0.72.

Cognitive emotion regulation questionnaire (CERQ) was developed by Garnefski et al. in 2001. The CERQ is a 36-item questionnaire consisting of the following nine conceptually distinct subscales, each consisting of four items and each referring to what someone thinks after the experience of threatening or stressful life events: self-blame, other blame, rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance, and planning. Cognitive emotion regulation strategies were measured on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). Individual subscale scores were obtained by summing the scores belonging to the particular subscale (ranging from 4 to 20). Previous research on cognitive emotion regulation strategies has shown that all subscales have good internal

consistencies ranging from .68 to .86 [33]. Abdi, Taban and Ghaemian, in 2012, translated and standardized this scale in Farsi. The construct validity of the questionnaire was reported appropriate through the correlation of the scores of the nine subscales with the (MAAS) questionnaire [34]. In this study, the Cronbach's alpha was 0.82.

In order to distribute and complete the self-report questionnaires, the researcher provided the questionnaires to all eligible women and collected at the same place. The completion of the questionnaire lasted an average of 15 minutes.

Data analysis was done using the SPSS version 20 software. Regarding the two criteria of criterion variables (depression or lack of postpartum depression), to investigate the relationship between cognitive-emotional regulation and satisfaction of the newborn's gender with post-partum depression, logistic regression was used. It was adapted to diagnose postpartum depression in primiparous women.

Results

In this study, 205 primiparous women were investigated. The mean age of pregnant women was 25.95±4.9 years. Regarding the academic status, 75(36.6%) were under the diploma, 56 (27.3%) had diplomas, 8(3.9%) had university degree, 53(25.9%) had bachelor degree, 12(9.5%) had master degree and one (0.5%) had a Ph.D. In terms of employment status, 162(79%) were housewives and 43(21%) were employees. In terms of satisfaction of baby gender distribution; 175 (85.4%) were satisfied and 30 (14.6%) were dissatisfied. Regarding the types of delivery, 94 (45.9%) was given cesarean section and 111 (54.1%) normal delivery. Regarding the husband's job, 105(51.2%) were employees and 100 (48%) were employed in the private sector. 102 had a degree of postpartum depression and 103 were non-depressed. The rate of postpartum depression based on the demographic characteristics of the research, including husband's job, pregnant woman's occupation and type of delivery in two groups of depressed and non-depressed women were compared by independent t-test. The results showed that postpartum depression was significantly higher in female housewives (T = 78.58, P = 0.001), postpartum depression was not significantly different in other groups (P> 0.05). The average scores of these two groups are reported in the components of emotional adjustment cognitive strategies in Table 1.

Table 1: The Descriptive Indicators of Emotional Cognitive Strategies'

Emotional cognitive strategies	Depressed		Non-depressed	
	Mean	SD	Mean	SD
Acceptance	9.35	2.64	12.06	2.74
Re-focus positive	7.65	3.18	10.34	3.40
Focus on planning	9.93	3.38	10.07	3.34
Positive reappraisal	7.63	3.58	8.85	3.53
Self-blame	9.93	3.61	12.26	3.28
Catastrophe	8.14	3.48	10.46	2.68
Putting into perspective	9.48	2.96	9.55	2.81
Rumination	7.00	4.26	10.60	4.13
Blame others	7.91	4.13	12.52	3.09

The results of Pearson correlation coefficient showed positive cognitive strategies including acceptance, positive re-focus and re-focus on planning have a negative relationship with the postpartum depression (P<0.001). Also, the strategies of self-blame, catastrophizing,

rumination and blame for others have a positive relationship with the postpartum depression (P<0.001). There was no significant relationship between dissatisfaction with newborn gender and postpartum depression (P>0.05).

Logistic regression was used to predict postpartum depression based on positive cognitive strategies of emotion regulation. The analysis of the results showed that the components of positive cognitive strategies of emotion regulation were the predictive power of postpartum depression ($X2_{(5,205)}$=88.08, P<0.001); Based on the Nagelkerke pseudo-R^2 statistic, positive cognitive strategies for emotion regulation explain 40% of variance in postpartum depression. According to the Hosmer-Lemeshow test, the Chi-square test showed that the prediction was acceptable ($X2_{(7)}$=10.31, P<0.05). The results of Wald test showed that three variables of admission, positive re-focus and re-focusing on planning have statistically significant predictors of postpartum depression and the probability of depression in postpartum women based on declining of the three mentioned strategies decline were respectively 1.46% (CI=1.68 and 1.26), 1.24% (CI=1.10 and 1.39), 0.89% (CI=0.79 and 0/99).

In table 2, the regression coefficients (B), Wald test, the level of significance, odds ratio Exp(B) and 95% confidence intervals for the odds ratios (OR) for each predictor variable are shown (Table 2).

Table 2: The Predictive Variables in the Regression Model of Postpartum Depression Based on Positive Cognitive Strategies of Emotion Regulation

Variable	B	S.E	Wald	DF	Sig	EXP(B)	95% confidence intervals	
							Min	Max
Acceptance	-0.37	0.07	25.87	1	0.000	1.46	0.63	1.26
Re-focus positive	-0.21	0.06	13.05	1	0.000	1.24	1.10	1.39
Focus on planning	-0.11	0.05	4.12	1	0.042	0.89	0.79	0.99
Positive reassessment	-0.08	0.05	2.87	1	0.090	1.09	0.89	1.20

Logistic regression was used to predict postpartum depression based on negative cognitive strategies of emotion regulation. The analysis of the results showed that the components of negative cognitive strategies of emotion regulation were able to predict the postpartum depression ($X2_{(5,205)}$= 94.72, P<0.001); Based on Nagelkerke pseudo-R2 statistic, negative cognitive strategies of emotion regulation explains 49% of variance postpartum depression. According to the Hosmer-Lemeshow test, the Chi square statistic was acceptable (P<0.05, $X2_{(7)}$=12.44).

The results of this study showed that the four variables of self-blame, catastrophizing, rumination and blaming others were statistically significant predictors of postpartum depression. Wald test results showed that by increasing self-blame, catastrophizing, rumination and blaming others strategies, the probability of depression in postpartum women were respectively 0.86% (CI=0.77 and 0.95), 0.85% (CI=0.75 and 0.97) due to increased for 0.88% (CI=0.81and 0.96), 0.76% (CI=0.69 and 0.84). In table 3 the regression coefficients (B), Wald test, the level of significance, odds ratio Exp(B) and 95% confidence intervals for the odds ratios (OR) for each predictor variable are shown (table 3).

Table 3: The Predictable Variables in the Regression Model of Postpartum Depression Based on Negative Cognitive Strategies of Emotion Regulation

Variable	B	S.E	Wald	DF	Sig	EXP(B)	95% confidence intervals	
							Min	Max
Self-blame	0.14	0.05	7.47	1	0.006	0.862	0.77	0.95
Catastrophe	0.15	0.06	5.24	1	0.022	0.857	0.75	0.97
Putting into perspective	0.00	0.06	0.01	1	0.915	1.00	0.88	1.14
Rumination	0.12	0.04	7.66	1	0.006	0.887	0.81	0.96
Blame others	0.26	0.05	25.26	1	0.000	0.766	0.69	0.84
Self-blame	0.14	0.05	7.47	1	0.006	0.862	0.77	0.95

Logistic regression was used to predict postpartum depression based on the newborn's gender preference. The analysis of the results showed that the newborn's gender did not have the ability to predict postpartum depression ($X_{2(1,205)}$=54.96, P>0.05). The probability of developing depression in postpartum women is not due to the lack of consent of the newborn's gender (Table 4).

Table 4: The Predictable Variables in the Regression Model of Postpartum Depression Based on the Newborn's Gender Satisfaction

Variable	(N)	B	S.E	Wald	DF	Sig	EXP(B)	95% confidence intervals	
								Min	Max
Newborn's Gender Satisfaction	no (110) / Yes (95)	0.21	0.67	2.11	1	0.78	2.86	0.32	0.41

Discussion

According to this study results postpartum depression had a negative and significant relationship with acceptance, positive re-focus and re-focus on planning of positive emotional cognitive strategies and postpartum depression. There was no significant relationship with positive re-evaluation strategy. Therefore, regarding the relationship between positive emotional regulation and postpartum depression, the result of this study with the result of Garsenflick et al. [35], which showed that the use of adaptive strategies in adults with psychiatric disorders is at the lowest level and with the results of Aldao et al. [36], is consistent, which showed in a meta-analysis the Symptoms of depression and anxiety with problem-solving strategies and reassessment have a negative and meaningful relationship. This finding has shown that people who consider their experiences to be positive rather than what they have really experienced reduce their depression and are less prone to depression; and they are less likely to be depressed when they think about managing their negative experiences. Therefore, pregnant women, using these three strategies, reduce their stress and anxiety, neglect their negative experiences and ultimately prevent their depression.

Concerning the other finding, the present study was to investigate the relationship between negative emotional cognitive strategies and postpartum depression. The results showed that postpartum depression had a positive and significant relationship with rumination strategies, catastrophizing, blame others and self-blame, while there was no significant relationship with the strategy of putting into perspective. This finding was consistent with the result of Fakhari

et al. [37], Garnesfaki et al. [35], Aldoo et al. [36] and Marcoquín [38] who reported that the defect in cognitive regulation of emotions plays a central role in the growth of depression.

The results showed that people with higher scores in acceptance, positive re-focus and re-focus on planning of positive cognitive emotion regulation strategies were less likely to develop depression than those with a lower score in three components. Also, the results showed that depressed people scores in maladaptive strategies of cognitive regulation were more than non-depressed ones. This suggests that depressed patients report maladaptive strategies more than non-depressed people. The cognitive coping theory also predicts that negative thoughts about self-blame, blame for others, and rumination associated with experiencing emotional distress [39]. Previous studies have shown that adaptive cognitive coping strategies are negatively related to depression and other mental illnesses [35].

In a non-depressed state, when the increase in negative mood is moderate, these abnormalities may not interfere with daily living. However, when mood worsens (for example, in response to stressful life events such as pregnancy) maladaptive strategies can lead to negative mood continuation and help to develop a depressive period.), Other studies have shown a negative relationship between positive re-focusing strategies and focus on planning and depression [37], Other studies have also shown a negative relationship between the positive re-focusing strategies and re-focus on planning and depression [40,41]. In fact, the negative relationship between adaptive strategies and psychopathology is that using these strategies leads one to take a different look at the assessment of negative events, consider the positive aspects and possible long-term benefits of that event, and thus experience less discomfort and tension, and more easily cope with it.

Based on the results of this study, the dissatisfaction of primiparous mothers with newborn gender did not play a role in the prediction of postpartum depression. This finding was consistent with the results of Habibzadeh et al. [41], who reported that the lack of satisfaction with the infant's gender did not play a significant role in postpartum depression but inconsistent with the results of Kheirabadi et al. [42] who reported being dissatisfied with the newborn's gender was the major risk factor for postpartum depression. The difference in the results in different parts of Iran can be due to the cultural difference between the Iranian ethnic groups or the difference between the samples characteristics.

One of the limitations of this study was the impossibility of random sampling due to lack of sampling frameworks. Also, in this study, only self-report tool was used to evaluate postpartum depression. Therefore, for future studies, it is suggested that diagnostic interviews be used to evaluate and diagnose depression. Since the prevalence of postpartum depression was high in the subjects, more studies are needed to investigate the causes and factors.

Also, cognitive emotion regulation is one of the predictors of postpartum depression that the probability of developing postpartum depression is 40% and 49%, respectively, due to a reduction in positive strategies and an increase in negative strategies; therefore Postpartum depression can affect the health of the mother, baby and the whole family. Since early intervention and timely treatment are associated with the best prognosis, screening for postpartum depression, accurate follow-up and treatment of these women, as secondary preventive care, is considered important in breast-feeding women.

Given the key role of nurses and midwives in identifying mothers at risk, timely referral of mothers at risk to psychologists in health centers may reduce PPD. The effective emotional regulating skills training, the implementation of group interventional programs to identify and correct the negative and non-adaptive strategies for regulating the excitement in the pregnant women, teaching stress management in cognitive-

behavioral approach, psychotherapy, and finally mother's guidance for obtaining the psychological services are the steps that can be taken to examine their impact on future research.

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