



Comparing Meaning in Life, Cognitive Emotion Regulation and Body Image Concern among Women with and without Postpartum Depression

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Abstract

Introduction: Postpartum depression causes negative changes in mothers' mood and family cohesion, undermines adjustment of mothers with their children, and prevents children from forming a healthy relationship with their mothers. The purpose of this study was to compare meaning in life, strategies of cognitive emotion regulation and body image concern in women with and without postpartum depression.

Methods: In this causal-comparative research, participants were selected by convenience sampling among women in the postpartum period in Tehran in 2021. Data was gathered using the Edinburgh Postpartum Depression Scale, Meaning in Life Questionnaire, Cognitive Emotion Regulation Questionnaire, and body image concern inventory. Then, 82 women with postpartum depression and 82 without postpartum were analyzed using ANOVA and MANOVA tests in SPSS-21.

Results: There is a meaningful difference between two groups (women with and without postpartum depression) in terms of presence subscale in meaning in life questionnaire, non-adaptive strategies of cognitive emotion regulation scale except for self-blame subscale and adaptive strategies of cognitive emotion regulation except for acceptance sub-scale, and body image concern ($p < 0.05$). In fact, depressed women use more non-adaptive strategies and suffer more from body image concern. However, presence of meaning in life and use of adaptive strategies are less prevalent among these depressed women.

Conclusions: Taken together, the findings shed light on the importance of meaning in life, cognitive emotion regulation and body image concern in postpartum depression and highlight potential targets for developing interventions in order to prevention and treatment of postpartum depression.

INTRODUCTION

During the period immediately after childbirth, women might experience onset or deterioration of a certain mental disorder due to hormonal, physical and mood changes and stress caused by parenthood as a new duty added to previous responsibilities [1]. Postpartum Depression (PPD) is a common disorder prevalent among 15 percent of women who have recently given birth [2, 3]. Signs and Symptoms of PPD might include mood changes, sleeping and eating disorder, psychomotor disorders, exhaustion, lack of focus, guilty feeling, and lack of enjoyment from work and daily activities [4]. Depression in mothers during first weeks and months after childbirth might weaken these mothers' relation with their children, which could create deep problems for children in the future. PPD can have

negative influence on children's natural growth and mothers' whole life [5, 6].

Having no meaning in life or losing it somehow is one of the landmark experiences of depressed people [7-9]. In 1984, Victor Frankl delivered the most popular definition of meaning in life. He postulated that when an individual is in relationship with others, watches artistic and literary works, takes sanctuary in the bosom of nature, and attends to their favorite activities in general, they feel the existence of meaning in themselves [10]. It is safe to assume that a person who finds life purposeful, special and understandable would also find meaning in life. Further, having meaning in life lowers the chance of suffering from mental disorders such as depression [7]. Among women, there is a negative and meaningful

correlation between having meaning in life and suffering from depression [9]. So it seems that lack of meaning in life could be a reasonable candidate as an underlying factor contributing to PPD. Meaning in life has some affinity with cognitive emotion regulation as an important psychological factor contributing to PPD [11, 12].

Emotion regulation strategies make up a distinct psychological aspect of mood disorders such as PPD [11, 13]. Emotion regulation is defined as “effort to control what emotions we have, when we have those emotions and how we experience or express them” [12]. Using non-adaptive and ineffective strategies for cognitive emotion regulation leads to depression and once again triggers the pattern of depressed thoughts [14, 15]. In other words, if an individual faces a problem or situation and considers it a horrible catastrophe, gives up in a passive mood and starts thought ruminations, they are probably using non-adaptive strategies which reinforce negative and depressed moods [16]. However, using adaptive strategies (adjusted) for cognitive emotion regulation is an effective way to prevent depressed moods or at least decrease their intensity and duration [17]. Research has shown that an intervention program based on cognitive emotion regulation can effectively reduce postpartum depression [18] because postpartum depression occurs directly and indirectly through emotion regulation problems [19]. The results of Pourkhaleghi et al. (2017) showed that adaptive cognitive emotion regulation strategies have a significant negative relationship with postpartum depression, and non-adaptive strategies have a significant positive relationship [20]. It seems that adaptive strategies for cognitive emotion regulation encourage individuals to have healthier and more proportionate reaction to various stimulating situations, and also to get involved with social environment by taking a more active stand. Using these adaptive strategies, individuals’ emotional response would be less rigid and more resilient in order to prevent return of symptoms of depression [21].

In addition to internal and emotional factors contributing to postpartum depression, body image concern is probably another psychological factor which has an enormous effect on PPD. Very visible changes in body and appearance of women as common consequence of birth-giving might disturb some individuals. After the birth of their baby, women can become dissatisfied with changes to their body image, including retained weight, stretch marks, loose skin, reduced muscle tone, and changed breast shape [22]. Body image is an individual’s internal perception about their appearance and body [23]. Body image concern consists of preoccupation with a kind of imperfection in appearance. That imperfection is usually imaginary, and if there is actually a minor anomaly, the individual’s

concern about it is exaggerated and agonizing [24]. Body dissatisfaction results from aforementioned discrepancy between perceived body and ideal body [25]. Strong concern about others’ appraisals and negative judgments leads to serious feeling of dissatisfaction with body, and persistence of this situation damages self-esteem and deepens depression [26]. There is a relatively strong and meaningful negative relation between body image and depression in which a decrease in rate of satisfaction with body image increases chance of suffering from depression [27]. It should be also noted that body dissatisfaction poses a serious threat against women’s emotional, mental, professional and social life and increases risk of depression among them [28] and poor body image and dissatisfaction with it in women with postpartum depression has a significant negative correlation and can predict postpartum depression [22, 29].

A glimpse at previous research would reveal that there is a shortage of information about differences between new mothers with and without PPD with regard to meaning in life, strategies of cognitive emotion regulation and body image concern. At the same time, PPD is on the rise and has unrecoverable consequences for mothers, children and other members of family. Recognizing factors contributing to PPD and understanding role of meaning in life, strategies of cognitive emotion regulation and body image concern in PPD could make possible new accomplishments in different realms of pathology, preventive actions and clinical interventions. Present research contributes to such effort by comparing woman with and without PPD in terms of meaning in life, strategies for cognitive emotion regulation and body image concern.

METHODS

Present study is a casual research, and its statistical population consists of women who have visited healthcare facilities of Tehran in 2020 and 2021. Participants in this study were selected by convenience sampling.

Participants

Participants were selected from among new mothers who had visited healthcare facilities. In the guideline for scoring provided by Edinburgh Postnatal Depression Scale (EPDS), the cut-off score of 12 is considered as the threshold of PPD [30]. Eighty two women among participants in a major research were diagnosed with PPD based on the cut-off score. The other eighty-two women who were selected were not diagnosed with PPD because they had not reached the cut-off score. These women were as old as women in the first group. Then, two groups with and without PPD were compared in terms of variables in this research. Inclusion criteria included giving consent to take part in the study, being of age between 20 and 45, having at least

a diploma, having given birth within last two weeks or last two months, having no prior condition with mental disorders diagnosed by specialists, and not abusing substance or medications which effect mood – based on self-report. And exclusion criteria included lack of wish to continue cooperation with researchers and damaged questionnaires.

Ethical Considerations

After receiving ethical code from committee of ethics in research in Royan Institute, and also after obtaining Iran University of Medical Sciences' license for obtaining samples from healthcare facilities under its direction in Tehran, the researchers visited these facilities with prior notice. Since statistical population was made of new mothers, and for the sake of keeping peace of mind of these women, process of completing questionnaires was carried out by female colleagues. Also, situation caused by Covid-19 in all parts of the country and particularly in healthcare facilities left no choice but to send questionnaires as Google Forms to participants. Questionnaires were distributed among people who were willing to participate in the research. As such, participants declared their consent to take part in the research. Then, introductory explanations about filling questionnaires were given to participants. Finally, participants were reminded that they could quit at their own will at any time.

Measurement and Data Collection

Tools used in this research include the following:

Biographic questionnaire: Biographic information and also inclusion and exclusion criteria was examined by this scale. Edinburgh Postpartum Depression Scal (EPDS): This scale, consist of ten items, was created by Edinburgh in 1987 to diagnose PPD. The scale of scores of EPDS range from 0 to 30, in which getting a score higher than 10 is considered as a sign of having PPD. Higher EPDS score would mean higher level of PPD, and vice versa. Peindl et al.'s study revealed that this questionnaire's reliability is 88 to 91 percent and its validity scores 76 percent [31]. In Iran, Behboudi's (2001) research has shown that EPDS's reliability is 88 percent, and its internal reliability is 90 percent based on Cronbach's alpha [32]. Also, Mazhari's (2007) reported that EPDS's reliability and availability stand at 95.3 percent and 87.9 percent, respectively [33].

Meaning in Life Questionnaire (MLQ): Steger et al. (2006) designed MLQ to evaluate meaning in life and also the effort to find it [34]. Researchers created ten items through factor analysis. MLQ consists of two sub-scales, namely presence of meaning in life (entries 1, 4, 5, 6, 9) and search for meaning (entries 2, 3, 7, 8, 10). Scoring system in this questionnaire is based on Likert scale from totally correct (1) to totally incorrect (7). Question number 9 is scored in reverse. The lowest and the highest scores are 10 and 70, respectively. High score

shows presence of meaning in life. As Steger et al. have shown, reliability of presence of meaning in life and search for life sub-scales are 0.86 and 0.87, respectively [34]. And a research by Peimanfar et al. (2012) based on Cronbach's alpha revealed that reliability coefficient of MLQ stands at 0.89 [35].

Cognitive Emotion Regulation Questionnaire (CERQ): This questionnaire, which includes 18 items, evaluates strategies of cognitive emotion regulation in response to stressful and threatening situations in a score range from 1 (never) to 5 (always). There are nine sub-scales in this questionnaire which include self-blame, other-blame, thought rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and refocus on planning. Minimum and the maximum scores in each sub-scale are 2 and 10, respectively, and a higher score reveals more usage of relevant cognitive strategy. Psychometric features of CERQ are approved in prior research [36-38]. For Iranian society, Yousefi has estimated reliability of CERQ by using Cronbach's alpha for participants with 15 to 25 years of age. The results for adaptive and non-adaptive strategies are 0.91 and 0.87, respectively. Furthermore, validity of this scale was calculated by using correlation between non-adaptive strategies and scores of scale of depression and anxiety in a 28-item questionnaire about general health, which resulted in 0.35 ($p = 0.001$) and 0.37 ($p = 0.001$), respectively.

Body Image Concern Inventory (BICI): This questionnaire, designed by Littleton, Axsom and Puri (2005), includes 19 items to which participants answer through five-choice questions (from never to always) [39]. Researchers reported that coefficient of Cronbach's alpha for BICI is 0.93. They have also positive and satisfactory assessment of reliability coefficient for BICI via Padua's obsessive compulsive scale (0.52) and eating disorder questionnaire (0.40) ($p < 0.001$). Furthermore, In Iran, a research by Basaknezhad and Gaffaari about a sample made of students revealed that based on Cronbach's alpha method, reliability of BICI for girls, boys and all students is 0.93, 0.95 and 0.95, respectively. Fear of negative evaluation (FNE) of physical appearance scale was used to calculate validity coefficient [40, 41].

Data Analysis

After collecting questionnaires, data were analyzed using SPSS software. In addition to descriptive statistics, multiple analysis of variance (MANOVA) and analysis of variance (ANOVA) were used for statistical estimations.

RESULTS

The mean and standard deviation of variables related to the two groups of participants are shown in Table 1.

Table 1. Ethnographic Characteristics of Participants

Variable	Group with PPD, N= 82	Group without PPD, N = 82	P
Age			0.89
20-29	51 (62.2)	54 (65.9)	
30-39	31 (37.8)	26 (31.7)	
40-45	0	2 (2.4)	
Education			0.22
High school graduate	17 (20.7)	7 (8.5)	
Associate degree	12 (14.6)	17 (20.7)	
Bachelor's degree	32 (39.0)	32 (39.0)	
Master's degree	17 (20.7)	20 (24.4)	
Ph.D. degrees	4 (4.9)	6 (7.3)	
Occupation			0.10
Government sector	4 (4.9)	11 (13.4)	
Private sector	7 (8.5)	12 (14.6)	
Freelancers	12 (14.6)	15 (18.3)	
Homemaker	54 (65.9)	38 (46.3)	
University student	5 (6.1)	6 (7.3)	
Number of children			0.58
1	68 (82.9)	66 (80.5)	
2	14 (17.1)	15 (18.3)	
3	0	1 (1.2)	
Type of childbirth			0.50
Cesarian	47 (57.3)	48 (58.5)	
Natural	35 (42.7)	34 (41.5)	
PPD			0.000
Mean	16.69	4.29	
Standard deviation	3.74	1.7	

Table 2. Mean, standard deviation and results of analysis of variance for two groups in terms of meaning in life, adaptive and non-adaptive strategies for cognitive emotion regulation, and body image concern

Variable	Mean $\pm$ SD	F statistic	P value	Eta squared
Presence of meaning		40.27	0.000	0.61
With PPD	19.41 $\pm$ 7.23			
Without PPD	25.89 $\pm$ 5.75			
Search for meaning		2.33	0.12	2.33
With PPD	25.20 $\pm$ 5.32			
Without PPD	26.57 $\pm$ 6.08			
Self-blame		2.97	0.08	0.01
With PPD	23.78 $\pm$ 1.54			
Without PPD	3.35 $\pm$ 1.62			
Other-blame		33.42	0.000	0.17
With PPD	5.06 $\pm$ 1.94			
Without PPD	3.41 $\pm$ 1.69			
Thought rumination		14.03	0.000	0.07
With PPD	6.95 $\pm$ 1.82			
Without PPD	5.84 $\pm$ 1.96			
Catastrophizing		36.74	0.000	0.18
With PPD	6.40 $\pm$ 2.17			
Without PPD	4.50 $\pm$ 1.83			
Putting in perspective		9.23	0.003	0.05
With PPD	5.40 $\pm$ 2.07			
Without PPD	6.32 $\pm$ 1.82			
Positive refocusing		28.19	0.000	0.14
With PPD	3.37 $\pm$ 1.43			
Without PPD	4.87 $\pm$ 2.11			
Positive reappraisal		12.66	0.000	0.07
With PPD	6.02 $\pm$ 2.06			
Without PPD	7.18 $\pm$ 2.10			
Acceptance		0.005	0.942	0.000
With PPD	5.89 $\pm$ 2.12			
Without PPD	5.91 $\pm$ 2.15			
Refocus on planning		10.62	0.001	0.06
With PPD	6.23 $\pm$ 1.97			
Without PPD	7.23 $\pm$ 1.95			
Body image concern		38.71	0.000	0.19
With PPD	46.71 $\pm$ 14.89			
Without PPD	33.84 $\pm$ 11.37			

Table 2 presents the results of comparing two groups regarding meaning in life. This variable was assessed through analysis of variance (ANOVA), which from the perspective of the presence of purpose in life, yielded $p > 0.01$; $F(1,162) = 0.17-1.88$ with Levene's test and $(-0.18-1.09)$ with Kolmogorov-Smirnov test, and from the perspective of a search for meaning, yielded $p > 0.01$; $F(1,162) = 0.21-1.56$ with Levene's test and $(0.26-1)$ with Kolmogorov-Smirnov test. These numbers hint at the uniformity of variance and normality of variance distribution.

To compare two groups in terms of cognitive emotion regulation with non-adaptive strategies, multiple analysis of variance (MANOVA) was used since both variables belonged to a single construct and were correlated. Levene's test ($F(1,162) = 0.74-0.1$; $P > 0.01$) and Kolmogorov-Smirnov test ($0.21-1.05$) revealed uniformity of variance and normality of distribution of variables. Also, the M Box test ($F = 1.6$; $P > 0.01$) showed a uniform matrix for dependent variables' covariance and that multiple analysis of variance is available for use. On the other hand, the result of Wilks's lambda multivariate test ($F(4,159) = 14.05$; $P < 0.05$) was meaningful. So there is a significant difference between the two groups in terms of the scale of cognitive emotion regulation in non-adaptive strategies. But this meaningfulness does not reveal which sub-scales of cognitive emotion regulation in non-adaptive processes are different between the two groups. For this end, analysis of variance was employed. Further, multiple analysis of variance was used to compare two groups in terms of cognitive emotion regulation in non-adaptive strategies since they were correlated and belonged to a single construct. Results of Levene's test ($F(1,162) = 0.63-0.22$; $P < 0.01$) and Kolmogorov-Smirnov test ($0.18-1.09$) point to uniformity of variance and normality of distribution of variables. Also, the M Box test ($F = 1.62$; $P < 0.01$) showed that the matrix of dependent variables' covariance in both groups is uniform and that multiple analyses of variance could be helpful. Wilks's lambda multivariate test ($F(1,158) = 6.59$; $P < 0.000$) yielded meaningful results. It showed which sub-scales of cognitive emotion regulation in adaptive strategies differed between the two groups. But this does not pinpoint which sub-scales in adaptive systems of cognitive emotion regulation are different from each other. As such, an analysis of variance was carried out. Table 2 shows the mean and standard deviation of cognitive emotion regulation with adaptive and non-adaptive strategies. F values of analysis of variance are also presented in the table.

Data in Table 2 show a meaningful difference between the two groups in terms of other-blame, thought rumination, and catastrophizing sub-scales as non-adaptive strategies. Data also reveal that the group's mean score with PPD is higher than that without PPD.

However, in terms of self-blame sub-scale, no significant difference was detected. Furthermore, there is an influential difference between the two groups regarding positive refocusing, positive reappraisal, and refocusing on planning sub-scales as adaptive strategies. Also, the group's mean score with PPD was higher than that without PPD. However, there is no meaningful difference between the two groups regarding the acceptance sub-scale.

Finally, Table 2 shows the results of comparing two groups in terms of body image concern based on the analysis of variance with Levene's test ($F(1,162) = 0.06-7.72$; $P > 0.01$) and Kolmogorov-Smirnov test ($0.07-1.67$), which reveal a uniformity of variance and normality of distribution of variables.

DISCUSSION

Present study was aimed at comparing meaning in life, strategies of cognitive emotion regulation and body image concern between two groups of women with and without PPD. Results of the research showed that there is a meaningful difference between two groups in terms of presence of meaning in life. It can be discerned that women with PPD lack or lose meaning in life. In this regard, the results of Mohammadi Nia and Mashhadi's (2018) research on 260 students showed a two-way relationship between depression and the meaning of life. Just as lack of meaning in life is negatively and significantly related to depression, so depression is a result of various factors that lead to a decrease in the meaning of life [8]. The quasi-experimental study of Haji Yousefi and Alvandi (2017) showed that group meaning therapy reduces depressive symptoms and increases the meaning of life in women. Women in the experimental group ($n = 12$) and women in the control group ($n = 12$) after group semantic therapy interventions were significantly different in terms of depression and meaning of life [42]. The results of research by Volkert et al. (2019) in a sample group of 2104 adults showed that the risk of depression increases with decreasing meaning in life [43]. Hedayati and Khazaei (2014), in a study on the relationship between depression and the meaning of life and hope in adults conducted on 215 people, showed that depression has a significant negative correlation with the meaning of life in both presence and search [44]. It is important to note that a study on the meaning of life and postpartum depression was not found in the sample group of newborn women. In an attempt to explain this finding, it can be said that meaning in life is totally dependent on each individual's perspective and is somehow unique for each individual. Presence of meaning in life for new mothers increases motivation for realizing the goals, doing chores, feeling responsible and worthy, and dealing with stressful events and internal and external

pressures. Therefore, presence of meaning rescues new mothers' life from the feeling of nothingness and disorientation. On the other hand, losing meaning in life leads to lack of motivation for living fully, following values and trying to realize dreams. New mothers who lose meaning in life feel that they have become ineffective, and that their disoriented lives have come to a stalemate. As a result, these mothers find life a negative and painful experience. They give up easily during crisis and stressful events. All this would result in negative mood, and decreased levels of pleasure and motivation, and would eventually lead to postpartum depression.

Also, results of present research showed that the group with PPD has a meaningfully higher use of ineffective, non-adaptive strategies for cognitive emotion regulation in terms of putting in perspective, positive reappraisal, positive refocus and refocusing on planning sub-scales. In this regard, the study of Hyo Sin et al. (2021), performed on 17 new mothers in the experimental group and 21 new mothers in the control group, showed a significant difference in the experimental group after interventions based on emotion regulation management. There are cognitive emotion regulation strategies between the two groups, and an emotion regulation-based program can effectively reduce postpartum depression, anxiety, and stress in newborn mothers [18]. Research by Krzeczowski et al. (2021) showed that maternal exposure to postpartum depression increases the child's risk of developing psychological and emotional regulation problems. Having postpartum depression can prevent psychological problems in the baby [45]. Research by Marques et al. (2018) on a sample of 450 newborn women showed that women with postpartum depression have more emotion regulation problems than non-postpartum women and that depression occurs directly and indirectly through emotion regulation problems [19]. Research by Pourkhaleghi et al. (2017) also showed that adaptive cognitive and emotional regulation strategies, including acceptance, positive refocus, and refocusing on planning, are negatively associated with postpartum depression. As well as non-adaptive cognitive and emotional regulation strategies, including self-blame, catastrophe, Ruminants and blaming others are positively associated with postpartum depression. According to this study, postpartum depression can be predicted through cognitive emotion regulation strategies [20]. It can be said that women can have a realistic, adaptive and more resilient response to new situations by using adaptive strategies for cognitive emotion regulation, such as putting in perspective, positive reappraisal, positive refocusing, and refocusing on planning [46]. This is done through adjustment and regulation of emotions and controlling them after childbirth experience, which is stressful, challenging and demanding. When levels of

life satisfaction and positive emotions increase, negative emotions and depressed mood become less prevalent. New mothers who make use of non-adaptive strategies for cognitive emotion regulation, such as other-blaming, catastrophizing and thought rumination, find others responsible for creating stressful situations. They also imagine the current situation to be more intense and more horrible than what it reality is. This leads to thought rumination about a stressful and sad event which has happened to them. All in all, this kind of irritability produces continuous negative experiences, and the sensitivity that is created in regard to others might lead to isolation and depression.

Furthermore, findings reveal that women with PPD are more vulnerable than their counterparts in terms of body image concern. Hartley et al. (2021) showed that the two groups with and without postpartum depression significantly differ regarding body image. Women with postpartum depression have a weak and negative body image [29]. The results of most studies in Silveira et al. (2015) review showed that dissatisfaction with body image is significantly associated with the onset of prenatal and postpartum depression [47]. A study by Sweeney et al. (2013) on 46 women who gave birth showed that body dissatisfaction predicted the symptoms of postpartum depression [22]. In fact, in explaining these findings, it can be said that women who feel others have a negative opinion about their appearance and therefore do not participate in social activities are constantly seeking approval. And are the opinion of others and compare their appearance with the patterns of the day in the world. Satisfy, but in the long run, it intensifies dissatisfaction with the body. Intense body dissatisfaction may cause issues such as eating disorder, sleeping disorder, lack of energy, self-blame and having guilty feeling without reason, which are all symptoms of depression [48]. In other words, excessive body image concern causes serious social and occupational disabilities, decreases quality of life and self-esteem, creates negative self-image, and inspires isolation and depression [49].

Few studies have compared the cognitive regulation variables of emotion and body image concern in the sample groups with and without postpartum depression in newborn women. Moreover, no research has examined the meaning of life with postpartum depression, a remarkable innovation of the present study. Therefore, the study of this theoretical gap and the lack of studies in the variables field led to a more complete and comprehensive relationship between these variables and added to the richness of academic resources in the mental health field.

The present study and its results can provide valuable and up-to-date information about the causes of postpartum depression, especially to clinical therapists in the community. In the case of this disorder, therapists

should use their knowledge and experience and the results of this study to take the necessary measures.

CONCLUSION

Present research showed that women with PPD feel that they have less meaning in life or have lost meaning altogether. New mothers with PPD make more use of non-adaptive strategies, including self-blame, thought rumination and catastrophizing. They also have more concern about their body image. In contrast, women without PPD feel they have enough meaning in life. They make more use of adaptive-strategies, including putting in perspective, positive refocusing, positive reappraisal, and refocusing on planning. They also have less concern about their body image. Thus, increasing knowledge and awareness in this context could improve interventions and make treatment of new mothers more effective.

LIMITATIONS AND RECCOMANDATIONS

One of the limitations of the present study was the use of a self-report questionnaire that can be associated with misconduct in response. The limitation of the statistical sample to the city of Tehran and newborn women who gave birth for two weeks to two months was another limitation of this study. Another limitation is related to the type of sampling, which is due to the low generalizability of convenience sampling. Also, due to the study's cross-sectional nature, accurate causal explanations cannot be made. It is recommended that healthcare facilities which provide vaccination services to mothers can offer courses to raise pregnant women's awareness about psychological issues of childbirth. In these courses, guidelines to find and appreciate meaning in life can be presented along with practical skills for regulating emotions. Finally, the effect of individual and cultural factors and also media on body image concern among women should be part of the educational course to alleviate PPD.

CONFLICT OF INTEREST

Present researchers guarantee that there is no conflict of interest over this study.

ETHICAL CONSIDERATIONS

Present study is approved by committee on ethics in Royan Institute with the code of IR.ACER.ROYAN.REC.1398.232.

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AUTHORS CONTRIBUTION

Mohsen Kachooei developed the original idea and study supervision. Rana Shakib Haji Agha collected and analyzed data. Mohsen Kachooei and Rana Shakib Haji Agha written the manuscript.

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