

Understanding the factors affecting the postpartum depression in the mothers of Isfahan city

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ABSTRACT

Background and Objective: Depression is one of the most common and specific problems during pregnancy and after it. Maternal postpartum depression compromises mother's health and affects social relationship, and has negative effect on infant development. The aim of this study was to investigate the prevalence of postpartum depression and its related factors in Isfahanian mothers. **Materials and Methods:** This is a cross - sectional study. The study populations were 133 women who at the last 8-4 weeks of labor referred to Isfahan health centers. Demographic information and obstetric and Beck Depression Inventory were applied. Three categories emerged according to the degree of scale: Mild, moderate, and severe depression. Statistical analysis was used with the Pearson correlation and linear regression in SPSS version 18. **Results:** A total of 73 mothers had mild depression (10-19) and 56 had moderate depressions (20-29). Among the factors related to depression such as maternal education, financial status, unwanted pregnancy, premenstrual syndrome, and maternal occupational history, there was a significant correlation with postpartum depression ($P > 0.05$). Variables in the regression analysis include maternal education, financial status, unwanted pregnancy, history of premenstrual syndrome, maternal occupation, type of delivery, history of miscarriage, and having a satisfaction with baby gender. And, a total of 27.7% variance explains the postpartum depression. Among these factors, the predictive variables of maternal education, type of delivery, financial condition, unwanted pregnancy, premenstrual syndrome, and maternal occupational history were significant in the meantime; the prediction of unplanned pregnancy was more than other variables ($\beta = 0.24$). **Conclusions:** With attention to factors associated with postpartum depression, the healthcare planner will help to better manage the problem. The results of this study will help to better understand the factors influencing mothers

in the labor process, and mothers in the labor process, experiences minimum mental health disorders.

Key words: Childbirth, mothers, postpartum depression, predictors

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INTRODUCTION

Postpartum disorders involve three phenomenons which include grief postpartum, depression, and psychosis. Postpartum depression will be considered as one of the most common and specific problems of pregnancy and later.^[1]

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Diagnostic Statistical Manual of Mental Disorders (DSM-IV) show that the start of postpartum depression is in the first 4 weeks after childbirth. Depending on the severity of the disorder, it can take 3 to 6 months and in rare cases may continue to 12 months after birth.^[2] The overall prevalence of postpartum depression is mentioned in 10 to 15%,^[3] but there is evidence that Asian women are at greater risk.^[4] In two studies conducted in Iran, the incidences of grief postpartum and depression have been reported, 51.3% in the Shiraz and 20% in the Rasht.^[5,6] During pregnancy and childbirth, changes in mood of women occurred that made them very sensitive to emotional stimuli and may sometimes lead to psychological problems for them.^[7] The highest rates of psychiatric disorder in women with 15 to 44 years old occurs in the first two months after delivery. In some cases, women may be suffering from postpartum depression with symptoms such as depressed mood, confusion of thought, sleeping and eating disorders, feelings of guilt and inadequacy of child care.^[8] It is noteworthy that the cause of this disorder is not known yet; however, biological factors like estrogen level drop suddenly after delivery, low progesterone, elevated urinary excretion of cortisol and antibodies against thyroid, prolactin, oxytocin, and beta-endorphin are involved in this disorder.^[9,10] On the other hand, the most common risk factors of this disorder in multifarious studies have been reported, such as maternal age, unwanted pregnancy, unstable income and employment status, marital conflict and lack of spouse support, and crisis one year before birth.^[9,11,12] Maternal depression in the weeks and months after childbirth may lead to damage in the relationship between mother and child, and can lead to subsequent behavioral problems in childhood that can affect child's natural evolution process and the overall mother life process.^[13,14] Veisani and Sayehmiri (2012) in a meta-analysis study concluded that postpartum depression in Iran is higher in comparison with similar studies in other parts of the world. History of postpartum depression in working women, mothers with a history of depression, and unplanned pregnancy is more than the total population.^[15] In Iran, several studies that have been conducted on postpartum depression have had different results. Kheirabadi *et al.* in a study with 6 627 women, who were eligible for participation in the study, showed that the prevalence rate of postpartum depression was 30% as the highest rate of major depression was 19% and moderate was 37% in the housewives.^[16] Dolatian *et al.* in their studies conducted in Tehran on 285 women had showed that the prevalence of postpartum depression was 20% and was the highest among women with unwanted pregnancies.^[17] Therefore, mechanisms and strategies to understand and control this phenomenon and its associated elements are essential. To this end, the aim of this study was to investigate the prevalence of postpartum depression and its associated factors in women referred to health centers of Isfahan city; as well as the assessment of relationship between depression and variables such as maternal education, financial status, unwanted pregnancy, abortion history, mode of delivery, and history of premenstrual syndrome, and occupation of mother was one of the other objectives of the present study.

MATERIALS AND METHODS

This study was a correlation and cross-sectional research. The study population was 133 women who referred to health centers in Isfahan. Five centers from all health centers in the city were selected as a cluster from different regions. In this case, first the number of areas of 14 districts were selected randomly (5 locations), then a list of selected health centers in five districts was provided and each district in the center of the 5 randomly selected locations. After visiting any of these sites and providing necessary arrangements for 7 months, the cluster sampling was conducted in 133 women.

Inclusion and exclusion criteria of the study were the following: All mothers who had delivered their child in the past 4 to 8 weeks and were willing to participate in the study were included. They also did not have a history of chronic diseases, neurological disorders, other serious physical, and was not using simultaneous psychological treatment.

The instruments used in this study included demographic and midwifery questionnaires (including maternal age, maternal education, financial status, unwanted pregnancy, history of premenstrual syndrome, maternal employment, having history of abortions, and fetal gender satisfaction) and the Beck Depression Inventory. Beck Depression Inventory contained 21 questions in Likert scale with 4 points that were graded as 0-3. Maximum and minimum scale score is 63 and zero, respectively. In addition, this questionnaire can be any one of the questions that show the distribution of the patients' situation such as social isolation, lack of assertiveness, decision making, fatigue, loss of appetite, weight loss, somatic anxiety, decreased sexual interest, sadness, pessimism, sense of failure, dissatisfaction, guilt, expectation of punishment, dislike of self, blame, suicidal ideas, crying, attitude change about their body image, weak and slow, insomnia, and feelings of resentment. Questionnaires were completed by the mothers under the supervision of the researcher. The scale range is as follows: 0-9 normal, 10-19 mild depression, 20-29 moderate depression, and 30-63 severe depression.

Various studies have reported the acceptable reliability and validity of this instrument.^[18,19] After obtaining a permit and letter of introduction from the Research Council of Isfahan University of Medical Sciences to see the whole Health Center, and coordination to go to the health centers and coordination with officials, researchers began sampling. Data were collected using questionnaires and confidentiality to participants who wish to participate in this study had been warned. The data were analyzed using descriptive and inferential statistics (Pearson correlation coefficient and linear regression analysis) at a significance level of $P < 0.05$ with the statistical software SPSS version 18.

RESULTS

The mean age of the samples was 24.32 ± 5.14 years. Their education levels were as follows: 34.7% - Guidance school,

44.5% - Diploma, and 15.8% - college education. The results show that most women who have postpartum depression have lower educational levels.

The majority of the participants were housekeepers (55.6%) and their spouses (67%) were free, and economic status of most mothers, according to their opinion, was medium (60.3%). 73.5% of the mothers were welcome pregnancies and 27.5% of them had uncalled-for. Also, 34.6% of them had history of abortion, 39.8% had history of premenstrual syndrome, and 75.9% women had normal vaginal delivery. About 60.6% of mothers were satisfied with their child's gender [Table 1].

The distribution of maternal depression showed that 73 patients (54.9%) of women with mild depression (10-19), 56 (42.10%) moderate depression (20-29), and 4 (3%) of mothers had severe depression, as more mothers had mild depression.

Among the factors associated between postpartum depression with maternal education, financial status, unwanted pregnancy, type of delivery, family history of premenstrual syndrome, and maternal employment showed a significant relationship ($P \leq 0.05$); but the other factors such as mother age, birth gender, and abortion had no significant relationship ($P < 0.05$) [Table 2]. In the regression analysis,

Table 1: Demographic characteristics and obstetric

Variable	Number	Percent
Age (years)		
20 years or less	26	19.5
21 to 25 years	47	35.3
26 to 30 years	36	27.1
Above 30 years	24	18.1
Education		
Guidance	46	34.7
Diploma	59	44.5
Collegiate	21	15.8
Financial status		
Good	20	15.1
Average	80	60.3
Weak	26	19.6
Unplanned pregnancy		
Yes	90	67.7
No	56	42.3
A history of abortion	46	34.6
A history of premenstrual syndrome	53	39.8
How birth		
Natural	101	75.9
Caesarean	32	24.1
Having a baby gender satisfaction	85	63.9
Mothers occupation		
Employed	27	20.3
Free	21	21.1
Housekeeper	74	55.6

it was found that the predictive power of variables such as maternal education, financial status, unwanted pregnancy, history of premenstrual syndrome, maternal occupation, history of abortion, type of delivery, and gender of the baby having satisfaction with postpartum depression was 27.7%. The predictive ability of these variables, such as maternal education, financial status, unwanted pregnancy, history of premenstrual syndrome, type of delivery, and maternal employment, was significant. Here, the predictive power of unplanned pregnancy is more than other variables ($\beta = 0.24$) [Table 3].

DISCUSSION

This study examined that the incidence of postpartum depression and its related factors in Isfahan has been maternal. Results showed that 54.90% of women had mild depression and 42.10% had moderate depression.

Mothers, despite experiencing pregnancy duration and suffering childbirth pain, despite giving birth to a healthy baby, with problems of the postpartum period, they haven't enjoyed from their living and look at life with a negative feeling. This is difficult for matching mother and child, husband and family, as well as the forward movement of life, and does not allow enjoyment of living after all of the hardship experienced. Postpartum depression will have several consequences on child development and family life process.^[20] Therefore, attention due to the issues and challenges of deliverance are particularly important for the mother and the whole family; understanding these factors can be implemented and programmed to control and better manage effective preventive measures. The results of this study showed that there is a direct correlation between the personal education level and postpartum depression. These findings are consistent with the results of the Hasanzahraei study; qua maternal education as an effective component in the incidence of postpartum depression is a value in its own and mother's health promotion programs can be considered to be special.^[21] Segre and Tannous study also showed that low education is associated with postpartum depression.^[22,23] Therefore, the level of education as a component of effective control and management of problems can be regarded as an indicator for healthcare providers to improve maternal health in their planning. In this regards, people with less education who are ready to face the consequences of delivery should be focused for provision of critical care and more attention.

The results showed that there is significant relationship between symptoms of postpartum depression and maternal employment and postpartum depression was more common in women as employees. On the other hand, mosalanejad *et al.* in their studies found that postpartum depression was more common in housewife mothers.^[24]

The convergence of the results of this study with other studies indicate that working mothers today, according to the responsibilities of the family, do not have enough

Table 2: Matrix of correlation coefficients between variables associated with postpartum depression

Variables	1	2	3	4	5	6	7
Postpartum depression	1						
Education of mother	0.229	1					
Financial	0.198	0.615	1				
Unwanted pregnancy.	0.237	0.966	0.494	1			
There is a history of premenstrual syndrome	<0.001	<0.001	0.005	0.975	1		
Occupation of mother	0.313	0.993	0.628	0.975	0.975	1	
Occupation of mother	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1
Occupation of mother	0.075	0.294	0.26	0.228	0.299		
Occupation of mother	0.021	<0.001	0.002	0.001	<0.001		1
Type of delivery	0.149	0.254	0.147	0.233	0.256	0.3	
Type of delivery	0.049	0.002	0.083	0.006	0.002	<0.001	1

Table 3: Regression analysis of factors associated with postpartum depression

Independent variables	Standardized beta	P value	R2
Education of mother	0.237	0.015	0.277
Financial status	0.176	0.038	
Unwanted pregnancy	0.243	0.011	
History of premenstrual syndrome	0.215	0.021	
Occupation of mother	0.173	0.026	
A history of abortion	0.017	0.235	
Having a baby gender satisfaction	0.112	0.165	

opportunity to renew their Spirited and adaptability, and provides compatibility with postpartum conditions; therefore, environmental and occupational stress lead to worsening of the symptoms of postpartum depression. So, in planning to better control the phenomenon of postpartum depression should also pay special attention to both the working mothers and housewives. When housewives get sufficient support from healthcare providers, they can better manage the problems, concerns, and overcome postpartum and prepare themselves to succeed in life; on the other hand, if they do not receive enough support from healthcare providers, they will be at risk for depression. Today's working mothers should also be given attention and support because they face greater challenges and need support of healthcare systems for successful reintegration into their life. What is known in this result as a key point for healthcare planners are plentiful, attention due to working mothers.

On the other hand, the importance of women's occupational safety and taking into account its impact on their mental health should also be considered. It should look more elegant and more attention should be given to employment and family responsibilities of these women for empowerment in their life.

In the present study, mothers with age more than 30 years were greater at risk of depression than those below 30 years;

hence, this finding was not statistically significant. studies are recognized that low maternal age as a risk factors and older age was low maternal risk factors and protective factors for postpartum depression.^[9,11]

It is noteworthy that in some societies, such as Iran, the age of the mother is associated with more children, unwanted pregnancy, unwillingness to accept responsibility for taking care of other children, and the imposition of financial problems following the birth of a new child,^[22] These factors, in turn, increases the amount of stress in older mothers and expose them to depression.^[22,25] Due to gestational age, health standards and recommendations are important. Mothers for better control of pregnancy problems, especially postpartum depression, should have their plan tailored to the age and physical and mental condition. In this regard, using of health advisory guidelines would be helpful.

Economic status is an independent variable in the studies in which it is referred as a risk factor of postpartum depression,^[9] In this study, a significant relationship was found between family income and maternal depression. While Ross *et al.* argue that social and economic factors for postpartum depression are strong predictors.^[26]

The context of Iranian care will require that the mothers avoid financial concerns and think about the process of pregnancy and leisure. Naturally, need of additional insurance protection for mothers are felt in our country as one of the main concerns of pregnant women to graduate from the financial and economic issues and support the healthcare system. In this regard, attention due to the necessary measures needs to be considered as one of the factors influencing the incidence of postpartum depression after giving birth, especially financial and economic challenges. While in some studies, supplemental insurance and patient-centered healthcare system facilitated the conditions for a successful pregnancy, as the evidence for this claim is the conclusion of Ross *et al's* study.^[26]

Also, studies have shown that poor economic challenges such as life crises such as loss of job, loss of housing, and etc., over

the past year were significantly correlated with postpartum depression. Traumatic life events, such as financial and economic problems, and challenges introduce the strongest risk factors for mental disorders, especially depression.^[11] Therefore, the effort and attention of the healthcare system to this issue is important and health plans should be designed and implemented on the needs of mothers.

In this study, there was a significant relationship between maternal depressive symptoms and type of delivery. In the cesarean delivery, the rate of depression was less than normal vaginal delivery. In this regards, Chaaya *et al.* disappointed that postpartum depression was higher in vaginal delivery.^[27] On the other hand, the results of Hassan Zahraee's studies showed that postpartum depression was not associated with type of delivery.^[21] Also, in some studies, postpartum depression in cesarean delivery was higher.^[20,28] Training for selecting the type of delivery and its complications is the most important responsibility of planners and healthcare providers to promote knowledge and attitudes of mothers. According to the controversies of delivery type, it is important give attention to principles and scientific evidence that the mothers' attitudes be evidence-based approach to select the best course of action. Given that natural childbirth is considered a safe procedure, unfortunately, in our country, in most cases, vaginal delivery is associated with intense pain imaginable that cause fear and anxiety in mothers and probably plays a role in the incidence of postpartum depression.

For this reason, it is recommended that more attention be paid to the labor without pain until women of our community as well as developing countries can benefit from the advantages of labor without pain.

Another important finding of this study is the relationship between unplanned pregnancy and postpartum depression. Nakku and Breese's studies found that pregnancy and childbirth as pathological stress are known to human. However, if the pregnancy is unwanted, the mother's problems are multiplied because unwanted pregnancy can lead to a state of acceptance and rejection of baby, and there are many physical and psychological complications for the mother.^[11,29]

Our study showed that there was a significant positive correlation between premenstrual syndrome, postpartum depression, and sadness ($P < 0/001$). In this context, studies in other countries have shown the positive relationship that can be mentioned and reported by Dennis (2007) in Canada,^[30] and Steve Garcia (2008) in Spain.^[31] But Haywood *et al.*'s study in the UK did not show a relationship between psychological symptoms of premenstrual syndrome and postpartum depression.^[32] One of the causes of premenstrual syndrome and postpartum depression is due to hormonal imbalance, as this study showed that there was not a significant correlation between them.

This study was carried out in health centers in the Isfahan city, while studies mostly have been conducted in hospitals. Health

centers due to postpartum care for these mother to obtain a suitable place for this type of studies. Also, this study will help to better understand the factors influencing depression after childbirth in order to prevent it. The next stage of designing and planning of family-and community-based programs have specific application. Thus, the impact of these factors can help health planners help this group of mothers. On the other hand, the results of this study could be an evidence for the claim that only prevention of postpartum depression will be able to identify and control the factors influencing it, despite spending time and money for it, so pay attention to the significance of such studies, which has an important preventative approach and special significance.

The limitations of this study include small sample size, which is perhaps one of the reasons it was the particular circumstances of mothers participating in the study; therefore, it is recommended that a study with a larger sample size in this regard and greater generalization of the findings to be designed and implemented.

CONCLUSIONS

With regard to the results of the study, factors affecting the occurrence of the postpartum depression phenomenon are of particular significance. Health planners and policymakers with understanding the impact of these factors in programs and their designs promote the knowledge and attitudes of mothers during pregnancy and will help to empower and support them from age-specific risk of maternal mental health problems. In this regard, it is proposed that other studies in this field of healthcare centers and other cultural contexts would be conducted to explore what factors influence the phenomenon of postpartum depression. It is recommended that further studies are done involving larger sample sizes to better understand these affecting factors.

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