

# Postpartum Depression and Its Associated Factors among Women in Bandar Abbas City

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## Abstract

**Background:** Postpartum depression with a different incidence of 40- 45% in different societies, which it has adverse effects on the health of mothers and their child, given the negative effects of maternal depression and its harmful effects on the baby and the quality of family life. So, this study was performed with the aim to determine postpartum depression and its associated factors in Bandar Abbas city. **Materials and Methods:** A descriptive cross-sectional study was conducted in 2015 after obtaining consent from mothers by the census. A total of 343 mothers was examined for depression who referred to Bandar Abbas health centers in the 2nd and 4th months after childbirth. The data collection tools included demographic information and Postpartum Depression Edinburgh questionnaires. Finally, the statistical analyses were performed using SPSS (version 22.0) software and data were analyzed using the Independent t-test, Mann Whitney, Chi-square, and Fisher exact tests. **Result:** Totally, 68 (19.8%) of samples were in the second month and 54 (15.7%) in the fourth month after delivery had postpartum depression. The incidence of depression in the four months was 6.6%. There was a significant difference between depression and income, parental education, father's use of cigarette and abnormalities of the infant ( $P < 0.001$ ). There was no significant difference between other factors such as gestational age, infant sex, birth weight, unwanted pregnancy, and type of delivery. **Conclusion:** Regarding the prevalence of this disorder, it seems that postpartum depression screening planning should be considered during child routine care as an essential component, especially for vulnerable groups. **Keywords:** Postpartum, Depression, Women

## Introduction

Postpartum depression (PD) is a serious, frequent, and treatable problem with extensive influences in the mother and its family and is estimated to be lower than actual estimates. The prevalence of PD has been reported in 10-20% of worldwide (1,2), which depends on the instrument used to measure depression, culture, society, sample size, and the length of time women are examined for PD (2). In Iran, the prevalence of PD was reported 28.7% (4,3). The World Health Organization estimates that PD will be the second leading factor of the global disease burden in 2020 (5). Pregnancy and childbirth are a definite period of women's life that causes hormonal, physical and social changes in the individual, and, due to the emergence of new

concerns and problems during this period, have a significant effect on the physical and mental health of mothers and their quality of life (6). Distress after delivery is a mood disorder that is different from postpartum depression. This disorder occurs in 4-5% of women within the first few days of delivery and is usually resolved within ten days and is characterized by symptoms such as sadness, sleep disturbance, irritability, and anxiety. PD with symptoms such as boredom, sadness, and severe loneliness, frustration, irritability, fear, lack of confidence, change in appetite, feelings of guilt, reduced focus, and in severe cases is associated with thoughts like suicide (7,8). These symptoms usually occur before the 6th week of delivery and at most up to one year after delivery (7). PD undesirable affects the cognitive and emotional development of the child, causing delays in learning

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and behavioral disorders in the child. In some cases, if the disorder is severe, the newborn killing of the depressed mother is reported (8,9). The consequences of PD in mother and child may appear as child neglect, family disruption, self-harm, and suicide. Also, the short-term damages in mother and child due to depression symptoms such as low appetite and anxiety, the depressed mother has less motivation for proper feeding of her baby which is directly related to the child's health (10,11). In addition to the harmful effects on mother-child relationships, this disrupts the relationship with the spouse. Depressed women's husbands often develop depression, and if depression is not treated, it can lead to family disruption (7). In various studies, the most common risk factors associated with this disorder are maternal age, unwanted pregnancy, job status, unsustainable income, marital differences, and lack of social support (12). There are several ways to diagnose PD. Edinburgh questionnaire is an appropriate test for early screening of patients with PD so that after identification of these patients, other measures such as clinical counseling and other primary measures can be taken (13,14). Regarding the negative effects of maternal depression and its harmful effects on infant and family life, early detection of the disease in early postpartum and early treatment is essential. Women who have PD often do not recognize their condition and are not known and left untreated. Health care providers play a major role in identifying women at high risk of PD and recognizing their early symptoms, and access to mothers during this period is possible during routine baby care. Therefore, it is possible to carry out a though small research to improve mental health. Thus, the present study was conducted to determine the prevalence of PD and its related factors in Bandar Abbas women in 2015.

## Materials and Methods

This was a descriptive-analytic study conducted in health centers in Bandar Abbas in 2015. The study's population included women who referred to urban health centers for routine examinations. Three hundred forty-three subjects were selected through simple sampling using the following equation.

$$n \geq \left[ \frac{(z_{1-\alpha/2} + z_{1-\beta})^2}{0.5 \times h \left[ \frac{(1+r)}{(1-r)} \right]} \right] + 3$$

The criteria for entering the study included Iranian women, who referred to urban health centers for routine examinations and had a willingness to participate in the study; had a healthy baby (without congenital anomalies), and according to them, they had no history of any known psychiatric disorders and had no history of depression in their previous births; they also had pregnancy and postpartum period without any complications such as preterm delivery, pregnancy pressure, post-

partum depression, and so on. The data collection tool was a two-part questionnaire consisting of the standard questionnaire of Edinburgh and the demographic questionnaire. The first assessment was performed in the 2nd month after delivery, when the mother referred for routine childhood vaccination; part of the information measurement questionnaire including age, education, occupation, income, place of residence, wanted or unwanted pregnancy, number of deliveries, type of childbirth, number of children, gestation age, delivery time, birth weight, child sex, and breastfeeding status. They were then evaluated for PD using Edinburgh's questionnaire. Edinburgh questionnaire is a developed tool for the screening of PD that was developed by Cox et al. in 1978 and is a developer tool for screening depressant symptoms during the past seven days in the postpartum period. The questionnaire consists of 10 short questions, each with 4 options and each response is valued from 0 to 3 in terms of severity which in the case of questions 4, 2, 1, the method of scoring from 0 to 3, and for the rest of the questions are from 0 to 3, then they are added to the total scores; earning a score of 12 or more was a PD symptom (15). This questionnaire has recently been validated by Kozinsky and Dodas (16). The Persian version of this questionnaire is acceptable and is a reliable instrument for measuring postpartum depression. In the study of Montazeri et al. (17), the reliability of the questionnaire was determined by Cronbach's alpha ( $\alpha = 0.77$ ) and retest method ( $r = 0.8$ ). In this study, to determine the reliability of the Edinburgh PD questionnaire, the internal consistency method (Cronbach's alpha coefficient calculation) and in-cluster correlation coefficient calculation (ICC) were used. Cronbach's alpha was 0.833 and in-cluster correlation coefficient with 95% confidence interval were equal to 0.831 ( $P < 0.001$ ). The second assessment was performed during the 4th month after childbirth. In the meantime, people who did not want to continue to participate in the study or had occurred the horrific events for them such as deaths of relatives, newborns' cureless illness, divorce, etc., were excluded. Then, the relationship between depression and its related factors was investigated. This research was carried out with the approval of the Ethics Committee of Hormozgan University of Medical Sciences and obtaining a license and a letter from the Deputy of Research and Science of Hormozgan University of Medical Sciences. The researcher referred to the research centers by submitting a written reference and obtained the informed consent from the samples away from any coercion, threat, or seduction. The research subjects were given information about the method of implementation, the purpose and the duration of the research, and their questions were answered, and then they were included in the research. The statistical analyses were performed using SPSS (version 22.0) software and data were analyzed using the Independent sample t-test, Mann Whitney, Chi-square and Fisher exact tests

## Result

The results showed that the mean age of the participants was  $27.44 \pm 5.22$  years, the average gestational age at delivery was  $38.35 \pm 2.35$  weeks, and the mean birth weight of the baby was  $3032.7 \pm 75.510$  g. Most of the mothers had a high school education by 44.3%, 85.7% of them were housewives. Eighty-three-point four percent of the mothers were satisfied with their pregnancy, and 90.4% of their newborns were satisfied, 54.4% of depressed mothers had a cesarean delivery. Sixty-eight patients (19.8%) had PD in the second month after delivery and 54 (15.7%) in the fourth month after delivery. The incidence of PD was estimated to 6.2%. In people who were not depressed at second months (80%), 17 (6.2%) were depressed at fourth months. It should be noted that the passing of time did not significantly affect the decrease or increase in depression [ $P = 0.681$ ]. The results showed that there was a statistically significant relationship between PD and parental education, family income, female employment status, spouse cigarette use, and infant's abnormality and infant weight at 2 months, but among other factors such as age maternal type, type of delivery, unwanted pregnancy, type of baby's feeding, newborns, newborns, newborns, and infants were not significantly associated with PD (Table-1).

## Discussion

The aim of this study was to determine the prevalence of PD and its related factors among Bandar Abbas women. Our results showed that in a total of 343 mothers, 68 (19.8%) patients in the second month and 54 (15.7%) in the fourth month after delivery had PD. In general, the prevalence of PD in various studies is in the range of 10-15% (18, 19). The prevalence of PD varies from 5% in Denmark, 13.4% in Brazil, and 36% in Chile (12). The prevalence of PD in Iran is 28.7%. The rate of PD was 33% in the north, 13% in the north-west, 20% in the west, 26% in the center, and 8% in the south of the country (4). In studies conducted in Iranian groups, there are different results of PD at Tehran was 43% in 2001 and 20% in 2004, 30% in Isfahan, 23.3% in Gorgan, 32% in Hamedan, 16% in Ardabil, 25% in Rasht, 37.7% in Kashan, 31.4% in Dezful, and 34.7% in Tabriz (4). In general, the prevalence pattern of PD in Iran follows a pattern of developing countries, which is almost three times more than developed countries (21, 20). Unfortunately, in Iran, due to its cultural context, the most attention in the post-partum period is on the infant, and the mother is deprived of the necessary attention. Therefore, one of the causes of the high prevalence of PD in our country is the same issue (21). PD is also common in all countries, and even in all cities of a country, and due to differences in the instruments used in its examination, different related prevalence and factors have been reported (21). In the present study,

according to the Edinburgh questionnaire, in the second month after delivery, 19.8% and in the fourth month after delivery, 15.7% had depression; the incidence of depression in the fourth month was 6.2%; as of the 275 people who were in fourth month had no depression, and 17 were depressed. Among the reports on Iran, the highest prevalence was in Tehran, which was reported by 43% with a sample size of 580, and the lowest was reported in Ardabil, 16% with a sample size of 350 (4). The result of this study in the second month after delivery had the highest compatibility with Tehran in 2004 and is not different from the results the Ardabil survey in the fourth month after delivery. The results of this study showed that the prevalence of PD decreased in the fourth month after delivery. Compared to the second month, which was consistent with the Sheeder study, the prevalence rate of 16.5% decreased in the two months age to 10.3% in four months age (22). It seems through time, the prevalence of PD decreases as a result of More compatibility with the physiological changes and maternal role adaptation in the postpartum period. Considering the results of the present study and physiological changes, postpartum period can be one of the effective factors in the incidence of postpartum depression. Since PD has negative effects on maternal health and the quality of child care, the necessity of screening is recommended by the health care system and identification of depressed mothers to improve the quality of mother and child care. In the present study, there was no significant relationship between PD and mother age, type of delivery and infant sex, and the desired sex of the newborn. The results of the studies of Zangena et al. (23), Narimani et al. (24), Mousaviet al. (1) were not in compliance with our study; while in the study of Lashkaripoor et al. (3) PD was associated with mother's age, type of delivery, and gender of the infant. Also, in Hosseini et al. (25) study in women who referred to health centers in Kermanshah during the first 10 days of delivery, PD was related to mother's age and infant's sex. In the study of Mousavi et al. (1), there was a meaningful relationship between the satisfaction of the baby sex and the incidence of postpartum depression. In some societies, it is likely that due to family cultural issues, paying attention to the gender of the son as a supporter of the family in responsibilities and works is more than the gender of the girl. Of course, in the postpartum period, maternal physiological changes seem to diminish the effect of demographic factors on the incidence of postpartum depression. In a study, higher education reduces the chance of PD, which is similar to that of the present study (25) that can reduce the incidence of this due to a better knowledge of prenatal care and PD. Of course, in the study of Ghaffani Nejad et al. (26), Khorramirad et al. (12), Ghaney Ghishlagh et al. (27), such a connection was not observed. In the study of Azimi et al. (28) and Mousavi et al. (1), there was no relationship between unwanted pregnan-

**Table 1.** Comparison of frequency of PD in terms of study variables in two months old

Characteristics		Groups		Test statistic	P-value
		Unaffected	Unaffected		
		N (%) or mean±SD	N (%) or mean±SD		
<b>Mother's education</b>	Uneducated	5 (7.4)	10 (3.6)	9.81*	0.045
	Elementary	6 (8.8)	24 (8.7)		
	Guidance	17 (25)	36 (13.1)		
	High school	28 (41.2)	124 (45.1)		
	Academic	12 (17.6)	81 (29.5)		
<b>Husband's education</b>	Uneducated	4 (5.9)	3 (1.1)	10.86*	0.031
	Elementary	6 (8.8)	30 (10.9)		
	Guidance	18 (26.5)	47 (17.1)		
	High school	28 (41.2)	123 (44.7)		
	Academic	12 (17.6)	72 (26.2)		
<b>Woman's occupation</b>	Employed	5 (10.3)	44 (15.3)	3.12*	0.043
	Housewife	61 (89.7)	233 (84.7)		
<b>Type of delivery</b>	Cesarean	37 (54.4)	153 (55.6)	0.03*	0.856
	Natural	31 (45.6)	122 (44.4)		
<b>Unwanted pregnancy</b>	Wanted	54 (79.4)	232 (84.4)	0.96 <sup>0</sup>	0.326
	Unwanted	14 (20.6)	43 (15.6)		
<b>Economic statue</b>	Good	6 (8.7)	41 (14.9)	10.37*	0.006
	Moderate	47 (69.1)	210 (76.4)		
	Low	15 (22.1)	24 (8.7)		
<b>Husband's cigarette use</b>	Yes	13 (19.1)	20 (7.3)	8.89*	0.003
	No	55 (80.9)	255 (92.7)		
<b>Infant's abnormality</b>	Yes	4 (5.9)	3 (1.1)	0.56**	0.031
	No	64 (94.1)	272 (98.9)		
<b>Infant's feeding type</b>	Breast milk	54 (79.4)	228 (82.9)	0.83*	0.660
	Milk powder	1 (1.5)	6 (2.2)		
	Both of them	13 (19.1)	41 (14.9)		
<b>Infant's sex</b>	Boy	34 (50)	131 (47.6)	0.12*	0.727
	Girl	34 (50)	144 (52.4)		
<b>Infant's hospitalization</b>	Yes	12 (17.6)	62 (22.5)	0.77*	0.379
	No	56 (82.6)	213 (77.5)		
<b>Infant's illness</b>	Yes	4 (5.9)	12 (4.4)	0.28**	0.595
	No	64 (94.1)	263 (95.6)		
<b>Mother's age</b>		27.74±5.18	27.36±5.23	-0.41***	0.676
<b>Newborn weight</b>		5176.50±728.09	5176.50±728.09	-2.33****	0.020

\*Chi-square \*\* Fischer exact test \*\*\*Independent sample t-test, \*\*\*\*Mann Whitney test

cy and depression, the results of which were consistent with our study. While in another study, there was a significant relationship between PD and unwanted pregnancy and its cause was generalized to the negative attitude that women with unwanted pregnancies had, which could lead to the emergence of PD (25). Narimani et al. (24) found a meaningful statistical relationship between family's low economic status and postpartum depression, which was in line with the results of this study. While Sadr et al. (29) showed no statistically significant correlation between socioeconomic status and PD in their research. In the present study, there was a significant correlation between infant's abnormalities and PD that was in line with the results of Khorramirad et al. (12), which showed that the odds of PD were 2.58 times higher in women with abnormal newborns than other women because the baby's abnormality in stressful postpartum condition causes an emotional reaction and a worse concern in the mother. In the present study, there was no significant relationship between infant illness and PD, while Boomadi et al. showed that the stress associated with the birth of the baby, especially his or her illness, was associated with PD(30). In the present study, there was a significant relationship between women's employment status and PD. Along with these results, in a study, the prevalence of depression has been reported more in working women (24, 25). In general, in developing countries, women employment in addition to identification a woman, contribute a lot to living expenses and the socioeconomic status of employed women is better than housewives (7). In this study, employment status along with other positive social and economic factors caused by women's employment could reduce depression in this group. Among the limitations of this study, we can mention the following: This study was conducted on urban women referring to health centers in Bandar Abbas city, which according to the cultural factors and the degree of differentiation, environmental stresses tolerated by rural women, the incidence of PD in this group is likely to be different. Also, there was no mention of the history of stressful events, social support, and disability in child care, while these factors were associated with PD in various studies (25).

## Conclusion

Therefore, given the high prevalence of PD and its side effects on mother, child, and family health, it is recommended to pay special attention to prenatal care as well as screening for mental disorders, especially in vulnerable groups.

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## Conflict of interest

The authors declare no competing interests.

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