



# Postpartum Depression Among Women With Previous Infertility in Health Care Centers of Hamadan in 2018

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## Abstract

**Background:** Childbirth is one of the essential goals of the family, so that infertility can cause many problems for the family. Therefore, the aims of the current study were the frequency of postpartum depression and evaluate the relationship between postpartum depression, socio-demographic factors, and quality of marital satisfaction in postpartum women with a history of infertility referring to health centers in Hamadan.

**Methods:** This study was a cross-sectional study. The study population consisted of all primiparous women with a history of infertility referring to Hamadan health care centers in 2018, of which 240 randomly selected according to the inclusion criteria for one year. Subjects assessed by demographic and clinical information checklist, Edinburgh Postnatal Depression Scale (EPDS), and marital relationship quality scale (Revised Dyadic Adjustment Scale; RDAS). All statistical calculations performed by using chi-square with SPSS-17.

**Results:** 152 out of 240 participants (63.3%) had a degree of depression, of which 57 (23.7%) had mild depression, 63 (26.3%) had moderate depression, and 32 (13.3%) had severe depression. According to the result of the study, marital satisfaction in 23.3% (56), 37.1% (89), and 39.6% (95) were excellent, moderate, and low, respectively — the quality of marital relationships associated significantly with and postpartum depression ( $\chi^2=19.3, P<0.001$ ). The results of the study showed that there was a significant relationship between age, occupation, educational level, duration of infertility, and depression ( $P<0.05$ ), but there was no significant relationship between ethnicity, insurance, and depression ( $P<0.05$ ).

**Conclusion:** Regarding the results obtained in this study and comparison with existing studies, the infertility problem can cause mental and psychological disorders in women. It seems that marital satisfaction and its relationship with different factors and the proper interventions by health care providers are necessary to prevent postpartum depression in these women.

**Keywords:** Depression; Postpartum; Marital satisfaction; Infertility.

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## Introduction

Childbirth is one of the essential goals of the family, so that infertility can cause many problems for the family.<sup>1</sup> Infertility often described as a crisis or problem in the family, which can be an obstacle to achieving parental social roles and lead to emotional, physical, and financial problems.<sup>2</sup> Just about one of seven couples experience infertility after one year of unprotected sex.<sup>3</sup> Historically, this is an exclusively related concern for women, which may cause adverse interactions between the mother and the child, adversely affect the child's development and, in severe cases, cause child abuse.<sup>4</sup> People with a history

of infertility usually experience feelings of shame, sin, depression, and anxiety.<sup>5</sup> Pregnancy and childbirth can reduce these emotions because of the link between mother and infant in processes such as baby care and breastfeeding.<sup>6</sup> Infertility creates many psychological consequences for couples, which can be considered as one of the unpleasant experiences in their life and make it a psycho-social crisis for them. These people may interpret infertility problems as indications that they have no "ability" or "value" of parenting.<sup>7</sup> Researches have shown that men and women often face different ways to cope with unpredictable infertility, which can increase divorce

and distance in marital relationships. Unfortunately, when their peers and relatives become pregnant, these couples are often more likely to be separated from their relatives and friends.<sup>8</sup> Stress in infertile couples disrupts marital satisfaction, reduces self-esteem, and the number of couples' sexual relationships. The set of these feelings leads to depression, anxiety, the feeling of disability, and sin in them. While couples are in the process of treatment for fertility, the purpose of sexual activity is just pregnancy. Moreover, it could increase marital conflicts and a lack of enjoyment of life.<sup>9</sup>

Women are often disappointed with infertility treatment and may be upset by the lack of understanding of their spouse.<sup>10</sup> In addition to experiencing the psychological problems caused by infertility, infertile couples encounter physical and financial stress if they decide to use fertility assisted methods, which can affect their marital quality.<sup>4</sup> Therefore, a combination of physical, psychological, and economic stress associated with social isolation often increases the pressure on marital relationships in infertile couples.<sup>2</sup> After treating infertility, couples may be anxious, particularly about the pregnancy and the health of the baby after birth, which increases the chance of postpartum depression.<sup>11</sup> Although depression is one of the most common diseases in modern societies, referral to help receive much less than its actual outbreak.<sup>12</sup> According to the Diagnostic and Statistical Manual of Psychiatric Disorders of the American Psychiatric Association, Postpartum Depression (PPD) defined as an episode of severe depression occurring during the first four months after delivery.<sup>13</sup> The psychological and emotional effects of infertility may not easily diagnose, and many couples prefer to remain quiet about this problem.<sup>14</sup> The prevalence of postpartum depression in the new mothers is about 13%.<sup>15</sup> It is essential to differentiate PPD from postpartum blues, which experienced in most women (at least 70%) in the first ten days after childbirth.<sup>13</sup> Postpartum depression is debilitating and prolonged disorder, and in addition to symptoms of depression (such as depressed mood, lack of pleasure from something, sleepiness, changes in sleep patterns or eating, feeling unworthy or frustrated). It is commonly associated with worries about child health.<sup>13</sup> The results of existing studies on the impact of infertility on psychiatric problems have been different, and the psychological effects of previous infertility have not thoroughly investigated. There are also controversial results on the prevalence of postpartum depression in couples, who have been successful in infertile treatment, and most studies in couples are infertile, not couples who have been treated infertility. Given the above inconsistencies and the high prevalence of infertility in the society, Hence, more research is required to adequately study the factors that impact postpartum depression in infertile women. Therefore, the aims of the current study were the frequency of postpartum depression and evaluate

the relationship between postpartum depression, socio-demographic factors, and quality of marital satisfaction in postpartum women with a history of infertility referring to health centers in Hamadan.

### Materials and Methods

This study was a cross-sectional study. The study population consisted of all primiparous women with a history of infertility referring to Hamadan health care centers in 2018, of which 240 randomly selected according to the inclusion criteria for one year. The sampling method in this study was multi-stage. A list of all health care centers in Hamadan used as a sampling frame in the first stage. Eight health centers randomly selected in the second stage. In the third stage, all primigravida women provided with their files number in each health center. The eligible women were selected based on the inclusion and exclusion criteria invited to participate in this study. This study designed to uphold the ethical protection of participants. All participants have given explanations of the research aims, as well as assured that the information would be confidential. Before enrolling in the study, each participant required to provide informed consent, through which they indicated that they understood (a) what expected of them and (b) that they were under no obligation to participate in or complete this questionnaire. The inclusion criteria include having at least elementary schooling, residing in Hamadan, having a history of infertility, and refer to health care centers during four weeks after delivery (p. 186 DSM5) for self-care or neonate, and the successful outcome of delivery with the healthy new-born. Exclusion criteria include the history of medical illness with severe complications during pregnancy, history of taking antidepressants, psychiatric disorders, systemic illness (which causes symptoms of depression), and dependency on cigarettes, alcohol, and drugs. Subjects assessed by demographic and clinical information checklist, Edinburgh Postnatal Depression Scale (EPDS), and marital relationship quality scale (Revised Dyadic Adjustment Scale; RDAS). All statistical calculations were performed using SPSS software version 17 and taking into account the significance level of 0.05. Descriptive statistics, including frequency and mean, and inferential level investigated by using chi-square.

### Demographic and Clinical Information Checklist

These included characteristics such as age, education, and obstetrics history, the cause of infertility, the duration of infertility, and the method of childbirth.

### Edinburgh Postnatal Depression Scale

The instrument of this study was the EPDS. This questionnaire has ten items and designed to detect depression during six weeks of postpartum. The score for the Edinburgh scale is between 0 and 30, and score

12 or more considered as postpartum depression. The questions number 1, 2, 3, 4, 5, and 6 from 3 to 0, and 7, 8, 9, 10 from 3 to 0 scored. The validity of this questionnaire has evaluated in several countries, and its reliability was confirmed by Cox et al that Cronbach's alpha was 0.88.<sup>16</sup> A study by Montazeri et al in Iran on 100 women postpartum depression was determined, and the reliability of this questionnaire has also assessed. The Cronbach's alpha coefficient in 6-8 weeks and 12-14 days after delivery was 0.77 and 0.86, respectively.<sup>17</sup> In the present study, Cronbach's alpha coefficient for the Edinburgh questionnaire was 0.75. In this study, the score of 13 and above considered as postpartum depression. Accordingly, mothers were referred to the psychiatrist to confirm their depression and more effective measures.

### Marital Relationships Quality Scale (RDAS)

This scale was designed and constructed by Busby et al in 1995, which measures the quality of the marital satisfaction relationship in three subscales of mutual agreement, mutual consent, and mutual cohesion.<sup>17,18</sup> It has 14 questions rated on a 6-point Likert scale (0-5), with the answer fully agreeing to the RDAS score of 5 and opposite to zero. High scores indicate higher marital quality, and lower scores indicate unfavorable marital relationships. In Iran, the internal validity of this questionnaire has obtained using Cronbach's alpha between 0.90- 0.70, and its reliability in the study of Iranian nulliparous pregnant women was 0.84.<sup>19</sup>

### Results

In this study, the mean age of participants was 36 years, with a minimum age of 20 and a maximum of 48 years. Out of 240 samples, 53% were in the age group of 44-35 years old. Most of the participants had a diploma and housewives. The maximum duration of marriage was 2 to 5 years; the duration of infertility was 63% less than five years, 28% between 5-10 years, and 9% more than ten years (Table 1).

The results of the study showed that there was a significant relationship between age, occupation, educational level, duration of infertility, and depression ( $P < 0.05$ ), but there was no significant relationship between ethnicity, insurance, and depression ( $P < 0.05$ ). As shown in Table 2, depression was higher in people aged between 25-34 who had a high school diploma, as well as depression more was observed in those who had specialized occupations and whose duration of marriage was between 5-10 years ( $P < 0.01$ )

The mean score and standard deviation of EPDS were in women with a history of infertility ( $84.7 \pm 33.79$ ). Totally 152 out of 240 participants (63.3%) had a degree of depression, of which 57 (23.7%) had mild depression, 63 (26.3%) had moderate depression, and 32 (13.3%) had severe depression. The mean and standard deviation of

marital satisfaction was  $50.48 \pm 15.4$ . According to the result of the study, marital satisfaction in 23.3% (56), 37.1% (89), and 39.6% (95) were excellent, moderate, and low, respectively. The quality of marital relationships associated significantly with and postpartum depression; ( $\chi^2 = 19.3, P < 0.001$ ) (Table 3).

### Discussion

The aims of the current study were the frequency of postpartum depression and evaluated the relationship between postpartum depression socio-demographic factors in postpartum women with a history of infertility referring to health centers in Hamadan. In the present study, 63.3% of mothers have reported some degree of depression. Infertility has considered a personal crisis that can cause stress and psychological pressure on couples and, in various ways, threaten their mental health. It can also impair marital quality, reduce intimacy and fear of

**Table 1.** Demographic characteristics of participants in the study

| Socio-demographic           | No. (%)    |
|-----------------------------|------------|
| <b>Age</b>                  |            |
| 20-24                       | 12 (5)     |
| 25-34                       | 84 (35)    |
| 35-44                       | 127 (53)   |
| ≥45                         | 17 (7)     |
| <b>Ethnicity</b>            |            |
| Fars                        | 179 (74.6) |
| Kurd                        | 20 (8.3)   |
| Lor                         | 16 (6.7)   |
| Turk                        | 25 (10.4)  |
| <b>Education</b>            |            |
| Primary school              | 17 (7.1)   |
| Secondary school            | 49 (20.4)  |
| High school diploma         | 120 (50)   |
| Bachelor degree or higher   | 54 (22.5)  |
| <b>Occupation</b>           |            |
| Non-professional employee   | 76 (31.7)  |
| Professional employee       | 47 (19.6)  |
| Self-employed               | 30 (12.5)  |
| Housewife                   | 87 (36.2)  |
| <b>Insurance</b>            |            |
| Yes                         | 182 (75.8) |
| No                          | 58 (24.2)  |
| <b>Duration of marriage</b> |            |
| Less than 2 years           | 22 (9.2)   |
| 2 to 5 years                | 72 (31.2)  |
| 5 to 10 year                | 109 (44.6) |
| More than 10 years          | 37 (16)    |

**Table 2.** Relationship Between Demographic Variables and Depression

| Depression Socio-demographic | Postpartum                   |                            | P Value |
|------------------------------|------------------------------|----------------------------|---------|
|                              | No Depression No. (%) (n=88) | Depression No. (%) (n=152) |         |
| Age                          |                              |                            |         |
| 18-24                        |                              | 21 (23.9)                  | 0.02*   |
| 25-34                        | 34 (38.6)                    | 65(42.8)                   |         |
| 35-44                        | 28 (31.8)                    | 43 (28.2)                  |         |
| >45                          | 5 (5.7)                      | 7 (4.7)                    |         |
| Ethnicity                    |                              |                            |         |
| Fars                         | 20 (22.7)                    | 43 (28.3)                  | >0.05   |
| Kurd                         | 23 (26.1)                    | 34 (22.4)                  |         |
| Lor                          | 24 (27.3)                    | 36 (23.7)                  |         |
| Turk                         | 21 (23.9)                    | 39 (25.6)                  |         |
| Education                    |                              |                            |         |
| Primary School               | 21 (23.9)                    | 19 (12.5)                  | 0.01*   |
| Secondary School             | 32 (36.4)                    | 51 (33.6)                  |         |
| High School Diploma          | 18 (20.4)                    | 43 (28.3)                  |         |
| Bachelor Degree or Higher    | 17 (19.3)                    | 39 (25.6)                  |         |
| Occupation                   |                              |                            |         |
| Non Professional Employee    | 16 (18.2)                    | 17 (11.2)                  | 0.03*   |
| Professional Employee        | 25 (28.4)                    | 75 (49.3)                  |         |
| Self-Employed                | 10 (11.4)                    | 12 (7.9)                   |         |
| Housewife                    | 36(40.9)                     | 48 (31.6)                  |         |
| Insurance                    |                              |                            |         |
| Yes                          | 76 (86.4)                    | 128 (84.2)                 | >0.05   |
| No                           | 12 (13.6)                    | 24 (15.8)                  |         |
| Duration of marriage         |                              |                            |         |
| Less than two years          | 6 (6.8)                      | 15 (9.9)                   | 0.01*   |
| 2 to 5 years                 | 21 (23.9)                    | 52 (34.2)                  |         |
| 5 to 10 year                 | 45 (51.1)                    | 57 (37.5)                  |         |
| More than ten years          | 16 (18.2)                    | 28 (18.4)                  |         |

termination of relationship, separation, and divorce, reduce self-esteem and feelings of rejection from the family and the community that the set of these factors can predispose a person to the psychological disorders such as postpartum depression and a weakening in marital quality. Postpartum depression is one of the most critical problems that threaten the health of the mother, infant, and family. Studies reported that the prevalence of severe postpartum depression with clinical symptoms is between 10%-20%.<sup>20,21</sup> It seems that one of the reasons for the difference in reported prevalence in various articles is that the different times of study after childbirth. For example, some researchers have examined depression during the first two weeks after delivery, which may include postpartum blues. Some of them have studied PPD a long time after childbirth, which results in the disappearing of

this disorder.<sup>22</sup> In the current study, all the cases evaluated within 4-6 weeks after birth that the symptoms of postpartum blues, which are very similar to postpartum depression, disappeared. On the other hand, some researchers have studied primigravida and multiparous women together. However, in the present study, only the primigravida was assessed, and the factors that may be related to postpartum depression in primiparous women such as the history of depression before pregnancy, during pregnancy, prenatal and disorders related to pregnancy were excluded.

The results of this study showed that there is a significant relationship between age, occupation, education level, duration of the marriage, duration of infertility, and their depression ( $P < 0.01$ ). Other findings also show that there is a significant relationship between

**Table 3.** Relationship Between the Quality of the Marital Relationship and Postpartum Depression

| Quality of Marital Relationship | Postpartum Depression           |                                |                              | $\chi^2$ | P Value |
|---------------------------------|---------------------------------|--------------------------------|------------------------------|----------|---------|
|                                 | No & Mild Depression<br>No. (%) | Moderate Depression<br>No. (%) | Severe Depression<br>No. (%) |          |         |
| Low                             | 41 (43.2)                       | 34 (35.8)                      | 20 (21)                      | 19.3     | <0.001  |
| Moderate                        | 48 (53.9)                       | 25 (28.1)                      | 16 (18)                      |          |         |
| Good                            | 37 (66.1)                       | 12 (21.4)                      | 7 (12.5)                     |          |         |

maternal age and postpartum depression, which is consistent with these results.<sup>23,24</sup> For example, maternal age in Rahmani's research is one of the practical factors in postpartum depression.<sup>23</sup> Younger mothers may be less prone to postpartum depression due to the use of newer sources of information, having higher education, and pay attention to the importance of prenatal care. Also, the results of this study showed that there is a significant relationship between maternal education and postpartum depression, which is consistent with Rahmani's research findings.<sup>23,25</sup> In participants who had a university degree, depression was less noticeable. It seems that in educated people due to more awareness about the issue of infertility and the proper treatment of this case and more suitable mechanisms for coping, depression, and anxiety are less than other people. In this study, there was no relationship between the duration of infertility with depression which is contrary to the results of Ramezanzadeh et al in Tehran, they concluded that there was a significant relationship between postpartum depression and duration of infertility, etiology of infertility, the level of education and occupation of women, but anxiety is related only to the duration of infertility and their educational level.<sup>26</sup> The reason for this difference is the variety of the population due to geographical location, individual life, cultural differences, and the different attitudes to infertility from altered societies. One of the benefits of our study is the assessment of primigravidae from different socio-economic levels. Based on the results, marital dissatisfaction, a predisposing factor for postpartum depression. In a study in Kashan on 204 mothers, three factors, including the quality relationship with spouse and family and history of depression, had a statistically significant relationship to postpartum depression.<sup>27</sup> In our study, there was a significant relationship between marital satisfaction and postpartum depression, which means that marital satisfaction in a severe depression of infertile women reduced. This result is similar to the study by Wang et al. They stated that the frequency of mental disorders and dissatisfaction with the marital relationship was higher in the case group (infertile women) than in the control group.<sup>28</sup>

## Conclusion

Regarding the results obtained in this study and

comparison with existing studies, the infertility problem can cause mental and psychological disorders in women. It seems that marital satisfaction and its relationship with different factors and the proper interventions by health care providers are necessary to prevent postpartum depression in these women. Intervention such as public education, raising awareness of people about different aspects of infertility, helping infertile couples to cope with stress, teaching problem-solving skills, and the decision-making process on treatment and resolving marital and family conflicts following treatment of infertility can help couples following treatment of infertility. In order to achieve these goals, it seems that the presence of psychiatrists and clinical psychologists in infertility diagnostic and treatment centers seems necessary.

## Conflict of Interest Disclosures

The authors declare that they have no conflict of interests.

## Ethical Statement

All participants have given explanations of the research, aims as well as assured that the information would be confidential. Before enrolling in the study, each participant required to provide informed consent, through which they indicated that they understood (a) what expected of them and (b) that they were under no obligation to participate in or complete this questionnaire.

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