Risk factors of postpartum depression in Ramhormoz city, Iran

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Abstract

Introduction: We aimed to determine risk factors of postpartum depression in pregnant women.
Material and methods: It was a prospective study on 143 pregnant women referred to health centers in Ramhormoz city during March 20 to September 21, 2013. The data collection tool was the Edinburgh questionnaire. The demographic data including age, education, occupation, spouse's occupation, relative income of the family, satisfaction with child gender, frequency of prenatal care, history of nausea and vomiting in the first trimester of pregnancy, and abortion were collected. Data were entered into the SPSS software and analyzed using descriptive and analytical statistical tests such as sample t-test, one independent sample t-test, one-way ANOVA and χ^2 test. The significance level was considered 0.05.
Results: A significant association was found between age of mother, parity, maternal education, satisfaction with gender of newborn, and method of delivery with postpartum depression ($p < 0.05$). The mean prevalence of postpartum depression was different in mothers with unwanted pregnancy, or newborn's disease during birth ($p < 0.05$). Factors associated with postpartum depression were husband's satisfaction with recent pregnancy, an unwanted pregnancy, satisfaction with gender of newborn, education levels, and stress levels during pregnancy.
Conclusions: The prevalence of postpartum depression is high. Therefore, identification of risk factors associated with postpartum depression is essential to reduce the frequency of this disorder.

Key words: postpartum depression, risk factor, women.

Introduction

Postpartum depression (PPD) affects women in developed as well as developing countries. The overall prevalence of clinically significant postpartum depressive symptoms is estimated to be 7-19%. Around a third of "postnatal depression" cases begin in pregnancy and around a quarter begin before pregnancy (Gaynes *et al.* 2005; Ahmed *et al.* 2011; Al Dallal *et al.* 2012; Vliegen *et al.* 2014). The prevalence of PPD in Iran was 25.3% (95% CI: 22.7-27.9%). Amongst subgroups of unwanted delivery, illiterate, housewives, and having a history of depression the prevalence was 43.4%, 31.6%, 30.7%, and 45.2% respectively. Postpartum depression presents with the same symptoms as for a major depressive episode occurring outside of the prenatal period, including core symptoms of depressed mood and/or loss of pleasure, together with additional symptoms, including changes in weight or sleep, fatigue or loss of energy, feelings of worthlessness or guilt, concentration difficulties, and suicidal ideation (American Psychiatric Association 1994). The Edinburgh Postnatal Depression Scale (EPDS) is a brief and widely used instrument for measuring postnatal depression. Although this approach has been criticized, the EPDS has showed good sensitivity and specificity, particularly when used to detect both major and minor depression (Montazeri *et al.* 2007). The Edinburgh Postnatal Depression included biological, psychological, and sociological aspects interacting with a woman's risk individually (Klainin *et al.* 2009). Sociological factors such as unwanted delivery, occupation, literacy, and history of depression have been more frequently reported throughout original research and a meta-analysis (Bahadoran *et al.* 2008).

According to the potential adverse effects of postpartum depression in mothers and their

families, prevention is the key issue. Since studies have demonstrated the multifactorial nature of postpartum depression, identifying and eliminating any of the factors can reduce the risk of postpartum depression. Right now, the current care during pregnancy and after it is limited to physical care. Therefore, introducing effective factors on postpartum depression to those involved in the care of mothers will help to reduce it. The aim of this study was to determine factors associated with PPD in women.

Material and methods

It was a cross-sectional study on 143 pregnant women who were referred to health centers in Ramhormoz city located in Khuzestan province, Iran during March 20 to September 21 in 2013; they gave informed consent to participate in the study.

Inclusion criteria:
- pregnant women 15-45 years old,
- pregnant women with primipara to tripara,
- pregnant women were willing and had informed consent to participate in this study.

Exclusion criteria:
- individuals with psychiatric disease,
- use of psychiatric drugs,
- history of psychiatric disease in the family,
- chronic disease,
- history of nulliparity,
- pregnancy complications such as high blood pressure, convulsion, fetal malformations, preterm birth,
- hospitalization for other reasons,
- obtaining scores higher than 12 in the Edinburgh questionnaire by women in the third trimester of pregnancy.

After subjects entered the study, Edinburgh standard criteria were completed for PPD. This questionnaire has a sensitivity of 75% and specificity 95%, based on another study (Uwakwe *et al.* 2003). In several studies performed in Iran, content validity of the questionnaire has been confirmed for Persian language (Khorramirad

et al. 2010). In the present study, reliability was confirmed by Cronbach's alpha coefficient of more than 7%. This questionnaire contains 10 questions. Each question receives a score of 0 to 3 based on the nature of the response. The cut-off score on the questionnaire was 12. Individuals who gained scores equal to or greater than 12 were considered as depressed persons and women with scores lower than 12 were normal. Also, the questionnaire was completed in the third trimester of pregnancy and in the last visit before delivery. Women who obtained scores higher than 12 were excluded from the study. Finally, 120 cases remained and six weeks after delivery, or the next visit, the questionnaire was completed again. The demographic data included age of mother, parity, maternal education, satisfaction with baby gender of newborn, method of delivery, history of violence, husband's feeling in recent pregnancy, family support, good experience of childbirth, unwanted pregnancy, method of delivery, satisfaction with baby gender of newborn, Newborn's disease during birth, ready to accept responsibility for pregnancy, husband's support. Health service status was collected.

Data analysis

Data were entered into the SPSS software (version 19, SPSS, Inc., Chicago, IL, USA), and analyzed using descriptive and analytical statistical tests such as one-sample t-test, independent sample t-test, one-way ANOVA and χ^2 test. The significance level was considered 0.05.

Results

The average age was 24.67 ±3.26 years. 42% of the participants had diploma-level education, and 19.5% and 10.6% had respectively college education or were illiterate. Almost 69% of subjects were housewives. The average number of deliveries was 1.83 ±0.07. Frequencies of women with primiparity, bipara, and tripara were 42%, 25%, and 31% respectively. Most women had wanted pregnancy. Of 33% subjects who had unwanted pregnancy, 64% were suffering from depression. The prevalence of postpartum depression was 47% in mothers who had low economic conditions, and it was 10% in participants who had good economic conditions. This rate was 14% in those who were satisfied with gender of the infant, and in others it was 76% (Table 1).

Postpartum depression had occurred in more than 50% of mothers who had child birth three or more times. The prevalence rate among people

Table 1. Association between demographic characteristics and postpartum depression

Variable	χ^2	*p*
age of mother	167	0.0005
parity	8.5	0.01
maternal education	77.9	0.0005
satisfaction with gender of newborn	0.07	0.0005
method of delivery	53	0.005

with hypertension, severe vomiting and back pain during pregnancy was 33%, 25% and 35% respectively. Findings showed a significant association between maternal disease during pregnancy, age of mother, parity, maternal education, satisfaction with gender of newborn, and the method of delivery, and postpartum depression ($p < 0.05$) (Table 2).

The mean prevalence of postpartum depression was different in mothers with unwanted pregnancy, newborn's disease during birth, ready to accept responsibility for pregnancy, spouse's satisfaction, number of pregnancy, and husband's feeling in recent pregnancy ($p < 0.05$). As can be seen in Table 2, some factors associated with postpartum depression included a history of violence, family support, a good experience of childbirth, satisfaction with gender of newborn, infant's disease, and health service status.

Table 2. Social and maternal-neonatal factors related to postpartum depression

Variable		p
history of violence	t = 2.6	< 0.01
husband's feeling in recent pregnancy	f = 2.7	< 0.005
family support	t = 2.5	< 0.01
good experience of childbirth	t = 2.8	< 0.005
unwanted pregnancy	t = 2.6	< 0.01
method of delivery	t = 9.8	< 0.0005
satisfaction with gender of newborn	t = 2.4	< 0.01
newborn's disease during birth	t = 59	< 0.0005
ready to accept responsibility for pregnancy	f = 2.6	< 0.01
husband's support	χ^2 = 1.2	< 0.16
health service status	t = 3.4	< 0.001

Discussion

Findings of this research indicated similarity to a study which showed an association between age of mothers and postpartum depression. High maternal age is a factor influencing postpartum depression. It is possible that younger mothers face lower postpartum depression due to using new information, important for prenatal care, and having higher education (Beck *et al*. 2001). A study showed that as parity increases, depression risk rises (Hung *et al*. 2011; Hung *et al*. 2004). In other words, when there are large numbers of children, a mother has less time for rest and recreation. As a result, these factors can lead to fatigue, and can make her susceptible to postpartum depression (Khodadadi *et al*. 2008). However, Beck and Verdoux did not find an association between parity and postpartum depression (Beck *et al*. 2001; Verdoux *et al*. 2002).

Dennis believes that an unwanted pregnancy can lead to lack of acceptance of the child, and depression may develop (Dennis *et al*. 2004; Sadat *et al*. 2014). Other studies, like this study, revealed that a much higher stress level causes likelihood of postpartum depression. Therefore, the main issue is the person's reaction to stress (Dennis *et al*. 2004; Wang *et al*. 2003).

In our study, support of mother is defined as communication network mothers with their husbands, families and friends. Result had emphasized that if social support by husbands is reduced, risk of depression increases (Fisch *et al*. 1997; Hopkins *et al*. 2000). Brockington stated that lack of an appropriate relationship with the spouse causes increased risk of postpartum depression (Brockington *et al*. 1996). One of the most important social supports is having health insurance. Women who have insurance coverage are less concerned about costs. As a result, they have less stress, and then low risk of depression (Abdollahi *et al*. 2014).

The research conducted by Chee showed that not having a good experience of childbirth is associated with postpartum depression (Chee *et al*. 2005).

Hopkins *et al*. demonstrated that stress due to newborn's disease is related to PPD. Infant characteristics can affect maternal attitudes and behaviors. The responsibility of keeping an infant limits the mother's social communication, and she has less independence than in the past, especially when a newborn is sick (Edwards *et al*. 1994; Mazaheri *et al*. 2014).

Verdoux stated that there was an association between the type of disease or problem and depression because long-term treatments and hospitalization can increase the risk of depression. He also indicated that higher education in mothers enhances information about awareness of civil rights and physical and mental health needs. Therefore, compatibility with existing conditions will be easier (Verdoux *et al*. 2002). In conclusion, the prevalence of postpartum depression is high. Therefore, identification of the risk factors for postpartum depression is essential to reduce the frequency of this disorder.

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