

# Prevalence of depression in women with preterm delivery in Jahrom city 2018

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## ABSTRACT

**Background and Aim:** The aim of this study was to investigate the prevalence of depression in women with preterm delivery in Jahrom city in 2018. **Method:** The research population of women with preterm labor, who had been at least 6 weeks to 1 year since their delivery, were deprived of the previous history of depression and referred to psychiatrists and drug users, and were covered by a health center in Jahrom city. A randomized-stratified random sample of 115 eligible people entered the study. The instrument used was demographic and depression questionnaires. **Results:** The results of the study showed that there is a significant relationship between the number of children and depression ( $p = 0.001$ ). The results showed that mothers with one child had higher levels of depression than mothers with more children. Also, there is a significant relationship between the number of pregnancies, abortion history, type of delivery, child's gender, unintended pregnancy, child's unwanted gender from the father's and the mother's point of view and type of child feeding and depression. Mothers with first pregnancy had higher depression than other mothers. Mothers without a history of abortion had higher rates of depression than those with abortion history. **Conclusion:** The results of this study indicated a high prevalence of mild depression in women with preterm labor in Jahrom city in 2018.

**Keywords:** Prevalence, Depression, preterm delivery, women

## Introduction

Pregnancy and labor are special events of the lives of women and their families. Pregnancy cause physiological and psychological changes and affects the functioning of different body organs. These changes cause symptoms and complaints in pregnant women and may occur naturally per pregnancy, but complications arise for mother and embryo if symptoms intensify

<sup>[1]</sup>. If pregnant women do not adapt themselves with these changes, they are exposed to a high level of stress.

Bairami reported that the prevalence of psychiatric disorders in the first, second, and third trimester of pregnancy is 0.029, 0.028, and 0.039 respectively. <sup>[2]</sup> Today, the health of mother and child is the main goal for the social and economic development of every society <sup>[3]</sup>. According to the results of the studies conducted on preterm labor, various factors such as physical and psychological stress <sup>[4]</sup>, depression <sup>[5]</sup>, anxiety <sup>[3]</sup> social relationships and support and self-care <sup>[6]</sup> are related to the preterm labor. Preterm labor is referred to as delivery before thirty-seven weeks of pregnancy (259 days from the first day of the last menstruation) <sup>[6]</sup>, which is the cause of about two-thirds of the neonate deaths <sup>[3]</sup>. The prevalence of preterm labor is reported by 5% in developed and 25% in developing countries. The costs of taking care of premature infants are estimated to be over \$ 5 billion in the United States <sup>[7]</sup>. Preterm labor has been rising in Iran <sup>[8]</sup>.

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Short-term complications in premature infants include respiratory problems, persistent arterial duct, necrotizing enterocolitis, or intestinal gangrene, and intracranial hemorrhage and its long-term complications include congenital malformations, neurodevelopment disorders such as cerebral palsy, hydrocephalus, seizures, vision hearing, behavioral problems, and airway disorders<sup>[7]</sup>. Other maternal complications of preterm labor include concern and anxiety, complications of prolonged rest, complications of tocolytic, and sedative drug use. The embryonic complications include respiratory distress syndrome due to lack of lung evolution, premature body organs, the possibility of hypothermia due to low-fat tissue and damage to the skull and intracranial hemorrhage during labor and the probability of infection and anemia<sup>[9]</sup>. Premature infant birth is one of the major problems in society. In addition to causing economic and psychological problems in the family, it also causes the loss of financial and human resources. In research conducted in Boston, America (1997), it was reported that premature neonates had a more negative behavioral pattern than mature ones. Also in a study conducted in Dublin Hospital (1995) in a 3-years period, prematurity has been one of the major contributors to neonates' mortality<sup>[10]</sup>.

The prevalence of postpartum depression has been reported 10-20% in recent studies conducted all around the world<sup>[11]</sup>. Also, postpartum depression has a high prevalence in Iran. It is reported 29% in the study of Salehi-Kasaei (1994)<sup>[12]</sup> and 27% in the study of Behboudi (2002)<sup>[13]</sup>.

## Methods:

This research was a descriptive cross-sectional study. The study population included pregnant women who had preterm labor at least 6 weeks to one year ago and did not have a history of depression, a history of referral to a psychiatrist, and taking psychiatric drugs and also were under surveillance of one of the health centers in Jahrom city. A stratified random sampling method was used to enter 115 eligible women to the study. The study data were collected using a two-part questionnaire. The first part included maternal demographic information such as age, level of education, spouse's level of education, job, number of pregnancies, number of children, the abortion history, the type of delivery, the child's gender, the unintended pregnancy, child's unwanted gender from the father's and the mother's point of view, type of child feeding, and baby's medical problems in the first week after birth. The second part consisted of questions about depression based on Beck's questionnaire. Beck's Depression test was introduced in 1961 by Beck and his colleagues for the first time. It was revised in 1971 and re-introduced in 1978. Since then, over 30 years after its introduction, more than 1,000 studies have been carried out about it or it was used in those researches. In Iran, this questionnaire has been standardized by Okhovvat and is widely used to measure depression in the normal and with mentally disordered people.

The Beck Depression questionnaire is known as a cross-cultural test that is applicable to all social classes. The respondents are required to rank the intensity of their symptoms on a scale from zero to three (0-3). Its questions are related to areas such as the feeling of failure and guilt, irritability, sleep disturbances, and lack of appetite. The validity and reliability of this questionnaire have been evaluated extensively since it was introduced about 30 years ago. Analysis to determine the internal consistency of the usual 21-items version of this test has shown that the coefficients range from 0.73 to 0.93 with an average of 0.76. In the present study, the 21-items version of this questionnaire was used. The total score of 0-14 is considered normal or individuals with depression at the normal level, 15-31 is representative of the mild depression level, 32-47 represents the moderate level, and 48-63 is considered as severe depression.

After obtaining permission from the vice-chancellor of research at Jahrom University of Medical Sciences, the researcher was referred to the health-care centers (a referral center for mothers in the postpartum period). All participants received information about the study objectives and provided written informed consent and then the questionnaires were delivered to them. Data were analyzed and summarized using descriptive statistics and tables consisting of frequencies and percentages and estimating the distribution of the frequencies of the variables in terms of depression.

## Results:

A total number of 115 women with preterm labor participated in the study. Most of the participants (95.7%) were under 30 years old and their mean age was  $29.2 \pm 3.75$ . Almost half of the mothers (53.9%) and 63.5% of fathers had a diploma or lower than diploma degree. The majority of the mothers (73.9%) were housewives. Nearly half of the mothers (45.2%) had only one child, 29.6% had 2 children and the rest 25.2% had three children. 59.1% of the participants had a vaginal delivery and the rest 40.9% had cesarean deliveries. More than half of the newborn babies (65.2%) were girls. 10.4% of the mothers had an unintended pregnancy. The gender of 7.8% of the infants was unwanted from the point of view of the child's father, and also 7.8% from the mother's point of view. Half of the mothers (52.2%) fed their children with breast milk. 27.8% had a history of abortion. 71.3% of the infants had experienced a medical problem in the first week after birth (Table 1).

The mean depression score was  $13.085 \pm 14.33$ . A higher score indicates a more severe level of depression. 58.3% of the women did not have depression (0-14), 33% of them had mild depression (31- 15%) and only 8.7% had moderate depression (32-47%). A severe level of depression was not observed in participating women. The results of the study showed that there is a significant relationship between the number of children and depression ( $p$ -value = 0.001) so that single-child mothers suffered from depression more than the others. Also, there is a significant relationship between the number of pregnancies, the abortion history, the type of delivery, the child's gender, unintended

pregnancy, child's unwanted gender from the father's and the mother's point of view, and type of child feeding and depression ( $p$ -value  $<0.05$ ). Mothers with the first pregnancy had experienced depression more than the other ones. Women with a history of abortion had a lower incidence of depression than those without a history of abortion. Depression in women with a vaginal delivery was higher than women with cesarean delivery. Results also showed that mothers who had delivered a girl baby experienced a higher level of depression than mothers with a boy. Also, the results indicated that the incidence of depression was the highest in the mothers who used hybrid milk to feed their babies.

Depression was higher in mothers aged 20 to 25 years than in mothers aged 26 to 35 years. The average depression in mothers

with postgraduate education was higher than other groups. The rate of depression in mothers was not significantly different according to the education of the wife, the rate of depression was higher in working women than housewives. Depression was also higher in women who had no history of miscarriage and had a normal delivery.

Depression was lower in women who had a son than in women who had a daughter.

The incidence of depression in cases of unwanted pregnancies was higher for parents. The prevalence of depression was higher in single women and mothers who fed their infants hybrid. The results of this study also showed that it was higher in the first delivery and the average incidence of depression was higher in women whose child had a medical problem at birth. (Table2).

**Table 1: Demographic characteristics of women with preterm labor in Jahrom city.**

Maternal demographic characteristics		N (%)	Maternal demographic characteristics		N (%)
<b>age</b>	>20	1 (9)	<b>Abortion history</b>	Yes	32 (27.8)
	21-25	72 (62.6)		No	83 (72.2)
	26-30	37 (32.2)	<b>Type of delivery</b>	Vaginal	68 (59.1)
	31-35	5 (4.3)		Cesarean	47 (40.9)
<b>level of education</b>	Lower than Diploma	10 (8.7)	<b>Child's gender</b>	Girl	75 (65.2)
	Diploma	52 (45.2)		Boy	40 (34.8)
	Advanced Diploma	16 (13.9)	<b>Unintended pregnancy</b>	Yes	12 (10.4)
	bachelor's degree and higher	37 (32.2)		No	103 (89.6)
<b>Spouse's level of education</b>	Lower than Diploma	14 (12.2)	<b>child's unwanted gender from father's point of view</b>	Yes	9 (7.8)
	Diploma	59 (51.3)		No	106 (92.2)
	Advanced Diploma	5 (4.3)	<b>child's unwanted gender from mother's point of view</b>	Yes	9 (7.8)
	bachelor's degree and higher	37 (32.2)		No	106 (92.2)
<b>Job</b>	Housewife	85 (73.9)	<b>Child's feeding</b>	Breast milk	60 (52.2)
	Employed	30 (26.1)		Milk powder	42 (36.5)
<b>Number of children</b>	1	52 (45.2)		Hybrid milk	13 (11.3)
	2	34 (29.6)	<b>Infant's medical problems</b>	Yes	82 (71.3)
	3	29 (25.2)		No	33 (28.7)
<b>Number of pregnancies</b>	1	52 (45.2)			
	2	24 (20.9)			
	3	39 (33.9)			

Table 2: The relationship between demographic characteristics and depression in women with preterm labor in Jahrom city

Maternal demographic characteristics		Depression	P-value	Maternal demographic characteristics		Depression	P-value
		Mean±SD				Mean±SD	
age	20-25	15.82±13.31	0.152	Abortion history	Yes	5.19±7.76	0.001
					No	17.87±13.04	
	26-30	12.49±12.24		Type of delivery	Vaginal	19.21±13.79	0.001
31-35	6.4±13.76	Cesarean	7.3±7.84				
level of education	Lower than Diploma	12.6±12.01	0.996	Child's gender	Girl	17.99±13.98	0.001
	Diploma	13.04±13.47			Boy	7.5±7.5	
	Advanced Diploma	20.75±13.07		Unintended pregnancy	Yes	15.66±13.19	0.001
	bachelor's degree and higher	13.86±12.49			No	3±2.09	
Spouse's level of education	Lower than Diploma	14.29±12.76	0.254	child's unwanted gender from father's point of view	Yes	15.56±12.91	0.001
	Diploma	14.34±13.44			No	0.00±0.00	
	Advanced Diploma	15.2±14.77		child's unwanted gender from mother's point of view	Yes	15.56±12.91	0.001
	bachelor's degree and higher	14.24±12.97			No	0.00±0.00	
Job	House wife	13.68±13.18	0.001	Child's feeding	Breast milk	17.1±11.07	0.001
	Employed	16.2±12.84			Milk powder	5.55±6.79	
Number of children	1	22.54±13.55	0.001		Hybrid milk	30±17.1	
	2	7.44±8.73		Infant's medical problems	Yes	14.77±12.08	
	3	7.72±6.69			No	13.27±15.47	
Number of pregnancies	1	22.54±13.55	0.001				
	2	6.63±7.69					
	3	8.15±7.9					

## Discussion:

The results of the present study about the prevalence of depression in women with preterm labor showed that 41.7% of women had mild to moderate levels of depression. Neshat Ramesh *et al.* [3] showed that the risk of preterm labor was higher in women with anxiety, stress and depression than other women [3]. Depression during pregnancy can lead to self-neglect, lack of appropriate prenatal care, lack of self-care, inadequate nutrition, smoking, excessive taking medication, low birth weight, and preterm delivery [1]. The first psychological sign of depression is a decrease in motivation and interest, which leads to reduced activity and efficiency, reduced life expectancy, reduced self-care, and a tendency to die in the person [14]. Baiami, quoted from McKay *et al.* (2001), reported that depressed and highly stressed pregnant women have a lower level of performance than the other women [2].

According to recent studies, it seems that women are more susceptible to depression during pregnancy than in the postpartum period [15]. There was a significant relationship between depression and the number of pregnancies, the number of children, the abortion history, the type of delivery, the child's gender, the unintended pregnancy, child's unwanted gender from the father's and the mother's point of view, and type of child nutrition. Mothers with the first pregnancy had experienced depression more than the other ones. Women with a history of abortion had a lower incidence of depression than those without a history of abortion. Depression in women with a vaginal delivery was higher than women with cesarean delivery. The prevalence of depression was more in the mothers with only one child than the others and mothers who had delivered a girl baby experienced a higher level of depression than the mothers with a boy. Also, the results showed that the incidence of depression was the highest in the mothers who used hybrid milk to feed their babies. Recent estimates project that, by 2050, rates of

depression will increase by 35% in adults and more than double in older adults <sup>[16]</sup>.

Neshat Ramesh *et al.* <sup>[3]</sup> described the factors affecting preterm labor as the mother's age, socioeconomic class, and the number of pregnancies <sup>[3]</sup>. In the studies, the major role of mothers' depression in the psychological development of the child has been discussed <sup>[17, 18]</sup>. In his study, Aulin stated that inadequate self-care during pregnancy can increase the risk of adverse outcomes such as preterm delivery <sup>[19]</sup>. It is also noted that the symptoms of postpartum depression are more in mothers with low socioeconomic status and inadequate social support <sup>[18]</sup>. Dissatisfaction with life and unintended pregnancy are contributing to the depression <sup>[18]</sup>. The most highlighted contributing factor of postpartum depression is dissatisfaction with the spouse <sup>[20]</sup>. Caesarean may cause negative emotional effects in some women such as the feeling of deprivation, sin, and failure in vaginal delivery, which leads to adaptive problems in the mother <sup>[21]</sup>. Adewuya *et al.* (2005) and Ukpong (2006) also mentioned cesarean delivery as a risk factor for postpartum depression <sup>[22,23]</sup>. Moreover, it has been shown that teaching, nursing, counseling, joking with patients, helping patients to achieve maximum activity, encouraging the use of socialization and relaxation techniques, improving the patients' spirituality and relationships with their family, friends and relatives, and inculcating a feeling of connectedness to a greater source are effective in increasing the patients' hope<sup>[24]</sup>.

## Conclusion:

The results of the present study indicated a high prevalence of mild depression in women with preterm labor in Jahrom city in 2018. The results also showed that there is a significant relationship between depression and the number of pregnancies, the number of children, the abortion history, the type of delivery, the child's gender, unintended pregnancy, child's unwanted gender from the father's and the mother's point of view, and type of child nutrition.

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