IJBS
10.30491/IJBS.2021.262639.1445
International Journal of Behavioral Sciences
Original Paper

Prevalence and Clinical Presentations of Postpartum Obsessive-Compulsive Disorder in Iranian Pregnant Women

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Submitted: 27 May 2021
Accepted: 12 July 2021

Int J Behav Sci. 2021; 15(2): 138-143

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Abstract

Introduction: Pregnancy, childbirth, and maternity are correlated with the heightened risk of the evolvement of postpartum obsessive-compulsive symptoms. This study aimed to inquire about the prevalence rate, clinical presentations, and relevant factors of postpartum Obsessive-Compulsive Symptoms (OCS).

Method: This cross-sectional study evaluated OCD in the postpartum period of women referred to the Imam Hospital in Sari, Mazandaran province, Iran. The sample population included 359 pregnant women who delivered their babies during the first half of 2018. The samples were taken using the convenience sampling method. Patients who scored 12 or higher in the Maudsley Obsessive-Compulsive Inventory completed the Yale-Browne Obsessive-Compulsive Scale self-report, and the Life Event Checklist were included in the study. Finally, data were analyzed using IBM SPSS version 24.

Results: The 359 mothers were in the range of 14 to 35 years old. Accordingly, 62.1% (223) were urban women while 37.9% (136) were rural, 20.6% (74) had preterm infants, 56.8% (204) term infants, and 22.3% (80) were post-term. Maudsley's test showed that 48.5% (174) of the mothers had a positive OCD result. The total scorein Yale-Brown was significant, and had a reverse correlation with the mother's residency ($t = -173$, $p = 0.02$) and significant correlation with the age of a pregnancy ($t = 269$, $p = 0.001$).

Conclusion: According to the results of the Maudsley test, women are at risk of OCD during the postpartum period. Actually, OCD affects the mother-baby relation, mother's anxiety, and depression and should be addressed during womens' postpartum clinical care.

Keywords: Clinical Presentations, Obsessive-Compulsive Disorder, Postpartum, Prevalence

Introduction

Obsessive-compulsive disorder (OCD) is characterized by obsession or compulsion, or both. The postpartum period constitutes the first few months after child delivery [1]. Adaptation to this period is complex, during which many mental disorders emerge. Studies report that the perinatal phase is correlated with the incidence of OCD/OCS and aggravation of preexistent OCD/OCS [2]. Furthermore, both pregnant and postpartum females are exposed to an increased risk of OCD than the general female population [3].

Postpartum OCD generates many disruptions in the mother and her family, but it is mostly undiagnosed. Some studies have shown that the incidence of postpartum OCD during the first six months after delivery was in the range of 6.1% to 27.9% [4, 5]. Also, Wenzel [6] found that at eight weeks postpartum, the rate of subclinical OCD was about 5.4%. However, the prevalence and clinical features of postpartum OCD/OCS have received limited

investigation [2]. In addition, as far as we know, no research has been carried out on the prevalence of obsession in the Iranian population.

Previous research reported that perinatal obsession in women is often composed of aggressive obsession-intrusive thoughts of intentionally or accidentally damaging the infant [7]. A review [4] revealed that the most typical obsession in postpartum females with OCD is aggression [8, 9]. This finding has not been confirmed by other studies.

The content of the obsessions is another important level of clinical manifestation. Some studies have revealed that aggressive obsessions primarily include thoughts of intentionally harming the infant [4, 10, 11]. Other studies focused on contamination obsessions as the most common in obsessive mothers [7, 12, 13]. However, the content of obsessions does not seem to be specific to postpartum-onset OCD. These research have less focused on compulsive symptoms in mothers distressed by postpartum OCD/OCS [14].

The risk factor of postpartum OCD/OCS is another issue that has seldom been addressed [14]. Studying 23 mothers with postpartum OCD/OCS, Neziroglu [15] reported that 12 (52.2%) experienced onset with the first baby, 8 (34.8%) with the second baby, and 3 (13.0) with the third baby. According to a few study reports, 50-80% of women with postpartum OCD had their first delivery [16]. Finally, Uguz [14] showed no significant differences between postpartum OCD/OCS and the number of gestations, live births, and demographic characteristics. Such inconsistencies in the literature are gaps that require further investigations.

In addition, postpartum OCD may harm the infant's growth; OCD and OCS without diagnosis and treatment can disrupt the bond between the mother and baby and potentially impact the attachment relationship between the parent and child. It also might have adverse effects on the newborn's cognitive-behavioral development [17, 18]. Regarding the presence of OCD as a phenomenon in pregnancy and postpartum periods; also, considering the significance of OCD symptoms in the newborn and mother's health and the family, the adverse side effects of its concealment call for an inquiry. Considering such studies have seldom been conducted because of the culture, religion, and special considerations in the Iranian society. To the best of our knowledge, this is the first study in postpartum OCD prevalence rates in the Iranian population.

This study aimed to ascertain the prevalence and clinical presentations of postpartum OCD in Iranian women.

Method

This study was a cross-sectional descriptive design research on mothers (after delivery) referred to Imam Khomeini Hospital in Sari during the first half of 2018. The data were extracted from the demographic information of mothers, including age, residence, gestational age, number of children, number of pregnancies, pregnancy complications, and phone numbers.

One month after delivery, a psychologist made a telephone conversation, and the Maudsley's questionnaire was completed. In this questionnaire, patients who scored 12 or higher based on diagnostic criteria were interviewed by a psychiatrist and filled out the Yale-Browne's obsessive-compulsive questionnaire and the Holmes questionnaire. Based on a previous study [7], the sample size was 35. The inclusion criteria included obtaining a written informed consent, Iranian nationality, first marriage, age between 14 to 35, and no mental illness or use of related drugs. The exclusion criteria included a history of mental disorders and major tension in the last six months (score above 150 in LEQ) [19]. After receiving the Code of Ethics approval from the Student Research Committee of the Mazandaran University of Medical Sciences (Approval Code IR.MAZUMS.REC.1395.2521), the study was conducted.

The tools used in this study are as follows:

Maudsley Obsessive-Compulsive Inventory (MOCI): This scale has been developed by Hodgson [1]. It is a self-report inventory with a true-false format and contains 30 dichotomous items. Thus, its total score can range from 0 to 30. The inventory has four subscales in the original version, including doubting (Alpha=0.7), slowness (Alpha=0.8), cleaning (Alpha=0.7), and checking (Alpha=0.7) [1]. Also, the scale has a good inter-correlations index [1]. Sternberger and Leonard [20] revealed that MOCI is valid in non-clinical samples. This scale was adopted and used in the Iranian population, and the results revealed sufficient psychometric indexes (test-retest reliability=0.98) [21].

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS): The Y-BOCS includes 10 items, on a 5-point Likert scale rating from 0 to 4, with higher total scores. Therefore, reflecting more severe OCD (internal consistency= 0.89) [22]. The test evaluates four types of compulsion and six types of obsession with adequate psychometric properties (alpha = 0.77; test-retest= 0.64) [23].

Life Events Questionnaire (LEQ): This scale is a 43-question self-report that lists usual life distresses, including the death of loved ones, unemployment, family conflicts, and critical dilemmas. Multiple studies have implemented the scale, which has shown good psychometric properties (test-retest reliability= 0.80, convergent validity with Fatigue-Inertia: r= 0.48) [24]. The internal consistency of the Persian version (Alpha=0.76) was in an acceptable range [25].

Data were analyzed using IBM SPSS software version 24, through which t-test, variance analysis for quantitative variables between groups, and Chi-square for qualitative variables have been exerted. Descriptive variables were depicted with percentages, and the significance level was considered $p < 0.05$.

Results

Demographic characteristics and history of diseases in the mothers under study based on the Maudsley test results have been presented in Table 1.

Maudsley's test showed that 48.5% (174) of the cases had a positive outcome for OCD. Mothers who had a positive Maudsley's test score had a mean age of 27.60 ±4.53,

while mothers with a negative score had a mean age of 27.38 ± 4.81. The average number of children in mothers with a positive result was 0.77 ± 0.71, and 0.74 ± 0.82 in mothers with negative scores, which were not statistically significant (P=0.657). However, the mean of pregnancies in the two positive and negative MOCI groups and the standard deviation were 1.80 ± 0.83 and 2. 06 ± 0. 99, respectively. The differences were statistically significant (P=0.007). In examining the Maudsley Inventory subscales, common symptoms were doubting in 73 patients (42%), washing in 59 patients (33. 9%), checking in 22 patients (12.6%), and slowness–repeat in 20 patients (11. 5%).

The t-test and one-way ANOVA analysis results for equality of means for the Yale-Brown scores based on the mothers' demographic characteristics are shown in Table 2. Furthermore, Levene's Test for Equality of Variances confirms the normality of variances in the Yale-Brown scores (F=0.07, Sig=.79).

The Mann-Whitney test was employed to assess the Yale-Brown questionnaire measures based on gestational age. The Yale-Brown questionnaire scores based on the history of diseases are given in Table 3.

The Yale-Brown questionnaire examined the correlation between demographic variables and scores obtained from mothers using the Spearman test, shown in Table 4.

Table 1. Demographic Characteristics and History of Diseases in Mothers

Variable		Has OCD	Hasn't OCD	Sig.
		Frequency (%)	Frequency (%)	
Location	Rural	73(42.0)	63(34.1)	0.123
	Urban	101(58.0)	122(65.9)	
Pregnancy	Preterm	36(20.7)	38(20.5)	0.001**
	Term	113(64.9)	91(49.2)	
	Post term	25(14.4)	56(30.3)	
History of disease	No disease	110(63.2)	119(64.3)	0.014*
	Gestational Diabetes	23(13.2)	14(7.6)	
	Pregnancy Hypertension	16(9.2)	10(5.4)	
	Thyroid disorders	1(0.6)	10(5.4)	
	Other Diseases	21(121)	30(16.2)	
	Diabetes and blood pressure	0(0.0)	2(1.1)	
	Diabetes and others	1(0.6)	0(0.0)	
	Blood pressure and other	2(1.1)	0(0.0)	
Type of delivery	Normal	46(26.4)	69(37.3)	0.028*
	Cesarean section	128(73.6)	116(62.7)	

*p<.05.
**p<.01.

Table 2. Compulsory Measures Score Based on Demographic Characteristics of Mothers

Variable		Total scores obsessions	Sig.	Sum of scores of compulsion	Sig.
		Mean (Standard deviation)		Mean (Standard deviation)	
Location	rural	9.45(3.96)	0.042	6.93(4.28)	0.038*
	Urban	8.34(4.07)		5.45(4.50)	
Type of delivery	normal	8.26(3.62)	0.206	6.65(4.44)	0.348
	Cesarean section	9.00(4.19)		5.86(4.46)	
Pregnancy	Preterm	7.47(4.00)	0.031	4.31(4.06)	0.004**
	term	8.91(4.05)		6.16(4.47)	
	Post term	10.24(3.65)		8.20(4.07)	
Pregnancy	One	9.03(4.10)	0.495	6.33(4.16)	0.242
	Two	8.57(4.40)		5.72(4.70)	
	Three	9.27(3.34)		5.41(4.90)	
	Four	7.63(1.19)		8.63(2.88)	
number of children	Zero	9.09(3.95)	0.826	6.18(4.15)	0.149
	One	8.53(4.39)		5.78(4.0)	
	Two	8.83(335)		5.17(4. 61)	
	Three	8.71(2.14)		9.57(1.81)	
History of disease	No disease	8.81(3.71)	0.563	6.35(4. 43)	0.001**
	Gestational Diabetes	9.39(4.80)		7.09(5.04)	
	Pregnancy hypertension	8.00(5.37)		1.75(1.34)	
	Thyroid disorders	9.00(0.00)		9.00(0.00)	
	Other Diseases	8.76(4.28)		7.14(3.82)	

*p<.05.
**p<.01.

Table 3. Yale-Brown Scores among Mothers Based on Disease History

Variables	History of disease							Sig.
	No disease (n=110)	Gestational diabetes (n=23)	Gestational hypertension (n=16)	Thyroid disorders (n=1)	Other diseases (n=21)	Diabetes and other (n=1)	Blood pressure and other (n=2)	
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	
Time spent on obsessive thoughts	1.47(0.80)	1.65(0.88)	1.38(0.50)	2.0(0.00)	1.57(0.93)	1.0(0.0)	1.0(0.0)	0.801
Interference obsessive thoughts	1.25(1.05)	1.52(1.12)	1.69(1.35)	1.0(0.00)	1.19(1.12)	0.0(0.0)	3.0(0.0)	0.158
Discomfort caused by obsessive thoughts	1.80(1.07)	2.35(1.30)	1.31(1.40)	2.0(0.00)	1.76(1.18)	1.0(0.0)	2.0(0.0)	0.201
Resistance to obsessive thoughts	2.17(1.21)	2.00(1.38)	2.00(1.21)	2.0(0.00)	1.81(1.03)	2.0(0.0)	2.0(0.0)	0.930
obsessive thoughts control	2.04(1.27)	1.87(1.25)	1.81(1.28)	2.0(0.00)	1.95(1.07)	2.0(0.0)	2.0(0.0)	0.994
Time spent on practical obsession	1.04(0.77)	1.22(0.52)	0.63(0.50)	1.0(0.00)	1.10(0.54)	2.0(0.0)	1.0(0.0)	0.160
Interference of practical Obsession	0.68(0.86)	1.00(1.17)	0.19(0.40)	2.0(0.00)	0.62(0.92)	0.0(0.0)	0.0(0.0)	0.065
Discomfort caused by practical obsession	0.86(1.02)	1.17(1.30)	0.44(0.51)	2.0(0.00)	1.62(1.07)	1.0(0.0)	0.0(0.0)	0.010**
Resistance to practical obsession	1.83(1.50)	1.87(1.66)	0.19(0.40)	2.0(0.00)	2.00(0.95)	2.0(0.0)	0.0(0.0)	0.001**
Control of practical obsession	1.95(1.58)	1.83(1.64)	0.31(0.60)	2.0(0.00)	1.90(1.04)	1.0(0.0)	0.0(0.0)	0.003**
Total scores obsessive thoughts	8.81(3.71)	9.39(4.80)	8.00(5.37)	9.0(0.00)	8.76(4.28)	6.0(0.0)	10.0(0.0)	0.942
Sum of scores of	6.35(4.43)	7.09(5.04)	1.75(1.34)	9.0(0.00)	7.14(3.82)	6.0(0.0)	1.0(0.0)	0.001**
Total score	15.15(7.33)	16.48(8.64)	9.75(5.04)	18.0(0.00)	15.9(7.56)	12.0(0.0)	11.0(0.0)	0.119

*p<.05. M= Mean, SD= Standard Deviation
**p<.01.

Table 4. Correlation between Demographic Variables and Severity of Obsessive Compulsive Disorder/Symptom

Variable	Total obsessive thought		Sum of scores of compulsion		Total	
	CC	Sig.	CC	Sig.	CC	Sig.
Age	-0.05	0.44	-0.08	0.25	-0.07	0.30
Location	-0.15	0.04	-0.15	0.04	-0.17	0.02*
Pregnancy gestational	0.20	0.01	0.25	0.001	0.26	0.001**
Pregnancy	-0.04	0.58	-0.02	0.71	-0.03	0.68
Number of children	-0.05	0.49	-0.003	0.97	-0.02	0.71
Type of delivery	0.09	0.21	-0.07	0.35	0.004	0.96
Total obsessive thought	1.000	-	0.54	0.001	0.85	0.001**
Sum of scores of	0.54	0.001	1.000	-	0.85	0.001**

*p<.05. CC= Correlation Coefficient
**p<.01.

Discussion

This study showed the occurrences of OCD in about half of the mothers postpartum. These findings are consistent with other studies [10]. The presence of physiological changes during pregnancy and at birth, psychological and interpersonal stresses due to becoming a mother, and guardianship [9, 26] can justify this difference. According to Dizavandi [27], the prevalence of OCD in pre-marriage, pregnancy, and postpartum periods in women referred to Mashhad's health centers was the lowest prevalence rate of 4% in non-pregnant women that is a clear difference between the two other groups. Marriage, pregnancy period, and delivery are important and influential events in a person's life. On the other hand, many people with OCD experience the onset of symptoms associated with significant life events such as marriage and childbirth because marriage and reproduction are the most critical decisions in life and are always accompanied by anxiety [23]).

Uguz et al. [14] reported the prevalence of OCD during pregnancy in the third trimester and determined the severity and type of obsessive-compulsive thoughts based on the number of pregnancies. They established that the prevalence of OCD in pregnant women was 3.5% in the third trimester of pregnancy. Dizavandi [27] reported that the prevalence of OCD in three trimesters was 13.5%, 19.6%, and 21.4%, respectively. A study on mental disorders during pregnancy showed that the prevalence of OCD was 35.6%. The type of OCD disorder [28] in the first study was based on specific psychiatric interviews, while other studies utilized questionnaires and symptoms. The different approaches to the problem could have led to a statistically significant difference, which can be another reason why the incidence of OCD in this study is also higher.

Sichel's [29] study on women who experienced OCD in

their postpartum period indicated that postpartum leads to obsessive exacerbation. In our study, mothers had different numbers of pregnancies, the mean of which in mothers with positive Maudsley test was significantly lower than mothers with negative results. These results are consistent with the study by Buttolph that showed that the prevalence of OCD in mothers in their first pregnancy compared to those in their second pregnancy was 22% and 7.5%, respectively. This indicates that the postpartum period is an emergency and high-risk condition for the onset of OCD, and the prevalence of OCD is more prevalent in the first pregnancy. In subsequent deliveries, OCD prevalence is lower because of the mother's adaptation to the condition.

The predicted relationship between the onset or exacerbation of OCD symptoms during pregnancy and the exacerbation of OCD symptoms in premenstrual periods has been confirmed, suggesting a subtype of OCD associated with hormonal changes in women. Women starting with OCD related to pregnancy or exacerbation of OCD during the prenatal period are more likely to exacerbate symptoms in premenstrual times when compared to other women who started a pregnancy-unrelated OCD [9]. There is a subgroup of women with different sensitivity to pregnancy hormones and the natural conditions of pregnancy that activate or exacerbate OCD. The results of this study are consistent with other studies, which indicate changes in OCD during the prenatal period [26, 30].

The OCD symptoms in this study were related to doubt obsession and hesitation (73 patients, 42 %), washing compulsion (59 patients, 33. 9%), reviewing obsession (22 patients, 12. 6%), and repeating obsession (20 patients, 11.5%). Forray et al. [31] examined the onset and exacerbation of OCD during pregnancy and postpartum. According to their study, compulsive symptoms related to pregnancy and childbirth were washing (58.4%), reviewing (49.5%), and repeating (31.2%), respectively. Also, in a study by Jaisoorya (8), obsession symptoms in adults were washing (50%), doubt (32%), and repeat obsession (28%), which is almost consistent with the results of the present study, which could be due to the effects of pregnancy on clinical and obsessive-compulsive symptoms patients. However, studies conducted on pregnant women are more consistent with the results of the present study. We did not find a similar study comparable with all the findings of the current study. In our study, there was a significant difference between the gestational age of mothers with and without OCD, the history of accompanying illnesses, type of delivery, and various measurements of Maudsley's test among mothers with different demographic characteristics, such as their place of residence and type of delivery. Also, there was a significant correlation between the scores obtained from Maudsley's questionnaire and the location of residence and gestational age.

Denoting the limitations of the present study, it was not possible to examine mothers in long term and investigate the disorder in the patients due to the duration of the study. It is suggested that all healthcare providers assign special attention to the diagnosis and early treatment of postpartum OCD during pregnancy and after delivery. Also, future studies of larger sample sizes and trials with female controls are suggested to determine the effects of the disorder on neonates. On the other hand, because of the complications of other psychiatric disorders with OCD, this issue can be considered for further studies.

The findings indicate that women are at risk of OCD during the postpartum period. The OCD affects mother-baby relations, mother's anxiety, and depression. Therefore, healthcare providers should plan for women's postpartum clinical care and mother and baby postpartum control. In addition, it can be mentioned that informing and creating the context for OCD during pregnancy and postpartum is very important because it has a significant effect on the mental health of the mother and infant.

Conflict of Interest

The authors declare no conflicts of interest.

Ethical Approval

The present study was approved by the Research Ethics Committee of the Mazandaran University of Medical Sciences with the ID code of IR.MAZUMS.REC.1395.2521. In order to observe the ethical principles of research and to respect the rights of the participants, the research aims and its process were explained to all the participants. The option of leaving the study at any point was also introduced. They were ensured that their information will always be confidential and the collected data will be published without revealing any personal information.

Acknowledgment

The authors would like to express their gratitude to the participants of this research. Also, many thanks to the Mazandaran University of Medical Sciences for their financial support.

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