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ORIGINAL ARTICLE

Postpartum Depression During the Fourth Wave of the Pandemic and Related Factors

Pandeminin Dördüncü Dalgasında Postpartum Depresyon ve İlişkili Faktörler

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ABSTRACT

Aims: Many studies have shown the effects of the COVID-19 pandemic on postpartum depression (PPD) as a stressor. In this study, we aimed to examine the frequency of PPD and the associated sociodemographic–obstetric factors in mothers who gave birth or were in the third trimester during the fourth wave of the pandemic.
Methods: This cross-sectional study included 211 women who underwent a postpartum checkup between December 2021 and August 2022. All women had given birth or spent the last part of their pregnancy in the fourth wave of the pandemic. PPD was measured using the Edinburgh Postnatal Depression Scale (EPDS). In addition, the authors assessed sociodemographic and obstetric characteristics with a form.
Results: The prevalence of PPD was 22.7% (EPDS cut-off score≥13). EPDS scores were higher in those with inadequate social support, fear of childbirth, or having a past psychiatric illness.
Conclusions: In the late pandemic, the negative effect on PPD does not seem to continue. However, PPD remains a significant public health problem in Turkiye. In addition, some sociodemographic characteristics associated with PPD continue to pose risks.

Keywords: COVID-19, Depression, Obstetrics, Pandemics, Postpartum

ÖZ

Giris: Birçok çalışma, COVID-19 pandemisinin postpartum depresyon (PPD) üzerindeki etkilerini bir stres etkeni olarak göstermiştir. Bu çalışmada, pandeminin dördüncü dalgasında doğum yapmış veya son gebelik döneminde olan annelerde PPD sıklığını ve ilişkili sosyodemografik-obstetrik faktörleri incelemeyi amaçladık.
Gereç ve Yöntemler: Bu kesitsel çalışmaya, Aralık 2021 ile Ağustos 2022 arasında doğum sonrası kontrol muayenesi için başvuran 211 kadın dahil edildi. Tüm kadınlar, pandeminin dördüncü dalgasında doğum yapmış veya hamileliklerinin son bölümünü geçirmişti. PPD, Edinburgh Doğum Sonrası Depresyon Ölçeği (EDDÖ) kullanılarak ölçüldü. Ayrıca katılımcıların sosyodemografik ve obstetrik özellikleri bir form ile değerlendirildi.
Bulgular: PPD prevalansı %22,7 idi (EPDÖ kesme puanı≥13). Sosyal desteği yetersiz, doğum korkusu olan veya geçmişte psikiyatrik hastalığı olanlarda EPDS puanları daha yüksekti.
Sonuçlar: Pandeminin geç döneminde, pandeminin PPD üzerindeki olumsuz etkisinin devam etmediği söylenebilir. Ancak PPD, Türkiye'de önemli bir halk sağlığı sorunu olmaya devam etmektedir. Ayrıca PPD ile ilişkili bazı sosyodemografik özellikler risk oluşturmaya devam etmektedir.

Anahtar kelimeler: COVID19, depresyon, pandemi, doğum sonrası

Introduction

The Coronavirus Disease-2019 (COVID-19) virus caused a pandemic and has affected many people since its emergence. By the end of two years, nearly 450 million people had been infected, and nearly 6.5 million had died due to the pandemic (1). To combat the pandemic, which caused many deaths, governments had to resort to methods such as lockdowns and quarantine in the early stages. Due to the pandemic, the biological effects of the virus, or the measures taken, there has been an increase in the cases of depression, anxiety, loneliness, fear, domestic violence, and suicide (2,3). The pandemic followed in waves and had long-term effects. At the end of 2021 and the beginning of 2022, Turkiye, along with many countries in the world, experienced the fourth wave of the pandemic (4). The pandemic significantly impacted the psychological state of some vulnerable groups, especially women during the perinatal period (5). Numerous studies have been conducted on postpartum depression (PPD) in mothers in the early stages of the pandemic. PPD is the most common postpartum illness among women, and it commences at any time in the first year after delivery. PPD is a significant disorder that affects the mother, father and infant, and it can lead to suicide and infanticide (6). The results of a study conducted with mothers who gave birth preterm showed that anxiety and social support were influential factors in postpartum depression (7). As a stress factor, the pandemic was expected to impact PPD. A meta-analysis comparing PPD rates pre-pandemic and during the pandemic period shows that the frequency of PPD increased during the pandemic period. However, it reveals a difference between regions; while there is an increase in Asian societies, no increase can be shown in European and

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North American studies (8). Other studies from various parts of the world, including Turkiye, have revealed a relationship between the pandemic and PPD. (9,10). Both in the pre-pandemic period and during the pandemic, PPD rates in Turkiye were above the world average and continued to be a significant public health problem (11–13). Few studies have shown the effects of many changing factors in the late stages of the pandemic, such as increased vaccination rates, removal of restrictions and mutations in the virus on PPD (14).

The first aim of the study was to determine the frequency of PPD in the non-clinical Turkish population whose delivery or the third trimester was during the fourth wave of the pandemic. The second aim was to reveal the sociodemographic and obstetric risk factors associated with PPD symptoms.

Methods

Study design and participants

The study was conducted in the obstetrics department of a tertiary center in İstanbul, the most crowded city in Turkiye. Ethics committee approval and necessary permissions were obtained from the Başakşehir Çam and Sakura City Hospital (March 13, 2023. 2023-105). The data were evaluated retrospectively.

The survey was conducted between December 2021 and August 2022, including the fourth pandemic wave (4). The women who gave birth were given the sociodemographic form and the Edinburgh Postnatal Depression Scale for screening after their informed consent forms were obtained. They were in the first year postpartum and over 18 years old. Their babies were still alive and healthy. Women diagnosed with mental retardation, autism spectrum disorder, schizophrenia, schizoaffective disorder, bipolar disorder, and psychiatric and general medical condition disorders that would prevent them from conducting the interview, such as delirium or other confusional disorder states, were excluded from the study. A psychologist conducted the interviews, filling the scales under the psychologist's supervision. We made the differential diagnosis between postpartum blues and postpartum depression with EPDS score (in previous studies, the cut-off score for postpartum sadness was evaluated as 10.(15))

We interviewed 261 women who came for routine obstetrics. Five were excluded because they did not meet the criteria, and 45 completed the forms incompetently. Therefore, 211 mothers were included in the study.

Measurement Tools

Sociodemographic Form: This form was developed by the authors and consisted of information about age, number of children, knowledge of psychiatric or other disorders, pregnancy and birth, and social support.

The Edinburgh Postnatal Depression Scale (EPDS) is a self-evaluation scale. It has 10 items, and each item can have 0–3 points, for a total score of 0–30 points. The higher the score, the more severe the postpartum depressive symptoms (16). The cutoff point of 13 or higher scores is considered as the potential risk for the presence of PPD (17). Engindeniz conducted the Turkish validity and reliability study. The Cronbach Alpha internal consistency coefficient of the Turkish version of the scale was 0.94 and the test-retest reliability was r = 0.86 (18).

Statistical analysis

For descriptive statistics and psychometric analysis, we used Jamovi version 2.3.21.0. In descriptive statistics, numerical data are mean ± standard deviation and minimum–maximum value; categorical data are expressed as numbers and percentages. The skewness and kurtosis tests evaluated the conformity of continuous variables to a normal distribution. An independent group t-test was used to compare the scale scores of the participants by grouping them according to categorical variables. A correlation test was used to investigate the relationship between continuous variables. The chi-square test was used to evaluate discrete data. Logistic regression was applied to examine factors predicting PPD.

Results

The mean age of the participants was 28.70 (SD = 5.74) years. When mothers attended the meeting, the median age of the babies was 15 (min = 4, max = 330) days. Sociodemographic and obstetric variables are presented in Table 1. Those with an EPDS questionnaire score ≥ 13 were considered depressed, and the PPD rate was 22.7% (n = 48).

We also evaluated the PPD dimensionally with the total EPDS scores. We compared EPDS scores according to educational status, employment status, marital status, psychiatric disorder status, delivery method, smoking, alcohol use, pregnancy intention, social support for caregiving, and focusing problems. EPDS scores were higher for those with worse social support (M = 15.7, SD = 6.16) than for those with better social support [M = 7.11, SD = 5.34; t(209) = 5.92, p < .001]. The EPDS scores of mothers who had a fear of childbirth (M = 8.42, SD = 5.77) were higher than those who did not [M = 6.55, SD = 5.84; t(206) = 2.27, p = .024]. Also, mothers with a previous psychiatric history (M = 9.40, SD = 6.28) had higher EPDS scores [M = 7.22, SD = 5.57; t(206) = 2.34, p = .020], which means more depression (Table 2).

We applied logistic regression to present the predictors of factors associated with or may impact PPD. The model in which we included the parameters of number of children, active psychiatric disorder, psychiatric disorder history, breastfeeding status, fear of childbirth, and social support were statistically significant (R2 = 0.09, p = .002). Of these factors, only the predictive effect of social support on PPD was statistically significant (β = –0.148, p < .001). According to this result, the probability of PPD in mothers who perceive social support as poor is 9.32 times higher than in those who perceive social support as good (OR = 9.32, 95% CI: 2.69 to 32.70). Logistic regression results are presented in Table 3.

Table 1. Socio-demographic and economic profiles of the respondents.

Age (mean/ SD)	28.7	5.74
Number of children (median/IQR)	2	1-2
Time after birth (mean/ SD)	23.2	36.1
Education (n/ %)		
No education	20	9.7
Elementary school	75	36.4
High school	68	33
Bachelor's degree	43	20.9
Delivery method (n/ %)		
Vaginal delivery	67	32.1
C-section	142	67.9
Psychiatric disorder history (n/ %)		
No	158	76
Yes	50	24
Pregnancy plan (n/ %)		
Planned/ Voluntary	145	70.4
Unplanned/ Voluntary	58	28.2
Unplanned/ Nonvoluntary	3	1.5
Breast-feeding (n/ %)		
No	42	20.6
Yes	162	79.4
Social support (n/ %)		
No	15	7.1
Yes	196	92.9
Fear of childbirth (n/ %)		
No	79	38.2
Yes	128	61.8

Abbreviations: SD, standard deviation; IQR, interquartile range.

Table 2. Social and obstetric factors associated with PPD

	M (SD)	t	df	p
Social support				
No	15.7 (6.16)	-5.92	209	<.001
Yes	7.11 (5.34)			
Fear of childbirth				
No	6.39 (5.70)	2.47	205	.014
Yes	8.42 (5.77)			
Psychiatric disorder history				
No	7.22 (5.57)	2.34	206	.020
Yes	9.40 (6.28)			

Table 3. Factors associated with PPD symptoms (scores ≥13) (n=211)

Risk factor	OR	95% CI	p
Number of children	1.09	0.75- 1.57	0.635
Active psychiatric disorder	0.26	0.02- 4.61	0.363
Psychiatric disorder history	0.50	0.22- 1.09	0.082
Breastfeeding	1.51	0.65- 3.54	0.338
Fear of childbirth	1.01	0.48- 2.15	0.968
Social support	9.39	2.69- 32.70	< 0.001

Abbreviations: PPD, postpartum depression; OR, odds ratio.

Discussion

The global prevalence of PPD among healthy mothers was 17%, according to a meta-analysis conducted in 2018 (19). Two meta-analyses were conducted in the pre-pandemic period in Turkiye, and they found PPD rates of 24% and 23.8%, respectively (11,13). Most studies have indicated the negative impact of the pandemic on PPD rates (20,21). However, some studies reported the same or decreased PPD rates, including Turkiye (22,23).

In our study, the PPD rate was found as 22.7%. Although this rate is consistent with the pre-pandemic rates of the region, it contradicts these conclusions based on the knowledge that the pandemic has had a deteriorating impact on PPD, as most studies have shown. Furthermore, our study was conducted in the fourth wave of the pandemic, when the pandemic's effect on social and personal life gradually ceased, and the pandemic bans generally ended. Thus, the harmful effects of the pandemic on PPD disappeared in the fourth wave.

EPDS scores were higher in mothers with low perceived social support (M = 15.7 vs. 7.11, p < .001), and according to the regression analysis, among the parameters examined, social support is the only factor that predicts PPD, as expected. Those with the perception of insufficient social support had an 9.32 times higher risk of PPD than those without (OR, 9.32; 95% CI, 2.69 to 32.70). A sufficient number of studies support our results (24–26). Studies have shown that little or no social support is a significant risk factor for depression and stress in the postpartum period. On the other hand, social support, especially from the spouse, is a significant protective factor against PPD (27). Poor social support may play a substantial role in PPD because of the restrictions of the pandemic. Social support has been described as a three-dimensional construct consisting of emotional support (concern, comfort and encouragement), instrumental support (money, time and tangible assistance), and informational support where advice, education and knowledge sharing takes place (28). However, we could not evaluate perceived social support in all its dimensions, and we measured it categorically. Due to its importance in the development of PPD, the effects of social support should be examined in all its dimensions. Mothers should be supported in the necessary social dimensions.

Mothers fearing childbirth had higher EPDS scores in our study (M = 8.42 vs. 6.39, p = .0014). This is congruent with previous studies. According to Räisänen et al., fear of childbirth is a solid predisposing factor for PPD (29). Also, PPD is related to an increased risk of adverse obstetric outcomes, such as maternal requests for caesarean delivery, preterm birth and prolonged labour (30). Therefore, informing, encouraging and supporting expectant mothers about childbirth should not be overlooked. In addition, anxiety predisposition may be a mediator in the relationship between fear of childbirth and PPD. A study revealed a correlation between fear of childbirth and anxiety sensitivity (31). This topic is worthy of further investigation.

A recent large cohort study showed that many previous psychiatric disorders, especially depression, independently increased the risk for PPD (32). Our study confirmed this result. However, our participants avoided sharing the names of their psychiatric disorders. Therefore, we could not evaluate disorders separately. Either way, this result points to the importance of mothers who have previously experienced a psychiatric disorder receiving psychiatric support

during pregnancy and postpartum periods.

Our study has some limitations. First, since we assessed with self-report scales and the study was cross-sectional, the results are subjective and do not allow long-term inferences. Second, although we evaluated the participants during the late pandemic, we did not ask about the subjects' COVID-19 infection history or fear of the pandemic. Third, in our center, we did not collect data on the frequency of PPD during the initial pandemic period. So, this undermines the value of our results comparing the onset and late stages of the pandemic as a limitation.

In conclusion, the pandemic has negatively impacted PPD as an essential stressor factor. However, our study shows that this negative effect did not continue in the later stages of the pandemic. Therefore, many factors in this process may have influenced this change. Further follow-up studies will be helpful both on the mental state of mothers who give birth in the postpartum period and on the continuation of the effect of the pandemic as a stressor over time.

Ethics

Ethics Committee Approval: Ethics approval and consent to participate The Başakşehir Çam and Sakura City Hospital Clinic Research Ethics Committee reviewed and approved the original study and revised for use in the current study (2023-105). All methods were performed in accordance with the ethical standards presented in the 1964 Declaration of Helsinki and its later amendments. All participants provided written informed consent through an online process.

Informed Consent: Informed consent was obtained from each subject.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Furkan Bahadır Alptekin wrote the initial manuscript draft and conducted the statistical analyses. Oya Güçlü supported the interpretation of the results. Furkan Bahadır Alptekin spent time on the theoretical concepts. Eylül Sucularlı conducted the data collection and management. The authors have read and approved the final manuscript.

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