Prevalence of Postpartum Depression and Anxiety Among Women Who Got Infected With COVID-19 During Pregnancy

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How to Cite This Article

ORIGINAL ARTICLE

Prevalence of Postpartum Depression and Anxiety Among Women Who Got Infected with Coronavirus Disease 2019 During Pregnancy

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Abstract

Background: Globally, mental health has been severely impacted by the coronavirus disease 2019 (COVID-19) pandemic. Recent research has linked the coronavirus 2 severe acute respiratory syndrome virus's transmission to anxiety and depressive symptoms, which are most common in postpartum women.

Aim: To detect prevalence of postpartum depression and anxiety among women who got infected with COVID-19 during their pregnancy period.

Patients and methods: This observational prospective study was conducted at psychiatry, pulmonology, gynecology, and obstetric clinics in addition to isolation wards at Al-Azhar University hospitals in the period from beginning of January 2022 for 6 months. Thirty-five postpartum women infected with COVID-19 virus while pregnant were recruited during first 4 weeks after delivery. Each woman was screened by Edinburgh Postnatal Depression Scale and Perinatal Anxiety Screening Scale. Positive women were interviewed to confirm the diagnosis. Negative scales and unconfirmed-diagnosis women were screened again using the same scales 1, 3, and 6 months following the first screen and finally the prevalence was detected.

Results: In the current study, the mean age was 25.31 ± 5.12 years. Only 19 (54 %) women were diagnosed to have postpartum depression with anxiety symptoms (with positive scales and confirmed-diagnosis clinical interview), while 16 (46 %) were not diagnosed (negative-scales + unconfirmed-diagnosis clinical interview). Follow up at 1, 3, and 6 months revealed no additional diagnosed women. Prevalence was 54 % among all participants.

Conclusion: Maternal postpartum depression and anxiety in our study are at an elevated level during the COVID-19 pandemic.

Keywords: Anxiety, Coronavirus disease 2019, Depression, Edinburgh postnatal depression scale, Perinatal anxiety screening scale, Postpartum, Pregnancy

1. Introduction

In December 2019, China's Wuhan became the epicenter of the coronavirus disease's 2019 (COVID-19) breakout, that is brought on by coronavirus 2 severe acute respiratory syndrome (SARS-CoV-2) [1].

Anxiety, depression, fear, and sleep difficulties are among the common mental health issues caused by rapid COVID-19 transmission, high mortality rates in at-risk groups, lack of efficient treatments and vaccines, and widespread quarantine measures [2].

According to previous studies on the impact of lockdowns on psychological and mental health, psychological symptoms of distress were very common. Longer quarantine periods, concerns about infection, frustration, boredom, insufficient resources, incomplete information, monetary loss, and stigma are some of these stressors [3].

For high-risk populations, such as pregnant women, lockdown can have terrible psychological and social consequences [4] the prevalence of mental health issues among postpartum women who caught the COVID-19 while pregnant is not well understood. Thus, the present study aimed to detect prevalence of postpartum depression and anxiety among such women.

2. Patients and methods

This observational prospective study was conducted at psychiatry, pulmonology, gynecology, and obstetric clinics in addition to isolation wards at Al-Azhar University hospitals in the period from beginning of January 2022 for 6 months. Approval was performed by the Ethics Committee of Faculty of Medicine at Al-Azhar University. Written informed consents were obtained from study participants before enrollment. Thirty-five postpartum women infected with COVID-19 while pregnant were recruited during first 4 weeks after delivery.

2.1. Inclusion criteria

We included postpartum women aged 18 years or more, infected with COVID-19 during their pregnancy period.

2.2. Exclusion criteria

We excluded women aborted after COVID-19 to avoid overlapping with grief that usually occurs after abortion, women with history of previous psychiatric disorder before being infected with COVID-19, and women with medical or neurological disease that may cause depression or anxiety.

The recruited women were screened by Edinburgh Postnatal Depression Scale (EPDS) and Perinatal Anxiety Screening Scale (PASS). Positive women were interviewed to confirm the diagnosis. Negative scales and unconfirmed-diagnosis women were screened again using the same scales 1, 3, and 6 months following the first screen and finally the prevalence was detected.

2.3. Outcome measures

The EPDS was used to assess postpartum depression [5]. The EPDS is a 10-item self-report questionnaire used to test for depression symptoms in the postnatal period. Scores range from 0 to 30 [6].

A score of more than or equal to 13 on the EPDS was defined to be postpartum depression.

The PASS [7,8] is a self-rating measure designed to screen for anxiety disorders throughout the entire perinatal period. It has a four-factor structure, consisting of: (a) acute anxiety and adjustment, (b) general worry and specific fears, (c) perfectionism, control, and trauma, and (d) social anxiety. Postpartum anxiety was defined as a PASS score of more than or equal to 26.

2.4. Statistical analysis

SPSS (Statistical Package for the Social Science) program, version 25.0 (IBM Inc., Chicago, Illinois, USA), Microsoft Office Excel 2016 software were used to calculate the statistical significance.

We used Kolmogorov–Smirnov test to validate normal distribution of data. Descriptive statistics were done for all studied parameters. Percentages represented qualitative data. Range, median, mean ± SD represented quantitative parametric data. Difference between qualitative variables was calculated using χ^2 test. Difference between parametric quantitative variables was calculated using independent t-test. The obtained findings were evaluated at 5 % significance level.

3. Results

In the current study, the mean age was 25.31 ± 5.12 years. Twenty one (60 %) participants were housewife, 12 (34 %) were office worker two (6 %) were manual worker, 22 (63 %) were rural residents while 13 (37 %) were urban residents. The mean gravidity was 2.74 ± 1.04 while the mean parity was 2.51 ± 0.98 (Table 1).

Table 1. Demographic characteristics among the study population.

Variables	Study population (N = 35)
Age (years)	
Mean ± SD	25.31 ± 5.12
Median (IQR)	24 (21.5–28.5)
Range (minimum–maximum)	20 (18–38)
Occupation [n (%)]	
Housewife	21 (60)
Office work	12 (34)
Manual worker	2 (6)
Residence [n (%)]	
Rural	22 (63)
Urban	13 (37)
Gravidity	
Mean ± SD	2.74 ± 1.04
Median (IQR)	3 (2–3)
Range (minimum–maximum)	4 (1–5)
Parity	
Mean ± SD	2.51 ± 0.98
Median (IQR)	2 (2–3)
Range (minimum–maximum)	4 (1–5)

IQR, interquartile range.

EPDS full scale in the study population ranged from 3 to 30 with mean ± SD = 16.6 ± 8.36. The PASS full scale in the study population ranged from 13 to 90 with mean ± SD = 57.43 ± 25.55 (Table 2).

Only 19 (54 %) women were diagnosed to have postpartum depression with anxiety symptoms (with positive scales and confirmed-diagnosis clinical interview), while 16 (46 %) were not diagnosed (negative scales + unconfirmed-diagnosis clinical interview) (Table 3).

The mean age in diagnosed group was 26.58 ± 5.06 years, while in nondiagnosed group, the mean age was 23.81 ± 4.93 with no statistically significant difference between both groups regarding age, residence, occupation, gravidity, and parity ($P > 0.05$) (Table 4).

Follow up of negative scales and unconfirmed-diagnosis women at 1, 3, and 6 months following the first screen using the same scales revealed no additional diagnosed women and finally the prevalence was still 54 % among all participants (Tables 5 and 6).

4. Discussion

Globally, mental health has been severely impacted by the COVID-19 pandemic. Recent

Table 2. Edinburgh Postnatal Depression Scale and Perinatal Anxiety Screening Scale full scale among the study population.

Variables	Study population (N = 35)
EPDS full scale	
Mean ± SD	16.6 ± 8.36
Median (IQR)	20 (9−23)
Range (minimum−maximum)	27 (3−30)
PASS full scale	
Mean ± SD	57.43 ± 25.55
Median (IQR)	69 (31.5−79)
Range (minimum−maximum)	77 (13−90)

EPDS, Edinburgh Postnatal Depression Scale; IQR, interquartile range; PASS, Perinatal Anxiety Screening Scale.

Table 3. Diagnosis among the study population.

	Diagnosis [n (%)]	
	Postpartum depression	Postpartum anxiety
Study population (N = 35)		
Positive scales	20 (57)	22 (63)
Confirmed diagnosis by clinical interview	19 (54)	19 (54)
Negative scales + unconfirmed diagnosis	16 (46)	16 (46)

Table 5. Follow-up Edinburgh Postnatal Depression Scale full scale among the nondiagnosed group.

Follow up EPDS	Nondiagnosed group (N = 16)
1 month	
Mean ± SD	6.25 ± 2.62
Median (IQR)	6.5 (4−8.25)
Range (minimum−maximum)	8 (2−10)
3 months	
Mean ± SD	4.88 ± 2.25
Median (IQR)	5 (3−7)
Range (minimum−maximum)	7 (1−8)
6 months	
Mean ± SD	3.5 ± 1.93
Median (IQR)	3.5 (2−5)
Range (minimim−maximum)	6 (0−6)

EPDS, Edinburgh Postnatal Depression Scale; IQR, interquartile range.

Table 4. Demographic characteristics among diagnosed and nondiagnosed groups.

Variables	Diagnosed (N = 19)	Nondiagnosed (N = 16)	Test	P value
Age (years)				
Mean ± SD	26.58 ± 5.06	23.81 ± 4.93	$t = 1.634$	0.112
Median (IQR)	26 (22−28.5)	22.5 (19.75−26.75)		
Range (minimum−maximum)	18 (20−38)	16 (18−34)		
Occupation [n (%)]				
Housewife	9 (47)	12 (75)	$\chi^2 = 3.195$	0.202
Office work	9 (47)	3 (19)		
Manual worker	1 (5)	1 (6)		
Residence [n (%)]				
Rural	11 (58)	11 (69)	$\chi^2 = 0.438$	0.508
Urban	8 (42)	5 (31)		
Gravidity				
Mean ± SD	2.89 ± 0.94	2.56 ± 1.15	$t = 0.924$	0.363
Median (IQR)	3 (2−3.5)	2.5 (2−3)		
Range (minimum−maximum)	3 (2−5)	4 (1−5)		
Parity				
Mean ± SD	2.58 ± 0.96	2.44 ± 1.03	$t = 0.417$	0.68
Median (IQR)	2 (2−3)	2 (2−3)		
Range (minimum−maximum)	4 (1−5)	3 (1−4)		

IQR, interquartile range.

Table 6. Follow-up Perinatal Anxiety Screening Scale full scale among the nondiagnosed group.

Follow up PASS	Nondiagnosed group (N = 16)
1 month	
Mean ± SD	16.63 ± 3.36
Median (IQR)	17 (14—19.25)
Range (minimum—maximum)	12 (11—23)
3 months	
Mean ± SD	13.5 ± 3.4
Median (IQR)	14 (10—16)
Range (minimum—maximum)	11 (8—19)
6 months	
Mean ± SD	11.67 ± 3.63
Median (IQR)	13 (8—14)
Range (minimum—maximum)	12 (6—18)

IQR, interquartile range; PASS, Perinatal Anxiety Screening Scale.

research has linked the transmission of the SARS-CoV-2 with depressive symptoms, most common in postpartum women [9].

The main aim of this study was to detect prevalence of postpartum depression and anxiety among women who got infected by COVID-19 during their pregnancy period.

In this observational prospective study, 35 postpartum women infected by COVID-19 while pregnant were recruited during first 4 weeks after delivery. Each woman was screened by EPDS and PASS. Positive women were interviewed to confirm the diagnosis. Negative scales and unconfirmed-diagnosis women were screened again using the same scales 1, 3, and 6 months following the first screen and finally the prevalence was detected.

In our study, the mean age was 25.31 ± 5.12 years. This come in agreement with Citu et al. [10] who reported that the mean participant age was 29.06 years. While in the study of An et al. [11], 209 postpartum women's mean age was 30.39 ± 4.66 ranged from 20 to 44 years; more than 70.0 % of them were 25—34 years old.

In our study, 21 (60 %) participants were housewife, 12 (34 %) were office worker, two (6 %) were manual worker. In contrary to our results, An et al. [11], reported that most of the postpartum women were nonmedical workers (67.5 %). Whereas in the study of Micha et al. [12], the majority were employed (63.1 %).

In our study, 22 (63 %) participants were rural residents while 13 (37 %) were urban residents. Our results agreed with study of Citu et al. [10] who reported that participants were mostly from rural areas.

In our study, the mean gravidity was 2.74 ± 1.04 while the mean parity was 2.51 ± 0.98. In the study

of Gluska et al. [13], 65 (26.4 %) were nulliparous. However, in the study of Citu et al. [10], most participants were primiparous.

In our study, EPDS full scale in the study population ranged from 3 to 30 with mean ± SD of 16.6 ± 8.36. Twenty participants were positive EPDS, 19 (54 %) were diagnosed to have postpartum depression.

In Chen et al. [14] meta-analysis, the pooled prevalence of postpartum depression was 34 % during the COVID-19 pandemic (95 % confidence interval: 21—46 %), much greater than the incident of previous study during the nonpandemic period. In another meta-analysis conducted by Usmani et al. [9], the prevalence of postpartum depression ranged from 7 to 80.8 % during the SARS-CoV-2 pandemic.

In our study, the PASS full scale in the study population ranged from 13 to 90 with mean ± SD of 57.43 ± 25.55. Twenty two participants were positive EPDS, 19 (54 %) were diagnosed to have postpartum anxiety.

Our results were supported by meta-analysis held by Shorey et al. [15], which reported that, in both the prenatal and postnatal periods, anxiety was more common than depression, and depression was more common in the antenatal than the postnatal period.

Follow up of negative scales and unconfirmed-diagnosis women at 1, 3, and 6 months following the first screen using the same scales revealed no additional diagnosed women and finally the prevalence was still 54 % among all participants.

Our study has some limitations. Convenience sampling does not accurately reflect the characteristics of the full maternal population. As the number of literature and studies is limited, further research is required to evaluate the prevalence of postpartum depression and anxiety among women who got infected by COVID-19 while pregnant.

4.1. Conclusion

Maternal postpartum depression and anxiety in our study are at an elevated level during the COVID-19 pandemic. Postpartum women urgently require psychiatric counselling, intervention, and health education about COVID-19.

Conflicts of interest

There are no conflicts of interest.

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