ORIGINAL ARTICLE

IMPACT OF COVID-19 ON POST NATAL MENTAL HEALTH

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Background: In January, 2020 COVID-19 infection was declared a public health emergency characterized as pandemic by the World Health Organization (WHO). In March 2020, special guidelines were issued to address mental and psychological aspects of the disease survivors and community at large. This study was conducted with the aim to evaluate the psychological impact of COVID-19 on mothers in the postpartum period. **Methods:** It was cross-sectional study of six months duration on COVID-19 positive deliveries and Covid negative mothers. A total of 84 women (42 Covid Positive and 42 Covid negative) were included through non-probability quota with consecutive sampling technique. Mothers with pre-existing mental health issues, those who had been on medication for any psychological issues or those who suffered from obstetrical and neonatal complications or required transfer to High Dependency Unit (HDU) were excluded from the study. The Edinburgh Postnatal Depression Scale (EPDS) was used to screen the women for postpartum depression. Independent sample t test was used for continuous variables and Fisher exact test was used for qualitative variables. **Results:** Mean EPDS score was 9.48±6.33 in COVID-19 positive group. The sub-scale analysis showed mean scores 1.6±1.76 and 4.86±2.94 for Anhedonia and Anxiety with statistically significant difference. **Conclusion:** Women experiencing COVID-19 infection during pregnancy were found to have greater anxiety and nervousness in post-natal period compared to their COVID-19 negative counterparts.

Keyword: COVID-19 pandemic; Mental Health; Postpartum depression (PPD)

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INTRODUCTION

The COVID-19 pandemic influenced health care provision worldwide with exceptionally high morbidity and mortality. Corona virus pandemic established itself in Pakistan in 2020 causing a great deal of hardship to the community. According to the government of Pakistan there were more than 800,000 confirmed cases and above 18000 deaths by May 2021.[1] This was taken as a global public health crisis challenging physical and mental health. From a simple flu, cough, Coryza symptoms it can propel severe acute respiratory distress syndrome. The reality that people die so quickly from it was traumatizing for the country.[2]

Individuals in quarantine may be exposed to a variety of emotional states including, anxiety, annoyance, grief, irritability, guiltiness, or misperception[8]. Pregnancy is the period of great susceptibility for developing anxiety and depression which may make quarantine perplexing for perinatal maternal health. Women tend to experience more depression and mental health issues like sadness or low mood after child birth referred to Postpartum Depression (PPD).

In a recent study PPD in Pakistan was found to be as high as 38%.[3] Symptoms of PPD include low mood, loss of appetite, loss of sleep, crying spells, feeling of guilt, over-thinking. These emotions are more marked initially during the first 2 weeks known as Baby Blues.[4]

There are many risk factors for developing PPD: previous mental illness, a stressful life, traumatic labour, complications of pregnancy in addition to socioeconomic conditions and lack of family support. All these may contribute to calamity badly influencing mental health during pregnancy leading to postpartum depression.[3,5]

Many studies reveal that COVID-19 pandemic could be a risk factor for PPD. Several aspects of Covid 19 disease could be an influence on the maternal post natal mental health like quarantine measures, less financial support, children not going to school increasing burden on mothers, news channels creating uncertainty, experiencing illness or death of loved ones due to Covid. Many women during quarantine and lockdown may experience boredom, loneliness and anger[6]. Moreover, pregnant women are more susceptible to infections because of their pregnancy induced low immunity and growing apprehension about vertical transmission to their newborn[7]. Overall, studies reveal that the

COVID-19 pandemic could be a significant risk factor for PPD.[8,9]

Studies related to PPD can significantly help to identify risk factors for PPD and how we can work on them for the benefit of mental health of postnatal women undergoing depression.[5]

For the development of a complete support system in the setting of an extremely contagious pandemic it is very crucial to understand the association between maternal physical and mental health needs. Keeping all these factors in mind, there seems to be an urgent requirement for well-timed comprehension of mental health status of pregnant women[10.] This study therefore aims at identifying the depressive illness of postnatal women who suffered from Covid 19 during the current pregnancy to prevent adverse outcome for them and their new-born.

MATERIAL AND METHODS

After approval from Internal Review Board (IRB), this cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Shifa International Hospital, Islamabad during June–Nov 2020 (6 months). According to Institutional policy, all women were screened by COVID-19 RT-PCR on admission. A total of 84 women (42 Covid Positive and 42 Covid negative) were included through non-probability quota with consecutive sampling technique. Forty-two women who tested positive for COVID-19 PCR and gave birth to a healthy neonate were consecutively asked to participate in the study.

Another 42 women who tested negative for COVID-19 PCR and delivered a healthy neonate during the same period were made part of the study. Mothers with pre-existing mental health issues, those who had been on medication for any psychological issues or those who suffered from obstetrical and neonatal complications or required transfer to High Dependency Unit (HDU) were excluded from the study.

The Edinburgh Postnatal Depression Scale (EPDS) is made up of 10-item questionnaire using a four-point Likert scale (0–3) that has been used to screen the women for postpartum depression. EPDS total score and the scores for anhedonia, anxiety, and depression were analysed. The cut-off score that has been taken for depressive symptomatology was higher than 12. The EPDS has been divided into "depression" (items 7–10), "anxiety" (items 3–6) and "anhedonia" (items 1–2) for more detailed analysis.

Data was analysed using SPSS 20.0. Independent sample t test was used for continuous variables and Fisher exact test was used for qualitative variables. A p-value of <0.05 will be considered statistically significant.

RESULTS

Of the total, 57.1% of the participants belonged to the age group of 31–40 years and 42.9% of participants belonged to the age group of 20–30 years. Baseline characteristics of the study participants are shown in Table-1. p-value was statistically insignificant for all the variables.

Figure-1 shows difference in scores of EPDS in both groups, it was found that 13 (31%) participants had an EPDS score of more than 12 in COVID-19 positive group while 8 (19%) had EPDS score of more than 12 in Covid negative group.

Mean EPDS score 9.48±6.33 in COVID-19 group as seen in Table-2. The sub-scale analysis was done for Anhedonia, Anxiety and Depression. The mean scores were 1.6±1.76 and 4.86±2.94 for Anhedonia and Anxiety with statistically significant p-values for both of them, i.e., p<0.05. However, mean scores for Depression on sub-scale analysis were statistically not significant.

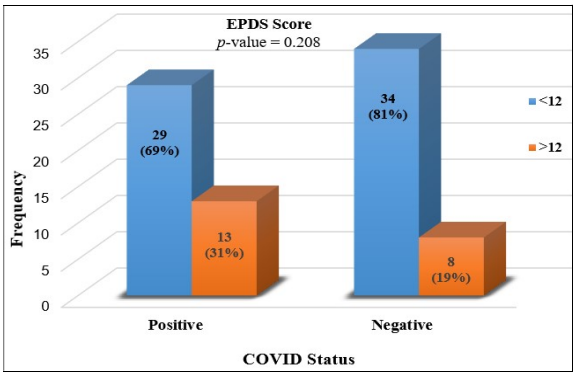

Figure-1: Edinburgh Postnatal Depression score (EPDS)

Table-1: Distribution of demographic characteristics

Baseline Characteristics	COVID-19 Status		Total (n)	*p*-value
	Positive %(n)	Negative % (n)		
Gestational age				
37-38	50 (21)	40.5 (17)	38	>0.05
38-39	35.7 (15)	45.2 (19)	34	
39-40	9.5 (4)	14.3 (6)	10	
40-41	4.8 (2)	0 (0)	2	
Parity				
Nulliparous	26.2 (11)	16.7 (7)	18	>0.05
multiparous	73.8 (31)	83.6 (35)	66	
Level of education				
Elementary	7.1 (3)	6 (14.3)	9	>0.05
Matric	21.4 (9)	26.2 (11)	20	
Bachelors	35.7 (15)	35.7 (15)	30	
Above	35.7 (15)	23.8 (10)	25	
Occupation				
Housewife	69.0 (29)	71.4 (30)	59	>0.05
Student	0 (0)	9.5 (4)	4	
Working	31.0 (13)	19.0 (8)	21	
Body Mass Index (BMI)				
<30	52.4 (22)	57.1(24)	46	>0.05
> 30	47.6 (20)	42.9 (18)	38	
Mode of delivery				
SVD	47.6 (20)	50.0 (21)	41	>0.05
El. LSCS	28.6 (12)	26.2 (11)	23	
Em. LSCS	23.8(10)	23.8 (10)	20	
Birth Weight				
< 2.5	7.1 (3)	11.9 (5)	8	>0.05
2.5-4	90.5 (38)	88.1 (37)	75	
> 4	2.4 (1)	0 (0)	1	
Reaction to Pregnancy				
Happy	78.6 (33)	78.6 (33)	66	>0.05
Unhappy	7.1 (3)	16.7 (7)	10	
Mixed	14.3 (6)	4.8 (2)	8	
Birth Experience				
As expected,	19.0 (8)	9.5 (4)	12	>0.05
Good	59.5 (25)	64.3 (27)	52	
Worse	21.4 (9)	26.2 (11)	20	

Table-2: Subscale analysis of Edinburgh Postnatal Depression Score (EPDS)

Scale	COVID-19 Status	Mean	*p*-value
EPDS Total Score	9.5±6.3	7.3±5.1	>0.05
Anhedonia	1.7±1.8	1.0±1.3	0.05
Anxiety	4.9±2.9	3.5±2.8	<0.05
Depression	2.9±2.8	2.9±2.3	>0.05

* Difference is significant at 5% level of significance

DISCUSSION

The women participating in this study reported enhanced psycho-emotional distress and higher EPDS scores, which stemmed from the fact that they contracted COVID-19 infection during pregnancy.

Analysis of subscales of EPDS showed increased levels of anhedonia and anxiety in covid 19 groups, emphasizing the added tool within EPDS which allow better appreciation of the spectrum of psychological issues that the pandemic had stirred among new mothers. Participants in both covid and control group felt anxious and uncertain about the future and the risks posed to the newborn. Inaccessibility to family and social support due to lockdown, which was usually available, further exacerbated stress.[11]

Postpartum Depression is the result of complex interaction between psychological, social and financial factors, all of these were amplified during this COVID-19 crisis.[12] The COVID-19 positive group had a higher post natal depression (31%) compared to the Covid negative pregnant women (19%) which may suggest that the psychological burden of pregnancy was exacerbated by a positive diagnosis of COVID. The same results were documented from an Italian study.[13] Dashraath *et al* also mentioned perturbed feelings due to their

diagnosis for fear of miscarriage, intrauterine growth restriction, still birth, prematurity, and neonatal death causing intense feelings of anhedonia during pregnancy which lingered post partum.[14]

Studies have revealed considerable evidence that facing such stresses during pregnancy is directly linked with a higher risk of PPD and emotional instability. In this study 45% more women in COVID positive group reported having postpartum anxiety compared to 30% in the Covid negative group which hindered their ability to cope with routine tasks. The need to safeguard their baby adds to the challenge of managing their own health during postpartum period.

Most studies have found a significant association between maternal PPD and the care that mothers provide their children, affecting bonding difficulties and insecure attachments.[15,16] In addition, many studies have found a significantly negative effect of maternal depressive symptoms on breastfeeding.[17] Therefore, women in the perinatal period are uniquely impacted by the current pandemic. Pregnancy is a stressful state especially in nulliparous women.[18] Pregnant women have exhibited a higher depressive symptomology and accumulation of these elements creates an environment that is not conducive to the mothers' personal development or the child's optimal development.[10]

There is an urgent need to develop medical and mental health care pathways to help women develop necessary skills to appropriately meet their needs. It is important to ensure that women receive optimal support during this vulnerable period.[19] This study may help to identify psychological impact of Covid 19 on vulnerable population and formulate interventions to improve mental health of pregnant and post-partum women during the COVID-19 epidemic.

Given the detrimental effects of prenatal distress on mothers and offspring, the observed upsurge of symptoms in pregnant women requires special clinical surveillance. All health care professionals are advised to pay special attention to the mental health of the mothers during a crisis to ensure maternal and foetal wellbeing. World Health Organization has also declared containment of Covid 19 at top priority in all countries.[20]

Limitations of the study included small sample size which may underestimate the demonstrable impact of Covid 19. However, considering the limited literature on the subject this study makes an important contribution to appreciate the effect of a catastrophic pandemic on mental and physical health of pregnant women. Cohort studies in future may help by considering the findings of this study.

CONCLUSION

Women experiencing COVID-19 infection during pregnancy faced higher levels of anxiety and depression in postnatal period, adversely affecting their quality of life as they struggled with the added stress of bringing new life in the world.

AUTHORS' CONTRIBUTION

NT: Concept, write-up, proof reading. MH: Data collection, write-up, proof reading. AT: Statistical analysis, write-up, proof reading. MN: Data collection, proof reading. AJ: Data collection, proof reading.

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