#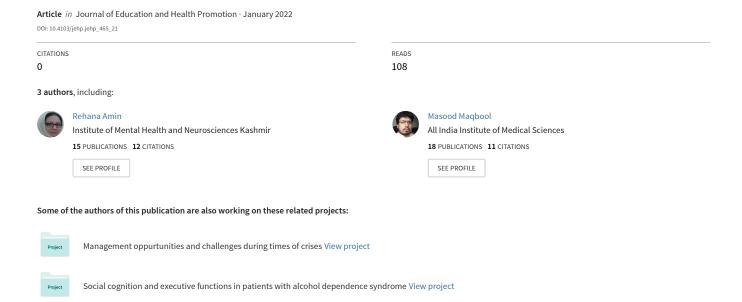 Emotional difficulties in pregnant females who tested positive for COVID-19: A cross-sectional study from South Kashmir, India

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Original Article

Emotional difficulties in pregnant females who tested positive for COVID-19: A cross-sectional study from South Kashmir, India

Tanzeela Nazir, Rehana Amin[1], Masood Maqbool[2]

Abstract:

BACKGROUND: It is evident that the novel coronavirus disease pandemic inevitably resulted in increased stress and anxiety in the general population. Pregnancy is a challenging period, and COVID-19 has added risk to women pregnant during the pandemic.

AIM: The present study was aimed to assess the emotional difficulties in pregnant females who tested positive for COVID-19. The current study estimated the prevalence of depression, anxiety, and stress among 63 pregnant ladies who tested positive for COVID-19.

MATERIALS AND METHODS: The study was conducted in Child and Maternity Hospital of GMC Anantnag, Kashmir, India, from April to December 2020. A total of 63 pregnant females who tested positive for COVID-19 participated in the study. The COVID-positive pregnant ladies were interviewed in the outpatient department of the child and maternity clinic 2 weeks after the infection. The interview scale used was Depression, Anxiety, and Stress Scale-21. The data were analyzed using Chi-square test and Fisher's exact test.

RESULTS: We found that the mean age of participants was 33.5 ± 7.4. We found that 38.1% of the females had positive bad obstetric history. The prevalence of depression, anxiety, and stress was 33.32%, 50.83%, and 60.3%, respectively. In correlation analysis, notably bad obstetric history and working females were significant independent factors for higher levels of depression, anxiety, and stress. The depression was also found more in literate females and the third trimester.

CONCLUSION: The study indicates high levels of depression, anxiety, and stress in pregnant females who tested positive for COVID-19. The emotional difficulties were found to be higher in educated and working females. The bad obstetric history was found to be an independent factor for higher levels of emotional difficulties in COVID-positive pregnant females. This calls for extra measures to promote the mental health and resilience of pregnant females, especially during a crisis.

Keywords:

Anxiety, COVID, depression, pregnant women, stress

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Introduction

The coronavirus disease pandemic imposed significant risk to the mental health of the general population.[1] The already existing evidence suggests that the COVID-19 pandemic resulted in symptoms of anxiety and depression (16%–28%) and self-reported stress was found to be 8%.[2]

The risk of developing adverse psychological reactions depends upon several individual and structural variables. For example, female sex,[3] older age group,[4] poor socioeconomic status, lower education, unemployment,[5] and people with a history of chronic diseases/medical/psychiatric illness[6] are the factors that impose a significant risk to exhibit adverse psychological reactions. The pregnancy is a state in which many

physical and psychological changes occur.[7] Women may experience some kind of emotional difficulties during pregnancy due to fear of the poor obstetrical outcome.[8] The COVID-19 pandemic and infection itself in pregnant women proved to be a challenging situation. A recent study indicates that pregnant women are more prone to anxiety and depression during the COVID-19 outbreak[9] that may increase the risk of postnatal depression in the mother[10] and more likely to induce cognitive and behavioral problems in the child.[11] Kashmir, a part of northern India, is also hit by the COVID-19 pandemic, but the status of its psychological impact on pregnant females is not known. The data are available about the psychological impact on pregnant females during a pandemic from other parts of India; however, no information is yet available regarding the psychological impact on pregnant females specifically who tested positive for COVID-19. Furthermore, the present study can make obstetricians aware about the psychological problems of COVID pregnant ladies so that early diagnosis and appropriate intervention can be made to facilitate smooth pregnancy and mental health of such ladies. The present study was aimed to investigate the levels of depression, anxiety, and stress in pregnant females who tested positive for pregnant females.

Materials and Methods

Study design and settings
It was a cross-sectional study. The study was conducted from April 2020 to December 2020 in a Child and Maternity Hospital of Government Medical College Anantnag. The hospital is located in district Anantnag and caters whole of the population from South Kashmir, India.

Study participants and sampling
A total of 63 pregnant females of age ≥18 years who tested positive for COVID-19 were enrolled in the study during the given period. We excluded those females whose age was <18 years, who had impaired intellectual ability, who were already suffering from neurological disorders/organic brain disorders and mental health-related issues, or who were on psychopharmacological/psychotherapeutic treatment. The purposive sampling technique was used in the present study. The COVID-19 test was done for three reasons like either they were symptomatic or had contact with COVID-positive case or as a routine test before delivery. The patients received treatment either in the hospital or at home. They were retested for COVID-19 at least 2 weeks after the positive test.

Data collection tool and technique
The assessment was conducted in the antenatal clinic of the hospital under full COVID-19 precautions. The questions about sociodemographic variables were enquired from each patient. The clinical questions about trimester, parity, and any bad obstetric history were also enquired. The bad obstetric history included the previous history of abortion, stillbirth, molar pregnancy, precious pregnancy, or previous pregnancy complicated by any medical comorbidity. The feeling of emotional difficulties such as depression, anxiety, and stress for the last 2 weeks was assessed using the Depression, Anxiety and Stress Scale-21 (DASS-21).[12] The DASS-21 is a scale of 21 questions grouped into three subscales of 7 questions each – the depression subscale, anxiety subscale, and stress subscale. The severity of the depression, anxiety, and stress was divided into 5 classes – normal, mild, moderate, severe, and very severe depending upon the score. The scale is rated from 0 to 3 as never, sometimes, often, and always. Each question was explained in the local language to the participants to get accurate responses. It was a face-to-face interview of 30–35 min under full COVID-19 preventative measures in the Child and Maternity Hospital Anantnag. The assessment was done after receiving informed consent from the participants.

Ethical consideration
The clearance for the study was obtained from Institutional Ethical Committee on a fast-track basis.

Statistical analysis
The data were tabulated in SPSS.2 The Statistical Package for the Social Sciences is a software package of a comprehensive system for analyzing data. It was announced on July 28, 2009, by International Business Machines Corporation Company. The descriptive statistics were used for various sociodemographic and clinical variables. The Chi-square test and Fisher's exact test were used as prime statistics to get the interpretations from the data available. The results were taken significantly at $P < 0.05$.

Results

Sociodemographic variables
A total of 63 females participated in the study. The mean age of the participants was 33.5 ± 7.4 years, with a minimum age of 18 and a maximum age of 45 years. The literates and illiterate females were 82.53% and 17.46%, respectively. The majority of the females were homemakers 74.6% and were from a rural background (77.77%). Out of 63 females, 13 (20.63%) females were in the first trimester, 16 (25.39%) were in the second trimester, and 34 (53.96%) were in the third trimester. Similarly, 63.5% were primiparous and 36.5% were multiparous. 38.1% of the females had bad obstetric history [Table 1].

Prevalence of depression, anxiety, and stress

The overall prevalence of depression, anxiety, and stress was 33.32%, 50.83%, and 60.3%, respectively. The mild-to-moderate depression, anxiety, and stress were reported by 30.15%, 20.63%, and 23.8%, respectively, and severe-to-very severe depression, anxiety, and stress were reported by 3.17%, 30.2%, and 36.50%, respectively [Table 2].

Prevalence of depression, anxiety, and stress by various variables

The prevalence of depression, anxiety, and stress by various sociodemographic and clinical variables is depicted in Table 2. For depression, education, employment trimester, and obstetric history were significant factors. In terms of education, the highest prevalence of depression was found among literate females, with a prevalence of 50% (14/21). In terms of employment and trimester, the prevalence of depression was highest among the working females (57.14%) and in the first 08/13 and third trimester 12/21 followed by first trimester 8/21. The *P* value was found to be

Table 1: Sociodemographic and clinical variables

Variable	n=63, n (%)
Age (years)	Mean age 33.5±7.4
18-30	21 (33.33)
31-42	33 (52.38)
>42	09 (14.28)
Education	
Literate	52 (82.53)
Illiterate	11 (17.46)
Occupation	
Homemaker	47 (74.6)
Working	16 (25.39)
Background	
Rural	49 (77.77)
Urban	14 (22.22)
Trimester	
First	13 (20.63)
Second	16 (25.39)
Third	34 (53.96)
Parity	
Primiparous	40 (63.5)
Multiparous	23 (36.5)
Past bad obstetric history	
Yes	24 (38.1)
No	39 (61.9)

Table 2: Prevalence of depression, anxiety, and stress

Severity	Depression, n (%)	Anxiety, n (%)	Stress, n (%)
Normal	42 (66.66)	31 (49.2)	25 (39.7)
Mild-moderate	19 (30.15)	13 (20.63)	15 (23.8)
Severe-very severe	2 (3.17)	19 (30.2)	23 (36.50)

0.032 and 0.007, respectively (*P* ≤ 0.05). Similarly, higher levels of depression were found among women with bad obstetric history with a Chi-square value of 30.288* and *P* = 0.000 (*P* ≤ 0.05). As for anxiety and stress, again occupation and bad obstetric history were significant factors. The anxiety and stress were higher among working females with Chi-square and *P* value of 7.432*/0.024 and 7.883*/0.019 (*P* < 0.05). Similarly, the highest prevalence of anxiety and stress was found among females with bad obstetric history as compared to females with normal obstetric history. The Chi-square/*P* value was 22.085*/0.000 and 22.155*/0.000, respectively (*P* ≤ 0.05) [Table 3].

Discussion

Pregnancy, a joyful period, can be uncertain, especially during times of crisis like COVID-19 pandemic which proved to be a global emergency. Although the virus was not found in pregnancy products or neonates of mothers with COVID-19[13] still, fear of contracting infection to a newborn cannot be ignored. The COVID-19 pandemic had certainly added stress to pregnancy. Understandably, such situations may cause anxiety, especially when infected by the virus while being pregnant. Various studies had been done on COVID-positive pregnant females regarding the maternal and fetal outcomes.[14] However, not much research is yet published on the impact of mental health in COVID-19-positive pregnant females, especially from our part of the world.

This was a cross-sectional study and unique in assessing the levels of depression, anxiety, and stress among pregnant women who tested positive for COVID-19. The results of the present study revealed that the prevalence of depression, anxiety, and stress in COVID-positive pregnant females was 33.32%, 50.83%, and 60.3%, respectively. In almost a similar study, depression was found in 26.7% while anxiety was found in 24.2% and stress was found in 11.7% of the pregnant females who were COVID positive,[15] which indicates that depression is comparable, but anxiety and stress are less as compared to results from of our study. It can be explained by the fact that Kashmir being a conflict-inflicted zone[16] and people living in such conditions are at risk of developing emotional problems. Furthermore, COVID pandemic and infection may have tolled up the psychological problems, especially in pregnant ladies who are more susceptible. Similarly, in a study by Shahid *et al*. 2020, depression was found in 27.8% and anxiety and stress were found in 24.8% of the COVID-19 patients,[17] which again indicates that anxiety and stress were higher in COVID-pregnant ladies than general COVID patients. It was reported that anxiety heightened to a maximum in COVID-positive pregnant females in the

Table 3: Analysis of prevalence depression, anxiety, and stress as a binary variable by various variables of participants

Variable	Depression			Anxiety				Stress			
	Normal	Mild-very severe	χ^2 Df Significance	Normal	Mild-moderate	Severe-very severe	χ^2 Df Significance	Normal	Mild-moderate	Severe-very severe	χ^2 Df Significance
Age (years)											
18-30 (21)	13	8	0.321 (NS)	8	6	7	1.857 (NS)	7	5	9	0.668 (NS)
>30 (42)	29	13	1	23	7	12	2	18	10	14	2
			0.571				0.395				0.716
Education											
Literate	38	14	Fisher's exact test	27	10	10	3.935 (NS)	22	11	19	1.399 (NS)
Illiterate	4	7	0.032*	4	3	9	2	3	4	4	2
							0.140				0.497
Occupation											
Homemaker	38	9	Fisher's exact test	27	10	10	7.432*	23	8	16	7.883*
working	4	12	0.000*	4	3	9	2	2	7	7	2
							0.024				0.019
Background											
Rural	34	15	0.735 (NS)	26	9	14	1.400 (NS)	22	10	17	2.782 (NS)
Urban	8	6	1	5	4	5	2	3	5	6	2
			0.391				0.497				0.249
Trimester											
First	5	8	9.9*	5	5	3	4.228 (NS)	4	3	6	1.450 (NS)
Second	15	1	2	10	2	4	4	8	3	5	4
Third	22	12	0.007	16	6	12	0.376	13	9	12	0.836
Parity											
Primi	28	12	0.548 (NS)	20	10	10	1.993 (NS)	15	10	15	0.226 (NS)
Multi	14	9	1	11	3	9	2	10	5	8	2
			0.459				0.369				0.893
Bad obstetric history											
Present	6	18	30.288*	3	10	11	22.085*	1	11	12	22.155*
Absent	36	3	1	28	3	8	2	24	4	11	2
			0.000				0.000				0.000

*Significant at $P<0.05$, NS insignificant at $P<0.05$. NS=Not significant

UK when mortality was at a peak due to pandemics.[18] A longitudinal study suggested that there were increasing anxiety and depression symptoms in patients with increased quarantine period.[19] One more study showed high pregnancy-related and COVID-related stress in pregnant women.[20] Similarly, in a study by Gabriele Saccone (2019), 53% of the females reported severe psychological impact due to the COVID-19 pandemic which collaborates with our results.[21] In another study by Niaz Kamal and Nasih Othman, the levels of depression, anxiety, and stress were 44.9%, 47.1%, and 17.5%, which indicates that the stress was high among COVID pregnant females than the general population.[22] The stress levels were almost double the prepandemic levels of perceived pregnancy stress when compared to the results of studies conducted in most parts of the world.[23] This could be because of fear of transmitting the virus to the baby in the womb.

We also found higher levels of depression in literate females probably due to high awareness of the health and nature of the pandemic.[24] Similarly, higher levels of depression, anxiety, and stress were found in working females than homemakers which can be explained by the fact of exhaustion and stress of the public dealing with a fear of infection. Depression and anxiety markedly compromise the quality of life and psychosocial functioning of an individual, thereby causing significant impairment even at subthreshold levels.[25]

Another finding of our study was that stress was more prevalent, followed by anxiety and depression. The results are supported by other similar studies.[26-28] The patients with bad obstetric history reported higher scores on stress, anxiety, and depression than with patients with a normal obstetric history. Pregnancy complications are one of the major stressors that commonly affect women in pregnancy throughout the world.[29] The emotional difficulties were also more in the first and third trimesters, which is supported by a similar study conducted in Kerala, India.

We did not find a significant association between mental health problems and age, background, trimester, and parity; however, some studies have reported a positive correlation between mental health problems and various sociodemographic variables.[15,30]

The limitation of the present study is to be viewed with the following key points. First, the sample size was small. Second, the study was carried out in a hospital, so the results cannot be representative of the whole population. Third, the screening tool loses its subjectiveness in explaining the questionnaire in the local language to illiterate participants.

Conclusion

From our study, we conclude that depression, anxiety, and stress levels in pregnant ladies with COVID-19 were almost the same of ladies pregnant during COVID. However, the levels of stress were double that prepandemic perceived pregnancy stress. The stress levels were also higher than the general population. It is recommended that they need to take extra precautions to protect themselves against COVID-19 and thereby prevent themselves from the psychological burden and mental health-related issues. It is also important to detect mental health-related changes early and take necessary action at the earliest possible time to prevent poor maternal and fetal outcomes.

Conflicts of interest

There are no conflicts of interest.

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