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Original Research Article

Psychological effects of isolation on antenatal women during COVID-19 pandemic

Chandramathy Kamalakshy^{1*}, Mini Chenicheri¹,
Lakshmi Chirayil Ratheesh², Ragesh Gangadharan²

¹Department of Obstetrics and Gynaecology, Government Medical College, Kozhikode, Kerala, India

²Institute of Mental Health and Neuroscience, Affiliated to Government Medical College, Kozhikode, Kerala, India

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***Correspondence:**

Chandramathy K.,

E-mail: drkchandramathy@gmail.com

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ABSTRACT

Background: Pregnancy is a time of increased vulnerability for the development of anxiety and depression. This study evaluated the psychological effect of isolation on antenatal women admitted with COVID-19 disease.

Methods: A cross-sectional study conducted at Government medical college Kozhikode from 1 November 2020 to 31 January 2021. One hundred antenatal women with COVID-19 disease admitted in isolation ward in quarantine were randomly selected. Clinical and demographic data collected at the time of admission. After one week of admission, mental health assessment done using following mental health assessment tools. They were general anxiety disorder-7 (GAD-7), perinatal anxiety screening scale (PASS), patient health questionnaire-9 (PHQ-9).

Results: Out of the 100 women selected, 74 responded with the questionnaires. All of them were educated, 62% studied up to plus two. Majority from joint family contributed 68.9% and 85.1% were home makers. Mean age was 26 years. Primigravidae were 48.6% and mean BMI of 25.71 kg/m². Commonest medical comorbidity was diabetes mellitus present in 28.4%. Mental health assessment done using 3 sets of questionnaires, PHQ-9, GAD-7 and PASS showed that women in our study did not have any increased risk of depression, general anxiety or perinatal anxiety. Infact they reported of feeling safer and more comfortable at the hospital compared to home.

Conclusions: Present study showed that antenatal women with COVID-19 disease admitted in hospital did not have any increased risk of general anxiety, depression or perinatal anxiety.

Keywords: Psychological effects, Antenatal, COVID-19, Isolation

INTRODUCTION

The coronavirus disease 2019 (COVID-19) outbreak poses significant pressure on the health system of our nation. The risks of COVID-19 during the pregnancy and the effects on maternal and/or foetal health or the anticipation of getting through the period of pregnancy unscathed has put tremendous physical and mental stress on the expecting mothers. Although pregnancy is commonly believed to be a joyous time for most women, some women experience a range of negative emotions during pregnancy leading to

anxiety and depression. Zeng et al found that globally around 10% of pregnant women suffered from mental disorders, primarily depression and it was even higher (16%) in developing nations.¹

Maternal mental health problems were associated with short term and long-term risks for the affected mothers' overall health and functioning as well as their children's physical, cognitive and psychological development. Conditions such as extreme stress, emergency and conflict situations and natural disasters can inflate the perinatal mental health morbidity. Therefore, it was plausible that

pregnant women were vulnerable to mental ill health during COVID-19 pandemic.

Corbett et al in their survey conducted in pregnant women in second and third trimester of pregnancy identified that, 35% of the pregnant ladies were self-isolating due to the fear of acquiring COVID-19 infection.² Fakari et al found that concern and stress in pregnancy were associated with side effects such as preeclampsia, depression, increased nausea and vomiting during pregnancy, preterm labour and low birth weight.³

In this background, we conducted the study to examine the psychological effects of quarantine on expectant mothers admitted with COVID-19 disease in the isolation ward at medical college Kozhikode.

Aim

The aim was to study the psychological effect of isolation on antenatal women admitted with COVID-19 disease.

METHODS

A cross-sectional study was conducted at government medical college Kozhikode from 1 November 2020 to 31 January 2021. The study protocol was approved by the institutional ethics committee (IEC) vide no. GMCKKD/RP 2020/IEC/522 dated 2 November 2020.

Written informed consent was obtained from the antenatal women admitted in the isolation ward. One hundred antenatal women with COVID-19 disease admitted in isolation ward who come under the age group of 18-41 years were selected randomly. Women who were on any psychiatric medications or who had history of psychiatric illness were excluded.

Data collection

Women either tested positive for COVID-19 or suspected were admitted in the isolation ward or private rooms. The rapid antigen test was used for diagnosis of COVID-19 in our institution. For women who were at high-risk category for operative intervention, RT-PCR or TRUNAAT was also done.

Clinical and demographic details collected regarding age, gravida, parity, gestational age, educational status and any medical co-morbidities. This information recorded along with their contact number. Complete clinical examination and relevant investigations were done. Appropriate obstetric care was given as per guidelines. Patients were counselled by the obstetrician and counsellor and option of personal contact if necessary was given. They were seen daily for the next one week. After one week of admission, psychological experience was assessed by mental health team. All the women were interviewed by audio/video call using semi structured questionnaires.

Mental health assessment questionnaires used were GAD-7, PASS, PHQ-9.

GAD-7 developed by Splitzer et al 2006, was used for assessing general anxiety of women.⁴ It consisted of 7 questions and each having scores ranging from 0 to 3.

Total score of 5, 10 and 15 were taken as the cut-off points for mild, moderate and severe anxiety respectively. When used as scoring tool, further evaluation was recommended when the score was 10 or more.

PASS scale developed by Somerville et al and primary validation done by department of health, state of Western Australia 2013.⁵ This will assess the anxiety related to their pregnancy and childbirth, having scores ranging from 0-3.

PHQ 9 was developed by Kroenke et al consist of 9 questions related to mental health, mainly depression, each has 4 scores ranging from 0-3.⁶

With these questionnaires, presence of general anxiety, depression or perinatal anxiety were recorded. The data analysed by SPSS version 16.

RESULTS

Of 100 study participants selected, complete information could be collected from 74 women. Age of the women was between 19 and 41 years with mean age 26±5.3 years.

Table 1: Educational status.

Education	Number	Percentage
12th standard	46	62.2
Graduates	27	36.5
Professional	1	1.4
Total	74	100

All were educated, 28 (37.9%) were graduates and above.

Table 2: Employment status.

Occupation	Frequency	Percentage
Unemployed	63	85.1
Employed	5	6.8
Student	6	8.1
Total	74	100

Majority were home makers contributing 64 (85.6%).

Table 3: Gravidae.

Gravida	Frequency	Percentage
Primi	36	48.6
Multi	35	47.3
Grand multi	4	4.1
Total	74	100

Gravidae: 48.6% were primigravidae.

Family type

Regarding family type, 52 (69.3%) were from joint family.

Hospital stay

Number of days of hospital stay range from 2 to 27 days with mean of 8.39±4.5 days.

Symptoms of COVID-19 disease was present in 25 (33.8%) women and 49 (66.2%) were asymptomatic. History of contact with covid positive patients present in 12 (16.2%) cases. None of the women had history of interstate or international travel. Two of them from hot spot area.

Table 4: BMI.

BMI (kg/m ²)	Frequency	Percentage
Underweight >19	5	6.70
Normal 19 to 24	23	31.08
Overweight 25 to 29	29	39.18
Obese 30 to 34	14	18.91
Morbid obese 35 and above	4	5.4
Total	74	100

Mean BMI was 25.8±5 kg/m².

Table 5: Medical comorbidities.

Comorbidity	Frequency	Percentage
Nil	46	62.2
Anaemia	1	1.4
Diabetes	21	28.4
Thyroid disorders	2	2.7
Cardiac disease	2	2.7
Others	2	2.7
Total	74	100

Medical comorbidities present in 28 (37.8%) and commonest was diabetes mellitus.

Table 6: Psychological status.

Scores	PHQ	GAD	PASS
Mean	2.38	1.55	4.96
Median	1.00	0.00	2.00
Std. deviation	3.79	3.62	9.39
Minimum	0	0	0
Maximum	21	17	47
Percentile			
25	0.00	0.00	0.00
50	1.00	0.00	2.00
75	3.00	1.00	4.00

Psychological health assessment

PHQ category

On administering the PHQ, the average score obtained was 2.38 and mid value as 1. Minimum score obtained was 0 and the maximum score 21 and IQR 3. It meant that no depressive symptoms was present in majority as mild depression should have a minimum score of 5.

GAD category

On administering GAD-7 to measure anxiety symptoms of the respondents, the average value obtained was 1.55 which meant low anxiety level. Minimum score obtained was 0 and the maximum score 17 with median 0 and IQR 1.

PASS category

On administering PASS the average score obtained was 4.96, that means minimal perinatal anxiety was reported among respondents and the mid value as 2, the minimum score of 0 and the maximum score 47 with IQR 4 (Table 6).

DISCUSSION

Out of the 100 women selected, 74 responded with the questionnaires set for mental health. All of them were educated, 62% studied up to 12th standard plus two and rest of them above 12th standard plus two. Majority from joint family contributed 68.9% and 85.1% were home makers. Mean age was 26 years and range between 19 and 41 years. Associated medical comorbidities present in 37.8% of women, of which diabetes mellitus was common seen in 28.4%. Mean duration of hospital stay was 8 days and ranges from 1 to 27 days.

Mental health assessment was done using 3 sets of questionnaires, PHQ-9, GAD-7 and PASS showed that women in our study did not have any increased risk of depression, general anxiety or perinatal anxiety. Infact they reported of feeling safer and more comfortable at the hospital compared to home.

Gabriele et al reported 46% of antenatal women had anxiety regarding transmission of COVID-19 to the foetus.⁷ A survey by Davenport et al reported significant increase in depression and anxiety during the pandemic, 15% depression before COVID-19 pandemic increased to 40.7% during pandemic and anxiety increased from 29% to 72%.⁸ In a systematic review by Ali et al highlighted the importance of screening for anxiety and depression in existing antenatal programs to provide proper support to pregnant women.⁹ Sri Lankan study by Agampodi et al revealed 16.2% prevalence of antenatal depression in 2013.¹⁰ Patabendige et al in their study showed that COVID-19 pandemic had resulted in an increase in

prevalence of perinatal anxiety and depression in Sri Lankan pregnant women, 17.5% and 19.5% respectively.¹¹

All these studies showed significant increase in anxiety and depression during COVID-19 pandemic. But in our study, none of the women showed significant anxiety or depression due to COVID-19 pandemic.

Zhon et al compared the prevalence of psychiatric symptoms depression, anxiety, insomnia, somatic symptoms and PTSD (post-traumatic stress disorders) between pregnant and non-pregnant women during COVID-19 epidemic.¹² They found that pregnant women had fewer psychiatric symptoms than non-pregnant women. Present study also showed fewer psychiatric symptoms in antenatal women.

Limitations

The first limitation was our sample size was less. Larger sample size provided better understanding of the psychological effects of quarantine. Second limitation was the study was a cross-sectional survey and lacked longitudinal follow up which prevented us from exploring its impact on pregnancy outcome. So it was worth studying long term psychological effects by further investigations. Third limitation was participants in our study was from antenatal women admitted in medical college hospital limiting the generalization of our findings.

CONCLUSION

Present study shows that antenatal women in quarantine due to COVID-19 disease had a reduced risk of anxiety and depression. In fact, they were safer and more comfortable at hospital than at home.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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