International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Kaur P et al. Int J Reprod Contracept Obstet Gynecol. 2023 Nov;12(11):3328-3333
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20233303

Original Research Article

Evaluation of psychological stress in pregnant females during COVID era

Prabhneet Kaur[1]*, Alka Sehgal[2], Rimpy Tandon[2], Deepti[2], Priti Arun[3]

[1]Jindal IVF, Chandigarh, Punjab, India
[2]Department of Obstetrics and Gynaecology, Government Medical College, Chandigarh, Punjab, India
[3]Department of Psychiatry, Government Medical College, Chandigarh, India

Received: 04 September 2023
Revised: 05 October 2023
Accepted: 06 October 2023

***Correspondence:**
Dr. Prabhneet Kaur,
E-mail: prabhneetkaur.16@gmail.com

ABSTRACT

Background: Anxiety and depression may affect 20-40% of pregnant women with concerns about foetal well-being, maternal health, social and financial support, and even death. During the COVID Era, fear of contracting illness, restricted availability of healthcare services, and stresses secondary to job loss were expected which led to an increase in pre-existing psychopathology as well as new onset of psychiatric disturbances. Hence it was decided to carry on a screening study to evaluate psychological stress among pregnant women during the COVID-19 pandemics related to it.
Methods: A questionnaire-based prospective study was conducted amongst pregnant women visiting Government Medical College and Hospital, Chandigarh in three months (June 2020 to August 2020) during the COVID Era. Among 162 subjects, 30 pregnant healthcare workers and 32 COVID-positive pregnant women were included. All COVID-appropriate behaviour and precautions were followed while filling out the questionnaires.
Results: Fear symptoms were present in 52.5% of pregnant women. All the fears were significantly more amongst the healthcare workers which could be due to more knowledge or since they were direct observers of COVID load. Fear of breastfeeding was more common among COVID-19 positives and was significant.
Conclusions: Screening and education should be made necessary components of prenatal care with the implementation of a multidisciplinary approach to tackle this aspect of maternal mental health.

Keywords: COVID-19, Pregnancy, Stress, Anxiety, Depression, Maternal health

INTRODUCTION

The recent pandemic with COVID-19 overwhelmed the health services across the world. The strains were palpable both in health care providers, patients, and the general public, though the reasons could be different. The impact was apparent even on essential services of maternal and child health care. To balance preventive and essential services some changes like the implementation of telemedicine services were global. However, while the changes in these arrangements were sudden, the adaptation by health seekers was relatively slower. Hence, the stress of the same on pregnant women and their caretakers was expected but inevitable.

The pandemic introduced widespread chronic fear of infection and, in pregnant women, fear for the health of the foetus in the face of the spreading virus.[1,2] Anxiety and depression during pregnancy are significant complications that have been reported to affect between 20 to 40% of pregnant women.[3,4] In a review study in 2016, the prevalence of anxiety disorders was 22.9% during

pregnancy and 20% after delivery.[5] There is evidence that anxiety has a higher prevalence than depression.[6] The general causes of worries during pregnancy can revolve around foetal well-being, maternal illnesses, social and financial support, and mortality.[7] Pregnancy anxiety is a reliable risk factor for earlier birth.[8] If these worries persist for a prolonged period, they can lead to functional impairment across multiple areas of a mother's life.[9]

A study reported psychiatric disorders to be present in 14.1% of pregnant women and majority of the women were found to be undiagnosed and untreated. As per a recent study half of the patients screened positive for psychiatric illnesses do not receive a diagnosis from their physicians and 3/4 are not treated.[10] The health services during the pandemic can be anticipated to have worsened this further. The evaluation of stress during pregnancy has remained a relatively undermined area. The pandemic by COVID 19 added stress to life as such, and the compounding effect of low or poor access to health services or the effect of decreased physical clinics during the pandemic may have added to the stress levels during pregnancy. Since anxiety, depression, and stress in pregnancy are risk factors for adverse outcomes for mothers including shorter gestation, and adverse implications for foetal neurodevelopment & outcomes, it was imperative to learn more about it.[11] The present questionnaire-based study was planned to assess psychological changes among pregnant women about concerns related to the pandemic, its effects on pregnancy and health care, etc. amongst women with different backgrounds.

METHODS

A questionnaire-based prospective study was done amongst pregnant women visiting Government Medical College and Hospital, Chandigarh in three months (June 2020 to August 2020) during the COVID era. 100 normal pregnant,30 healthcare workers and 32 COVID-19 positives were enrolled in the study. A screening questionnaire for fears and psychological stresses was administered at the time of admission or during initial triage (OPD). Wherever possible reviews were done using telemedicine services. A patient information sheet specifying all the concerns was given to each patient and consent was obtained in the patient's vernacular language. Questionnaire filling was done by the social worker either telephonically or manually in the OPD or wards. All necessary precautions like hand hygiene, social distancing, using antimicrobial wipes on the surface, and equipment before and after use, were adopted. The pregnant females having symptoms of stress were planned to be referred to the Department of Psychiatry on a 24-hour telephonic helpline for further evaluation and management. Statistical analysis was done using the SPSS-22 system and a p value less than 0.05 was taken as statistically significant. Cross-variate analysis was done to find association amongst different variants.

RESULTS

The (Table 1-2) depicts that relatively elderly age even at first conception amongst health care workers.

Table 1: Age based distribution.

Parameters	N	Mean	SD	SE	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Normal	100	27.93	4.567	0.457	27.02	28.84	18	40
Health care workers	30	31.17	2.451	0.447	30.25	32.08	25	35
COVID-19 positive	32	27.81	5.682	1.004	25.76	29.86	19	42
Total	162	28.51	4.663	0.366	27.78	29.23	18	42

p=0.002*

Table 2: Obstetrics score.

Parameters			Group			Total
			Normal	Health care workers	COVID-19 positive	
Obstetrics score	**Multi**	**N**	51	5	21	77
		%	51.0	16.7	65.6	47.5
	Primi	**N**	49	25	11	85
		%	49.0	83.3	34.4	52.5
Total		**N**	100	30	32	162
		%	100.0	100.0	100.0	100.0

p<0.001*

The (Table 3) reflects the better education status of healthcare workers as well of the COVID-19-affected population. Pregnant health-care workers continued working even in the COVID era; hence the result was statistically significantly.

Table 3: Educational status.

Parameters			Group			Total
			Normal	Health care workers	COVID-19 positive	
Educational status	Above metric	N	69	30	29	128
		%	69	100	90.6	79
	Below metric	N	31	0	3	34
		%	31	0	9.4	21
Total		N	100	30	32	162
		%	100	100.0	100	100

p<0.001*

Table 4: Distribution based on working/nonworking.

Parameters			Group			Total
			Normal	Health care workers	COVID-19 positive	
Working/nonworking	Non-working	N	91	0	28	119
		%	91	0	87.5	73.5
	Working	N	9	30	4	43
		%	9	100	12.5	26.5
Total		N	100	30	32	162
		%	100	100.0	100	100

p<0.001*

Table 5: Distribution based on concern/fear.

Parameters			Group			Total
			Normal	Health care workers	COVID-19 positive	
Concern/fear	No	N	51	8	18	77
		%	51	26.7	56.3	47.5
	Yes	N	49	22	14	85
		%	49	73.3	43.7	52.5
Total		N	100	30	32	162
		%	100	100.0	100	100

p=0.35

A very high percentage (52.5%) of concerns /fears during the pandemic were noted amongst participants and more so among healthcare workers. The significantly lower concern of healthcare workers as related to delays in check-ups seems to be related to their easy access to services at the workplace. P value varies from <.001 to 0.154 the fear was significantly more amongst healthcare workers except for fear of breastfeeding the baby which was more amongst COVID positive mothers. The practice of individual or collective preventive precautions for transmission was satisfactorily high in all groups.

Table 7: Fear based distribution.

Crosstab	Group			Total	P value
	Normal (N=100)	Health care workers (N=30)	COVID-19 positive (N=32)		
Of coming to the hospital	53.3	83.3	15.6	51.2	<0.001
Infection due to working husband	70	60	31.3	60.5	0.002
Infection to self	13	60	9.40	21	0.001
Abortion	11	29.20	9.40	13.50	0.048

Continued.

Crosstab	Group Normal (N=100)	Health care workers (N=30)	COVID-19 positive (N=32)	Total	P value
Malformation	21	20.80	6.30	15.40	0.154
Preterm birth	10	46.70	3.10	15.40	0.001
Newborn infection	13	63.30	25	24.70	0.001
Apprehension of decreased help	1	33.30	3.10	7.40	0.001
Attendants being infected	5.10	60	0	14.30	0.001
Of missing complications	34	33.30	6.30	28.40	0.008
Possibility of infection from the house help	38	63.30	53.10	45.70	0.032
Change in place of delivery	10	33.30	9.40	14.20	0.004
Concern about breastfeeding in the hospital	25.80	46.70	87.50	42.10	0.001

Table 8: Preventive precautions for transmission.

Crosstab	Group Normal (N=100)	Health care workers (N=30)	COVID-19 positive (N=32)	Total	P value
Mask	75.50	100	100	85.30	<0.001
Sanitizer	70.20	96.70	68.80	75	0.009
Handwashing	60.60	73.30	71.90	65.40	0.306
Social distancing	51.10	86.70	62.50	60.30	0.002
Staying at home	9	53.30	0	15.40	0.001

DISCUSSION

The management of pandemic required diversion and adjustments of existent healthcare manpower, equipment, space, etc. During the pandemic, COVID-19-positive patients commanded segregation and separate arrangements for antenatal and labouring patients. Further management of asymptomatic to symptomatic with the variability of the severity of disease was very taxing for health care providers.

However, the recent literature has challenged the previous belief that the risk of mood and anxiety disorders with pregnancy is low; depression has been quoted to affect about 20% of women during their lifetime with pregnancy being a period of high vulnerability.[12,13]

In a study by Rosemary Et al amongst 186 pregnant women,38% of women screened positive for a psychiatric disorder and amongst these 38% females- only 23% females received treatment.[14] An increase in pre-existing psychopathologies, as well as new onset of psychiatric disturbances due to fear of contracting the illness, mental health issues secondary to job loss or fall in family income due to adverse effects on business during the pandemic, are a matter of concern but, there is a severe scarcity of literature on this issue. Our pre-study anticipation of fears and concerns of pregnant women due to COVID stands verified in the present study with almost 52.5% of subjects affected. Our results correlate well with another study done in Belgium wherein 2421 pregnant and 3435 breastfeeding women participated, and almost half of the women experienced depressive or anxious symptoms during the lockdown.[15] The age of pregnant healthcare workers seems to suggest that probably while establishing their career there is an inadvertent delay in planning pregnancy. Our institute extends free services to pregnant women under the National Program and is largely availed by women from low socio-economic status as reflected in (Table 3). The lesser education status in subjects other than health care providers is partially explained by this. Though the group consisting of healthcare providers self signifies their working status, it is pertinent to specify that as healthcare is an essential service even during the pandemic and the prevalent circumstances commanded active manpower, pregnant healthcare worker was not exempted from physically providing hospital services though all attempts were made to ensure prevention of their exposure from red areas catering to covid positive patients. Nevertheless, the pandemic did not even spare non-working women as suggested by (Table 4). Though overall the concern and fears about various factors studied were high, these being significantly more amongst healthcare workers may be explained by their relatively higher education status.

It is also possible that as they were direct observers of the effect of COVID-19 on admissions and outcomes, this might have led to apprehensions also. We have no literature to compare our results with but the fear of infection transmission from attendants or house help is interdependent and seems to be related to the education

status as well as more awareness due to exposure to the hospital environment. However, fear of infection from the husband was only marginally different between participants of normal and health care workers groups. The concern/fear of breastfeeding is observed to be significantly more among COVID-19 positives. This is understandable since the lack of much knowledge/evidence regarding practices of breastfeeding in COVID-19-positive pregnancies versus the general belief that the virus is highly transmissible is a matter of concern for lactating mothers. With so much stress on the contribution of the use of masks for the prevention of transmission and the non-feasibility of its use in neonates, the concern of lactating women is genuinely expected.

Education and working status increase fear probably due to direct witness of the impact of the pandemic and hence highest in healthcare workers. But it also appears that this exposure inculcated more awareness and hence more use of preventive measures amongst the hospital staff. It is commendable that despite fear for self, fear of coming to the hospital, and stress of newborn infection to the tune of 60% 83.3% 63.3% respectively among the hospital staff, healthcare workers acted as COVID warriors and carried out their duties during the pandemic. The present study verifies that there was a significantly high incidence of fears and related anxiety but the same was only admitted on interrogation. Had this study not been conducted as health care providers, we would have remained ignorant of these. These findings suggest or can be extrapolated to the need for a proactive approach to exploring the component of psychological health issues with or without the pandemic. Incorporating screening questionnaires on mental health in the antenatal history cards may be a good approach, to begin with. In light of the skewed doctor-to-patient ratio specifically in developing countries strengthening antenatal health services with qualified counsellors may be a good option.

Limitations

Small sample size and short duration of study is the primary limitation which was due to the increased risk/fear of acquiring COVID during that time. A greater sample size with better inter-disciplinary approach could have helped in having better results and a more conclusive analysis.

CONCLUSION

Women's health takes a back seat in most of the developing countries and more so amongst the underprivileged class. Further psychological issues are still largely an underestimated component of health. In many societies, the annexed stricture of stigma is also a deterrent to discussing the same. This is also true for pregnant women. The study reflects that interrogation helps surface these suppressed emotions. While the baseline pre-COVID stress in this population is not known, the impact of the pandemic was extensive. Yet apparently, none of the patients demanded or felt to command any kind of psychological counselling or intervention. Whether it is the high threshold to bear stress or hesitancy to share emotional stresses behind the same needs analysis.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Ilska M, Kołodziej-Zaleska A, Brandt-Salmeri A, Preis H, Lobel M. Pandemic-related pregnancy stress assessment-Psychometric properties of the Polish PREPS and its relationship with childbirth fear. Midwifery. 2021;96:102.
2. Preis H, Mahaffey B, Lobel M. Psychometric properties of the Pandemic-Related Pregnancy Stress Scale (PREPS). J Psychosom Obstet Gynecol. 2020; 41:191-7.
3. Dhillon A, Sparkes E, Duarte RV. Mindfulness-Based Interventions During Pregnancy: a Systematic Review and Meta-analysis. Mindfulness. 2017;8(6):1421-7.
4. Verbeek T, Arjadi R, Vendrik JJ, Burger H, Berger MY. Anxiety and depression during pregnancy in Central America: a cross-sectional study among pregnant women in the developing country Nicaragua. BMC Psychiatr. 2015;15:292.
5. Dennis CL, Falah-Hassani K, Shiri R. Prevalence of antenatal and postnatal anxiety: systematic review and meta-analysis. Br J Psychiatr. 2017;210(5):315-23.
6. Giardinelli L, Innocenti A, Benni L. Depression and anxiety in perinatal period: prevalence and risk factors in an italian sample. Archives of women's mental health. BMC Psychiatr. 2012;15(1):21-30.
7. Berger MY. Use of psychiatric medications during pregnancy and lactation. Obstet Gynecol. 2008;111(4): 1001-20.
8. Dunkel SC, Rahal D, Ponting C, Julian M, Ramos I, Hobel CJ, et al. Anxiety in pregnancy and length of gestation: Findings from the healthy babies before birth study. Health Psychol. 2022;41(12):894-903.
9. Melissa F, Cheryl HT, Owais CS, Frey BN. Risk Factors Of New Onset Anxiety And Anxiety Exacerbation In The Perinatal Period: A Systematic Review And Meta-Analysis. J Affect Disord. 2018; 238:626-35.
10. Andersson L, Sundström-Poromaa I, Bixo M, Wulff M, Bondestam K, åström M. Point prevalence of psychiatric disorders during the second trimester of pregnancy: a population-based study. Am J Obstet Gynecol. 2003;189(1):148-54.
11. Dunkel Schetter C, Tanner L. Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. Curr Opin Psychiatry. 2012; 25(2):141-8.
12. O'Hara MW, Schlechte JA, Lewis DA, Varner MW. Controlled prospective study of postpartum mood

disorders: psychological, environmental, and hormonal variables. J Abnorm Psychol. 1991;100(1):63-73.
13. Ajinkya S, Jadhav PR, Srivastava NN. Depression during pregnancy: Prevalence and obstetric risk factors among pregnant women attending a tertiary care hospital in Navi Mumbai. Ind Psychiatry J. 2013; 22(1):37-40.
14. Kelly R, Zatzick D, Anders T. The detection and treatment of psychiatric disorders and substance use among pregnant women cared for in obstetrics. Am J Psychiatry. 2001;158(2):213-9.
15. Ceulemans M, Foulon V, Ngo E, Panchaud A, Winterfeld U, Pomar L, et al. Mental health status of pregnant and breastfeeding women during the COVID-19 pandemic-A multinational cross-sectional study. Acta Obstet Gynecol Scand. 2021;100(7):1219-29.

Cite this article as: Kaur P, Sehgal A, Tandon R, Deepti, Arun P. Evaluation of psychological stress in pregnant females during COVID era. Int J Reprod Contracept Obstet Gynecol 2023;12:3328-33.