The socioeconomic apprehensions of a pregnant woman around COVID-19 – Do we need to be worried?

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Abstract

Introduction: Coronavirus 2019 (COVID-19) pandemic has become the most severe intercontinental health challenge and pregnant women are deemed to be a special population group. The COVID-19-related restrictions on visiting the hospital for antenatal check-up and procedures may be distressing for them. The present study aims at assessing the level of anxiety and risk perception of pregnant women during the pandemic. **Materials and Methods:** This cross-sectional observational study included all pregnant women who were above 18 years of age, irrespective of their gestational age. They were administered the pre-designed, pre-tested questionnaire via face-to-face interview. The effect of the COVID-19 pandemic and its influence on women's experience including her worries were collected. Data analysis was done using SPSS software version 22. **Results:** A total of 130 pregnant women with a mean maternal age of 26.1 ± 6.5 years were enrolled in the study. The mean gestational age of the women was 19 ± 4.7 weeks and most of them were in the second trimester (48.5%). Most of the pregnant women encountered the adverse socioeconomic influence of COVID-19 on their daily life (55.6% somewhat, 9.1% moderately so, 1.1% very much). Majority of them reported that they had limited their social activities (78.5%) and amorous relationship with their partner (30.8%). Also, around 59.2% of antenatal women experienced a moderate level and 40.7% had a mild level of anxiety. **Conclusion:** It is essential for obstetric providers to do prompt identification of mental health concerns in perinatal women and to liaise with mental health professionals to provide relevant interference.

Keywords: Anxiety, COVID-19, mental health, pandemic, pregnancy

Introduction

Within a few months, the coronavirus 2019 (COVID-19) pandemic has become the most grave global health problem since the Spanish Flu outbreak in 1918.[1] The coronavirus infection was declared a public health crisis of international concern by the World Health Organization (WHO) on 30 January 2020.[2] Since then, global health authorities are battling to prevent the COVID-19 pandemic from having serious consequences for women's health.

Pandemic poses a significant health threat to pregnant women over the world. Fear, anxiety and a sense of insecurity have prevailed in this otherwise joyous time. It is evident from the past that antenatal women are being assorted as a high-risk group during pandemics; for example, pregnancy was correlated with deplorable clinical outcomes and soaring mortality rates during the H1N1 'swine flu pandemic and the severe acute respiratory syndrome' (SARS) pandemic.[3] Pregnant women are considered to be a special population group because of the unique 'immune suppression caused by pregnancy'.[4] The unpredictability of the disease puts additional strain on these women during their pregnancy.

The Royal College of Obstetricians and Gynecologists states that the Coronavirus pandemic increases the risk of perinatal anxiety, depression, and domestic violence.[5] They may have grave concerns about their health and of their unborn baby. The prime challenges are posed during the first trimester and the third trimester when the patient has to go undergo diagnostic tests, scans, and investigations every week or so to confirm the pregnancy and well-being. The COVID-19 associated limitations on visiting the health centre for antenatal check-ups and procedures may be stressful for pregnant women. Life crises and unemployment due to the stringent measures to control the pandemic further aids to their level of anxiety. Women who faced stress and anxiety during pregnancy may have notably higher rates of pernicious birth outcomes like preterm deliveries and low birth weight babies.[6]

A condition such as extreme stress, emergency during the pandemic and conflict situation and natural disasters can escalate the risk of perinatal mental health morbidity. Pregnant women deserve a more insightful approach and understanding during the present pandemic. Acknowledging their fears and apprehensions can help healthcare experts to restrain their anxiety. Psychological support to pregnant women is essential during this crisis. The present study aims to ascertain the degree of anxiety and perspectives on maternal care of expecting mothers during the ongoing pandemic.

Methods

This study was conducted amongst pregnant women attending the antenatal clinics of a tertiary hospital in Central India and its affiliated Urban Health Centre during the period between 4 July 2020 and 31 December 2020. This cross-sectional observational study included pregnant women who attended the antenatal clinics at the above centres. All willing women provided written informed consent to participate in the study. Women were assured of complete confidentiality and anonymity of the data. The study was approved by the Institutional Ethics Committee (IEC/Pharmac/2020/39). Women responded to the pre-designed, pre-tested screening questionnaire via face-to-face interview.[4,5,7-9]

Part I of the questionnaire was designed to elicit the socio-demographic data including age, education level, employment status, health and reproductive history including duration of the marriage, parity and gestational age. **Part II** consisted of six pre-validated questions. The questions included knowledge regarding clinical features, various modes of transmission, preventive measures and so on. The first five questions were questions with a single best answer. The last question was regarding the source of information for which respondents could choose multiple options.

Part III consisted of five pre-validated questions related to the concerns of pregnant women about the COVID-19 pandemic. **Part IV** composed of 11 questions, which were used to measure the impact of socio-economic impact of COVID-19 on pregnant women's daily life including her worries and anxieties. These questions also assessed the level to which the participants had experienced anxiety-related symptoms and emotions during the COVID-19 pandemic by using a 4-point scale ranging from 1 (not at all) to 4 (very much so). The impact of the COVID-19 pandemic and its influence on women's experience including her worries were collected. During data collection, if women with an extreme degree of stress were identified, they were offered a referral to the counselling centre and helpline numbers.

Part V consisted of 20 items, the Chinese Version of State-Anxiety Scale of the State-Trait Anxiety Inventory (STAI-state), which was used to assess the state anxiety level of the women.[10] Items measured the extent to which participants had experienced anxiety-related symptoms and emotions by using a 4-point scale ranging from 1 (not at all) to 4 (very much so). These scores were further added to obtain a total anxiety score. The total score ranged from 20 (minimal score) to 80 (maximal score). Scores for mild anxiety varied from 20 to 39, moderate anxiety from 40 to 59 and severe anxiety from 60 to 80.

Analysis of data

The data collected were entered in a spreadsheet; categorical data and continuous data were recorded into numerical variables and expressed as mean and median and frequency, respectively. Analysis of the data was done using SPSS (Statistical Package for Social Sciences) software version 22.

Results

A total of 130 pregnant women with a mean maternal age of 26.1 ± 6.5 years were recruited in the study. The majority of the women were multiparous (54.7%), homemakers (88.5%) and resided in rural areas (70.8%). About their educational level, 26.2% were graduates and 43.8% had secondary/senior secondary levels. Most of the participants were in the second trimester (48.5%) at the time of receipt of the questionnaire. The mean gestational age of the women was 19 ± 4.7 weeks. Baseline characteristics of the study participants are listed in Table 1.

All women (100%) had heard about COVID-19 and all knew about the population at risk of acquiring COVID-19 infection, signs and symptoms, modes of transmission and precautionary measures related to COVID-19 infection. Television was the major source of information (36.2%) followed by social media (18.5%).

The majority of women 96.2% (*n* = 125) showed their concern about COVID-19 and around 93.8% (*n* = 122) believed that they were more vulnerable during the ongoing pandemic. However, only 3.8% (*n* = 11) felt that it can be transmitted to a newborn baby. Table 2 lists the concerns of pregnant women regarding the ongoing pandemic.

Most of the pregnant women endured the negative socioeconomic impact of COVID-19 on their daily life (55.6% somewhat,

Table 1: Demographic details of study participants (*n*=130)			
Characteristics	**Groups**	**Number (*n*)**	**Percentage**
Age (in years)	<20	4	3.1%
	21-30	110	84.6%
	31-35	12	9.2%
	>35	4	3.1%
Education	Illiterate	11	8.5%
	Primary	17	13.1%
	Middle	11	8.5%
	Secondary	19	14.6%
	Higher	38	29.2%
	Graduate and above	34	26.2%
Residence	Urban	38	29.2%
	Rural	92	70.8%
Occupation	Housewife	115	88.5%
	Unskilled worker	12	9.2%
	Clerical	3	2.3%
Husband education	Illiterate	12	9.2%
	Primary	4	3.1%
	Middle	9	6.9%
	Secondary	28	21.5%
	Higher	44	33.8%
	Graduate and above	33	25.4%
Husband occupation	Unskilled worker	90	69.3%
	Semiskilled worker	20	15.4%
	Self-employed	7	5.4%
	Clerical/Farmer	8	6.1%
	Semi-professional	5	3.8%
Type of family	Joint	44	33.8%
	Nuclear	86	66.2%
Gravida	1	49	37.7%
	2	53	40.8%
	≥3	28	21.5%
Parity	0	59	45.4%
	1	63	48.5%
	2	8	6.2%
	3	0	0%
Period of gestation (weeks)	≤12 weeks	44	33.8%
	13-28 weeks	63	48.5%
	>28 weeks	23	17.7%
Is current pregnancy	Planned	92	70.8%
	Unplanned	38	29.2%
Any existing comorbidity?	Yes	19	14.6%
	DM	5	
	PIH	5	
	Hypothyroidism	9	
	Heart disease	0	
	Asthma	0	
	Epilepsy	0	
	No	111	85.4%

Table 2: Concern of the pregnant women about COVID-19 pandemic (*n*=130)		
Variables	**Number (*n*)**	**Percentage**
Are you concerned about coronavirus outbreak?		
Yes	125	96.2%
No	5	3.8%
Due to pregnancy, do you feel more vulnerable during the outbreak?		
Yes	122	93.8%
No	2	1.5%
Don't know	6	4.6%
Do you constantly keep thinking that you may have or already have coronavirus?		
Yes	80	61.5%
No	50	38.5%
Do you think that your newborn baby might get infected after birth?		
Yes	5	3.8%
No	114	87.7%
Don't know	11	8.5%
Do you think you might get infected during or right after the delivery?		
Yes	48	36.9%
No	81	62.3%
Don't know	1	0.8%

family was being disturbed. Their routine life was disrupted by COVID-19. Figure 1 summarizes the extent of socio-economic effect of COVID-19 on the samples.

Around 59.2% of pregnant women (*n* = 77) experienced a moderate level of anxiety and 40.7% had a mild level of anxiety. However, none of the respondents had a severe level of anxiety. Figure 2 highlights the anxiety score of the study population.

In the present study, there was a statistical correlation of age, parity and gestational age with anxiety score (*p* value >0.05). Increased age was associated with a severe anxiety score. Similarly, women who were near delivery time (third trimester) had severe anxiety scores. Nulliparous women had severe anxiety score as compared to multiparous women. However, there was no statistical correlation between the educational status and anxiety score.

Discussion

The COVID-19 pandemic is an unprecedented crisis faced by the 21st century. Care of vulnerable populations like pregnant women becomes a vital component at the time of catastrophic events of natural and manmade disasters. The effect of COVID-19 on the maternal psyche cannot be ignored.[11] As a result, women faced increased levels of anxiety and depression symptoms which are a matter of concern for both maternal and foetal well-being. There is a higher risk of cognitive and behavioural problems among infants whose mothers experienced high prenatal stress.[12-14]

Pregnant women in the pandemic bear an ancillary predicament. They required stellar antenatal care and there is a possibility
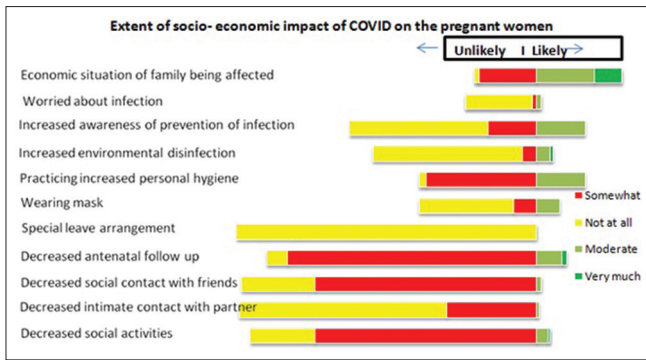
9.1% moderately so, 1.1% very much). Majority of the women reported that they had limited their social ventures (78.5%), intimate liaison with their partner (30.8%) and decreased contact with friends and other family members (75.4%). A great majority (93.1%) of the women were worried about reduced follow-up during the antenatal period. More than three-fourth of the participants (77.7%) were anxious about getting infection despite adopting stringent precautionary measures. Almost all the participants (98.4%) reported that the economic condition of the

Figure 1: The extent of socio-economic impact of COVID-19 on the samples

Figure 2: The anxiety score of the study population

of contracting the virus if they choose to travel to a hospital to receive this service. On the other hand, they also have apprehension about adjourning their appointment and not being able to access adequate healthcare. The vulnerability of pregnant women towards the development of severe pneumonia makes them more susceptible to COVID-19 infection than the general population.[15,16] Evans *et al*.[17] reported that approximately 20% of infections in patients and almost 90% of infections in medical personnel were mainly due to hospital-acquired transmissions. Although mortality rates for COVID-19 appear to be lesser in children and women of reproductive age, they might be inordinately affected by the disruption of routine health services. This may lead to substandard care resulted by not reaching the physician may result in negative pregnancy outcomes. And this factor featured majorly in their fears. In the present study, pregnant women were found to be deeply distressed about the COVID-19 pandemic.

More than 90% of the participants perceived vulnerability due to the ongoing pregnancy and 62.3% of pregnant women believed that they might get infected during or shortly after their delivery. This is slightly higher than a study by Yassa *et al*.[5] wherein 52% of the women reported that they felt vulnerable and the majority (80%) were concerned about the coronavirus outbreak.

Previous articles have shown that pregnant women afflicted from infectious diseases are more worried about their baby's health.[15,18-21] As per the review including more than 500 pregnant COVID-19 patients, the vertical transmission of the coronavirus has not yet been established. However, the women may feel worried about such risk or infection to the infant in the peripartum period.[22] Although pregnant women were not reported to be at a higher risk for mortality secondary to COVID-19 infection, the rate of preterm births and cesarean sections were found to be increased.[20,23] Proper advice about the disease transmission, the precautions that can be taken for prenatal, postpartum, breastfeeding and neonatal care play an important role in increasing the psychological well-being of pregnant women.

Wu *et al*.[24] reported that there is a significant rise in the prevalence of depressive and anxiety symptoms after the declaration of
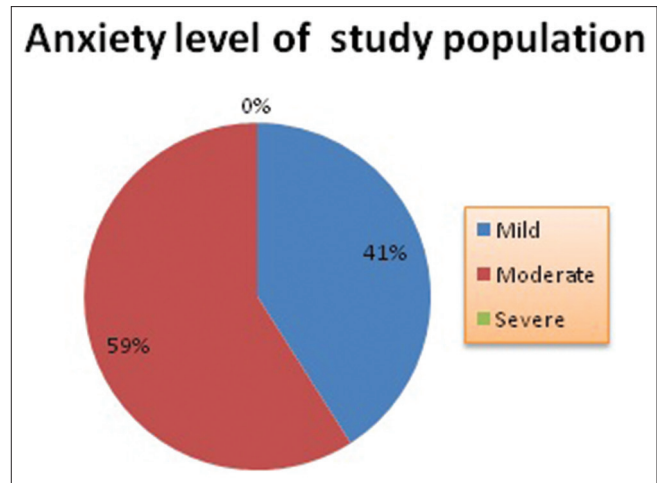
human-to-human transmission of the COVID-19 infection. Anxiety may lead to psychological stress triggering other physiological events and results in decreased immunity of pregnant women.[25] In the present study, a higher proportion of pregnant women show moderate anxieties in this regard (59.2%). Studies conducted in Singapore (35.8%), Turkey (75.9%), Poland (59.5%) and Italy (53%) among pregnant women in relation to the COVID-19 have also reported similar results.[25-28] Hence, healthcare professionals must concurrently monitor the mental well-being of antenatal women so that women requiring early intervention may be identified.

As is globally evident, COVID-19 pandemic has had negative repercussions on global healthcare organization with an undulate effect on every facet of human life. In a response to 'trample the curve', governments have enforced lockdowns. Stern public health action directed towards alleviating the spread of the disease is obligatory but is known to have detrimental psychological effects. The coronavirus pandemic and lockdowns instituted are causing the profound economic vandalization. Financial uncertainties are likely to further intensify the psychological burden and take a toll on the mental health of pregnant women.

Some individuals may adapt to noxious approach of coping with the crisis, such as substance abuse and alcohol consumption, thus contributing to existing mental well-being problems. This may also lead to an increase in gender-based intimate partner violence, reduction in preventive help-seeking behaviour and an increase in suicide rates with devastating results, especially among low-income families.[29] Present study results revealed that the financial difficulties during the pandemic interfered with the woman's ability to prioritize her health and maintain a healthy lifestyle throughout pregnancy. These findings were echoed in a Turkish study by Hocaoglu *et al*.[25] Other studies have also shown that, during public health emergencies like SARS, several negative emotional responses such as high levels of anxiety were observed.[30-32] An evaluation of the Ebola virus outbreak in West Africa showed that the indirect effects of the outbreak were more severe than the outbreak itself.[33] Lawmakers must assess not only

the direct health effects of the pandemic but also the probable long-term consequences of the pandemic and the response to it.

It is recognised that pregnancy-related anxiety surge in the third trimester and the current study results revealed the same. The fears of childbirth and negative conviction about the upcoming delivery have been associated with an increased risk of maternal anxiety and depression.[34-36] Despite the relatively high prevalence of anxiety disorders in women of childbearing age, less attention has been given to such disorders during pregnancy. Although the relationship between advanced maternal age and depression is debatable, yet research showed that advanced maternal age, especially over 35 years, had higher levels of depression as compared to younger adult pregnant women. The findings of the present study are in consistent with those of previous studies.[15,37-39] The increase in this menace has been imputed to several factors such as the increased chances of obstetric complications, obstacles in adapting to safe motherhood and decreasing aid from the social domain with increasing age.

This study is especially relevant to the primary care providers as they are the ones who will directly interact with the patient. If they are aware of the anxiety-triggering issues among pregnant women, especially in the context of COVID, they can better handle the cases.

Strengths and Limitations

A prospective design was the major strength of this study. However, the main limitation of the study was that the survey was only available to those women who had access to the hospital: hence, the most underprivileged could potentially be under-represented. It is, therefore, possible that the actual impact of the lockdown on antenatal women is much more marked than observed in the present study. Another limitation of our study is that we did not have the baseline depression and stress scores of our antenatal population for comparison. Third, our results were limited by the single-centre study design. Hence, the findings might not fully reflect the stress of the pregnant women in the whole community.

Conclusion

In conclusion, COVID-19-related anxiety during pregnancy needs to be considered as it may adversely affect pregnancy and foetal outcomes. Therefore, it is essential for obstetricians to do early identification of mental health issues in perinatal women and to bridge with mental health specialists to provide suitable interventions. Additionally, it is the need of the hour to develop appropriate strategies proactively to ease the anxiety. Various available screening tools, online consultation and psychological support may play a vital role in this arena.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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