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WORRY, DEPRESSION, STRESS, AND ANXIETY RELATED PERCEPTION IN ANTENATAL FEMALES DURING COVID-19

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ABSTRACT

Background: COVID-19 is an infectious disease reported in Wuhan, China in 2019 for the first time and resulted in widespread infection and mortality, and was declared as a pandemic. The disease has affected large population globally including the antenatal females.

Aim: The present study was aimed to assess the levels of worry, depression, stress, and anxiety in antenatal females during COVID-19 era and comparison was done with the pre COVID levels and the associations were assessed between demographic data of antenatal females and BMWS (Brief Measure of Worry Severity), PSS (Perceived Stress Scale), GAD-7 (Generalized Anxiety Disorder), HADS-A (Hospital Anxiety Depression Scale), and HADS-D scores.

Methods: Study assessed 202 antenatal females reported during COVID-19 era. The 4 questionnaires assessed the females including BMWS, PSS, GAD-7, HADS-A and D.

Results: A significant increase in worry, stress, depression, and anxiety was seen in antenatal females during COVID-19 compared to the females prior to COVID-19 levels of these parameters. The results showed a significant association of panic disorder to BMWS, PSS, and HADS scores. A significant association was seen in HADS scores and pregnancy complications, health problems with BMWS and PSS, and BMWS, GAD-7, and HADS with worry, stress, depression, and anxiety to BMWS, GAD-7, and HADS scores in antenatal females during CIVID-19.

Conclusion: The study concludes a need for prior attention to psychology in antenatal females during COVID-19. Adequate management can result in worldwide changes in interventions and social experience are vital to assessed changes in mental health of antenatal females.

Keywords: Anxiety, depression, COVID-19, pregnant females, stress, worry

INTRODUCTION

COVID-19 disease was first reported in 2019, in Wuhan, China and soon spread globally which was then announced as pandemic by WHO (World Health Organization). It has affected a large population globally affecting the subjects from all categories including pregnant females.[1] Antenatal females have a unique immune tolerance and are vulnerable to various diseases including viral infections with an extensive literature data reporting infection in the pregnant females. COVID-19 is a global health concern posing burden on various health sectors including obstetrical concerns while assessing adequate treatment for pregnant females. Despite various medical associations across the globe have made guidelines for managing pregnant females during COVID-19, the data on managing the mental health of pregnant females have been scarce on the experiments.[2] Main concern has been placed on the outcomes of neonatal and maternal infection during COVID-19 in pregnancy by antenatal researchers. Hence, the present study was aimed to assess the effects of COVID-19 on the psychological health of pregnant females.[3]

Females have been extremely vulnerable to stress during the pregnancy phase with nearly 25% females reporting emotional distress during their pregnancy. Stress, depression, and anxiety related disorders have been published in literature concerning pregnant females involving psychological and physical changes. These changes in the body have been attributed to rapid appearance of mental health symptoms causing various obstetric and medical complications during the pregnancy.[4]

During pregnancy, females are susceptible to stress leading to increased depression and anxiety. Previous literature data reported a varying incidence of stress during pregnancy within the range of 5.5% to 78%. Increased stress levels during pregnancy can cause low-birth weight infants, preterm births, developmental delays, hearing impairment, vision impairment, preeclampsia, miscarriage, and/or gestational hypertension.[5]

Depression is the second most common complication reported in the pregnant females. Depression signifies the mood disorder that signifies a constant feeling of loss of interest and unhappiness leading to various physical and emotional problems decreasing the ability of an individual to perform personally and professionally. Nearly 70% females report depression during pregnancy and nearly 15% presenting major depressive disorder symptoms along with decreased awareness towards the baby.[6]

Worry is another factor affecting quality of life in females during pregnancy. Worry has a strong correlation with fear where high worry levels are reported in pregnant females. The primary reason for worry during pregnancy constituted by health during pandemic times, health of the fetus, breastfeeding and care of the newborns, financial constraints and accommodation, and childcare and family.[7]

During research, various scales have been used to assess worry, stress, depression, and anxiety including different self-reported scales which are reliable and validated. These including BMWS (Brief Measure of Worry Severity),[8(26)] PSS (Perceived Stress Scale),[9(25)] GAD-7 (Generalized

Anxiety Disorder),[10(24)] HADS-A (Hospital Anxiety Depression Scale), and HADS-D scores[11(23)] which have been used to evaluate worry, stress, and anxiety during pregnancy.

The present study was aimed to assess the levels of worry, depression, stress, and anxiety in antenatal females during COVID-19 era and comparison was done with the pre COVID levels and the associations were assessed between demographic data of antenatal females and BMWS (Brief Measure of Worry Severity), PSS (Perceived Stress Scale), GAD-7 (Generalized Anxiety Disorder), HADS-A (Hospital Anxiety Depression Scale), and HADS-D scores.

MATERIALS AND METHODS

The study included pregnant females reporting the Department of Obstetrics and Gynecology and Psychiatry of the Institute during the study period. Before commencement of the study, the detailed study design was explained to all the participants and informed consent was taken in both verbal and written format.

The inclusion criteria for the study were antenatal females, age range 19-40 years, and gave consent for study participation. The exclusion criteria were subjects with recent COVID-19 positive reports and medical conditions posing inability to understand the questionnaire.

For all the participants, demographic data were recorded including gender, age, BMI in kg/m2, weight in kg, height in m, and anthropometric factors. Other data gathered were panic disorder history, pregnancy complication history, psychiatric illness history in family, chronic health problem, recent hospitalization, medicine use, parity, pregnancy method, infertility duration, and employment history. After the complete data recording, questionnaire was explained to all the participants and they were asked to fill questionnaire. As study was done during COVID-19, online methods such as Facebook, WhatsApp, and e-mails were used to send the questionnaire to included subjects. The filled questionnaires were then sent back to the researchers via online mode.

The BMWS (Brief measure of worry severity) was formulated as single direction assessment scale to evaluate the various degree worry impact by asking subjects to rate their usual worry levels under 4 categories where 0 was not true at all, 1 was somewhat true, 2 was moderately true, and 3 was definitely true. All answers were added to get a total score with high scores depicting higher worry in antenatal females.

PSS or perceived stress scale contain 10 questions concerning feeling and thought levels seen during the last month and frequency of the feelings. The scores were o for never, 1 for almost never, 2 for sometimes, 3 for fairly often, and 4 for very often.

GAD-7 contain 7 items on how the subject is concerned about each symptom in past 2 weeks. 0, 1, 2, and 3 scores were allotted to “not at all,” “several days,” “more than half the days,” and “nearly every day” respectively. Scores of 5, 10, and 15 were for mild, moderate, and severe anxiety respectively.

HADS is a common screening procedure develop to assess depression and anxiety. It is a 14 item comprising of HADS-A and HADS-D for anxiety and depression respectively. Both HADS-A and HADS-D having seven items with scores of 0 and 3. The scores of 0-7, 8-10, and 11-21 were considered normal, border, and abnormal respectively.

The gathered was analyzed statistically using SPSS software version 24.0 (Chicago, Illinois, USA). Obstetric and demographic data were assessed with descriptive statistics. Differenced in BMWS, PSS, GAD-7, HADS-A, and HADS-D prior to and after COVID-19 were assessed using student's t-test. The significance level was at $P < 0.05$ for all analyses.

RESULTS

The present study was aimed to assess the levels of worry, depression, stress, and anxiety in antenatal females during COVID-19 era and comparison was done with the pre COVID levels and the associations were assessed between demographic data of antenatal females and BMWS (Brief Measure of Worry Severity), PSS (Perceived Stress Scale), GAD-7 (Generalized Anxiety Disorder), HADS-A (Hospital Anxiety Depression Scale), and HADS-D scores. Study assessed 202 antenatal females reported during COVID-19 era. The demographic and disease characteristics of the study participants are listed in Table 1. The mean BMI of study subjects pr-COVID and post-COVID was 25.44±3.88 and 26.42±2.60 kg/m2 respectively which was comparable. The mean weight was 69.29±8.44 and 72.17±8.40 kg respectively before and after COVID, mean height before and after was 1.63±0.04 meter, and the mean age was 32.71±5.65 both pre-COVID and post-COVID.

The history of stress, depression, anxiety, and worry was positive in 40.59% (n=82) subjects before COVID which significantly increased to 88.11% (n=178) subjects after COVID with p<0.05. Similar significant increase was seen in panic disorder history from 23.76% (n=48) subjects before COVID and 62.37% (n=126) subjects post-COVID (p<0.05). A significant increase in pregnancy complications was seen from 57.42% (n=116) subjects pre-COVID to 75.24% (n=152) subjects post-COVID (p<0.05). History of family psychiatric illness was positive in 52.47% (n=106) pre-COVID which increased significantly to 52.47% (n=106) subjects. Health problems also increased significantly from 53.46% (n=108) females to 70.29% (n=142) females from pre-COVID to post-COVID with p<0.05. Exercise duration was 0 minutes was higher post-COVID, 15-30 minutes exercise and 31-40 minutes exercise was also more in pre-COVID time compared to post-COVID as shown in Table 2.

On assessing the various scales for assessment of psychological health in the ante-natal females, it was seen that BMWS (Brief Measure of Worry Severity) scores increased significantly from 14.07±4.24 to 19.96±3.86 from pre-COVID to post-COVID time with p<0.05. Similarly, PSS (perceived stress scale) scores increased significantly from pre-COVID to post-COVID time from 16.55±5.43 to 25.43±7.26 respectively with p<0.05. GAD-7 scores increased from 5.22±2.82 to 11.03±4.26 from pre-COVID to post-COVID time with p<0.05. HADS-A and HADS-D scores also increased significantly from pre-COVID to post-COVID time with p<0.05 as depicted in Table 2.

DISCUSSION

The present study was aimed to assess the levels of worry, depression, stress, and anxiety in antenatal females during COVID-19 era and comparison was done with the pre COVID levels and the associations were assessed between demographic data of antenatal females and BMWS (Brief Measure of Worry Severity), PSS (Perceived Stress Scale), GAD-7 (Generalized Anxiety Disorder), HADS-A (Hospital Anxiety Depression Scale), and HADS-D scores. Study assessed 202 antenatal females reported during COVID-19 era. The mean BMI of study subjects pr-COVID and post-COVID was 25.44±3.88 and 26.42±2.60 kg/m2 respectively which was

comparable. The mean weight was 69.29±8.44 and 72.17±8.40 kg respectively before and after COVID, mean height before and after was 1.63±0.04 meter, and the mean age was 32.71±5.65 both pre-COVID and post-COVID. The demographic data were comparable to the previous studies by Monk c et al[12] in 2012 and Raisanen S et al[13] in 2014 where authors assessed subjects with demographics comparable to the present study.

The history of stress, depression, anxiety, and worry was positive in 40.59% (n=82) subjects before COVID which significantly increased to 88.11% (n=178) subjects after COVID with $p<0.05$. Similar significant increase was seen in panic disorder history from 23.76% (n=48) subjects before COVID and 62.37% (n=126) subjects post-COVID ($p<0.05$). A significant increase in pregnancy complications was seen from 57.42% (n=116) subjects pre-COVID to 75.24% (n=152) subjects post-COVID ($p<0.05$). History of family psychiatric illness was positive in 52.47% (n=106) pre-COVID which increased significantly to 52.47% (n=106) subjects. Health problems also increased significantly from 53.46% (n=108) females to 70.29% (n=142) females from pre-COVID to post-COVID with $p<0.05$. Exercise duration was 0 minutes was higher post-COVID, 15-30 minutes exercise and 31-40 minutes exercise was also more in pre-COVID time compared to post-COVID. The disease characteristics were consistent with the studies by Caparros-Gonzalez RA et al[14] in 2020 and Effati-Daryani F[15] in 2020 where authors reported increased stress, depression, anxiety, worry, psychiatric illness, and pregnancy complications in ante-natal females after COVID-19.

Concerning the various scales for assessment of psychological health in the ante-natal females, it was seen that BMWS (Brief Measure of Worry Severity) scores increased significantly from 14.07±4.24 to 19.96±3.86 from pre-COVID to post-COVID time with $p<0.05$. Similarly, PSS (perceived stress scale) scores increased significantly from pre-COVID to post-COVID time from 16.55±5.43 to 25.43±7.26 respectively with $p<0.05$. GAD-7 scores increased from 5.22±2.82 to 11.03±4.26 from pre-COVID to post-COVID time with $p<0.05$. HADS-A and HADS-D scores also increased significantly from pre-COVID to post-COVID time with $p<0.05$. These results were in agreement with the previous studies of Colizzi M et al[16] in 2020 and Ahorsu DK et al[17] in 2020 where authors suggested a significant increase in BMWS, PSS, GAD-7, HADS-A, and HADS-D scores from pre-COVID to post-COVID time in their study subjects.

CONCLUSION

Considering its limitations, the present study concludes that there is a need for prior attention to psychology in antenatal females during COVID-19. Adequate management can result in worldwide changes in interventions and social experience are vital to assessed changes in mental health of antenatal females. However, the study had limitations of small participant size and short follow-up time needing further assessment of ante-natal females for their psychological health.

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TABLES

Characteristics	Subgroup	Pre-COVID (n=202)	Post-COVID (n=202)
BMI (kg/m2)		25.44±3.88	26.42±2.60
Weight (kg)		69.29±8.44	72.17±8.40
Height (m)		1.63±0.04	1.63±0.04
Age (years)		32.71±5.65	32.71±5.65
Stress, depression, anxiety, and worry	Yes	82 (40.59)	178 (88.11)
	No	120 (59.40)	24 (11.88)
Panic disorder history	Yes	48 (23.76)	126 (62.37)
	No	154 (76.23)	76 (37.62)
Pregnancy complications history	Yes	116 (57.42)	152 (75.24)
	No	86 (42.57)	50 (24.75)
Family psychiatric illness history	Yes	106 (52.47)	106 (52.47)
	No	96 (47.52)	96 (47.52)
Health problem history	Yes	108 (53.46)	142 (70.29)
	No	94 (46.53)	60 (29.70)
Exercise duration (minutes)	0	70 (34.65)	166 (82.17)
	15-30	98 (48.51)	32 (15.84)
	31-40	34 (16.83)	4 (1.98)
Hospitalization history	Yes	52 (25.74)	136 (67.32)
	No	150 (74.25)	66 (32.67)
Medication history	Yes	126 (62.37)	176 (87.12)
	No	76 (37.62)	26 (12.87)
Parity	Primiparous	56 (27.7)	56 (27.7)
	Multiparous	146 (72.27)	146 (72.27)
Pregnancy method	IUI	54 (26.73)	54 (26.73)
	IVF	38 (18.81)	38 (18.81)
	Normal	110 (54.45)	110 (54.45)
Occupation	Employed	154 (76.23)	114 (56.43)
	Unemployed	48 (23.76)	88 (43.56)
	0	16 (7.92)	16 (7.92)
	1	36 (17.82)	36 (17.82)
	2	10 (4.95)	10 (4.95)
	3	24 (11.88)	24 (11.88)
	4	18 (8.91)	18 (8.91)
	5	24 (11.88)	24 (11.88)
	6	24 (11.88)	24 (11.88)
	7	12 (5.94)	12 (5.94)
	8	12 (5.94)	12 (5.94)
	9	12 (5.94)	12 (5.94)
	10	24 (11.88)	24 (11.88)

Table 1: Demographic and disease characteristics of the study participants

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Scale	Pre-COVID	Post-COVID	p-value
BMWS	14.07±4.24	19.96±3.86	<0.001
PSS	16.55±5.43	25.43±7.26	<0.001
GAD-7	5.22±2.82	11.03±4.26	<0.001
HADS-A	5.34±2.79	11.07±4.09	<0.001
HADS-D	3.98±1.76	8.57±4.73	<0.001

Table 2: Psychological health in the study subjects before and after COVID-19