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**ASSESSMENT OF DEPRESSION, ANXIETY AND STRESS IN
PERINATAL WOMEN DUE TO COVID-19 PANDEMIC: CROSS-
SECTIONAL STUDY**

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ABSTRACT

BACKGROUND: Due to the rapid spread of COVID-19 disease, Governments and public health authorities began to implement protective measures in order to protect public health and prevent the spread of COVID-19. Being pregnant during the COVID-19 pandemic causes increased chances of developing depression and anxiety.

AIM AND OBJECTIVE: The aim of the study is to evaluate the impact of the COVID 19 pandemic on depression, anxiety, and stress in perinatal women. The objectives are to determine the significant relationship between the Fear of COVID-19 and depression, anxiety, and stress in perinatal women.

RESULTS: Among 169 respondents pregnancy status of each woman was classified as 26(12%) women are trying to get pregnant, antenatal women classified as 40(24%) in their 1st trimester, 41(24%) women are in their 2nd trimester, 34(20%) women are in their 3rd trimester and 34(20%) women gave birth (postnatal). Women who gave birth were found to have severe depression, anxiety, and stress. The association between fear of COVID-19 and the perinatal period was assessed and found that women in the 3rd trimester had a higher association and women trying to get pregnant have a lower association.

CONCLUSION: The positive resilience factors such as providing counseling or information leaflet on prenatal care, antenatal care and breast feeding should be the first measure. Providing information regarding physical exercise and lifestyle modifications adopted according to the pandemic can help in improving poor mental health.

Key words: Pregnant Women, Anxiety, COVID-19

INTRODUCTION

Many cases of Corona Virus were reported in China in December 2019. The virus has infected millions of people around the globe [1]. On January 30, 2020 the world health organization (WHO) announced the outbreak of COVID-19 and established a public health emergency of international concern (PHEIC), calling for all countries to take immediate action against the spread of the virus^[3]. Due to the rapid spread of COVID-19 disease, Governments and public health authorities of various countries and states began to implement guidance and protective measures like health policies, social distancing, and isolation, partial and total lockdown in order to protect public health and prevent the spread of COVID-19 [2, 4]. In addition to these health measures, the world economic crisis also created a great impact on mental health among the population. These mental health issues turned out to be psychological distress such as depression, anxiety, and stress associated with more severe symptoms [5, 6].

Pregnancy or having a baby is ideally an event that is to be enjoyed and associated

with joy, delight, and fulfillment, following a safe and positive pregnancy, birth, and early parenthood [7]. Being female is the foremost risk factor for developing post-traumatic stress symptoms (PTSS) and depressive symptoms among adults and adolescents. Pregnant women are always considered to be a vulnerable and high-risk population [8]. Many studies have reported that psychological distress such as depression; anxiety and stress are more common in the perinatal period than compared in the non pregnant period [4]. Being pregnant during the COVID-19 pandemic causes increased chances of developing depression and anxiety. The perinatal period is defined as the period between conceptions up to 1 year post-partum [9]. Perinatal mental disorders are an important public health problem, especially in low and middle-income countries (LMICs) [11]. These are mental disorders that occur either during pregnancy or the postpartum period and include antenatal and postnatal common mental disorders (CMD) and severe mental disorders (SMD) [10, 11]. Common mental disorders

include major depression and anxiety disorders, such as generalized anxiety, panic and obsessive-compulsive disorders, and phobias, like a social phobia. The severe mental disorders including bipolar disorder and psychotic disorders including schizophrenia and delusional disorders can be developed later [12, 13].

METHODS AND MATERIALS:

STUDY DESIGN:

Cross-sectional study method is adopted. Inclusion criteria were all prenatal and postnatal women with gestation weeks 10 - 40 weeks, no personal and family history of mental disorders, and the ability to understand the questionnaire and complete it independently with a willingness to participate in the survey. Exclusion criteria were with known psychological disturbances and those who cannot understand the questionnaire (with mental retardation or abnormality). The independent ethics committee approved this study.

DATA COLLECTION:

The questionnaire consisted of three parts, sociodemographic details, Fear of COVID-19 scale, Depression, Anxiety and Stress scale (DASS-21). The Depression, Anxiety and Stress-21 items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and

stress of participants in a 4-point Likert scale 0(never) to 3 (almost always). The score was further divided into mild, moderate, severe, and extremely severe.

STATISTICAL ANALYSIS:

Statistical analyses were performed with the help of SPSS (statistical package for social sciences) version 21.0. Continuous data were summarized as mean (standard deviation). Categorical variables including socio-demographic details such as age, perinatal period, number of children, and educational qualification were provided in frequency and percentages. The relationship between the independent and dependent variables is calculated by using a multiple bivariate regression test was used. Two-sided P-values < 0.05 were considered statistically significant.

RESULTS:

PARTICIPANTS' SOCIODEMOGRAPHIC CHARACTERISTICS:

Table 1, shows the demographic status of the participants, where majority of the participants are from their 1st and 2nd trimester.

DEPRESSION IN PERINATAL WOMEN:

With respect to the Depression in DASS-21 the statement “ I feel like I am less interested in doing daily activities” ranks first with higher mean and the statement “Nowadays, I

am unable to get involved in joyful activities” ranks least with lower mean measuring the Depression (Table 2).

ANXIETY IN PERINATAL WOMEN:

The statement “Often I feel getting surprised and alarmed” ranks highest in mean and the statement “I feel like I have strong thoughts about specific things” ranks lowest in mean compared to all other statements measuring the Anxiety in DASS-21 (Table 3).

STRESS IN PERINATAL WOMEN

In case of Stress, the statement “I feel like getting irritated even for small things” ranks highest in mean and the statement “I feel difficulty in relaxing myself” ranks lowest in mean compared to other statements measuring stress in DASS-21 (Table 4).

INFERENCE ANALYSIS

MULTIPLE REGRESSION MODELS 1 (Table 5).

Based on the Table 5, Depression and Anxiety shows a positive relationship with fear of COVID-19. Perinatal period or pregnancy status also shows a positive relationship with fear of COVID-19. In contrast, Stress exhibited a negative relationship with fear of COVID-19. At the same time, socio-demographic details such as age and pregnancy status show a positive relationship with fear of COVID 19. Also, the major study variables had shown a significant relationship that is p-value is lesser than 0.05. Thus, it shows that there is an impact of fear of COVID-19 on the perinatal period and psychological distress.

Table 1: Demographic distribution

DEMOGRAPHIC DETAILS	RANGE	FREQUENCY (N=169)	PERCENTAGE
AGE IN YEARS	20-30	81	48%
	31-40	88	52%
QUALIFICATION	School level/diploma	13	8%
	Graduate	88	52%
	Post Graduate	68	40%
PARITY HISTORY	0	101	60%
	1	61	36%
	2	7	2%
PERINATAL PERIOD	Trying to get pregnant	26	12%
	Between 1 to 3 months (1 st trimester)	40	24%
	Between 4 to 6 months (2 nd trimester)	41	24%
	Between 7 to 9 months (3 rd trimester)	34	20%
	Child born (<6 weeks)	34	20%
OTHER KNOWN PSYCHOLOGICAL ISSUES	NO	169	100.0%
	YES	-	-
COVID-19 TEST	Positive	26	15%
	Negative	143	85%

Table 2: Depression in perinatal women

Questionnaire items	Range	Frequency	Percent	Mean	Standard deviation
1. I feel like having negative opinions towards my thoughts	Never	13	7.7%	2.57	0.634
	Sometimes	47	27.8%		
		109	64.5%		
2. I feel like I am less interested in doing daily activities.	Never	13	7.7%	3.45	0.893
	Sometime	7	4.1%		
		40	23.7%		
	Often	109	64.5%		
3. Nowadays, I am being happy like everyone around me	Never	40	23.7%	21.7	0.784
	Sometime	61	36.1%		
		68	40.2%		
4. I found myself unable to experience enjoyment	Never	13	7.7%	2.81	0.845
	Sometime	40	23.7%		
		82	48.5%		
	Often	34	20.1%		
5. I am worried about the things going to happen in the future	Never	6	3.6%	2.57	0.850
	Sometime	95	56.2%		
		34	20.1%		
	Often	34	20.1%		
6. Nowadays, I am unable to get involved in joyful activities	Never	7	4.1%	2.64	0.562
	Sometime	47	27.8%		
		115	68.0%		
7. I tend to focus more on upsetting situations	Never	13	7.7%	2.33	0.613
	Sometime	88	52.1%		
		68	40.2%		
Often					

Table 3: Anxiety in Perinatal Women

Questionnaire items	Range	Frequency	Percent	Mean	Standard deviation
1. Nowadays, I feel anxious or fearful that something will happen	Never	20	11.8%	2.92	1.058
		41	24.3%		
	Sometime	40	23.7%		
		68	40.2%		
	Often				
	Almost always				
2. I was worried about many situations in which I might get panic	Never	47	27.8%	2.36	1.094
		48	28.4%		
	Sometime	40	23.7%		
		34	20.1%		
	Often				
	Almost always				
3. Often I feel difficulties in concentrating	Never	41	24.3%	2.40	1.065
		54	32.0%		
	Sometime	40	23.7%		
		34	20.1%		
	Often				
	Almost always				
4. I feel scared nowadays without any valid reasons	Never	14	8.3%	2.76	0.870
		47	27.8%		
	Sometime	74	43.8%		
		34	20.1%		
	Often				
	Almost always				
5. I feel like I have strong thoughts about specific things	Never	20	11.8%	2.52	0.699
		41	24.3%		
	Sometime	108	63.9%		
	Often				
6. I feel like I have imbalanced thoughts	Never	14	8.3%	3.00	0.756
		6	3.6%		
	Sometime	115	68.0%		
		34	20.1%		
	Often				
	Almost always				
7. Often I feel getting surprised and alarmed	Never	55	32.5%	2.28	1.123
		46	27.2%		
	Sometime	34	20.2%		
		34	20.1%		
	Often				
	Almost always				

Table 4: Stress in perinatal women

Questionnaire items	Range	Frequency	Percent	Mean	Standard deviation
1. Often I get nervous and tend to use a lot of nervous energy	Never	20	11.8%	3.41	0.978
	Often	40	23.7%		
	Almost always	109	64.7%		
2. I feel difficulty in relaxing myself	Never	7	4.1%	2.80	0.804
	Sometime	53	31.4%		
		75	44.4%		
	Often	34	20.1%		
Almost always					
3. Nowadays, I am getting upset easily	Never	14	8.3%	3.20	0.856
	Sometime	6	3.6%		
		81	47.9%		
	Often	68	40.2%		
Almost always					
4. I feel intolerance when someone interrupts me for any reason	Never	54	32.0%	2.52	1.140
	Sometime	7	4.1%		
		74	43.8%		
	Often	34	20.1%		
Almost always					
5. Nowadays, I tend to overreact for many situations	Never	48	28.4%	2.12	0.822
	Sometime	53	31.4%		
		68	40.2%		
Often					
6. I found myself difficult to be initiative to do things	Never	94	55.6%	2.05	1.253
	Sometime	7	4.1%		
		34	20.1%		
	Often	34	20.1%		
Almost always					
7. I feel like getting irritated even for small things	Never	61	36.1%	2.68	1.325
	Often	40	23.7%		
		68	40.2%		
Almost always					

Table 5: multiple regression summary-1

VARIABLE	UNSTANDARDIZED COEFFICIENT		STANDARDIZED COEFFICIENT	T - value	P-value SIGNIFICANCE
	Beta	Std. error	Beta		
Perinatal period	0.596	0.92	0.929	6.51	<0.001*
Age	0.300	0.54	0.179	5.56	<0.001*
Depression	0.590	0.089	0.436	6.65	<0.001*
Anxiety	2.610	0.169	2.284	1.540	<0.001*
Stress	-2.626	0.236	-2.692	-1.125	<0.001*

Dependent variable: Fear of COVID-19

*Significant at 0.05 level

DISCUSSION

This cross-sectional study is conducted to assess the relationship between depression, anxiety, stress, and the COVID-19 pandemic and also to find out the impact of COVID-19 on psychological distress in perinatal women. The socio-demographic details were analyzed using descriptive statistics. The mean and frequency were found using descriptive analysis and normal distribution was tested. The relationship between independent and dependent variables was analyzed using linear regression analysis. The association between fear of COVID-19 and the perinatal period was checked and correlated. It has been found that there is a significant relationship between Depression, Anxiety, Stress, and Fear of COVID-19 in the perinatal period. There was a positive relationship found between Depression, and anxiety and a negative relationship found

between stress and Fear of COVID-19. The inter-relationship between the perinatal period and Fear of COVID-19 was also found to be significant. The prevalence and severity of the depression, anxiety, and stress were measured and found that women in the 3rd trimester faced moderate to severe depression, severe anxiety, and stress. Women who gave birth (<6weeks) were found to have severe depression, anxiety, and stress. The association between fear of COVID-19 and perinatal period was assessed and found that women in the 3rd trimester had a higher association and women trying to get pregnant have a lower association. Higher symptoms of depression and anxiety were associated with more concern about fear of COVID-19 to the life of the mother and baby, as well as concerns about not getting the necessary prenatal care, postnatal care due to the COVID-19 pandemic. This study

identified the importance of mental health during pregnancy and its short-term and long-term effects on the baby.

CONCLUSION

Depression and anxiety are the most reported mental health problems among pregnant women. The major objectives of this study are to determine the impact of COVID-19 in the relationship between Fear of COVID-19 and depression, anxiety, and stress in perinatal women and to evaluate the prevalence, nature, and severity of the depression, anxiety, and stress in perinatal women. This study found that there is a significant relationship between the variables and there is a significant impact of the COVID-19 pandemic on psychological issues such as depression, anxiety, and stress in perinatal women. The association between fear of COVID-19 and demographic details was also increased. To improve the quality of life of the pregnant population implementing resilience factors is needed.

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