

Mental Health Issues in Female Population during Covid-19 Pandemic

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ABSTRACT

Background: Female population can be affected by various psychological factors that can have adverse effects on the woman's mental health. Pandemics are one such times which can have negative effect on the mental health. Therefore, this study was conducted to determine the status of depression and anxiety and factors associated with it in the female population (pregnant and non-pregnant women) during the outbreak of COVID-19.

Methods: This descriptive-analytical cross-sectional study was performed on 345 women coming to a tertiary care hospital in Karachi, Pakistan. The data was collected using the socio-demographic characteristics questionnaire and the GAD-7 and PHQ-9 questionnaires. Regression analysis was done to determine the association between various factors with depression and anxiety.

Results: Mean age of the participants was 27.9 years Depression and anxiety symptoms were observed in 32.7, 32.7, and 43.9% of the participants, respectively The mean score of depression was found to be 3.72 (3.80) whereas of anxiety was 3.5 (4.006). The overall prevalence of depression was 30.5% and that of anxiety was 18.55%, with varying degrees from mild to severe.

Conclusions: Females in general and pregnant women specifically need special attention of the health care policy makers and this group should be given importance especially in times of such pandemics and all necessary measures should be taken to provide mental and psychological support.

Keywords: COVID-19, Pregnancy, Prevalence, Depression, Anxiety, Stress

INTRODUCTION

WHO declared Covid-19 as a public health emergency of international concern on January 30th, 2020 and on March 11th, 2020, the disease was declared as a pandemic since its outbreak from Wuhan, China. ¹

The governments all around the world have taken many preventive measures, including Pakistan. Since the first case was diagnosed in February 2020 firm precautionary measures were imposed time to time, all over the country in the form of lockdown, social distancing etc. new cases are still surfacing in significant numbers although the number has decreased.

Pandemics not only pose health threats due to disease itself but also has great influence on mental health of different population groups especially those who are susceptible ². One such high risk group is the female population especially the pregnant women who are particularly vulnerable to mental health disorders^{3,4}. Studies have revealed that there is significant prevalence on anxiety and depression among pregnant women as compared to general population⁵. WHO reports say that every one out of three to one out of five women experience mental health issues during pregnancy⁶.

Anxiety and depression may have adverse effects on mother and fetus including miscarriage, preterm labor, low birth weight, pre-eclampsia and cesarean section^{7,8}. Research has shown that there is also association of anxiety and depression in perinatal period with poor APGAR scoring, maternal request for operative delivery and also post-natal depression⁹. A survey conducted on the prevalence of mental disorder in Pakistan showed that females are more vulnerable to mental disorders and

prevalence in female was found to be 29% (vs 26% in males) ¹⁰.

Study conducted by Adeel Ahmed et al. in Pakistan, found the prevalence of poor psychological well-being in 41.2% of general population during the current pandemic¹. S M B Asdaq et al. conducted a study in Saudi Arabia and found prevalence of abnormal mental health status to be 23% in Saudi female population during covid-19 pandemic¹¹. Iran, a neighboring country of Pakistan also faced pretty bad outbreak of covid-19. Effati-daryani et al. from Iran found in their study that 32.7% of pregnant women showed symptoms of depression while 43.9% had symptoms of anxiety in this pandemic ². A Srilankan study revealed the prevalence of anxiety and depression to be 17.5% and 19.5% respectively during the current pandemic¹².

Pakistan has also faced social and economic crisis during this covid-19 pandemic which could also be a risk factor for causing psychological issues in general population as well as pregnant women. This study was designed to study the prevalence of anxiety and depression in pregnant and non-pregnant females of Pakistan, in order to see whether the covid-19 pandemic has any serious effect on their mental health, as it was felt that very few studies have been conducted in this area in Pakistan

METHODOLOGY

It was a cross sectional study, conducted upon the pregnant and postpartum patients attending the OPD at Sohail Trust Hospital, from 1st April 2021 to 30th April 2021. Prior Ethical approval was taken from ethical review committee of Jinnah Medical and Dental College, Sohail University (ERC#:OO088/21). Sample size of 317 was

calculated by using OpenEpi taking the prevalence of mental disorders in Pakistani women as 29%¹⁰. Random, consecutive, non-probability sampling technique was used.

Verbal consent was obtained from all participants. Participants willing to participate were asked questions according to the predesigned questionnaire. The questionnaire consisted of four parts. 1st part comprised of socio-demographic information. In second part, questions regarding knowledge and attitude of the woman regarding the effect of the coronavirus pandemic on the life of participants were asked. In the last two parts, presence of anxiety and depression were assessed using the Urdu versions of GAD-7 and PHQ-9 questionnaires.

GAD-7 Scale (Generalized Anxiety Disorder 7-item) questionnaire consists of seven questions, each with 4 options with scoring 0-3 according to the severity of the symptoms. Minimum score can be 0 and maximum score can be 21. Score of >10 is suggestive of anxiety disorder in general population whereas for pregnant it is >7. This is also a recommended tool by National Institute for Health and Care

Excellence (NICE) as a measure for anxiety in pregnancy and postpartum^{13, 14}.

PHQ-9 Scale (Patient Health Questionnaire-9) consists of nine questions with four options assessing the symptoms of depression. The scoring is like GAD-7. Maximum score can be 27. It is also supported by NICE. A score of > 10 is significant for presence of depression¹⁵.

Exclusion criteria was patients with known psychological disorders.

All statistical analyses were performed with SPSS Statistical Software version 25. The descriptive statistics (frequencies, percentages, mean and standard deviation) were calculated for demographic characteristics, knowledge on COVID-19 infection, depression and anxiety. Univariate analysis was done to obtain relationship between socio-demographic variables and covid related variables and anxiety and depression.

RESULTS

A total of 345 participants were included in the study, out of which 80.9% were pregnant and 19.1% were with various gynecological complaints. The mean age of the participants was 27.9 years, 25.5% were Urdu speaking, 19.5% Pushto speaking, 15.9% Sindhi speaking and the rest belonged to other ethnicities. 36.6% of participants did not receive any formal education, 28.7% and 23.5% women were educated till primary and secondary levels respectively. Majority of the participants had monthly income of <20000 (41.4%). 94.2 % women were house wives and only 58% were working.

Most of the females were multiparous (51%) and among pregnant women, most were in their 3rd trimester (36.5%).

61.2 % of the females did not have any medical disorder where as 14.2 % were anemic, 9.6 had hypertension, 8.7 were diabetic and 6.3 had thyroid disorders. 14.5 % of the total participants were addicted to chaalia and 6% were addicted to pan, cigarette etc.

Regarding the knowledge and perception about covid-19, most of the information about the disease was from the television (62.9%), family and friends (26.1%), social media

(7%), health professional (2.6%) and newspaper (1.4) % were other sources through which participants got to know about covid 19.

Table 1: Use of sources to get knowledge about Covid 19 and Effect of COVID-19

Variable	Frequency	Percentage
Use social media to get latest info about covid		
Yes	146	42.3
No	199	57.7
How much use social media to get latest info about Covid		
<2 hrs	72	20.9
2-6 hrs	49	14.2
>6 hrs	25	7.2
N/A	199	57.7
Do you use TV to get latest info about covid		
Yes	249	72.2
No	96	27.8
How much TV used to get info about Covid		
< 2 hrs	104	30.1
2-6 hrs	107	31.0
>6 hrs	38	11.0
NA	96	27.8
Scared of going to hospital during covid?		
Yes	160	46.4
No	185	53.6
Have you been affected by covid?		
Yes	17	4.9
No	328	95.1
Any Family Member affected by covid?		
Yes	49	71.3
No	296	28.7
Following SOPs		
Yes	246	71.3
No	99	28.7
Has Covid affected you economically		
Yes	251	72.8
No	94	27.2
How covid affected you economically?		
Lost job	82	23.8
Loss in business	168	48.7
Others	16	4.6
N/A	79	22.9
Had Regular antenatal checkups		
Yes	254	73.6
No	53	15.4
NA	38	11.0
Think covid can affect your Baby		
Yes	110	31.9
No	195	56.5
NA	40	11.6
How Covid can affect your Baby		
Miscarriage	30	8.7
Birth defect	16	4.6
Fetal death	44	12.8
C-Section	13	3.8
Effect BF	8	2.3
NA	234	67.8
C-section can save your baby from Covid		
Yes	99	28.7
No	246	71.3
Vaccination is safe		
Yes	233	67.5
No	112	32.5

In **table 1** the participant's perception of covid 19, use of source of knowledge, fear, whether affected by covid or not, following SOPs and economic impact of covid lockdowns are shown. Television and social media was widely used to get information regarding covid updates.

72.4% participants bread earners either lost jobs (23.7%) or had loss in some form in their business (48.7%)

The mean score of depression was found to be 3.72 (3.80) whereas of anxiety was 3.5 (4.006). The overall prevalence of depression was 30.5% and that of anxiety was 18.55%.

22.9% women had mild depression, 5.2% had severe, 1.2% had moderately severe and 0.9 % had severe depression based on PHQ-9 scoring. Considering anxiety, 13.6% had mild, 9.6% had moderate and 2.3% had severe anxiety according to scores based on GAD-7.

We did not find any statistically significant relation of age, parity, educational status, monthly income, medical disorders or loss of job/business with anxiety and depression. P-value was significant for anxiety in those whose family members were affected by covid-19 and those who did not go for regular antenatal checkups whereas for depression it was significant for working women, as shown in **table 2** and **3**.

Table 2: Univariate analysis of factors associated with Anxiety and sociodemographic characteristics.

Characteristics	Anxiety absent n(%)	Anxiety present n(%)	P-Value ^a	Odds ratio (95%CI)
obstetric	54 (81.8)	12 (18.2)	0.083	1.916 (0.919, 3.992)
gyne	250 (89.6)	29 (10.4)		1
House wife	289(88.9)	36(11.1)	0.071	1
Working	15(75.0)	5(25.0)		2.676 (0.918,7.799)
Sources of Knowledge about covid 19				
Media 1	226(91.9)	20(8.1)	0.001*	1
Family, friends and doctor	78(78.8)	21(21.2)		3.042 (1.566,5.911)
Scared of going to hospital during covid				
Yes	136(85.0)	24(15.0)	0.099	1.744 (0.900,3.378)
No 1	168(90.8)	17(9.2)		1
Have you been affected by covid				
Yes	14(82.4)	3(17.6)	0.456	1.635 (0.449,5.953)
No	290(88.4)	38(11.6)		1
Any Family Member affected by covid				
Yes	36(73.5)	13(26.5)	0.001*	3.456 (1.642,7.274)
No	268(90.5)	28(9.5)		1
You and your family following SOPs				
Yes	216(87.8)	30(12.2)	0.778	1.111 (0.533,2.315)
No	88(88.9)	11(11.1)		1
COVID-19 affect you economically				
Yes	218(86.9)	33(13.1)	0.240	1.627 (0.723,3.664)
No	86(91.5)	8(8.5)		1
How COVID-19 effects your job				
Lost job or business	219(87.6)	31(12.4)	0.631	0.831 (0.390,1.769)
No Effect on Job	85(89.5)	10(10.5)		1
Go for Regular antenatal checkups (n=279)				
Yes	209(91.7)	19(8.3)	0.021*	1
No	41(80.4)	10(19.6)		2.683 (1.163,6.188)
Think COVID-19 can affect your Baby(n=279)				
Yes	83(87.4)	12(12.6)	0.381	1.420 (0.648,3.112)
No	167(90.8)	17(9.2)		1
Do you think Vaccination is safe?				
Yes	203(87.1)	30(12.9)	0.413	1.357 (0.653,2.818)
No	101(90.2)	11(9.8)		1

P-value obtained by binary logistic regression analysis; * P-value significant; P-value of ≤ 0.05 is considered significant; OR = Odds Ratio; CI = Confidence Interval

Table 3: Univariate analysis of factors associated with Depression and sociodemographic characteristics.

Characteristics	Depression absent n(%)	Depression present n(%)	P-Value ^a	OR (95% CI)
Age of patients				
<20	37(88.1)	5(11.9)	0.221	1.912 (0.677, 5.400)
>or equal to 20	283(93.4)	20(6.6)		1
Occupation				
House wife	305(93.8)	20(6.2)	0.004*	5.083 (1.678,15.404)
Working	15(75.0)	5(25.0)		
Monthly income				
Less than or equal to 40,000	227 (91.9)	20(8.1)	0.33	1.639 (0.597, 4.496)
>40,000ref=1	93(94.9)	5(5.1)		1
Sources of Knowledge about covid 19				
Media 1	231(93.9)	15(6.1)	0.199	1.730 (0.749,3.995)
Family friends and doctor	89(89.9)	10(10.1)		
Scared of going to hospital during covid				
Yes	147(91.9)	13(8.1)	0.559	1.275 (0.564, 2.880)
No	173(93.5)	12(6.5)		
Have you been affected by covid				
Yes	16(94.1)	1(5.9)	0.824	1
No	304(92.7)	24(7.3)		1.263 (0.161, 9.936)
Any Family Member affected by covid				
Yes	46(93.9)	3(6.1)	0.744	1
No	274(92.6)	22(7.4)		1.231 (0.354, 4.280)
You and your family following SOPs				
Yes	231(93.9)	15(6.1)	0.199	1
No	89(89.9)	10(10.1)		1.730 (0.749, 3.995)
COVID-19 affect you economically				
Yes	229(91.2)	22(8.8)	0.088	2.914 (0.851, 9.975)
No	91(96.8)	3(3.2)		1
How COVID-19 effects your job				
Lost job or business	232(92.8)	18(7.2)	0.957	1
No effect on employment	88(92.6)	7(7.4)		1.025 (0.414, 2.539)
Go for Regular antenatal checkups 279				
Yes	212(93.0)	16(7.0)	0.497	1
No	46(90.2)	5(9.8)		1.440 (0.502, 4.130)
Think covid can affect your Baby				
Yes	89(93.7)	6(6.3)	0.583	1
No	169(91.8)	15(8.2)		1.317 (0.494, 3.511)
Vaccination is safe				
Yes	219 94.0%	14 6.0%	0.205	1
No	101 90.2%	11 9.8%		1.704 (0.747,3.884)

a P-value obtained by binary logistic regression analysis; * P-value significant; P-value of ≤ 0.05 is considered significant; OR = Odds Ratio; CI = Confidence Interval

DISCUSSION

Pakistan has faced 4 waves of covid-19 spread since the outbreak and more than 28 thousand deaths have been reported. During the period of data collection Pakistan was

facing 3rd wave of the outbreak and the process of vaccination had started.

Most of the participants in the study were young with the age under 35 years (90.7%) similar to the study conducted by Yanting Wu et al³. In terms of pregnancy 36.5 % of patients presented in 3rd trimester and 68.4% had parity more than 1 which is also seen in the study conducted by meryem et al

The reported prevalence of depression and anxiety before the outbreak of pandemic was 30.5% according to a study conducted by B.S. Ali et al¹⁶. Our study showed that the overall incidence of depression and anxiety was 30.1% and 25.5 % respectively, including various degrees from mild to severe which is more or less similar to the prevalence before the outbreak of pandemic which could be due to the fact that most of the in our study the women took more care of themselves following SOPs and in terms of antenatal care and following the health advices

Study conducted in China by Chuanxiao li showed prevalence of depression to be 35.4 % in perinatal population which is more than our results¹⁷. Another study by Effati-Daryani F showed that 32.7% and 43.9% & of women had symptoms of depression and anxiety respectively during the pandemic². Considering anxiety, a study from Belgium showed that 14% of perinatal women had anxiety which is comparable to our results¹⁸.

Preventive measures taken against spread of covid 19, in the form of lock downs had a great economic impact on the study population and 72.8% participants and their families faced financial crisis in the form of either loss of jobs (23.7%) or loss in some form in their business (71.3%)

We didn't find any significant relation of depression and anxiety with –age parity, monthly income, medical disorders and economical loss. The main associations that we found were between the rate of depression and the working status of women with depression being more in working women whereas the rate of anxiety was significantly associated with those who had any family member affected by covid or those who were not regular with their antenatal checkups (p value<.05)

A study showed that anxiety levels were HIGH in women who were primigravidas¹⁹. In another study, Rezaee et al found no difference in anxiety level in relation to parity²⁰ which is similar to our study but in our study there was no significant relation of anxiety with parity.

In our study we found that most of the patients had regular antenatal checkups and majority were not scared of going to the hospital and this regular contact with doctors provided them guidance, education and helped in reducing anxiety and depression. This could be the reason why the prevalence of anxiety and depression are similar to the pre covid level. Furthermore, our population generally has combined family system where usually the females have support of other female members in terms of taking care of children and house chores and they share the economic burden as well. This may be why the level of anxiety and depression are not very much different before and after the outbreak of pandemic.

Strengths And Limitations: Our study is one of the very few studies conducted on mental health of perinatal population in Pakistan especially in delayed phase and after the effects of lock down but the limitation was that it

was a cross-sectional study and was based on self-reported symptoms although we used standardized tools (GAD-7 and PHQ-9) but it may have been different if the objective assessment was done by a mental health professional.

CONCLUSION

The prevalence of depression and anxiety was 30.5 and 18.55 in Covid 10 pandemic .Females in general and pregnant women specifically need special attention of the health care policy makers and this group should be given importance especially in times of such pandemics and all necessary measures should be taken to provide mental and psychological support.

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