Assessment of anxiety and depression symptoms in the general population during the outbreak of COVID-19 pandemic

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Abstract
Background: Mental health of individuals is a major health concern, expected to be disturbed during pandemics, including the COVID-19 pandemic. People now have a better understanding of the scope of the pandemic more than a year has passed after the first reported case of COVID-19 in India. Present study was aimed to assess anxiety and depression symptoms in the general population during the outbreak of COVID-19 pandemic depression among people in India during the COVID-19 pandemic. **Material and Methods:** Present study was cross-sectional, questionnaire based study conducted in persons of age 21-50 years, of any gender, came to general OPD with accompanying patient. volunteered to answer questionnaire in written were considered for study. Generalized Anxiety Disorder-7 (GAD-7) scale was used to assess the respondent's anxiety symptoms. The patient health questionnaire-9 (PHQ-9) was used in this study to assess depression. **Results:** In present study, we interviewed 322 individuals, out of which 279 had filled complete questionnaire and were considered for this study. Prevalence of anxiety was 21.51 %. Majority had mild anxiety (11.83 %) followed by moderate anxiety (7.53 %) and severe anxiety (2.15 %). While prevalence of depression was 28.67 %. Majority had minimal depression (10.04 %), mild depression (7.53 %), Moderate depression (5.38 %), moderately severe depression (3.23 %) and severe depression (2.51 %). Anxiety, depression was more common in 21-30 years age group, in presons unemployed after pandemic, income <25,000, with addictions and in students, private office employees and persons working in health professional. **Conclusion:** The COVID-19 pandemic appears to negatively affect the mental health of the general population with the prevalence and levels of anxiety and stress being increased, and depression symptoms remaining unaltered.
Keywords: COVID-19, Prevalence, Anxiety, Depression, General population

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INTRODUCTION

Mental health of individuals is a major health concern, expected to be disturbed during pandemics, including the COVID-19 pandemic.[1] Both the pandemic and the lockdown measures have the potential to cause considerable panic and stress. The current COVID-19 pandemic itself is likely to evoke fear of infection, concerns regarding disease and death, and anxiety/stress about future health and economic uncertainties.[2] Global evidence supports rising trend of symptoms of depression, anxiety and stress related to COVID-19 among general population resulting from stressors such as life disruption

due to nationwide lockdowns, fears of illness and economic loss, stress of social isolation and worry about health of self and loved ones. A significant increase in the risk of mental health problems among individuals happen, including anxiety, depression and traumatic stress.[3,4,5] People now have a better understanding of the scope of the pandemic more than a year has passed after the first reported case of COVID-19 in India. Present study was aimed to assess anxiety and depression symptoms in the general population during the outbreak of COVID-19 pandemic depression among people in India during the COVID-19 pandemic.

MATERIAL AND METHODS

Present study was cross-sectional, questionnaire-based study conducted under department of psychiatry at Belagavi Institute of Medical Sciences, Belagavi, India. Study duration was of 2 months. Study was approved by institutional ethical committee. Persons of age 21-50 years, of any gender, came to general OPD with accompanying patient, volunteered to answer questionnaire in written were considered for study. The procedures were clearly explained and the participants could quit from the study at any point without explaining their reasons for doing so. Demographic variables included age, gender, education level, marital status, occupation and working life and living with their families or not. Other details such as any current mental illness, their alcohol consumption, cigarette smoking, Participants were asked about the stressors during the confinement. Generalized Anxiety Disorder-7 (GAD-7) scale was used to assess the respondent's anxiety symptoms. The GAD-7 is a self-administered screening tool based on the seven DSM criteria for GAD. Participants reported their symptoms for the last 2 weeks. We measured symptoms of anxiety using the Generalized Anxiety Disorder (GAD-7) questionnaire, a validated seven-item assessment. The total score for the GAD-7 ranges from 0 to 21. A score of 10 or greater on the GAD-7 represents a reasonable cut point for identifying cases of GAD. Cut points of 5, 10, and 15 might be interpreted as representing mild, moderate, and severe levels of anxiety on the GAD-7, similar to levels of depression on the PHQ-

9.[6,7] The patient health questionnaire-9 (PHQ-9) was used in this study to assess depression.[7] The PHQ-9 is focused on the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition's diagnostic criteria for depression (DSM-IV). The total score ranged from zero to 27, with a higher score indicating greater self-reported depression.

Total Score	Interpretation
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

A cut off score of greater or equal to 10 was used to classify participants who were likely to meet the criteria for depressive disorder. This cut off has sufficient sensitivity (0.85) and specificity (0.89), responds to moderate levels of depression, and is used to define a depression level that may need psychiatric intervention. Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Frequency, percentage, means and standard deviations (SD) was calculated for the continuous variables, while ratios and proportions were calculated for the categorical variables. Difference of proportions between qualitative variables were tested using chi- square test or Fisher exact test as applicable. P value less than 0.5 was considered as statistically significant.

RESULTS

In present study, we interviewed 322 individuals, out of which 279 had filled complete questionnaire and were considered for this study. In present study male (55.91 %) subjects were slightly more than female (44.09 %). Majority were from 21–30 years age group (47.31 %), followed by 31–35 years age group (29.75 %) and 41 – 50 years age group (22.94 %). Majority of them were married (67.74 %), with monthly family income less than Rs. 25,000 per month (79.21 %), employed (59.5 %), educated below graduation (60.93 %). Various addictions noted were binge drinking (23.66 %), Substance use (3.94 %) and smoking (>20 cigarettes/bidis in a day) (16.49 %).

Table 1: Demographic and general characteristics.

Characteristics	No.	Percentages
Gender		
Male	156	55.91
Female	123	44.09
Age (years)		0
21–30	132	47.31
31–35	83	29.75
41 - 50	64	22.94
Marital status		
Married	189	67.74

Unmarried	90	32.26
Family monthly income		
Less than Rs. 25,000 per month	221	79.21
More than Rs. 25,000 per month	58	20.79
Employment status		0
Employed	166	59.5
Unemployed	113	40.5
Education level		0
Graduation and above	109	39.07
Below graduation	170	60.93
Addiction		
Binge drinking	66	23.66
Substance use	11	3.94
Smoking (>20 cigarettes/bidis in a day)	46	16.49

In present study prevalence of anxiety was 21.51 %. Majority had mild anxiety (11.83 %) followed by moderate anxiety (7.53 %) and severe anxiety (2.15 %). While prevalence of depression was 28.67 %. Majority had minimal depression (10.04 %), mild depression (7.53 %), Moderate depression (5.38 %), moderately severe depression (3.23 %) and severe depression (2.51 %).

Table 2: Prevalence of anxiety and depression

Characteristics	No.	Percentages
Anxiety	60	21.51
Mild Anxiety	33	11.83
Moderate Anxiety	21	7.53
Severe Anxiety	6	2.15
Depression	80	28.67
Minimal depression	28	10.04
Mild depression	21	7.53
Moderate depression	15	5.38
Moderately severe depression	9	3.23
Severe depression	7	2.51

In present study anxiety, depression was more common in 21-30 years age group, in presons unemployed after pandemic, income <25,000, with addictions and in students, private office employees and persons working in health professional.

Table 3: Comparison in terms of PHQ-9 and GAD-7

Variables	GAD-7/ Anxiety (Mean ± SD)	PHQ-9 / Depression (Mean ± SD)
Age groups (years old)		
21–30	9.31 ± 5.41	9.12 ± 6.37
31–35	6.39 ± 5.24	6.29 ± 4.25
41 - 50	5.85 ± 4.12	7.27 ± 5.93
P- value	0.62	0.54
Employment status		
Unemployed after pandemic	11.13 ± 6.86	10.81 ± 7.91
Working from home	5.46 ± 4.64	7.01 ± 5.21
Employed and continue to go to work	4.41 ± 3.74	5.67 ± 4.66
P-value	0.023	0.031
Family monthly income		
Less than Rs. 25,000 per month	7.47 ± 5.36	6.83 ± 5.28
More than Rs. 25,000 per month	5.01 ± 3.91	4.02 ± 3.23
Addictions		
Binge drinking	10.12 ± 5.41	9.23 ± 6.37
Substance use	10.23 ± 6.17	11.26 ± 7.53
Smoking (>20 cigarettes/bidis in a day)	9.31 ± 5.41	9.12 ± 6.37
Employment		
Student	11.63 ± 9.46	13.97 ± 10.84
Private office employee	10.13 ± 6.86	10.12 ± 7.91

Health Professional	9.31 ± 5.41	8.89 ± 6.37
Teaching/academics	7.73 ± 5.36	6.83 ± 5.28
Vendor	6.92 ± 5.24	6.11 ± 4.25
Health Professional	5.11 ± 3.91	4.29 ± 3.23
Laborer	5.01 ± 4.12	5.72 ± 5.93

DISCUSSION

Stress, anxiety, depression affect the physical and psychological health status and results in negative health outcomes such as heart disease, high blood pressure, diabetes.[8] A further impact of this illness is neuropsychiatric complications like cognitive decline, affective, behavioral, and perceptual domains disturbances. Therefore, knowing the extent and considering.[9] Early interventions to alleviate symptoms of depression, psychological distress, and anxiety are important. Shankey Verma[10] conducted a cross-sectional survey, using an electronic questionnaire with 354 participants recruited through convenience sampling. In total, 25%, 28% and 11.6% of the participants were moderate to extremely severely depressed, anxious and stressed, respectively. Binary logistic regressions indicated employment status (OR = 1.91; CI: 1.072–3.418) and binge drinking (OR = 2.03; 95% CI: 1.045–3.945) were significantly associated with depressive symptoms; gender (OR = 2.17; 95% CI: 1.317–3.589), employment status (OR = 1.77; 95% CI: 1.002–3.141) and binge drinking (OR = 2.62; 95% CI: 1.361–5.048) were significantly associated with anxiety symptoms; and binge drinking (OR = 3.42; 95% CI: 1.544–7.583) was significantly associated with stress symptoms. Bhowmick S *et al.*,[11] studied 355 responses, 15.49% responders were observed to have anxiety and 37.74% participants had low well-being scores. Majority of healthcare workers (89.47%) were seen to have anxiety and a significant (52.03%) had a low well-being status. Ajoke Akinola *et al.*,[12] studied 412 participants, mean age of the participants was 24.9 ± 6.26 years. The mean PHQ-9 score was 6.32 ± 6.01. Majority (48%) were normal, 23% with mild depression, 21% with moderate depression, as few as 6% and 3% with moderately severe and severe depression respectively. 70% scored ≤ 10 (normal) while as low as 30% scored ≥ 10 (depression). Logistic regression analysis found a significant relationship between gender (p<0.02) and depression and no significant relationship between age and educational qualification (p>0.05). Salari N *et al.*,[13] conducted a systematic review and meta-analysis of articles that have focused on stress and anxiety prevalence among the general population during the COVID-19 pandemic. The prevalence of stress in 5 studies with a total sample size of 9074 is obtained as 29.6% (95% confidence limit: 24.3–35.4), the prevalence of anxiety in 17 studies with a sample size of 63,439 as 31.9% (95% confidence interval: 27.5–36.7), and the prevalence of depression in 14 studies with a sample size of 44,531 people as 33.7% (95% confidence interval: 27.5–40.6). Thus, COVID-19 not only causes physical health concerns but also results in a number of psychological disorders. It is essential to preserve the mental health of individuals and to develop psychological interventions that can improve the mental health of vulnerable groups during the COVID-19 pandemic. Singh RK *et al.*,[14] conducted a meta-analysis of studies from India, from onset of the current pandemic and until 10th October 2020, they noted a significant impact on psychological well-being during COVID-19, as common adverse outcomes were stress (61%), psychological distress (43%), anxiety (34%), depression (33%), and sleep disturbances (27%). Thus the COVID-19 pandemic represents an unprecedented threat to mental health, which should become a priority for public health strategies. Also, sub-group analysis showed that Health Care Workers (HCWs) had a higher prevalence of stress, anxiety, depression and psychological distress in comparison to the general population. In study by Porter C *et al.*,[15] 8988 individuals were studied, 51% were men. Rates of symptoms of at least mild anxiety (depression) were highest in Peru at 41% (32%), and lowest in Vietnam at 9% (9%) mirroring COVID-19 mortality rates. Women were most affected in all countries except Ethiopia. Pandemic-related stressors such as health risks/expenses, economic adversity, food insecurity, and educational or employment disruption were risk factors for anxiety and depression, though showed varying levels of importance across countries. Prior parent/peer relationships were protective factors, while long-term health or emotional problems were risk factors. Along with the uncertainty and unpredictability of the current pandemic, lockdown and physical-distancing might lead to social isolation, loss of income, loneliness, inactivity, limited access to basic services, increased access to food, alcohol, and online gambling, and decreased family and social support, especially in older and vulnerable people. Regular participation in PA seems to improve self-efficacy, while reducing anxiety, depression, and negative moods and is frequently cited as the first step in lifestyle modifications to prevent and manage chronic disease, including psychological disorders.[16]

CONCLUSION

The COVID-19 pandemic appears to negatively affect the mental health of the general population with the prevalence and levels of anxiety and stress being increased, and depression symptoms remaining unaltered. Addressing and mitigating the negative effect of COVID-19 on the mental health of this population is crucial.

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