Depression, Anxiety and Stress among the general population in the time of COVID-19 lockdown: A cross-sectional study protocol

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INTRODUCTION

Depression is a mental state, indicated by disturbed sleep or appetite, feeling sadness, feelings of guilt or low self-worth, feelings of tiredness, loss of interest or pleasure, and poor concentration. It may be episodic due to life-altering tragedy, or it may be a chronic condition. It impairs a person's ability to function appropriately with day to day activities of everyday life (Sagar et al., 2020). Anxiety is defined as the feeling of worry, nervousness or unease about something with an uncertain outcome; whereas “stress is the state of mental or emotional strain or application of pressure.” (Sagar et al., 2020)
tension resulting from adverse or demanding con-
sequences” (Bandelow and Michaelis, 2015). The
global burden of disease study, in India, nearly 45
million people are leaving with depressive disor-
ders, and 44 million are affected by anxiety disor-
ders (Sagar et al., 2020). Moreover, the prevalence of DAS is steadily rising from 1990 to 1970.

At present entire human race is under the threat of
COVID-19, and cases are reported in all continents
across the globe and resulted in pandemic (Bao
et al., 2020). It was first identified in Wuhan, China
spreading to Europe and the United States of Amer-
ica. This calamity has also struck India gravely. As
per WHO, on 11th June 2020 more than two lacs
population of India are infected with COVID 19 out
of which 7745 people have succumbed to the dis-
ease (Dong et al., 2020). While there is increasing
global responsiveness towards coronavirus pan-
demic in the form of lockdown, quarantine, isolation
to prevent the transmission of COVID 19, an alarm is
being raised for emotional and psychological effect
in terms of Depression, Anxiety and Stress among
non-infected general population during this unique,
severe conditions of lockdown (Montemurro, 2020;
Dong and Bouey, 2020). As general public does
not have access to primary medical care because of
mass lockdown, restrictions and absence of pub-
lic transport, these factors may increase in psycho-
logical problems, including anxiety, depression, and
stress (DAS) among the general population (Mon-
temurro, 2020; Duan and Zhu, 2020). Further-
more ‘"unpredictability, uncertainty, the serious-
ness of the disease, misinformation and social iso-
lational may contribute to stress and mental morbidity
among the general population (Zandifar and Badr-
far, 2020). Shigemura et al. (2020) reinforced in
their study result that economic impact of COVID-19
affects general psychological well-being, as well as
the possible high levels of fear and panic behaviour,
such as hoarding and stockpiling of resources, in the
general population.

These emotional problems may be more pro-
nounced in persons having non-communicable
chronic comorbid diseases like Hypertension(HTN),
Diabetes Mellitus (DM), Coronary artery diseases
(CAD), and chronic pulmonary diseases (COPD).
They also are at increased risk of mortality due to
COVID 19 infection. cause of additional mental
stress of COVID-19 pandemic, many physicians,
researchers and psychiatrists have contemplated
a rising trend of risk of DAS or relapse of previous
mental health diseases (Das-Munshi et al., 2007).

Moreover, Ho et al. in their report discussed the role
of improved screening for mental disorders, improv-
ing links between community and hospital services,
and providing accurate information to the general
public to minimise maladaptive responses such as
"panic" and paranoia regarding the disease and its
transmission (Ho et al., 2020). Lima et al. high-
lighted the role of anxiety as the dominant emo-
tional response to COVID 19 outbreak, and lock-
down (Montemurro, 2020). There is also a need for
adequate training of healthcare personnel to pro-
vide mental health care.

There is a lack of data in India, documenting the
mental health of the general population in the era of
lockdown due to COVID-19 pandemic and lockdown.
Hence we proposed this study intending to find out
the prevalence of Depression, Anxiety, Stress (DAS)
among the rural population who are accompanying
the Non-COVID 19 patients at a tertiary care rural
hospital in central India. We also want to determine
the risk factors associated with DAS for early iden-
tification to prevent or minimise the psychological
impact of COVID 19 lockdown.

MATERIALS AND METHODS

Approval of ethics committee

The study will be started after seeking ethical
approval from the Datta Meghe Institute of Medical
Sciences Institutional Ethical Committee.

Study design

This will be a single-centre cross-sectional study
using validated DASS-21 English and Marathi involv-
ing self-administered questionnaire.

Study setting

This study will be conducted among the partici-
ants attending medicine OPD in Acharya Vinoba
Bhave Rural Hospital (AVBRH), DMIMSU, Sawangi,
Wardha, Maharashtra. AVBRH hospital caters to the
rural population of Wardha district of Maharashtra.
During Lockdown district, borders are sealed, and
public transport is not available. Private vehicles
or ambulance is allowed to cross the district bor-
der after availing permission from collector office.
After procuring the permissions, patients of sur-
rounding districts like Yeotmal, Chandrapur, gad-
chirol, Bhandara, Nagpur and Amaravati of Mah-
araashtra obtain medical opinion and services from
AVBRH.

Study population

Inclusion criteria

1. Asymptomatic patient's relatives accompanying
the Non-COVID-19 patient attending the
medicine OPD will be included in the study. The
Table 1: Classification of severity of DAS

<table>
<thead>
<tr>
<th>Severity</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0-9</td>
<td>0-7</td>
<td>0-14</td>
</tr>
<tr>
<td>Mild</td>
<td>10-13</td>
<td>8-9</td>
<td>15-18</td>
</tr>
<tr>
<td>Moderate</td>
<td>14-20</td>
<td>10-14</td>
<td>19-25</td>
</tr>
<tr>
<td>Severe</td>
<td>21-27</td>
<td>15-19</td>
<td>26-33</td>
</tr>
<tr>
<td>Extremely severe</td>
<td>28+</td>
<td>20+</td>
<td>34+</td>
</tr>
</tbody>
</table>

non-COVID-19 patient is a patient who does not have symptoms and sign of COVID-19 (as per the WHO case definition of COVID-19) (9).

2. Asymptomatic adult (more than 18 years) participants with either gender.

3. The participant with comorbid conditions like Hypertension (HTN), Diabetes Mellitus (DM), Coronary artery diseases (CAD), and chronic pulmonary diseases (COPD) will be included.

Exclusion criteria

1. Participants with any symptoms of the respiratory, cardiac or abdominal system.

2. Participants with any mental illness, any drugs affecting mood, affect and behaviour, cognitive impairment, malignancy, or chronic kidney diseases.

Sample size

The Sample size of our study will be 246 anticipated population proportions of DAS as 20% with 95% confidence interval and absolute precision of 5 % points (Charan and Biswas, 2013).

Data collection tools and measurements

The persons who can read, understand and write English will be given an English version of the DASS-21 questionnaire (Lovibond and Lovibond, 1995). As a most common language spoken in our rural population is Marathi, hence validated DASS 21 questionnaire translated in Marathi will be used for detection of DAS. The questionnaire will be self-administered. The questionnaire contains four sections (i) socio-demographic information (ii) knowledge about COVID 19 (iii) Presence of comorbid condition and (iv) 21 questions for detection of DAS, will be given to the patient’s relatives when attending medicine OPD.

The socio-demographic profile like age, gender, professions, marital status, education level, occupations and household income will be documented. Factors which may influence the incidence, prevalence and severity of DAS such as smoking status, presence of co-morbidities, like the history of diabetes mellitus, hypertension, CAD, chronic pulmonary diseases and psychiatric illness will also be noted.

The identification of DAS will be made using validated DASS-21 questionnaire. It consists of three self-reported scales, which are devised to measure the negative mental states of DAS. The DASS-21 census has 21 questions, which assess the symptoms of depression, anxiety and stress, respectively (Lovibond and Lovibond, 1995). The patients will be asked to rate their experience on each symptom on a 4-point severity scale ranging from ‘0’ (does not apply to me), to ‘3’ (applies to me most of the time).

Scores of each scale will be added up and multiplied by two and then classified as usual, mild, moderate, severe and extremely severe as per the total score, according to DASS manual tool generated by Sydney: Psychology Foundation in 1995.

Data collection procedure

All the study participants will be screened for symptoms for COVID 19 at the screening OPD. The patient and their relative are asked to wash hands at screening OPD. The temperature of the patient and patient’s relative is taken by Health care workers by Touchless thermometer. Once the temperature is average, patients can be allowed to attend Medicine OPD. If the temperature is found to be raised, they are admitted at the suspect ward and the isolation of their relatives. In Medicine OPD, Patients relative will be screened for study eligibility criteria by trained Investigators.

The eligible study participants giving informed written consent will be asked to fill a questionnaire to their best knowledge and feelings. They will be provided with patient socio-demographic information sheet, the pilot-tested English and Marathi version of the DASS-21 self-administered questionnaire. The questionnaire will be filled up while awaiting their turn to be seen by the doctor. During the consultation with the doctor, the survey will
be checked for its completion.

Safety measures like hand washing before entering Medicine OPD, use of mask and physical distancing in the waiting area, using alcohol rub before and after filling the Pro-forma, will be maintained. After filling the questionnaire, all the forms collected at the end of a single day will be kept in a sealed box. The box will be opened on the fourth day, and data will be explored.

**Data analysis**

Data will be checked for inconsistency and completeness. DASS 21 is a collection of seven self-answered questions for detecting Depression, Anxiety and Stress. Scores on each scale will be added up and multiplied by two and then classified as usual, mild, moderate, severe and extremely severe as per the total score, according to the DASS manual tool generated by Sydney: Psychology Foundation in 1995 (Lovibond and Lovibond, 1995) as shown in Table 1.

All analyses will be pre-specified, and codes and will be ready for the review. Analyses will be done with Stata MP (version 14). All continuous variables will be expressed as mean and standard deviation. All Categorical variables will be expressed as frequency and percentage. The core outcome variables will be depression, anxiety, and stress.

**DISCUSSION**

We will be able to find out the prevalence of Depression, Anxiety, Stress (DAS) among the rural population who are accompanying the Non-COVID-19 patients at a tertiary care rural hospital of central India during lockdown. We will also be able to determine the risk factors associated with DAS. We will discuss our findings of this study and compare it with the other relevant reviews.

This study will help clinicians in early identification of DAS, and its risk factors and to prevent or minimise the psychological impact of COVID 19 lockdown. It will also help the policymakers to frame policies keeping in view the mental health status of the general population. We will conclude the study based on the result observed in the study.

**CONCLUSION**

The COVID-19 pandemic and lockdown have led to varying mental health problems response in the general population, among healthcare workers, and in vulnerable populations. There is a need for further research, to assess the effect of covid 19 pandemics and resulting lockdown in India, particularly in the rural community where mental health infrastructure is less developed, and the impact is likely to be more severe.

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Nil.

**Conflict of Interest**

Nil.

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