

## Original Research Article

# Effect of lockdown due to COVID-19 pandemic on mental health of final year students of Maharashtra

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## ABSTRACT

**Background:** A pandemic is the worldwide spread of a new disease and currently COVID-19 has become a major medical crisis. The worldwide rapid increase of infected cases has created a sense of uncertainty and anxiety about the situations and upcoming exams period. It also leads to stress amongst the students. Objectives of the study was to evaluate and analyse the prevalence of depression, anxiety and stress among final year students of Maharashtra using DASS-21.

**Methods:** It was an online survey which was conducted using Google Forms with link sent using Whatsapp. A standard DASS-21 questionnaire was used for the study. The survey questionnaire would take around 3-4 min to complete. Total 324 responses were received by the stipulated time.

**Results:** The study showed that the engineering final year students are more depressed than others. 34 engineering and 26 medical students were suffering from anxiety. The relationship between anxiety level and course was statistically significant. On depression scale 47% participants were suffering from mild to moderate stress.

**Conclusions:** Index survey suggested that the pandemic affected the preparation of the respondents to a great extent and affected their mental status negatively.

**Keywords:** Corona virus, COVID-19, Mental health, Psychological impact, Pandemic, University exams, UGC

## INTRODUCTION

A pandemic is the worldwide spread of a new disease and currently COVID-19 has become a major medical crisis. The WHO definition of a pandemic is “an epidemic occurring worldwide, or over a very wide area, crossing International boundaries and usually affecting a large number of people”.<sup>1</sup>

Human corona virus constitute a large family of viruses that usually cause mild to moderate upper respiratory illnesses in people such as the common cold.<sup>2</sup> Corona virus transmission could be linked to bats, cattle and other

animals, as it have been described in multiple animal species.<sup>3</sup>

While many different corona viruses exist, seven types are known to cause disease in humans.<sup>4</sup> Three of the viruses have been associated with causation of more severe illnesses and worse outcomes in humans. The first of these to appear was named Severe Acute Respiratory Syndrome (SARS). It subsequently disappeared in 2004. This was followed by Middle East Respiratory Syndrome (MERS). The third being COVID-19 and is caused by the SARS-COV-2 that was first described in Wuhan China in December, 2019.<sup>5</sup>

The first case of COVID-19 in India, which originated from China, was reported on 30 January 2020. On February 11, 2020, the WHO officially declared the COVID-19 as “pandemic” from the previous status of global health emergency.<sup>6</sup>

On 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India.<sup>7</sup>

As the end of the first lockdown period approached, state governments and other advisory committees recommended extending the lockdown.<sup>8</sup> On 14 April, Prime Minister Narendra Modi extended the nationwide lockdown until 3 May, with a conditional relaxation after 20 April for the regions where the spread had been contained or was minimal. On 1 May, the Government of India extended the nationwide lockdown further by two weeks until 17 May. The Government divided all the districts into three zones based on the spread of the virus green, red and orange with relaxations applied accordingly. On 17 May, the lockdown was further extended till 31 May by the National Disaster Management authority. On 30 May, it was announced that the ongoing lockdown would be further extended till 30 June in containment zones, with services resuming in a phased manner starting from 8 June. It is termed as “Unlock 1”.<sup>9</sup>

The state thought of having a relief of opening from the 1 July, still being in a state in danger and taking in consideration of the increased cases, the state of Maharashtra has extended its lockdown again for the month of July, 2020.

On 1st June 2020, Maharashtra Chief Minister Uddhav Thackeray announced that all final year exams are canceled.<sup>10</sup> But on July 06, 2020, UGC announced the guidelines for university exams and ordered that final year examinations should be conducted by the universities/institutions by the end of September.<sup>11</sup> The above two announcements created a state of confusion for all the students of Maharashtra.

The worldwide rapid increase of infected cases has created a sense of uncertainty and anxiety about what is going to happen. It has also caused a tremendous level of stress among the students. This stress may lead to unfavourable effects on the learning and psychological health of students.<sup>12,13</sup>

The global prevalence rate of anxiety among medical students was 33.8% (95% Confidence Interval: 29.2-38.7%).<sup>14</sup> The COVID-19 pandemic may have a serious impact on the careers of the final year students. They are experiencing major interruptions in teaching and assessment in the final part of their studies. Further, the students are going to face the severe challenges of the

global recession caused by the COVID-19 crisis. So, with this background the present study has been planned with following objectives which are to evaluate depression, anxiety and stress among the final year students of Maharashtra using DASS-21 and to analyze the prevalence of depression, anxiety and stress among the final year students.

## METHODS

In order to assess depression, anxiety and stress among the final year students of Maharashtra, The present study was designed as a cross-sectional questionnaire based study. The students studying in the final year of the professional courses in Maharashtra were included in study. The study was carried out in the span of one month from 15th June 2020 to 15th July 2020.

In the study only the students of final year of the professional courses were included and students studying in other undergraduate years or post-graduation courses were excluded from the study.

The online study was conducted using the google forms in association with the department of psychiatry, Government Medical College, Gondia, Maharashtra, India.

An online semi-structured questionnaire was developed, with a consent form attached to it. The link of the questionnaire was sent through e-mails, WhatsApp, and other social media to the contacts of the investigators. The link was also posted in social media group comprised of only final year students. On receiving and clicking the link, the participants got auto directed to the information about the study and informed consent. Once they accepted to take the survey, they filled up the demographic details. Then, a set of several questions appeared sequentially, which the participants were to answer. The study questionnaire has two sections each of demographics and DASS-21 scale.

A section of demographic profile (age, gender, pursuing course) was added in the questionnaire.

In the second section of study “Depression Anxiety and Stress Scale (DASS- 21) was administered. DASS is a reliable tool to assess psychological distress in clinical and non-clinical populations. (Lovibond PF,1995). The DASS-21 is based on three subscales of depression, stress, and anxiety, and each subscale consists of seven questions each.

## Data scoring

The data from all the google forms was pooled in the MS Excel 2010 and then was analyzed on the basis of depression, anxiety and stress scale - 21 items (DASS-21). The DASS-21 is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales

contains 7 items, divided into subscales with similar content. Each item is scored in a self-rated Likert scale from 0 (didn't apply to me at all) to 3 (much or mostly applied to me) in the past 1 week.<sup>15</sup>

The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic nonspecific arousal. The rating of DASS sub items such as depression, anxiety, and stress can be rated as normal, mild, moderate, and extremely severe.

### Statistical analysis

The analysis was carried out with the help of MS Excel 2010 and chi square test was used to draw meaningful conclusion.

## RESULTS

### Demographic characteristics

Out of 200 final year students to whom online questionnaire was distributed, only 90.05% (181) filled the questionnaire. Out of these 181 samples 51.38% (93) were males and 48.61% (88) were females. All the respondents were studying in the final year of the professional courses. Out of 181 respondents 56.35% (102) were from rest of Maharashtra, 04.97% (09) were from Marathwada and 38.67% (70) were from Vidarbha region. For majority of the students the mode of study at home is self-study along with online classes.

### Depression scale

The study showed that the respondents of engineering were more depressed in this lockdown crisis as compared

to those of medical sciences and commerce courses. But the difference of course and depression was not statistically significant (Table 1).

Also it was found that males were comparatively more depressed than that of females but this was not statistically significant (Table 2).

### Anxiety scale

In the present study, 34 respondents of engineering had very high levels of anxiety while in the students of medical sciences there were 28 such respondents. The relationship between anxiety level and course was statistically significant (Table 3). It was also seen that there was slight similarities between male and female anxiety levels and just in few cases males are slightly more anxious than females.

### Stress scale

When compared on the stress scale 30.38% (55) respondents are absolutely normal and did not suffering from the stress. But 46.96% (85) that is nearly half of the study participants were suffering from moderate to severe stress and 12.15% (22) respondents were suffering from very severe stress.

It was found that males were under more stress. The relation between course and stress, gender and stress came out to be statistically insignificant (Table 5, Table 6).

Figure 1 describes the overall mental status of the respondents. Out of 181 respondents 18 (09.94%) had mild depression, 45 (24.86%) had moderate, 24 (13.25%) had severe and 49 (27.07%) had very severe depression. Whereas if we see on the anxiety scale 10 (05.52%) had mild, 30 (16.57%) had moderate, 19 (10.49%) had severe and 88 (48.61%) of them had very severe anxiety.

**Table 1: Course-wise distribution of mental status of respondents on depression scale.**

Course	Normal (0-9)	Mild depression (10-13)	Moderate depression (14-20)	Severe depression (21-27)	Very severe depression (> 28)	No. of respondents	P-value
Engineering	5	5	14	10	23	57	<0.102
Medical sciences	24	8	15	7	13	67	
Other UG courses	14	4	14	5	10	47	
commerce Courses	2	1	2	2	3	10	

**Table 2: Gender-wise distribution of mental status of respondents on depression scale.**

Gender	Normal (0-9)	Mild depression (10-13)	Moderate depression (14-20)	Severe depression (21-27)	Very severe depression (≥ 28)	No. of respondents	P-value
Male	21	6	24	12	30	93	0.316
Female	24	12	21	12	19	88	

**Table 3: Course-wise distribution of mental status of respondents on anxiety scale.**

Course	Normal (0-7)	Mild anxiety (8-9)	Moderate anxiety (10-14)	Severe anxiety (15-19)	Very severe anxiety (> 20)	No. of respondents	P-value
Engineering	4	2	9	8	34	57	<0.029*
Medical sciences	17	7	7	8	28	67	
Other UG courses	12	0	12	3	20	47	
Commerce courses	1	1	2	0	6	10	

\*Chi-square test;  $p < 0.05$  is statistically significant.

**Table 4: Gender-wise distribution of mental status of respondents on anxiety scale.**

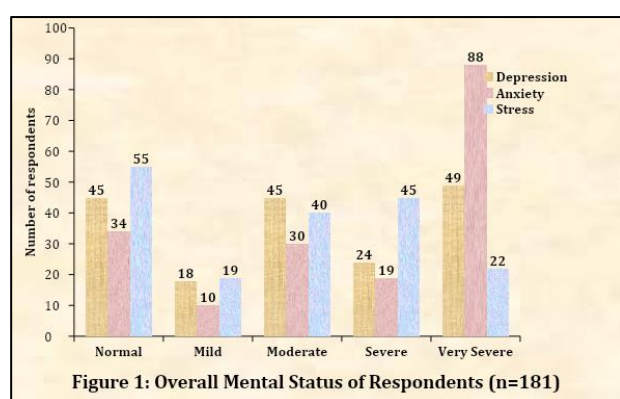
Gender	Normal (0-7)	Mild anxiety (8-9)	Moderate anxiety (10-14)	Severe anxiety (15-19)	Very Severe anxiety ( $\geq 20$ )	No. of respondents	P-value
Male	14	5	16	12	46	93	0.635
Female	20	5	14	7	42	88	

**Table 5: Course-wise distribution of mental status of respondents on stress scale.**

Course	Normal (0-14)	Mild stress (15-18)	Moderate stress (19-25)	Severe stress (26-33)	Very Severe stress (> 33)	No. of respondents	P-value
Engineering	8	8	13	16	12	57	0.105
Medical sciences	26	5	18	14	4	67	
Other UG courses	18	5	8	12	4	47	
Commerce courses	3	1	1	3	2	10	

**Table 6: Gender-wise distribution of mental status of respondents on stress scale.**

Gender	Normal (0-14)	Mild stress (15-18)	Moderate stress (19-25)	Severe stress (26-33)	Very severe stress (> 33)	No. of respondents	P-value
Male	23	13	22	20	15	93	0.1
Female	32	6	18	25	7	88	

**Figure 1. : Overall mental status of respondents (n=181).**

According to the stress scale 19 (10.49%) people had mild, 40 (22.09%) had moderate, 45 (24.86%) had severe and 22 (12.15%) had very severe stress. But overall 45 on depression scale, 34 on anxiety and 55 on stress scale

were reported to be completely normal on DASS-21 Scale.

## DISCUSSION

The present survey is unique in the sense that it assessed the psychological impact of COVID-19 specifically on the students of final year in Maharashtra.

The socio-demographic profile suggests that majority of the respondents were male, living in urban areas, and studying in final years of their academics. Majority of the respondents were aware of the symptoms of COVID-19 and they were very much aware of the pandemic and the lockdown and various restrictions by the national and state governments.

India has been under lockdown since 25th of March 2020. As this report is being written, Government has started releasing the lockdown in a stepwise manner though the colleges are still not regularly started and in the regular

scenario this is the time sooner or later when the final year students are supposed to write their final year university examinations. Due to the increasing graph the exams are being postponed to no definite date. Also the stress of further placements and form filling is nothing to be surprised if looking at the declining economy, there is no future seen for the unemployed. Similar studies regarding the mental health under lockdown have been conducted for migrant labourers and pre-medical NEET aspirants.<sup>16</sup> So study as Universe students is also important as it is no wonder that they will be under pressure too.

The extrinsic pressures like competition in further placements and intrinsic pressure which they are facing as pressure of society, self-motivation, perfectionism, further competition, earning, monetary stability, performance, when the extrinsic and intrinsic pressures are combined they become a hindrance to a person's well being.

This study was achieved using DASS-21.<sup>15</sup> Many scales like the DASS-21 scale, PHQ-a and GAD 7 were considered but only the DASS-21 included stress and was more multifunctional in analysis. The reliability of the DASS-21 was more under time constraints. The adjustment to new routines for students as classroom (the conventional form of studies) was not available was also a big task as only self-studies and online lectures remain a source now. This leads to psychological distress among students. However, we choose DASS-21 due to its reliability, multifactorial analysis and time constraints.

The study revealed that Covid-19 is creating psychological distress among the individuals, as there are restrictions due to lockdown students are forced to stay home and hence they are unable to attend the live classes and they are away from the environment of their colleges and universities and also the detachments from their friends can affect their mental well-being.

The studies revealed that 22% of the sample population was severely stressed and 48.6% has very severe anxiety. Both these parameters were similar for male and female students, which is much more than the global prevalence of anxiety which was 33.8% and anxiety was most prevalent among medical students from the Middle East and Asia.<sup>14</sup>

However count of very depressed students was 27.07% slightly having male dominance. This prevalence of excessive worrying and feeling depressed is far more than what we ordinarily get in community sample. Majority of the respondents were worried more than usual about their own future as well as future of their family members and worried about the educational carrier during the period of lockdown. This comes as no surprise considering the situation.

As observed the medical students are under high pressure as compared to other universities, these findings of the present study co-relates with the study done by Khetan et al.<sup>16</sup> One reason for this could be, the other universities have either promoted the students or have given some lenient ressorts. Whereas the medical students as expected to write the exams are been given and extended dates a number of times. Also, many institutes have had their internal exams amidst the lockdown without proper completion of portions.

Many respondents found that COVID-19 pandemic has made it difficult to adjust to the new routine of lockdown period and disturbed their preparations. This is a testimony to the fact that the current situation has been quite disruptive in terms of emotional health of the final year students and required adjustment on part of them to get acquainted to new routine during the period of lockdown.

### **Limitation**

There are some limitations of the present study as the present study was designed as a cross sectional observational study and conducted on a limited sample size. The study did not highlight the correlation of mental status of the final year students and their causes.

### **CONCLUSION**

The findings of the study showed that the engineering final year students are more depressed than other courses. 34 engineering and 26 medical students were suffering from anxiety. The relationship between anxiety level and course was statistically significant. On depression scale 47% participants were suffering from mild to moderate stress. Hence Index survey suggested that the pandemic affected the preparation of the respondents to a great extent and affected their mental status negatively..

### **Recommendations**

The state council authorities or individual universities should have and release a helpline number for distressed students. The college should keep a check and engage students into relaxing activities. All colleges (including medical colleges) should have at least few teachers at least who look after the academics and conduct regular lectures and practicals as and when possible. A separate desk of counsellors and psychiatrist should be appointed and be available for students by the state educational authorities. There should be a uniformity in the announcements by the state governments and UCG.

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