

# Impact of COVID Pandemic on the Training of Postgraduate Residents: Comparison between Clinical versus Basic Specialty Residents

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## Abstract

**Introduction:** COVID pandemic has come up as a challenge for the global health-care system, leaving no other option but to redistribute the staff and resources of the health sector toward the aid of the patients affected due to COVID. Out of all health care workers, postgraduates trainees are among the most vulnerable group. Postgraduate medical students especially are under stress to watch over potentially infectious patients, so several effective interventions can be implemented by institutions, supervisors and employers can help to mitigate this problem.

**Materials and Methods:** Fifty postgraduate students each from clinical and non-clinical specialty were distributed with study questionnaire and their response was compiled and statistically analyzed.

**Results:** It was observed that clinical specialty residents suffered more levels of anxiety, fear, and stress compared to non-clinical specialty residents and out of them more anxiety levels were observed in female postgraduate students.

**Conclusions:** COVID-19 had put a large impact on the mental health of postgraduates and suffered anxiety and depression from the pandemic. Appropriate measures must be taken both at management levels and at college levels to supply all the necessities required by the postgraduates so that they can work without any hindrance. Furthermore, their physical and mental well-being should be taken care of.

**Key words:** Anxiety, COVID-19, Depression, Mental health

## INTRODUCTION

On December 31, 2019, the Chinese authorities notified the World Health Organization regarding a novel coronavirus that has spread in Wuhan city as a highly contagious disease that affects the respiratory system.<sup>[1]</sup>

This COVID pandemic has come up as a challenge for the global health-care system, leaving no other option but to redistribute the staff and resources of the health sector

toward the aid of the patients affected due to COVID. Amidst this sudden change, there has been widespread effect on the medical education and the training of the postgraduate residents. Because of the pandemic and its social distancing measures, regular face-to-face trainings of the residents are not possible. In such an extraordinary scenario of pandemic, our health-care systems had to rapidly mold their organization to handle the emergency, aiming to efficiently optimize resources and curb further spread of the infection. Hence, most of the trainees/residents were diverted toward the management of COVID patients. There was appreciably reduced number of outpatient clinics, ward work, and multidisciplinary meetings because of redeployment of the residents to support the emergency response to COVID-19-centered approach.

On the contrary in some hospitals, there has also been reduction in the inpatient service due to the pandemic

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again leading to decrease clinical exposure to the residents. As hospitals have now created different COVID wards to combat this pandemic, residents have to spend maximum amount of their time in these COVID services leading to less clinical exposure of their respective branches.

If we talk about the psychological impacts, the work-related anxieties about provision of personal protective equipment, and risks to self and to colleagues are superimposed on concerns for family and friends and domestic disruption. These seismic changes have had consequences for wellbeing and mental health. In these unprecedented times, there has been frequent postponement or even cancellations of examinations, leading to slowing down of the preparations of the residents. All these factors contribute to increase psychological distress among medical students. There is insufficient data availability regarding prevalence of depression during the pandemic.

However, in India according to a recent survey, a very high (32.6%) prevalence of depression was found in health care workers (HCWs) during COVID pandemic.<sup>[2]</sup> Out of all HCWs, postgraduates trainees are among the most vulnerable group.<sup>[3]</sup> Postgraduate medical students especially are under stress to watch over potentially infectious patients, so several effective interventions can be implemented by institutions, supervisors and employers can help to mitigate this problem. Hence, we need to seek out the measure to establish balance between the needs of the residents and the service provision to prevent any kind of frustration among the residents.

## MATERIALS AND METHODS

After taking permission from the Institutional Ethics Committee, Government Medical College, Amritsar, a cross-sectional survey will be conducted among postgraduate residents of Guru Nanak Dev Hospital attached to GMC, Amritsar, Punjab, to study the “impact of COVID-19 pandemic on postgraduate residents.” A written informed consent was taken from each medical resident. The survey involved a questionnaire that was distributed in either a paper based or online version by means of email or social media, to the residents. The residents were divided into two set of batches, one batch of 50 residents comprising the clinical specialty (medicine, chest and tuberculosis, surgery, anesthesia, etc.) postgraduate residents, and another batch of 50 residents comprising the basic specialties (anatomy, physiology, biochemistry, etc.).

### Questionnaire

The questionnaire included 13 questions regarding the COVID-19 infection and its impact on daily lifestyle of

the residents. A friendly reminder was sent to potential respondents to ensure highest possible response rate. Unreturned questionnaire was recorded as missing. Participants were aware of study aim or outcomes to reduce the risk of any possible bias. The questionnaire was self-administered without intervention by the authors or any specific person, and it did not contain any identifying data of the participants to ensure confidentiality.

### Study Tool

The questionnaire covered participants basic demographic data, such as their gender, age, marital status, as well as general questions about their financial status, faculty, level of medical education, history of health problems, psychological illness, and learning disabilities, if present. The survey requested information about participants medical education status during the pandemic, such as their work status, type of educational activities conducted, how COVID-19 affects their career plan, their personal attitude toward the pandemic, and questions on their personal opinions about authorities response to the pandemic and about their well-being. It also covered mental health assessment that measures the level of anxiety and depression in the form of depression, anxiety, and stress scale (DASS) questionnaire. It was in English language.

We used the DASS21 questionnaire for the assessment of psychological impact of COVID pandemic on the residents. The DASS-21 items are 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 seven items, divided into subscales with similar content. 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 level of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive, and impatient. Scores for depression, anxiety, and stress are calculated by summing the scores for the relevant items. The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety, and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21, therefore, has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the Diagnostic and Statistical Manual of Mental Disorders and International Classification of Diseases.<sup>[4]</sup>

### Statistical Analysis

The data from the present study were systematically collected, compiled, and statistically analyzed to draw relevant conclusions. Counts and proportions (%) were used for descriptive values. The comparison on the trainings and psychological behavior was assessed using the Chi-square test.  $P < 0.05$  at 95% confidence interval was considered statistically significant. Statistical Package for the Social Sciences (SPSS), version 21 (SPSS, Chicago, IL, USA) was used for all statistical data.

## RESULTS

We collected 100 responses from clinical and non clinical postgraduate students from online questionnaires, sent to them via mails and social media from May 2021 to June 2021. Out of 100 residents, 70% of the clinical group and 26% of non clinical group residents had direct involvement in the management of COVID 19 patients ( $P < 0.05$ ).

During this pandemic, teaching, trainings and clinical activities were some of the major concerns being faced by the postgraduates and out of all, 66% students from clinical and 32% from non clinical department residents acknowledged that they did not get enough time to study. Hence, due to lack of time for studying, majority of the clinical group residents i.e. 80% and 46% of non clinical residents felt psychological stress about their upcoming exams during this pandemic ( $P < 0.05$ ).

Major cause of anxiety and stress during this pandemic was related to self infection while treating the covid patients. We have observed that, 52% of the residents from the clinical and 30% from non-clinical department were infected with COVID disease while treating and handling these patients and almost equal proportion of trainees from both groups i.e. 28 and 30% felt that their family members contracted the disease from them.

Majority of the clinical undertraining postgraduates (82%) vs 24% in the non-clinical group suffered changes in their sleep pattern which further attributed to their stress and anxiety levels.

DASS 21 questionnaire was used to calculate anxiety, stress and depression among residents of both groups. From the responses, we have observed that, overall, 43.8% residents had stress, 39% anxiety and depression was found in 17.2% which was further divided into mild, moderate, severe, and extremely severe. Many of the postgraduates experienced more stress than anxiety.

The higher anxiety and depression levels were observed in clinical residents as compared to non-clinical subject

residents (22%). But no one in any of the two groups experienced an extreme depression levels.

In non-clinical group postgraduate residents there was more anxiety (63%) as compared to clinical group of residents (44%), where stress and depression levels were more common. In the clinical group, 48 % suffered from stress and 56 % from depression, which was much higher when compared to non-clinical group (i.e. 22% and 29% respectively) ( $P < 0.05$ ), but none of the residents in any group suffer from extreme levels of depression and stress.

It has also been witnessed in our survey that, the gender, female (63%), suffered more anxiety and stress compared to male (20%) postgraduates in both clinical and nonclinical groups ( $P < 0.05$ ) Also, postgraduates from clinical groups were more anxious and stressful and suffered more problems in learning and their teaching was affected more compared to non-clinical undertraining postgraduates.

## DISCUSSION

With covid pandemic, clinical trainings and health education is affected harshly. Clinical postings, elective opds, surgeries and other works were suspended and hence there was marked reduction in clinical teaching and learnings of the students which was one of the major contributing factor leading to stress and anxiety in the postgraduates.

For the PGs involved in COVID-19 duties, there is more mental stress because of the possibility of getting the viral infection. Various researchers observed significant levels of anxiety and stress in the students and faculty who were directly and indirectly involved in treating covid patients and also in those in whom additional covid duties were assigned during the pandemic.<sup>[5]</sup>

Medical students experience more symptoms of anxiety and stress compared to general population.<sup>[6,7]</sup> They had higher burnout rates relative to similarly aged people and students involved in other courses and activities.<sup>8</sup> Students involved in medical field, experience more mood changes, anxiety disorders, suicidal ideation and psychological distress because of their nature of work.<sup>[8]</sup> Our survey findings also suggested the same results about the experience of anxiety, stress and depression among the working postgraduate students.

Postgraduate students not only feel burnout because of excessive workload, compromised sleep patterns, exposure to terminal illness<sup>[9]</sup> but also, some students raise their bars high about their studies and come under more pressure and stress which further can exaggerate the mental health

problems in these students. The other contributing factor is, most of the postgraduates are far from their home place, so despite of their emotional distress, they were unlikely to seek help from the fellow colleagues because of their own busy schedules and rotatory duties.<sup>[10]</sup> Some students knowingly do not seek help for their mental conditions because of fear of compromising academic and career progressions.<sup>[11]</sup>

Researchers also found that, females have higher prevalence for anxiety and depression in general may be because of their hormonal and emotional levels.<sup>[12]</sup> Among medical students, female postgraduates, are affected more both mentally and socially and suffered more mood or anxiety disorder and severe psychological distress.<sup>[7,8]</sup> As viral diseases are more transmissible, so fear of contracting this disease was much higher while working in the medical field.

Fear, anxiety and depression among the medical students was much higher when the disease was at its peak leading to psychological disturbances among the resident students. Approximately, 84.71% medical students declared about their fear of getting covid infection and 70.8% medical students observed that this pandemic has affected their financial status and which may compromise their course continuity.<sup>[13]</sup> In such cases, of postgraduate students, support system needs to be emanate from their own universities.<sup>[14]</sup> Hence, we can say that the COVID-19 pandemic had caused potential impact not even on emotional as well as mental health state of the postgraduate undertrainee students. Also, the level of anxiety and stress was more in those students who were directly involved in the management of the critically ill patients i.e. in the clinical group postgraduates.

The purpose of this study was to find out the possible causes for anxiety and stress among the postgraduates of different specialities involved in the management of covid patients, so that their physical and psychological well being can be taken care of with best possible alternatives related whether to studies or with their support system. So, at medical college level, administrators and leaders should take lead in providing adequate support system for those students who needs help for their mental and psychological wellness.

## CONCLUSIONS

To conclude, though covid 19 had put a large impact on health care workers, but among all health care workers,

medical postgraduate undertrainees were the highest affected. Further, among the postgraduate trainees, female doctors and residents from the clinical speciality suffered more levels of anxiety and depression compared to non clinical batch students because of their direct exposure with the covid patients. So there must be a solution and protection to mental health and social well being of all medical students. Also, they should be appropriately trained before giving them the exposure to a highly infectious disease as quality of patients care depends upon the physician's physical and mental wellness.

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