

Are doctors joining post-graduate residency programmes amidst COVID-19 pandemic facing anxiety and lacking mental preparedness? Outcomes from a multi-centric cross-sectional tertiary institutional survey

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Abstract:

Introduction: The Corona Virus Disease-2019 (COVID-19) pandemic has mandated diversion of majority of healthcare services towards handling the disease burden. Newly joining post graduate medical residents are likely to suffer from anxiety and have apprehension about providing such services.

Aims: To identify the anxiety and preparedness of newly elected post-graduate residents in tertiary care teaching hospitals

Methods: An online questionnaire was circulated amongst post graduates who were joining their residency program in tertiary care hospitals in Mumbai. The questionnaire included information about their selection of course and institute, their anxiety assessment (Generalised Anxiety Disorder Assessment score or GAD-7) and preparedness for residency.

Results: Out of the 175 respondents, 55% were female, majority (67%) of participants belonged to 23 to 25 years age group and 89% did not suffer from co-morbidities. According to the GAD-7 scale, anxiety was seen in 85 (49%) of the participants, of whom 8.5% showed severe anxiety. Only 9% of the respondents reported that they had worked in COVID wards and Intensive Care Units prior to joining their residency. 27% respondents said that the pandemic had an impact on the choice of branch of residency and they considered not joining branches with high exposure like internal medicine, emergency medicine, anaesthesia and intensive care.

Conclusion: Our study highlights the prevalent anxiety and lack of preparedness amongst newly joined post graduate medical residents. The choice of medical profession has also been affected by the pandemic, with preference for non-clinical branches.

Date of Submission: 10-12-2020

Date of Acceptance: 25-12-2020

I. Introduction:

The Coronavirus disease (COVID-19) pandemic which started after the first case was detected in Wuhan, China on 17th November, 2019 has now spread to almost every country of world (1). This has led to a diversion of majority of healthcare services towards handling the pandemic. The situation is likely to persist for the upcoming months, making formal residency training programmes suffer in their individual specialities. Additionally, front line healthcare workers (HCWs) show maximum vulnerability to the disease, as well as the misinformation surrounding it. This is likely to increase their anxiety levels (2). The National Health Commission of the People's Republic of China reported that as of February 24, 2020, a total of 3387 (4.4%) of 77,262 patients with COVID-19 in China were HCWs or others who worked in medical facilities (3).

Trainee doctors enrolled in postgraduate courses are regularly exposed to patient-interactions in emergency departments, wards and operation theatres, and care of critically ill patients in the Intensive Care Units. These residents form the main source of manpower in all tertiary care teaching hospitals and are thus maximally exposed to the physical and psychological impact of the disease burden. Currently residents of all postgraduate departments are being redirected from their departmental duties towards the management of the burden of this pandemic. All healthcare workers working as frontline caregivers in the COVID-19 pandemic have certain basic concerns- availability of adequate personal protective equipment (PPE), exposure to COVID-19 at work and subsequently infecting their family, uncertainty over institutional help and support in case they develop infection, increased work hours, provisions for food, lodging and transportation and providing competent medical care despite all the limitations(4). All these factors could potentially have an impact on their choice of branch and institute of training.

This study was designed to highlight the anxiety, preparedness and impact on choice of institute amongst first year post graduate medical doctors joining residency in tertiary care hospitals amidst the pandemic.

AIMS: To identify the anxiety and preparedness of newly elected post-graduate residents in tertiary care teaching hospitals

II. Methodology:

This online cross-sectional study enrolled medical graduates who were joining postgraduate medical courses from the July 2020 term at tertiary care public or private medical colleges, in Mumbai. This study was conducted over one week from 3rd July 2020 to 10th July 2020, immediately after the beginning of their term in the respective institutes.

An online survey form was created using Google forms and circulated via Whatsapp freeware/email to individual participants. The survey questionnaire consisted of three sections – one each for assessing anxiety, preparedness and impact on choice of branch and institution. This Questionnaire was internally validated for simplicity, clarity, ambiguity and relevance of each question. The Generalised Anxiety Disorder Assessment score (GAD-7) was used for evaluation of anxiety in the participants (5).

GAD-7 is an easy-to-use self-administered patient questionnaire used as a screening tool and severity measure for anxiety. The GAD-7 score is calculated by assigning scores of 0, 1, 2, and 3, to the response categories of 'not at all', 'several days', 'more than half the days', and 'nearly every day', respectively, and adding together the scores for the seven questions. Scores of 5, 10, and 15 are taken as the cut-off points for mild, moderate and severe anxiety, respectively. When used as a screening tool, further evaluation is recommended when the score is 10 or greater.

Preliminary part of the questionnaire consisted of demographic data of the participants. All the questions allowed single best response answers. Successfully completing the questionnaire was considered as consent for participation in the survey. After the study period of one week elapsed, the total number of responses that were recorded was entered in to an excel sheet document and analysed. Categorical data were expressed as percentage (%). Continuous data were presented as mean and standard deviation. Statistical analysis was performed using SPSS version 24.0 (IBM Corp. N.Y.)

III. Results:

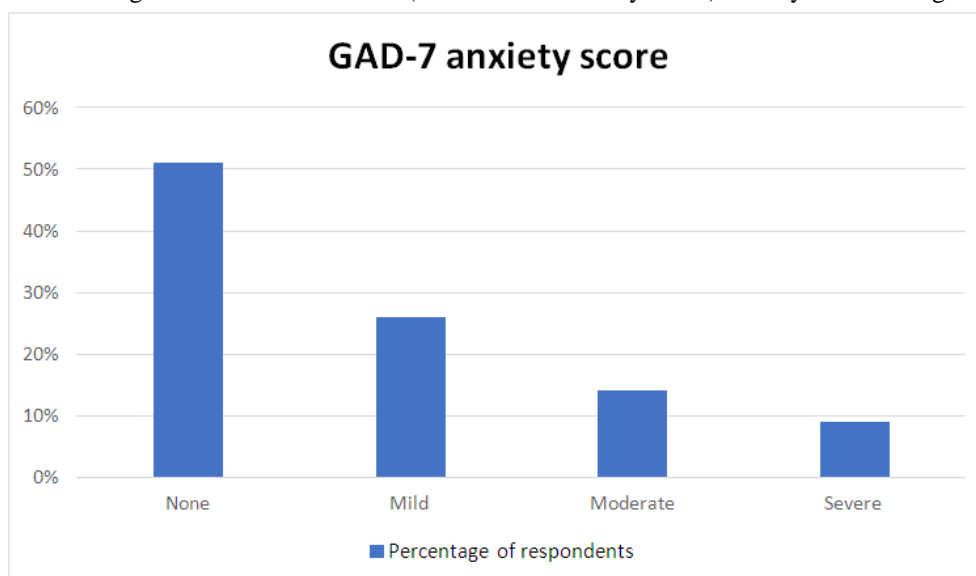
At the end of one week we received one hundred and seventy-five complete responses.

Demographics: Majority of the respondents were females 95 (55%) and 80 (45%) were males. Most of the respondents- 118 (67%) were between 23-25 years of age.

Co-morbidities: Out of all the respondents 156 (89%) had no comorbidities. The most common comorbidity was Asthma in 6 (3%) participants followed by Hypertension in 4(2%) participants. The remaining 10(4%) consisted of thyroid disorders (hypo and hyperthyroidism), diabetes, chronic bronchitis, myasthenia gravis, polycystic ovarian disease and drug and food allergies.

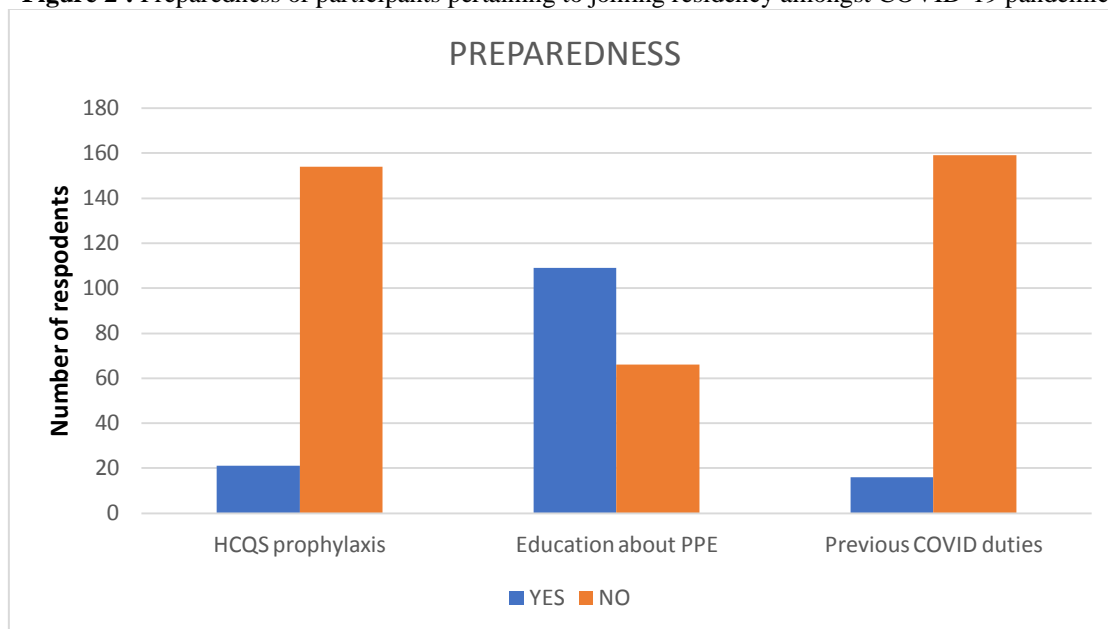
GAD-7 anxiety scale – Out of the 175 participants, according to the GAD-7 scale, anxiety was seen in 85 (49%) of the participants. The severity of anxiety was as follows – 47 participants (26%) showed mild anxiety, 23 participants (14%) showed moderate anxiety and 15 participants (9%) showed severe anxiety. 90 participants (51%) reported no anxiety (Figure 1).

FIGURE 1: Percentage distribution of GAD-7 (Generalised Anxiety Score) anxiety score amongst respondents



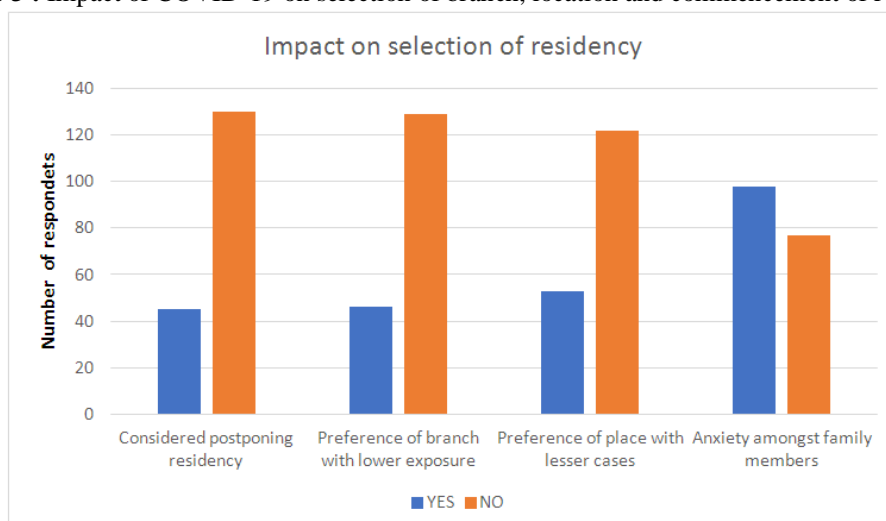
Preparedness: Only 16 (9%) of the respondents reported that they had worked in COVID wards and Intensive Care Units prior to joining their residency as a part of their medical internship and that they were aware about the disease progression and patient profile. Hydroxychloroquine was taken for prophylaxis against COVID-19 by 21 (12 %) of our respondents. In anticipation of being posted for COVID duties on joining residency 109 (62%) did personal research and watched videos of correctly donning and doffing Personal Protective Equipment. However, only 14(8%) had purchased a health insurance in view of the pandemic prior to joining their residency (Figure 2).

Figure 2 : Preparedness of participants pertaining to joining residency amongst COVID-19 pandemic



Impact on choice of residency: Out of all the respondents, 45(25%) students had strongly considered postponing their residency to next year in view of the pandemic. Forty-six (27%) respondents said that the pandemic had an impact on the choice of branch of residency and they considered not joining branches with high exposure like internal medicine, emergency medicine, anaesthesia and intensive care instead preferring non-clinical and para-clinical branches with lesser exposure. Citing higher number of active cases in metro cities as compared to two-tier cities, 53(31%) respondents mentioned that they took their decision on choice of institute based on its location and preferred admission in smaller cities. Taking into account isolation and quarantine periods, chance of exposure to family and overall impact on the family, 98(54%) respondents mentioned that their immediate family (parents/ spouse / siblings) had requested them to rethink their decision of joining residency this year (Figure 3).

Figure 3 : Impact of COVID-19 on selection of branch, location and commencement of residency



IV. Discussion:

The coronavirus disease 2019 (COVID-19) pandemic has become a major health crisis in our generation. The healthcare workforce from all broad and super specialities of medicine is being redirected towards the care of patients afflicted by this disease in order to control the burden on the healthcare system. In a study, Matheson et al. (6) noted that first year postgraduate students on the basis of their undergraduate medical education were not fully prepared for starting work, especially in clinical and practical areas as well as lacked good communication skills. However, it is the need of the hour to incorporate these new medical postgraduates to manage COVID-19 patients in emergency medical services, wards and intensive care units. This requires certain preparedness on behalf of the residents on basic preventive practices being followed in the current scenario.

In our study, majority of respondents were females, belonging to age group 23 to 25 years and without co-morbidities. Although the overall mortality rate of COVID-19 is low (1.4–2.3%), studies have shown that patients with co-morbidities are more likely to have severe disease and subsequent mortality (7, 8). Diabetes mellitus (DM) has been distinctively associated with more severe disease, acute respiratory distress syndrome and increased mortality (7).

Initial reports from China and Italy reported infections in HCWs ranging from 4.4 to 20% (9). In our study, 49% were reported to have anxiety, as per the GAD-7 scale, while 22.5% showed moderate to severity anxiety. In a study done by Lai et al. (10), 44.6% of the healthcare workers working on the frontline who participated in the study reported anxiety related to the pandemic. Elbay et al. (11) found that 51.6% of the healthcare workers had anxiety and 41.2% had stress-related symptoms in the early period of the outbreak in Turkey. A systematic review of 12 studies by Pappa et al. (12) revealed a prevalence of anxiety in 23.2% and depression in 22.8% HCWs during the pandemic. Insomnia was reported by 34.3% from 5 studies in this review. Higher prevalence of anxiety and depression was reported in females. Increased work hours, physical exertion, inadequate personal protective equipment (PPE), risk of hospital transmission, and the need to make ethically difficult decisions on the rationing of care may have dramatic effects on their physical and mental well-being. In their study, they reported that HCWs are vulnerable to mental health problems, including fear, anxiety, depression and insomnia.

In anticipation of their duties 12% of our respondents had started HCQS prophylaxis prior to joining residency. During the nascent period of the pandemic in India, the Indian Council of Medical research (ICMR) had recommended the use of Hydroxychloroquine (HCQS) in healthcare workers caring for suspected / laboratory positive COVID-19 patients (13). A study by Nasta et al. (14) showed 52% of surgeons were taking HCQs prophylaxis in their practice. We reported that 62% residents had seen videos of Donning and Doffing Personal protective equipment correctly in anticipation of their clinical duties as a resident during this pandemic. The importance of appropriate technique of donning and doffing cannot be ignored. A study by Kwon et al. (15) showed 27% of Ebola Virus Disease (EVD) PPE HCWs and 50% of Contact Precautions (CP) PPE HCWs made ≥ 1 protocol deviation while donning, 100% of EVD PPE HCWs and 67% of CP PPE HCWs made ≥ 1 protocol deviation while doffing ($p=0.02$).

Studies in the pre- COVID pandemic era showed that the choice of postgraduate speciality training branch was based on a general set of factors such as work-life balance (16), intellectual challenges and academic opportunities. In particular, women preferred specialities with direct patient contact/communication, and men preferred instrument-oriented and high-technology medicine (17, 18). However, our study shows that young doctors seeking speciality training this year were deeply impacted by the pandemic and 46 (27%) sought branches with lesser patient interaction and lower risk of transmission of disease. As many studies have shown that coronavirus spread in larger cities is faster as they are more populous with difficult social distancing (19), 53(31%) respondents from our study preferred taking admission in medical colleges in smaller cities.

Our study reveals a high prevalence of anxiety and lack of preparedness amongst newly joined medical postgraduates. It's the first study from India where the focus is on a unique group of HCWs whose education and residency training is affected by the pandemic. As our population is from tertiary hospitals from a city which has been affected severely by COVID-19, it may not fully represent the mentality of new medical postgraduates at large. Also due to the nature of the cross-sectional data, it is difficult to mark pivotal implications. There is a further need for studies to determine more factors leading to anxiety amongst the newly joined residents.

V. Conclusion:

Our study highlights the prevalent anxiety and lack of preparedness amongst newly joined post graduate medical residents. The choice of medical profession has also been affected by the pandemic, with preference for non-clinical branches. Larger studies are desirable to study such issues, which are perhaps the unidentified collateral repercussions of the COVID-19 disease.

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