Psychiatric Sequelae and COVID Experiences of Post COVID-19 Recovered Resident Doctors and Interns of a Tertiary General Hospital in Mumbai

Neena Sawant1, Sushrut Ingawale2, Urja Lokhande3, Sanket Patil3, Eera Fatima Mohammed Ayub4, Vedant Rathi4

Abstract

Background: The wide and profound psychological impact of the COVID pandemic on people has been demonstrated by several studies. A survey from the Indian Medical Association (IMA) showed that at least 500 doctors have been infected across Maharashtra, with Mumbai doctors making it to the top of the list. The most infected are the resident doctors working in government hospitals. A few doctors also have lost their lives while working in this pandemic. The delicate balance between duty, altruism and fear for oneself and others often causes conflict and feelings of helplessness and dissonance in many health care personnel with a fear to resume back the duty, especially after being a COVID victim. There have been hardly any studies yet, related to understanding the emotional and general well being of COVID-19 positive health care workers who have recovered and resumed their duties.

Aims and Objectives: To study in post COVID-19 recovered resident doctors and interns the presence of anxiety and depressive symptoms, sleep changes, general well-being, perceptions of their COVID experience and association of general wellbeing with anxiety, depression and sleep changes.

Methods: The study was conducted after institutional ethics committee permission and online informed consent from the participants which included medical interns and resident doctors of our institute. A Google form with questions and scales pertaining to the aims of the study (Patient Health Questionnaire, Zung Self Rating Anxiety Scale, Warwick Edinburgh Mental Well Being Scale and Insomnia Symptom Questionnaire) was sent on the Google link to the 150 interns and resident doctors via whatsapp who had recovered from COVID 19 infection. Their details were taken from hospital database with Dean permission.

Results: 79 responded to the link with the mean duration of COVID infection being 16.1 ± 8.59 days. 64 participants were hospitalized and 18 participants had lung parenchymal involvement. 28 participants had depressive symptoms on the patient health questionnaire. Only 4 participants experienced anxiety as per Zung self rating anxiety scale. 69 participants had greater well being with scores higher than 40 on the Warwick Edinburgh mental well being scale. 8 participants had sleep related issues affecting their work. A negative correlation of general well being was seen with depression, anxiety and insomnia which was highly significant. The most distressing of COVID experiences were being isolated in a room, transmitting disease to near and dear ones and possibility of a serious complication. Re infection, workload followed by use of PPE was the major concern. Many described their COVID experience as boring, depressing with feelings of loneliness.

Conclusions: Our study is the first of its kind to evaluate the psychiatric sequelae and COVID experiences of post COVID-19 recovered resident doctors and interns. Psychosocial and institutional support will definitely help in improving the post COVID sequelae in the resident doctors and interns.

Introduction

An ongoing outbreak of pneumonia associated with the severe acute respiratory Corona virus 2 (SARS-CoV-2) started in Wuhan, China on 31st December and then rapidly spread from Wuhan to other areas.1 On 30th January 2020, the Director-General of WHO declared that the outbreak of 2019-nCoV constituted a Public Health Emergency of International Concern,2 owing to the easy transmission of the causative agent by respiratory droplets (by coughing and sneezing) or via direct contact from an infected person.3 The numbers of cases documented across the Indian subcontinent had been steadily increasing till recently where it is now on a decline.

Few research studies have demonstrated the wide and profound psychological impact the outbreaks can have on people. This has been invoked not only by the prospect of severe disease but also by the impacts it has had on society. Sawant et al studied workplace and personal concerns, along with stress related to the pandemic in resident doctors, interns and medical faculty.4 A survey from the Indian Medical Association (IMA)
showed that at least 500 doctors have been infected with COVID-19 across Maharashtra, with Mumbai doctors especially resident doctors working in government hospitals topping the list. A few doctors also have lost their lives while working in this pandemic. Healthcare workers (HCWs) have been found to display heightened stress and experience higher levels of anxiety and depression during such outbreaks. This could be due to the anxiety and fear of becoming infected due to high risk of exposure or fear of infecting loved ones and children. The delicate balance between duty, altruism and fear for oneself and others often causes conflict and feelings of helplessness and dissonance in many HCWs. Moreover, the increasing number of suspected and confirmed cases, widespread media coverage, depleted personal protective equipment, ambiguity of specific treatment, overwhelming workload and lack of support can lead the way for a myriad of mental health problems to affect them.

There have been hardly any studies yet, related to understanding the psychiatric sequelae and general well being of COVID-19 positive health care workers who have recovered and resumed their duties. Also, no similar studies were found involving health care workers in India in the context of previous pandemics. Hence this research was planned to study in post COVID-19 recovered resident doctors and interns, the presence of anxiety, depressive symptoms, sleep changes, general well being and perceptions of their COVID experience. We also wanted to study the association of general well being with symptoms of depression, anxiety and sleep changes.

Methods

The study was a cross-sectional questionnaire based study conducted online in a general municipal hospital in Mumbai after IEC approval and informed consent of the participants. The study duration was 1 month after IEC approval and responses were recorded over a period of 20 days after initiation in October 2020. The online questionnaire was sent out to the resident doctors and interns from the hospital database of COVID affected healthcare personnel and there were about 150 resident doctors and interns who were affected till first week of September 2020.

Only those resident doctors and interns who were willing to participate in our study, gave consent and had suffered from COVID-19 illness in the past 4 months with complete recovery from it were included in the study. Those resident doctors / interns who were suspected of having COVID 19 and those who had not yet recovered from the illness and were still admitted in hospital or were into home quarantine for the same were excluded from the study.

The survey was conducted through an online questionnaire which was administered in English through the means of Google Forms. The link for the study was circulated by means of email and Whatsapp groups and confidentiality was maintained. The online questionnaire was designed to collect information on the demographic variables and included scales to study the presence of anxiety, depression, sleep changes, general well being as well as some open and closed ended questions to study the perceptions of the COVID experience and hospital stay during the infection.

Tools

i. Patient Health Questionnaire-9 (PHQ-9): The Patient Health Questionnaire is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 is the depression module, which scores each of the 9 Diagnostic and Statistical Manual-IV criteria as “0” (not at all) to “3” (nearly every day). This questionnaire is found to have excellent reliability and validity, and sensitivity and specificity of 88% for major depression.

ii. Zung Self-Rating Anxiety Scale (SAS): The SAS is a 20-item self-report assessment device built to measure anxiety levels, based on scoring in 4 groups of manifestations: cognitive, autonomic, motor and central nervous system symptoms. Each question is scored on a Likert-type scale of 1-4 (based on these replies: “a little of the time,” “some of the time,” “good part of the time,” “most of the time”). Some questions are negatively worded to avoid the problem of set response. Overall assessment is done by total score with the interpretation of score:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Interpretation</th>
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<tbody>
<tr>
<td>0-10</td>
<td>None</td>
</tr>
<tr>
<td>11-20</td>
<td>Mild Anxiety</td>
</tr>
<tr>
<td>21-30</td>
<td>Moderate Anxiety</td>
</tr>
<tr>
<td>31-50</td>
<td>Severe Anxiety</td>
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iii. Warwick Edinburgh Mental Well Being Scale (WEMWBS): It is a 14-item scale covering both hedonic and eudemonic aspects of mental health including positive affect (feelings of optimism, cheerfulness, and relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self acceptance, personal development, competence, and autonomy). It has good content validity and high test retest reliability. The total score was determined by adding the score of all the 14 items. A higher score indicates greater positive well-being. A score of ≤40 has been reported to indicate high risk for depression.

iv. Insomnia Symptom Questionnaire (ISQ): It is a 13-item self-report instrument designed to identify insomnia. Questions 1, 2 or 5 are used to determine the presence, frequency and duration of sleep symptom criteria. Questions 6-13 are used to identify significant daytime consequences of the sleep complaint.

Results

Among the total 150 participants who were sent the link, 79 responded and we had a 52% response rate.

Demographic and illness details

The mean age of the sample was 26.4±3.25 years with the age range being 22 – 33 years. There were 46(58.2%) males and 33(41.8%) female participants. 57(72.2%) were resident doctors and 22 (27.8%) were interns. The mean duration of COVID infection was 16.1 ± 8.59 days with the range being from 2 - 45 days. 64 (81%) participants were hospitalized for their COVID illness and 12(15%) were hospitalized and then home quarantined while 2(2.5%) participants were only home quarantined and 1(1.2%) was quarantined at the government organized COVID Care Centre. 18(22.8%) participants had lung parenchymal involvement whereas 61 (77.2%) did not have and none of the participants required any oxygen therapy with the use of Face mask, Nasal prongs, etc.
mild, 6 (7.5%) moderate and 1 (1.2%) participant having severe symptoms. The mean PHQ score was 3.7 ± 4.22. The anxiety scores on SAS revealed normal scores for 75 (95%) participants with only 4 (5%) participants experiencing mild – moderate anxiety symptoms. The mean SAS scores were 31.2 ± 6.3. When all the residents and interns were assessed for their general well being, 26 (32%) felt stressed due to their COVID experience where they felt it as disturbing, lonely and isolated. 34 (43%) found the experiences of being isolated in a room (69%), possibility of transmitting disease to near and dear ones (54%), possibility of a serious complication (53%), deviation from routine (46%) etc whereas the least bothersome were swab coming positive despite no symptoms (3.7%) or not being able to work in their respective specialty (1%) Table 3a.

When the participants were asked about the most distressing of their COVID experience where they could choose multiple options, then in descending order of distress were the experiences of being isolated in a room (69%), possibility of transmitting disease to near and dear ones (54%), possibility of a serious complication (53%), deviation from routine (46%) etc whereas the least bothersome were swab coming positive despite no symptoms (3.7%) or not being able to work in their respective specialty (1%) Table 3b.

When they were further asked to select the most important stressor among the same then 24 (30.3%) expressed possibility of serious complication and 22 (27%) about transmitting it to near and dear ones as most important amongst all Table 3b. 49 (62%) participants were concerned about resuming duty after their recovery whereas 30 (38%) were not. When they were assessed for concerns they had on resuming duty then the various concerns enumerated were reinfection 38 (48%), workload 21 (26.5%) followed by use of PPE 19 (24%). Maintaining social distancing was the least of their concerns Table 4.

When the participants were asked about their perceptions of their COVID experience then 41 (51%) expressed it as boring as time passed slowly, 34 (43%) felt it as disturbing, lonely and isolated experience, 26 (32%) felt stressed due to their COVID experience.
outcome in this group of HCWs. It was also the state government and MCGM mandate that all HCWs were hospitalized at a COVID hospital for better care and treatment even if the symptoms were mild and hence in our sample only 3 participants who were asymptomatic were quarantined and not hospitalized.

A lot of studies have focused on presence of anxiety, depression and psychosocial burden during the pandemic; though studies on psychiatric problems in COVID recovered HCWs are less. Among our participants mild depressive symptoms were reported by nearly 1/3rd of the sample though they did not seek any treatment for the same. Majority of the participants did not give any anxiety symptoms and nearly 87% of them expressed a feeling of general well-being and positive thoughts, which does seem to reflect active coping and good mental state in their recovered phase. Jin et al in their study of 105 health care workers who had COVID 19 found 88.3% of the participants to have psychological stress or emotional changes during the isolation.16 Similarly Zhu et al found the prevalence rates of anxiety and depression symptoms among doctors to be 11.4% and 45.6%, respectively.17 Our sample consisted of post COVID recovered resident doctors and interns who were more resilient and able to handle the stress of being infected, isolated and quarantined and hence did not have significantly disturbing depressive or anxiety symptoms. Also all the resident doctors had institutional support and psycho-social support was already being offered during training workshops with provision of several helplines for counseling for faculty, resident doctors, patients and caregivers during the pandemic.

Hossain et al18 in their umbrella review of mental health outcomes of quarantine found that depression, anxiety disorders, mood disorders, post-traumatic stress symptoms, sleep disorders, panic, stigmatization, low self-esteem, lack of self-control were highly prevalent among individuals impacted with physical isolation. Several meta-analytic reviews on epidemiological19 and psychosocial20 aspects of mental health problems during the pandemic reported that HCWs working as frontline workers or those having prolonged exposure or contact to persons with COVID-19, preexisting psychosocial challenges, with low institutional and social support, had varying levels of psychosocial burden in this pandemic. Researchers have said that these findings contributed to the deterioration of mental health.21-24

We had only 8 (10%) participants who had insomnia which affected their work schedule and caused fatigue. The other participants reported sleep disturbances once or twice a week with complaints of difficulty falling asleep or frequent awakenings but it did not impact their lifestyle. This could be due to the fact that they were coping well with their duties and probably their stress and anxieties from the beginning of the pandemic had now reduced. However several pandemic studies have reported insomnia as a significant disturbance.5,20-27 A survey of Chinese HCWs during the COVID-19 outbreak found that 36.1% (564 of 1,563) had symptoms of insomnia.20 Sawant et al reported that nearly 80% of resident doctors and interns suffered from insomnia during the lockdown phase.4

When all the participants were studied for a correlation of the general well being as per WEMWBS with depressive symptoms (PHQ), anxiety symptoms (SAS) and insomnia symptoms(ISQ) then a highly significant negative correlation was seen with all, indicating that an increased well being was seen with decreased depressive, anxiety and insomnia symptoms. Thus in our study the general wellbeing was high due to which the prevalence of the psychiatric sequelae was less.

We were interested to study the personal experiences of the resident doctors and interns as more than 90% were hospitalized for their COVID infection and all had been isolated. There are studies which have found an increase in stress levels on isolation.18 The distress experienced by our participants was definitely for being isolated in a room and fear of having infected their near and dear ones. Similar perceptions were expressed by participants on social distancing and risk of exposure in a qualitative study by Al Ghafri et al.29 Developing COVID related complications or sequelae was another stressor. No human touch, inability to have favorite foodstuffs, not able to exercise, deviation from routine

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<th>Table 5: Perception of the COVID experience</th>
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<tr>
<td>Perception of the COVID experience (Multiple responses)</td>
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<tr>
<td>It was a boring feeling as time passed slowly</td>
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<tr>
<td>It was disturbing, lonely, isolated experience</td>
</tr>
<tr>
<td>It was a stressful experience due to feelings of anxiety and depression</td>
</tr>
<tr>
<td>It was a normal experience which did not affect me</td>
</tr>
<tr>
<td>No perceptions as above or any other</td>
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to the same and 12(15%) participants remained unaffected Table 5.

Discussion

There is hardly any prevalence data available on COVID infected frontline workers especially resident doctors and interns. Data is available of healthcare workers (HCWs) which include doctors, nurses, paramedics, and administrative staff of hospital who could get infected due to exposure to positive patients. Our hospital being a general municipal hospital became a designated tertiary COVID hospital due to increasing patient load in the metropolitan city of Mumbai. Hence all resident doctors, interns and departmental faculty had to do COVID duties. Studies done among HCWs by other researchers revealed source of infection in HCWs from community but in our city and state there being a complete lockdown which gradually opened from last week of June, most of our participants got infected with COVID due to exposure to positive patients while working in the hospital. During the entire period our city had a very high positive rate for infection with increased number of cases in comparison to the other cities of India. There are about 800 resident doctors and 150 interns in our hospital of whom 150 (15.7%) had got infected as per the hospital database before the initiation of this study. This is much higher than reported in other studies where clinicians accounted for 4.7% of infected HCWs.14 Most of our participants had a mild infection with only 18 (22.7%) participants having lung involvement but they did not require oxygen therapy. Similar results were reported by Maskari et al14 and Chu et al15 where probably a younger age with no co morbidities had a better
etc were considered less distressing by the participants.

Reporting back to duty after recovery with chances of re-infection and having an increased workload were the most important concerns the participants had during their COVID hospitalization. This was because the Mumbai COVID figures were still rising and it has been only since mid November that the numbers have reduced. The participants described the hospital stay as being boring with time passing slowly with increased feelings of loneliness and being isolated. For the resident doctors working in this tertiary care hospital doing nothing seemed more stressful. However some residents remained unaffected, as they enjoyed the break despite being infected.

Conclusions

Our study is the first of its kind to evaluate the psychiatric sequelae and COVID experiences of recovered resident doctors and interns. Though mild depressive symptoms were found in residents, none of them sought help and could cope with the same. Anxiety and sleep disturbances were few and overall the general sense of wellbeing was high among the participants. Psychosocial and institutional support definitely helps in improving the post COVID sequelae. Our study has a few limitations. It was done at a tertiary care centre in only the resident doctors and interns and other healthcare workers were not evaluated. It was a cross sectional survey and long term prospective studies would be more helpful in evaluating the psychiatric sequelae.

Ethical statement

This study was approved by Institutional Ethics Committee with reference number EC /OA-140/2020 obtained on 5th October 2020.

Declaration of Patient Consent

Patient consent statement was taken from each patient as per institutional ethics committee approval along with consent taken for participation in the study and publication of the scientific results / clinical information /image without revealing their identity, name or initials. The patient is aware that though confidentiality would be maintained anonymity cannot be guaranteed.

References


