

# The Effect of Covid-19 on Orthopaedic Residents' Education, Skills and Mental Health: A Resident's Perspective

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## Authors' contributions

This work was carried out in collaboration among all authors. Author MS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AK and RC managed the analyses of the study. Author SV managed the literature searches. All authors read and approved the final manuscript.

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## ABSTRACT

**Background:** The Coronavirus Disease-2019 (COVID-19) was first detected in Wuhan, China, in November 2019. Orthopaedic residents have faced many challenges during this pandemic and this study aims to set forth the issues and concerns faced by residents that have been neglected in the current scenario of the pandemic. We did an online survey among the orthopaedic residents of North India to know how COVID-19 has affected their training, skills and mental health and what measures they have in their mind to tackle these problems.

**Methods:** A 43-question web based survey was conducted among orthopaedic residents enrolled in various medical colleges of North India from 1<sup>st</sup> October, 2020 to 31<sup>st</sup> October, 2020. Orthopaedic residents irrespective of their year of residency from North Indian states were included

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in the survey. The data collected from the resident's feedback was calculated as frequencies and proportions. Correlation between different variables was calculated using Pearson method.

**Results:** 150 residents (76.92%) contributed in this survey. 93.3% of residents informed that the number of face to face classes have decreased during this pandemic. 43.33% have informed that they have been or going to be redeployed in COVID care wards. 96% of the residents were of the opinion that there was decrease in surgical exposure. 70.65% respondents were afraid of getting infected with COVID-19. Majority of residents (71.33%) were afraid that they would fail their final exams.

**Conclusion:** COVID-19 pandemic has significantly affected the personal and professional life of orthopaedic residents. They have been under a lot of stress due to various factors which needs to be addressed and solved on priority basis so that a healthier workforce is formed to fight against COVID-19 pandemic.

*Keywords: COVID-19; orthopaedic; resident; mental health; impact.*

## 1. INTRODUCTION

The Corona virus Disease-2019 (COVID-19) was first detected in Wuhan, China, in November 2019 [1]. On 30<sup>th</sup> January 2020 India registered its first COVID-19 case. On 25<sup>th</sup> March 2020 government of India announced a nationwide strict lockdown and started promoting the practices of social distancing, use of hand sanitizers, use of masks. All human coronaviruses have originated from animals. SARS-CoV, MERS-CoV, SARS-CoV2, HCoV 229E, and HCoVNL63 have originated from bats, whereas HCoV OC43 and HCoVHKU1 originated from rodents. The pathogenicity of coronavirus was recognized way back in 1960 when it was identified as a cause of common cold. In the year 2012, a new coronavirus emerged in the Middle East that caused an illness similar to SARS. First case of infection was reported on 13 June, 2012 in Jeddah in Saudi Arabia [2]. Although COVID-19 is most well known for causing substantial respiratory pathology, it can also result in several extrapulmonary manifestations. These conditions include thrombotic complications, myocardial dysfunction and arrhythmia, acute coronary syndromes, acute kidney injury, gastrointestinal symptoms, hepatocellular injury, hyperglycemia and ketosis, neurologic illnesses, ocular symptoms, and dermatologic complications [3]. To date, nearly 10.5 million people have been diagnosed positive for COVID-19 in India and 96 million people worldwide. Since the outbreak of COVID-19, dramatic change is seen globally in every aspect of life. Every country is adopting strict policies to tackle the spread of COVID-19. As every sector is affected by this pandemic, health sector is one of the worst affected sectors in almost every country all over the world. Doctors from different medical fields were affected in a different way. The specialties like

internal medicine, anesthesia and intensive care medicine were the usual frontline workers to manage the COVID-19 patients in the initial stage. But with the passage of time and increasing number of COVID-19 patient count, doctors from other branches had to step in and Orthopaedics was no exception.

Out-patient services along with elective surgical procedures were rescheduled, ultimately decreasing patient influx to hospitals [4]. Orthopaedic residents have faced many challenges during this pandemic and this study aims to set forth the issues and concerns faced by residents that have been neglected in the current scenario of the pandemic. We did an online survey among the orthopaedic residents of North India to know how COVID-19 has affected their training, skills and mental health and what measures they have in their mind to tackle these problems. Most of the studies conducted all over the world regarding the COVID-19's impact on orthopaedic resident focuses majorly on the training and education aspect and less on their mental health and various solutions to their problems.

## 2. METHODS

A 44-question web based survey was conducted among orthopaedic residents enrolled in 16 medical colleges of North India from 1<sup>st</sup> October, 2020 to 31<sup>st</sup> October, 2020 by sharing web links via social networking sites and messenger. The questionnaire was developed using Google forms. In this cross sectional study, the questions were divided into various categories.

- (1) General demographics: questions like age, sex and year of residency were asked from orthopaedic residents.

- (2) Resident's training and skills: questions were asked about effect of pandemic on their surgical exposure, regular classes and skills.
- (3) Role in COVID-19: questions regarding their experience of handling COVID-19 patients and being frontline workers were asked.
- (4) Mental health: residents were asked about various factors leading to their increased stress levels. The 10- item Perceived Stress Scale (PSS-10) was used which is a measure of degree of stress experienced in last 30 days. The result ranges from 0-40, with higher scores pointing toward high degree of stress.
- (5) Solutions: solutions in the form of questions were asked from residents to tackle the various problems faced by them.

## 2.1 Inclusion Criteria

Orthopaedic residents irrespective of their year of residency from North Indian states were included in the survey. Senior residents who having completed their residency were not included in the survey.

## 2.2 Statistical Analysis

The data collected from the resident's feedback was calculated as frequencies and proportions. Data was entered in SPSS (Statistical product and service solutions) software for statistical analysis. A two-sided P value < 0.05 was considered as significant.

## 3. RESULTS

The questionnaire was sent to 195 orthopaedic residents of North India. A total of 150 residents (76.92%) responded to the request. The final analysis of all the responses was done in the form of proportions and frequencies.

1. Demographics: 73.4% of the residents belonged to the age group of 26-29 years, 6.6% belonged to age group of 23-25 years and 20% were having their age >30 years. 93.3% of the residents were male and 6.7% were female. As residency period in India is of 3 years, 43.33% of the respondents were in their 2<sup>nd</sup> year of residency, 36.67% were in their 3<sup>rd</sup> year of residency and 20% of the respondents were in their 1<sup>st</sup> year of residency (Fig. 1).
2. Training and skills: 66.6% of the residents informed that there used to be face to face

classes prior to COVID-19 pandemic and 33.4% informed that no face to face classes were conducted by their department but 93.3% of residents told that the number of face to face classes have decreased during this pandemic. This decrease in number of face to face classes is significantly associated with the feeling of getting failed (71.33%) in the final examination ( $p < 0.001$ ). Majority of the residents (53.3%) confirmed that their institution was not conducting online classes and rest of the residents (46.66%) confirmed that their institution was conducting online classes. Out of these, 20% of residents were satisfied with it and 26.66% of residents were not satisfied with the classes. 75% of the residents informed that there was decrease in clinical case presentations in their department and no change was seen in 25%. Negative effect on ward rounds was reported in 81.3% cases. 96% of the residents were of the opinion that there was decrease in surgical exposure during COVID-19. This decrease in surgical exposure is significantly associated with the feeling of decrease in confidence level (64.66%) since COVID-19 among residents ( $p < 0.001$ ). Residents confirmed that there have been increase in exposure to some basic techniques like cast application (42%), skeletal traction application (12.6%), k-wire insertion in phalanges (6%) and 39.4% of the residents were of the opinion that no increase in exposure was seen in any of the basic techniques. In contrast to it, the residents felt decrease in exposure to cast application (13.3%), k wire insertion in phalanges (13.3%), amputation procedures (13.3%), wound dressings and debridement (20%), external fixator application (6.66%) and 33.34% of residents were of the opinion that no decrease in exposure was seen in any of the basic techniques. 93.3% of residents reported that no case simulation techniques or cadaveric courses were conducted in their institution (Fig. 2). 29.33% of residents have never attended any webinars and online Continuing Medical Education (CME), 35.3% of residents have attended them both before and after COVID-19 outbreak. 29.3% of residents have attended them but only after COVID-19 outbreak and 6% of residents have attended them but only

- before COVID-19 outbreak. 94.66% of residents felt an increase in need for in person conferences/ workshops/ educational exposure outside the institution. 88.2% of residents think that there will be decrease in opportunities for international fellowships and 83.33% of residents think that there will be decrease in quantity and quality of PG teaching courses. 76.5% of residents informed that they didn't get their monthly stipend on time.
3. Role in COVID-19: 43.33% have informed that they have been or going to be redeployed in COVID care wards. This is significantly associated with the fear among residents (70.6%) that they would get infected with COVID-19( $p < 0.001$ ). 58.6% of residents have been quarantined atleast once due to exposure to a COVID-19 positive patient. 23.3% of residents have been diagnosed with COVID-19. Majority of orthopaedic residents (72%) did not receive any training regarding donning and doffing technique of Personal protective equipment (PPE) kit. 43.33% of residents did not receive any training regarding management of patients infected with COVID-19.
  4. Mental health: 58.8% of residents think that they will not be able to complete their thesis work on time.. 91.33% were afraid that their parents or relatives would be infected with COVID-19 because of them. 74% of residents felt that this COVID-19 situation had a negative impact on their personal life. 53.33% of residents have experienced a change in their sleep cycle.
  5. Solutions: 65.33% of the residents felt that residency exams should be removed during the COVID-19 pandemic. Majority of the residents thought that there should be relaxation in thesis so that they should be able to complete their thesis on time. A large number of residents (91.33%) wanted that there should be more online CMEs and provision of online paper/poster presentation and 88.6% thought that there was a need to increase the number of webinars, online workshops and live surgeries. 77.33% residents were in favor of exemption from log book completion. Nearly half of the residents (52.66%) in our survey felt that duration of their residency should be extended. 88.66% thinks that there is a need of proper training of orthopaedic residents regarding the usage of PPE kit and management of COVID-19 patients. 64% of residents were in the favor of virtual case presentations during final exams. Majority of the residents (95.33%) thinks that timely paying of monthly stipend to residents is going to decrease their stress level and 75.33% felt that there was a need of regular psychiatric counseling of residents as they were under a lot of stress (Fig. 3).

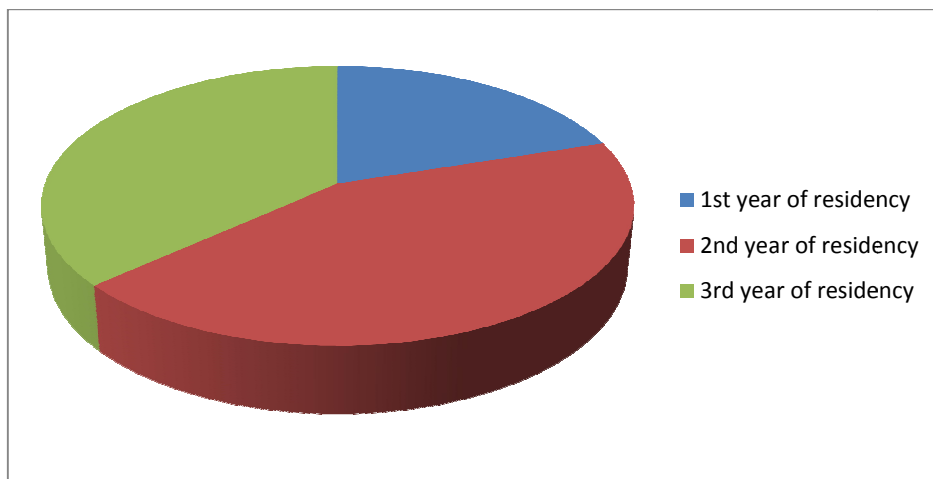
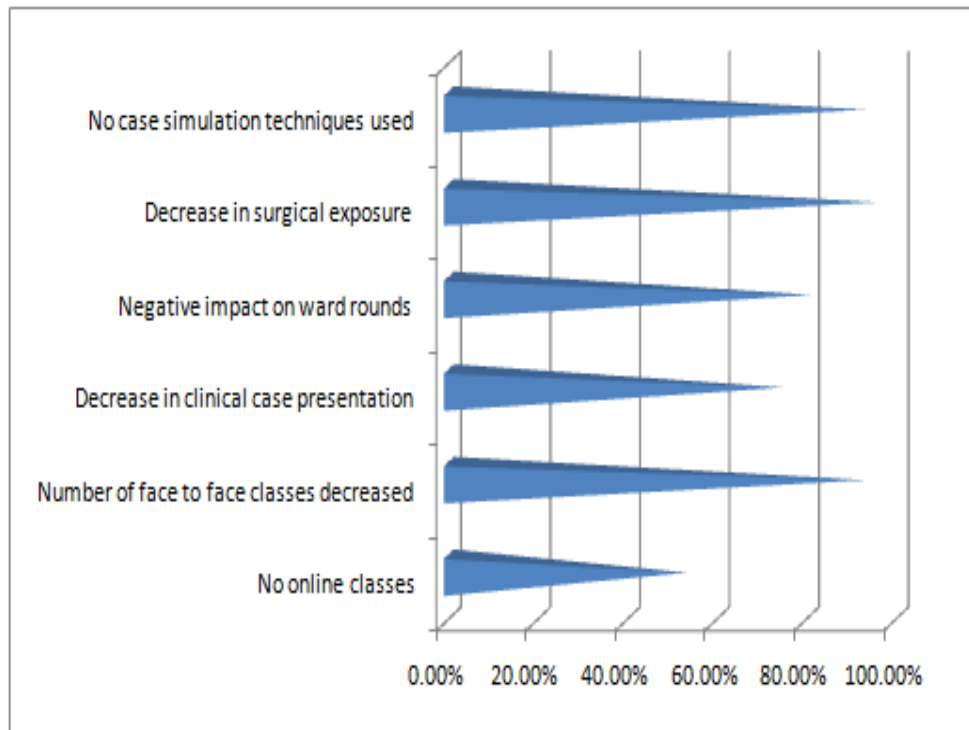
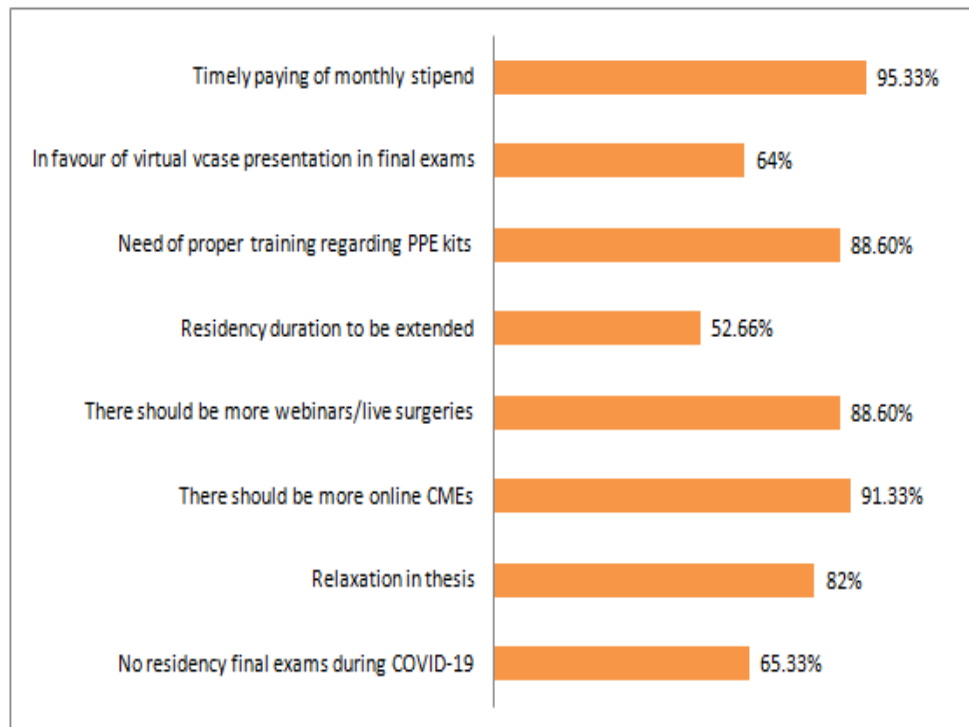


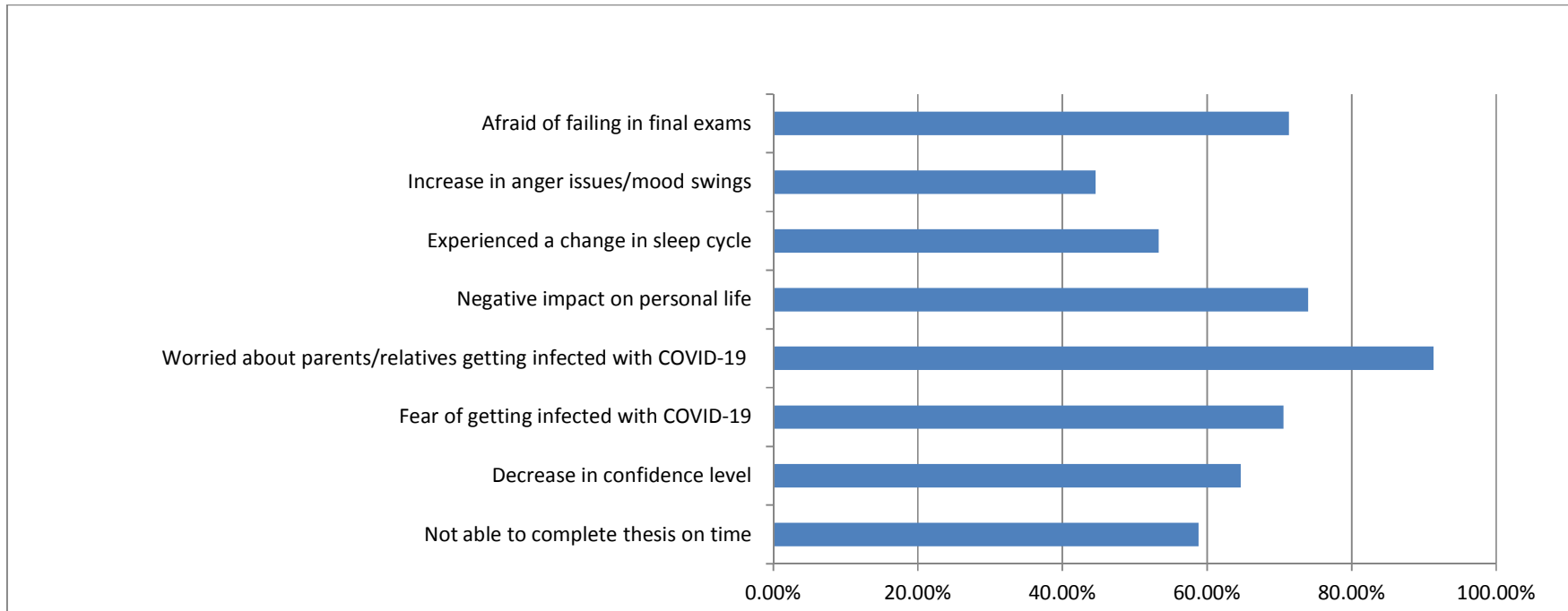
Fig. 1. Participants' year of training



**Fig. 2. Problems faced by residents in their training and skills**



**Fig. 3. Various solutions to the problems faced by orthopaedic residents**



**Fig. 4. Impact of COVID-19 on orthopaedic residents' mental health**

**Table 1. Association between different variables and their significance**

| Variables   | P value < 0.05 |
|---|----------------|
| Redeployment of residents in COVID care wards AND Fear of getting infected with COVID-19                | yes            |
| Reduction in number of face to face classes AND Fear of getting failed in final exams.                  | yes            |
| Decrease in confidence level during COVID-19 pandemic AND Decrease in surgical exposure during COVID-19 | yes            |

#### 4. DISCUSSION

The COVID-19 pandemic has changed the scenario of health institutes globally. Due to strict lockdown imposed by the government, hospitals have seen a slump in patient turnover. The residents are the backbone of every health institution but since the COVID-19 outbreak they are facing multiple challenges on personal and professional level which had a severe impact on their skills and mental health. We did this survey to highlight the problems and challenges that an orthopaedic resident is facing and the appropriate solutions to these problems. This will help in maintaining a healthier workforce against COVID-19.

To contain the spread of COVID-19, theoretical and practical classes have been suspended in many institutes. As evident from our survey, no face to face classes were conducted even before the pandemic in many institutes which is a great matter of concern as COVID-19 has only made the situation worse. Only 66.7% of residents stated that face to face classes used to happen previous to pandemic times and majority of them informed that the number of classes has decreased. Some institutes have switched onto online platforms to teach and train their residents but only 20% out of these 46.66% of residents were satisfied with the online classes. So, majority of residents were either not being provided with any sort of classes and teaching programs or they were not satisfied with the one provided to them. Similar results regarding satisfaction level of residents was reported in one of the studies done in South Korea [5]. Virtual learning systems have many advantages and disadvantages as discussed in a study done few years back [6]. Virtual learning systems provides the opportunity to residents to attend classes in situations where they couldn't attend in-person classes. Online CMEs and webinars proved to be a great source of learning especially for the budding orthopaedic surgeons. Residents gets an opportunity to learn from the best. About 1/3<sup>rd</sup> of respondents have never attended any webinar or online CMEs, so there is a need to promote them. Many residents started attending them only after COVID-19 pandemic depicting the wide acceptance among the orthopaedic residents. A large number of residents wanted that there should be more online CMEs and provision of online paper/poster presentation and felt that there was a need to increase the number of webinars, online workshops and live surgeries. Clinical case presentations and ward rounds are

the key elements to develop clinical skills for correct diagnosis and management purpose. Online education can never replace the skills gained through in-person patient examination. A large number of residents stated that there was a significant decrease in clinical case presentations and ward rounds.

Suspension of elective surgeries in almost every institute all over the world [7-9] has decreased the chances of residents to learn surgical and clinical skills because surgery is something one can learn and master only by performing it. According to 96% of residents, there was a decrease in surgical exposure, but many residents felt an increase in exposure to basic techniques like cast application and skeletal traction application. This trend can be explained by the fact that due to limited availability of resident workforce and high risk of exposure to both doctor and the patient, there is a need for postponement of non emergency surgeries that led the residents to opt for conservative management [10]. Orthopaedic surgery offers specific challenges and difficulties. Power tools, hammers, and other instruments spread a lot of material around. Even though we do not know about the concentration of COVID-19 in blood and muscle, research into the airborne transmission of SARS and MERS makes it plausible that transmission is likely [11]. The case simulation techniques, anatomage and cadaveric courses can be a good alternative to learn surgical skills [12]. They are a safer option as there is no exposure to patients. But 93.3% of respondents informed that no case simulation techniques have been used in their institutes and no cadaveric courses were ever conducted. These simulations can be done only for few surgeries like arthroscopy. They lack the tactile feedback necessary for development of surgical skill [13]. From past few years residents have shown great interest in Post Graduate (PG) teaching courses taking place all over the country. They are considered as a great opportunity to interact with pioneers in the field of orthopaedics but due to COVID-19 pandemic residents felt that there would be decrease in quantity and quality of the PG teaching courses.

To tackle this pandemic, every department in the hospital has stepped in. Orthopaedic residents have been redeployed to COVID-19 care wards, flu corners etc. 43.33% have informed that they have been or going to be redeployed in COVID care wards. It was a necessary step to fight this pandemic, but it has negatively impacted on

resident's training and exposure to orthopaedic procedures (Table 1). Many residents have been quarantined at least once due to exposure to a COVID-19 positive patient. 23.3% of residents have been diagnosed with COVID-19. Shortage of PPE is reported worldwide due to rise in demand, panic-buying and irrational use [14]. The global shortage of PPE was experienced during the Ebola outbreak of 2014–2016 in West Africa, which resulted in a high number of infected Health care workers (HCWs) (900 infected, 500 deaths). This highlights the importance of access and availability of PPE at the right place and right time. It also emphasises prioritising PPE use by HCWs as per PPE guidelines in such situations [15]. According to our survey majority of orthopaedic residents did not receive any training regarding donning and doffing technique of Personal protective equipment (PPE) kit. Similar response was seen in one of the studies done in Europe by Megalokonomos PD et al. [16]. Commonly, PPE include items such as gloves, safety glasses and shoe covers, earplugs or muffs, hard hats, face cover, masks or respirators, coveralls, vests and full bodysuits. The guidelines issued by Government of India on the rational use of PPE kits for COVID-19 focuses on using gloves, coverall or gowns, goggles, N95 masks, shoe covers, triple-layer medical masks and head covers [17], based on the risk assessment 43.33% of residents did not receive any training regarding management of patients infected with COVID-19. So, redeployment of residents without training adds to their misery. There was shortage of PPE kits all over the world and this poses a major risk to doctors [18-20]. That's why in our study majority of residents demanded proper training of orthopaedic residents regarding donning and doffing of PPE kits.

This pandemic has added more stress to the stressful life a resident is already living due to workload. According to our survey, they have been under a lot of stress due to various factors and their mental health is usually ignored by the authorities (Fig. 4). Due to redeployment in COVID care units and without any proper training regarding usage of PPE kits, a large number of respondents were afraid that they were going to get infected with COVID-19 and were afraid that their parents or their relatives would be infected with COVID-19 by coming in their contact. This led to many residents avoid going home which further added to their stress. About 2/3<sup>rd</sup> of total residents voiced their opinion regarding decrease in their confidence level due to prolonged period

of decreased exposure to activities related to orthopaedics. So, there is a need to formulate an efficient strategy to keep orthopaedic residents in touch with their field and they shouldn't be redeployed for longer continuous periods. Many residents had even faced a negative impact of this pandemic on their personal life as residents were not able to devote time to their families. These multiple factors led to increase in mood swings and anger issues among many residents which is a matter of concern. Long odd duty hours along with so many fears in their mind had taken a toll on their sleep cycle too as stated by more than half of the respondents in our survey. For total sample mean PSS-10 total score was 21 (SD= 11.04, range= 0-40). Scores ranging from 0-13 are considered low stress, scores between 14-26 are considered moderate stress and scores between 27-40 are considered high perceived stress. 41 (27.3%) of residents were under low stress, 47 (31.3%) residents were under moderate stress and 62 (41.3%) residents were under high perceived stress. Due to decrease in patient influx and cessation of elective surgeries, residents are afraid that they will not be able to complete their thesis on time. Residents are facing problems with patient follow up as patients are afraid to come to hospital during this pandemic. Especially the residents with their thesis topics related to elective surgeries are facing major issues. That's why a large number of residents wanted some relaxation in their thesis work like decrease in sample size for their study so that they would be able to complete it on time. All the above discussed factors related to fear and stress among residents ultimately led them to think that they are going to fail in their final exams. That's why in our survey some of the residents have even considered for psychiatric counseling and majority were in favor of regular psychiatric counseling of residents.

As some of the residents are going to appear in their final exams in few months, they wanted exemption from log book completion and about two-third of the respondents felt that final examinations should be cancelled. Along with the challenges that residents are facing on personal and professional level, they have been burdened with the financial stress too by not crediting their monthly stipend on time and according to 95.33% of residents, timely payment of monthly stipend is definitely going to reduce the stress levels.

Our study like any other survey-based research has some limitations. Firstly, as the respondents



were from different states of India, they might be working in different environment and facilities, there is a possibility that majority of responses might be from a particular state thus not representing the nationwide phenomenon completely. Secondly, all the residents from 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year were asked to fill the questionnaire and as evident from the results of our study, majority of the respondents were in their 2<sup>nd</sup> or 3<sup>rd</sup> year of residency and they might be facing different challenges than the 1<sup>st</sup> year residents.

## 5. CONCLUSION

COVID-19 pandemic has significantly affected the personal and professional life of orthopaedic residents. There is a reduction in specialty education for residents, including case presentations and in person CMEs. Some residents have started using online platforms to gain skills like attending online classes and webinars, attending online CMEs but a void still exists. They have been redeployed in COVID care wards and this calls for major steps to be taken to evolve the traditional teaching methods into modern ones. Majority of residents did not receive any training regarding PPE kits which is a matter of concern. They have been under a lot of stress due to various factors which needs to be addressed and solved on priority basis so that a healthier workforce is formed to fight against COVID-19 pandemic.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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## **QUESTIONNAIRE**

### **Q1-Age**

- 1- 23-25 years
- 2- 26-29 years
- 3- Above 30 years

### **Q2- Gender**

- 1- Male
- 2- Female

### **Q3- year of Residency**

- 1- 1<sup>st</sup>
- 2- 2<sup>nd</sup>
- 3- 3<sup>rd</sup>

### **Q4 There used to be face to face classes prior to COVID-19?**

- 1- Yes
- 2- No

### **Q5- Is there any change in number of face to face classes during Covid-19?**

- 1- Decreased
- 2- Increased
- 3- Remained same

### **Q6- Is your institution conducting online classes and if yes, are you satisfied with it?**

- 1- Yes, and I am satisfied with it
- 2- Yes, but I am not satisfied with it
- 3- No

### **Q7- Is there any effect on case presentations?**

- 1- Yes
- 2- No

### **Q8- is there any negative effect on ward rounds?**

- 1- Yes
- 2- No

### **Q9- Do you think there is decrease in surgical exposure during COVID-19?**

- 1- Yes
- 2- No

### **Q10- Choose one of the basic techniques that have been increased during pandemic situation?**

- 1- Cast application
- 2- Skeletal traction application

- 3- K wire insertion in phalanges
- 4- Wound dressing and debridements
- 5- External fixator application
- 6- Amputation procedures
- 7- None

**Q11- Choose one of the basic techniques that have been decreased during pandemic situation?**

- 1- Cast application
- 2- Skeletal traction application
- 3- K wire insertion in phalanges
- 4- Wound dressing and debridements
- 5- External fixator application
- 6- Amputation procedures
- 7- None

**Q12- Any case simulation techniques or cadaveric courses being conducted in your institution?**

- 1- Yes
- 2- No

**Q13- Have you attended any webinars and online CMEs?**

- 1- Yes, both before and after covid-19 outbreak
- 2- Yes, only before covid-19 outbreak
- 3- Yes, only after covid-9 outbreak
- 4- Never

**Q14- After covid-19 pandemic do you feel an increase in need for in person conferences/workshops/educational exposure outside the institution?**

- 1- Yes
- 2- No

**Q15- Do you think there will be decrease in opportunities for international fellowships?**

- 1- Yes
- 2- No

**Q16- Do you think there will be decrease in quality and quantity of of PG teaching courses?**

- 1- Yes
- 2- No

**Q17- Do you get your monthly stipend on time?**

- 1- Yes
- 2- No

**Q18- Have you ever been or going to be redeployed to COVID care wards?**

- 1- Yes
- 2- No

**Q19- Have you ever been quarantined due to exposure to a COVID-19 positive patient?**

- 1- Yes
- 2- No

**Q20- Have you been diagnosed with COVID-19?**

- 1- Yes
- 2- No

**Q21- Did you receive any training regarding PPE kit donning and doffing technique?**

- 1- Yes
- 2- No

**Q22- Did you receive any training management of patients infected with COVID19?**

- 1- Yes
- 2- No

**Q23- Do you think you will not be able to complete your thesis work?**

- 1- Yes
- 2- No

**Q24- Is there any decrease in your confidence level since COVID-19?**

- 1- Yes
- 2- No

**Q25- Do you fear of getting infected with COVID-19?**

- 1- Yes
- 2- No

**Q26- Are you afraid that your parents and relatives can get infected with COVID-19 because of you?**

- 1- Yes
- 2- No

**Q27- Do you think your sleep cycle has been affected since COVID-19 pandemic?**

- 1- Yes
- 2- No

**Q28- Has COVID-19 situation negatively affected your personal life?**

- 1- Yes
- 2- No

**Q29- Do you fear that you will fail your final exams due to this pandemic situation?**

- 1- Yes
- 2- No

**Q30- Do you think there is an increase in mood swings or anger issues now in comparison to pre covid era?**

- 1- Yes
- 2- No

**Q31- Do you feel stressed thinking about future opportunities being affected by pandemic?**

- 1- Yes
- 2- No

**Q32- Do you feel stressed thinking about your time of residency being wasted due to COVID-19?**

- 1- Yes
- 2- No

**Q33- Have you ever considered for a psychiatric counseling during this tough time?**

- 1- Yes
- 2- No

**Q34- Do you feel that residency exams should be removed during the COVID-19 pandemic?**

- 1- Yes
- 2- No

**Q35- Do you think there should be relaxation in thesis like decrease in sample size so that you should be able to complete your thesis in time?**

- 1- Yes
- 2- No

**Q36- Do you think there should be increase in online CMEs and provision of online poster/paper presentation?**

- 1- Yes
- 2- No

**Q37- Do you think there is a need to increase the number of webinars,Online workshops and live surgeries?**

- 1- Yes
- 2- No

**Q38- Do you think exemption from completing log books will be helpful?**

- 1- Yes
- 2- No

**Q39- Do you think there is a need of proper training of orthopaedic residents regarding the usage of PPE kit and management of COVID-19 patients?**

- 1- Yes
- 2- No

**Q40- Are you in favour of virtual case presentations during final exams?**

- 1- Yes
- 2- No

**Q41- Do you feel that duration of your residency should be extended?**

- 1- Yes
- 2- No

**Q42- Do you think timely paying of monthly stipend to residents is going to decrease the stress level?**

- 1- Yes
- 2- No

**Q43- Do you think there is a need of regular psychiatric counseling of residents as they are under a lot of stress?**

- 1- Yes
- 2- No

**Q44- 0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often**

- 1- In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4
- 2- In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4
- 3- In the last month, how often have you felt nervous and "stressed"? 0 1 2 3 4
- 4- In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
- 5- In the last month, how often have you felt that things were going your way? 0 1 2 3 4
- 6- In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2 3 4
- 7- In the last month, how often have you been able to control irritations in your life? 0 1 2 3 4
- 8- In the last month, how often have you felt that you were on top of things? 0 1 2 3 4
- 9- In the last month, how often have you been angered because of things that were outside of your control? 0 1 2 3 4
- 10- In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

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