

# Stress Busters To Fight Professional Burnout Amongst Resident Doctors In A Tertiary Care Hospital

Seema Jain<sup>1</sup>, Sanjeev Kumar<sup>2</sup>, Ravi Bandhu<sup>3</sup>, Kraty Singh<sup>4</sup>

<sup>1,2</sup> (Professor, Department Of Community Medicine, Lrm Medical College, India)

<sup>3,4</sup> (Junior Resident, Department Of Community Medicine, Lrm Medical College, India)

---

## Abstract

**Background-** Burnout, defined by emotional exhaustion, cynicism, and reduced professional efficacy, is prevalent in medical residents due to prolonged working hours, administrative responsibilities, and relentless time constraints. Burnout is a work-related stress syndrome resulting from chronic exposure to job stress.

**Aim** (a) Assess the impact of the COVID-19 pandemic on burnout levels among healthcare professionals, focusing on emotional exhaustion, depersonalization, and personal accomplishment, by comparing responses during and post-COVID-19. (b) Find out the demographic and professional factors associated with burnout among healthcare professionals, (c) Assess the self-care practices adopted by doctors to cope with burnout and identify the most commonly utilized stress reducing activities.

**Material and Method** - A comparative study was conducted in the tertiary care centre of district Meerut, with data collected across two time periods: during the peak wave of COVID in April 2021 and in April 2023. The participants included all resident doctors in the healthcare centre, selected through convenience sampling. Inclusion criteria encompassed non-faculty doctors, particularly junior residents, while exclusion criteria comprised individuals with pre-existing psychiatric conditions and incomplete form submissions. A semi-structured questionnaire was utilized to gather work-related and socio-demographic information, and stress busters being used by residents to cope with burnout. The survey also incorporated the Maslach Burnout Inventory (MBI), to assess burnout among 200 resident doctors.

**Result** - Emotional exhaustion and Personal accomplishment decreased post-COVID-19, with a shift towards lower levels. Depersonalization remained stable in surgical specialties but increased significantly in non-surgical specialties. Individuals aged 26-30 years, Females compared to males, Post-graduate first-year students, inexperience in work and longer working hours were factors found to be associated with higher burnout rates. Most popular practices included listening to music, spending time with family or friends, getting adequate sleep, taking regular and healthy diets, and engaging in regular physical activity while seeking professional help was the least adopted practice.

**Conclusion** - The study highlights the importance of enhancing working conditions for resident doctors. Recommendations include stress management workshops, counselling sessions, and organizational support. Strategies to reduce burnout involve engaging in enjoyable activities, taking vacations, and creating non-work commitments.

**Key Word:** Burnout, residents, coping strategy, stress-busters

---

Date of Submission: 20-03-2024

Date of Acceptance: 30-03-2024

---

## I. Introduction

The COVID-19 pandemic had scarred the healthcare scene in India, the magnitude of which was totally unanticipated, and the healthcare service delivery had to be transformed across the country in never seen before manner. COVID-19 pandemic affected healthcare services in India in many complicated ways. Healthcare systems were at their capacity, running out of resources and not enough personnel to handle the large numbers of patients. The financing of healthcare system exposed the pre-existing problems such as capacity, accessibility & preparedness.

Being on the forefront as corona fighters, they are performing non-stop long hours giving the excessive level of stress and tiredness. This had opened up an awareness of the extent to which healthcare providers are already experiencing mental and emotional suffering due to the Covid-19 situation.

Health care workers are being pushed to their limits with caring for countless people in pain and fear while struggling with their own emotional and psychological wellbeing. The fact that the service personnel are always subjected to the trauma including the fear of spreading the infection to their loved ones has severely affected their thresholds and morale.

Burnout is a work-related stress syndrome resulting from chronic exposure to job stress. The term was introduced in the early 1970s by psychoanalyst Freudenberg and has subsequently been defined by Maslach et al as consisting of three qualitative dimensions which are emotional exhaustion, cynicism and depersonalization, reduced professional efficacy and personal accomplishment. (2,3)

Burnout is included in the 11th Revision of the International Classification of Diseases (ICD-11) as an occupational phenomenon. It is described in the chapter: 'Factors influencing health status or contact with health services' – which includes reasons for which people contact health services but that are not classed as illnesses or health conditions. Burn-out is defined in ICD-11 as follows: "Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions : (a) feelings of energy depletion or exhaustion; (b) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; (c) reduced professional efficacy. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life (4,5)

The long hours and constant onslaught of COVID-19 cases have stretched the healthcare workers to their limit, worsening the burnout that was already prevalent among healthcare providers. This exhausting situation needed long working hours, increased levels of stress and emotional wear, among doctors, resulting in high rates of burnout in the medical community. In this fight against the highly contagious virus, doctors have overcome many obstacles including taking difficult decisions related to the patient's care, worrying about their own safety and facing the hardships of watching people suffer and die. Identification of multilateral burnout among doctors during COVID-19 crisis has become crucial to develop efficient support systems and intervention aimed at protecting the wellness of doctors and general healthcare resilience.

The frontline health workforce experienced a heavy workload and multiple psychosocial stressors which affected their mental and emotional health, leading to increased burnout symptoms. Sleep deprivation and lack of psychosocial support aggravated such symptoms amidst Covid-19<sup>[6]</sup>. There was a shift in inclination towards opting for non-medical specialities after COVID owing to the higher incidence of mental and physical complications among the young doctors.

Although burnout and work-related stress have been studied widely in the western/developed countries, there has been a paucity of literature about burnout in India. Against this background the present cross-sectional study was done among the doctors to assess burnout and recognize its potential impact on their well-being. By examining how the sociodemographic factors and various work-related factors intersect with Burnout, we aim to gain a deeper understanding of the challenges faced by resident doctors. Studying its prevalence and causes helps identify systemic issues that may contribute to burnout, enabling the development of targeted interventions to enhance the functioning of the healthcare system.

## II. Methods

**Study design and Setting** -This was a comparative study conducted in the tertiary care center of district Meerut. The data was collected across two time periods. First data was collected during the peak wave of Covid. i.e. April 2021. The second set of data was collected in April 2023. All the Resident doctors in the healthcare center were the participants. Convenience sampling method was used for sample collection.

**Inclusion criteria:** All non-faculty doctors and especially junior residents were included in the study.

**Exclusion criteria:** Those who were already suffering from any psychiatric condition and those who did not fill the forms completely were excluded from the study.

**Sample size:** -The sample size required for the study was calculated as follows:

$$n = Z^2 \times p \times q / d^2$$

where n– sample size, p= anticipated value of proportion in the population, q = (1- p)

d= absolute precision.

By taking the population proportion as 56.66<sup>[6]</sup> at 95% confidence interval with 7% absolute precision, the sample size was estimated at 192.5, rounded off to 200.

**Study tool:** A semi-structured questionnaire was administered to gather work-related and socio-demographic information like age, sex, religion, marital status, educational status, medical specialty, working hours per day, frequency of night duties, type of activities involved in COVID-19 care (quarantine, isolation, intensive care, bereavement, contact tracing, community care, screening and transport ).The survey included the Maslach Burnout Inventory, a validated, gold-standard survey instrument (7). The MBI measures three components of burnout (emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA)) on a seven-point scale ranging from never (0) to everyday (6). Higher scores on EE and DP indicate higher levels of burnout, while higher scores on PA indicate lower burnout. As advised by MBI survey creators, if respondents omitted more than one answer per MBI component, their survey was not averaged, and summative MBI scores required all questions in each category to be completed. As per the MBI's criteria, we defined burnout as those who received an EE score  $\geq 27$  or DP score  $\geq 10$

**Data Collection:**

The data was collected using a self-administered questionnaire. Verbal consent for participation in study was taken and questionnaire was given to the participants to be filled by themselves at their earliest available time.

**Statistical analyses:**

The data thus collected were entered into MS excel and statistical analysis was performed using Epi Info (ver. 7.2.5.0). Categorical variables were summarized as frequency counts and percentages and continuous variables as mean, standard deviation (SD) and median with range. In all analyses,  $p < 0.05$  was considered statistically significant.

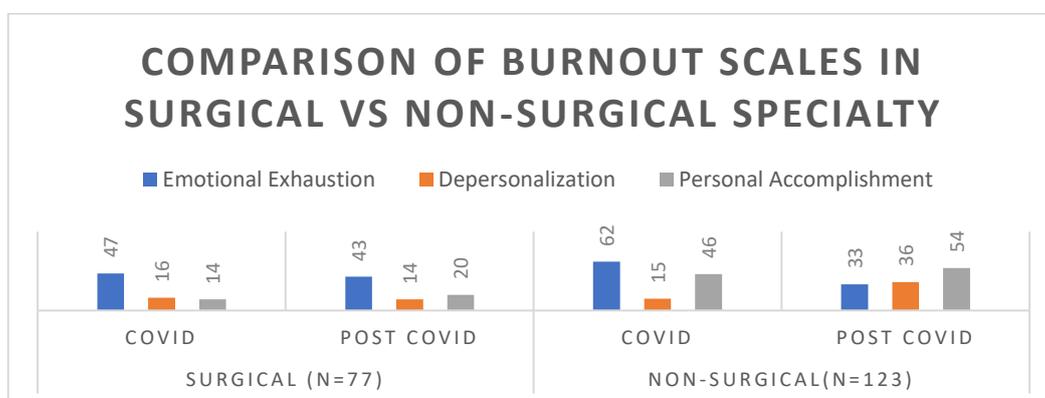
**Ethical Consideration:** Ethical clearance was obtained from the ethics committee of Lala Lajpat Rai Memorial Medical College, Meerut.

**III. Results**

**Table 1:** Maslach Burnout Inventory subscale categorization of the study population.

Variables	During Covid N (%)	Post Covid N (%)
Emotional Exhaustion		
Low	74(37)	100(50)
Moderate	60(30)	40(20)
High	66(33)	60(30)
Depersonalisation		
Low	90(45)	112(56)
Moderate	40(20)	40(20)
High	30(60)	48(24)
Personal Accomplishment		
Low	108(54)	56(28)
Moderate	40(20)	80(40)
High	52(26)	64(32)

Table 1 presents the categorization of the study population based on the Maslach Burnout Inventory subscales, comparing responses during the COVID-19 pandemic and post-COVID-19. For Emotional Exhaustion, during COVID 37% had low emotional exhaustion, 30% had moderate, and 33% had high while Post COVID 50% had low emotional exhaustion, 20% had moderate, and 30% had high. For Depersonalization, during COVID 45% had low depersonalization, 20% had moderate, and 35% had high. Post COVID 56% had low depersonalization, 20% had moderate, and 24% had high. For Personal Accomplishment, during COVID 54% had low personal accomplishment, 20% had moderate, and 26% had high, Post COVID 28% had low personal accomplishment, 40% had moderate, and 32% had high. Overall, there appeared to be a shift towards lower emotional exhaustion and depersonalization but also a decrease in personal accomplishment post-COVID-19 compared to during the pandemic.



**Figure 1:** Comparison of Burnout scales in Surgical Vs Non-Surgical specialty

Figure 1 presents a comparison of burnout scales between surgical and non-surgical specialties during and post the COVID-19 period. It was found that both surgical and non-surgical specialties experienced a decrease

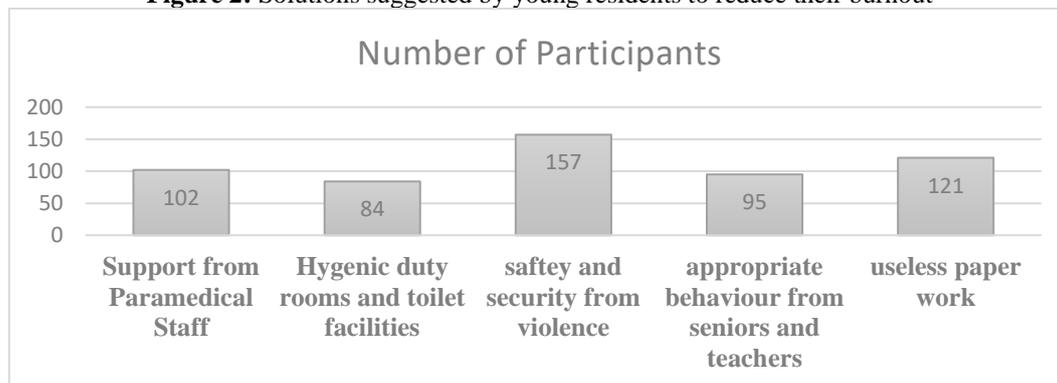
in emotional exhaustion post-COVID though the change was more pronounced in the non-surgical group. The emotional exhaustion decreased from 62% to 56% post-COVID among Surgical Specialty doctors and among non-surgical specialty, during COVID 50% experienced emotional exhaustion, which significantly decreased to 27% post-COVID. Depersonalization remained relatively stable in the surgical group but increased significantly in the non-surgical group. 21% of surgical residents reported depersonalization during COVID which dropped to 18%, while 12% of non-surgical residents reported depersonalization, which rose to 29% after COVID. Personal accomplishment increased post-COVID in both groups, with a higher increase observed in the surgical specialty. 18% reported having a high level of personal accomplishment during COVID, and 26% reported having one after COVID. For Non-Surgical Specialty, 38% reported high personal accomplishment during COVID, which increased to 44% post-COVID.

**Table 2:** Association of various factors with burnout

FEATURE	N (%) (n= 200)	Frequency of burnout (%)
<b>Age (in years)</b>		
<25	17(8.5)	5(29.4)
26-30	131(65.5)	53(40.5)
31-34	36(18)	14(38.9)
35-40	14(7)	5(35.7)
>40	2(1)	0(0)
<b>Gender</b>		
Male	108(54)	28(25.9)
Female	92(46)	49(53.3)
<b>Educational Status</b>		
Non-PG Residents / Demonstrators	24(12)	8(33.3)
Post Graduate (first year)	74(37)	49(66.2)
Post Graduate (second year)	44(22)	18(40.9)
Post Graduate (third year)	30(15)	11(36.7)
Senior Resident	28(14)	7(25)
<b>Work Experience (in years)</b>		
0-5	175(87.5)	102(58.3)
6-10	24(12)	11(45.8)
>10	1(0.5)	0(0)
<b>Number of working hours</b>		
<8	38(19)	4(10.5)
9-12	106(53)	31(29.2)
13-16	35(17.5)	16(45.7)
17-20	10(5)	9(90)
>20	11(5.5)	9(81.8)

Table 2 shows the burnout rates among healthcare professionals categorized by various demographic and professional factors. In terms of age, the highest frequency of burnout was observed among individuals aged 26-30 years, with 40.5% experiencing burnout. Females had a higher burnout rate (53.3%) compared to males (25.9%). It was found that post-graduate first-year students had the highest burnout rate at 66.2% followed by second- and third-year residents having 40.9% and 36.7% burnout rates respectively. Inexperience in work was found to play a role in burnout among the participants as those with 0-5 years of experience had higher burnout rate (58.3%) as compared to those with more experience. Longer working hours were also found to contribute to higher burnout rates, with the highest rates seen among those working 17-20 hours (90%) and over 20 hours (81.8%).

**Figure 2:** Solutions suggested by young residents to reduce their burnout



\*Multiple Responses

The responses of participants regarding factors perceived to be contributing to overall job satisfaction were recorded (Figure 2). The residents (78.5%) stressed the necessity of increasing security in the hospital owing to increasing cases of violence against them and enforcing consumer protection laws to ensure their well-being. Additionally, they advocate for stringent measures such as issuing non-bailable warrants against individuals involved in violence towards healthcare professionals, aiming to safeguard their physical and mental integrity. Other suggestions include effective teamwork, reduced workload and reasonable working hours, respect from administration and patients, appropriate compensation for their services, better workplace environment, and provision of recreational activities.

**Table 3:** Various self-care practices adopted by doctors to cope with burnout (n=200) \*

Self-care practices adopted	Number of Participants who have adopted the practice
Get adequate sleep	89(44.50)
Taking a regular and healthy diet	66(33)
Engage in regular physical activity	53(26.50)
Take day trips/Vacations/time-offs	53(26.50)
Pray/Meditate	51(25.50)
Spend time with Family, or friends	76(38.50)
Spend time doing recreational activities (singing/dancing/playing games/practicing art, etc.)	61(30.50)
Inspirational literature or audios	43(21.50)
listen to music	154(77)
Find spiritual connection	34(17)
Seek professional help	6(3)

\*Multiple response

Table no. 3 presents self-care practices adopted by participants along with the number of participants who have embraced each practice. Among the most popular practices were listening to music that was 154 participants, accounting for 77% of the total. Other widely adopted practices included spending time with family or friends (38.50%), getting adequate sleep (44.50%), taking regular and healthy diets (33%), and engaging in regular physical activity (26.50%). However, seeking professional help was found to be the least adopted practice, with only 6 participants (3%). Overall, a range of self-care strategies were being utilized by the residents with emphasis on activities promoting relaxation, social connection, and physical well-being, while professional help was underutilized among the participants.

#### IV. Discussion

Over half of frontline healthcare workers involved in intensive care, patient tracing, screening, and transportation during the COVID-19 pandemic are at risk of psychological distress and require further psychiatric assessment. This finding is consistent with research from China, Italy, and Singapore, indicating a higher prevalence of depression, anxiety, and post-traumatic stress disorder symptoms among healthcare workers during this pandemic<sup>(8-12)</sup>. The high prevalence of burnout in doctors causes them to have more irritability, emotional separation from family and friends, which disheartens their children to take up medicine as a career.

The findings of increased stress and burnout can be attributed to the COVID-19 Pandemic as surge in COVID-19 cases had led to an overwhelming increase in the workload for doctors. This constant exposure to illness, trauma and death contributed to emotional exhaustion and heightened stress. The cumulative effect of these stressors increases the risk of burnout among doctors. In the present study, the percentage respondents with high emotional exhaustion were 33%, high level of depersonalisation was seen in 60% and low personal accomplishment was seen in 54%. The above findings are similar to study conducted by *S. Ahmad et al.*<sup>(14)</sup> which showed that 63.2% participants experienced high levels of emotional exhaustion, 26.3% people suffered high levels of depersonalization, respectively while 87.6% had low level of personal accomplishment. The results are also similar to study conducted in Italy by *Lasalvia A, et al.*<sup>(15)</sup>

Non-surgical specialties have experienced higher burnout rates than surgical ones. This is because non-surgical doctors (such as those in internal medicine, family medicine, and psychiatry) have more direct patient interactions. The pandemic worsened this burnout due to increased patient numbers, longer workdays, and the need to handle COVID-19 cases alongside regular ones. To reduce COVID-19 transmission, many non-surgical specialties implemented telemedicine appointments. However, this shift came with challenges like technical problems and difficulties in building rapport with patients remotely.

Several demographic and professional factors were found to be associated with burnout among resident doctors. Younger age groups (40.5%) experienced more burnout which was similar to findings in a study done by Dyrbye *et al.*<sup>(16)</sup> where younger physicians appeared to be at increased risk of burnout symptoms, with those less than 55 years old at more than double the risk of those older than 55. In the present study, females had a higher burnout rate (53.3%) compared to males (25.9%). The findings were comparable to study done by Lanballe *et al.*<sup>(17)</sup> where burnout scores found higher exhaustion levels amongst women which was linked with work-home conflicts, and higher disengagement levels amongst men, in whom burnout was most strongly predicted by workload. It was found that the highest burnout scores were among the post-graduate first-year students, 66.2% followed by second- and third-year residents (40.9%) and (36.7%) burnout rates respectively. This can be due to the fact that first year residents have to do most of the ward duties and have the maximum hours of duty which leads to high burnout.

Workload is a significant predictor of burnout. Long working hours, frequent night duties, and high patient volumes contribute to emotional exhaustion and depersonalization among healthcare professionals. Study done by Belji *et al.*<sup>(18)</sup> among Hospital nurses revealed that even in other healthcare professionals workload was a major reason for burnout. It was found that a higher rate of work-related burnout among nurses in emergency units than nurses in other units.

Studies have shown that workload management interventions, such as reducing shift lengths or implementing mandatory rest periods, can help alleviate burnout symptoms. A previous study done by Rubio *et al.*<sup>(19)</sup> among nurses also reported a higher prevalence of burnout among emergency nurses might relate to work circumstances, particularly excessive extended working hours, psychological workload, and organizational factors.

Among the most followed self-care practices were listening to music that was 77% of the total. Other commonly accepted behaviours were getting enough sleep (44.50%), spending time with friends and family (38.50%), having regular, nutritious diets (33%), and exercising regularly (26.50%). However, seeking professional help was found to be the least adopted practice, with only 6 participants (3%). On the other hand, studies done by Ahuja *et al* receiving social support was the highest used coping strategy and by Htay *et al*, 77% used prayers and religious connection as a coping strategy. The study by Htay *et al* was done in 2021 among healthcare workers and they found that prayers being highest adopted coping strategy, 74.5% were seeking family support, 49.5% and 35.7% considered adequate sleep and food intake and Exercise as a mitigating factor respectively.

The residents were asked for suggestions to reduce burnout, where they emphasized the importance of enhancing security in healthcare settings, enforcing laws to protect healthcare professionals, promoting teamwork, reducing workload, and ensuring fair compensation. These suggestions reflected that nature of burnout has many aspects and there is need for comprehensive interventions at both individual and systemic levels.

## **V. Conclusions And Recommendations-**

Resident doctors are most prone individuals for psychological stress or work-related stress. Present study has highlighted the importance of improving working condition of doctors as they are the backbone in the functioning of medical system.

Psychological problems during pandemics may not stem solely from treating COVID patients but rather from caring for all critically ill patients needing intensive care. To curb distress and burnout among healthcare providers during outbreaks, hospitals should hire more staff and limit excessive work hours by providing regular breaks. In the study we saw that first-year resident had the highest level of burnout which can be attributed to the fact that they are generally the first-line health service providers, subjected to prolonged working hours, sleep deprivation and high job demands. Being young and inexperienced in the medical field, while also in the process of training, first year residents normally treat patients with varying presentations and severity levels; at the same time, they are responsible for presenting reports to and taking orders from supervisors.

Above findings of increased stress and burnout can be attributed to the COVID-19 Pandemic as surge in COVID-19 cases had led to an overwhelming increase in the workload for doctors. This constant exposure to illness, trauma and death, contributed to emotional exhaustion and heightened stress. The cumulative effect of these stressors increases the risk of stress and burnout among doctors. Residents and emergency doctors who work 24-hour shifts have much more burnout, compared to other medical staff.

To enhance the well-being of hospital staff, hospitals and medical colleges should implement the following measures: Organize stress management workshops and regular counselling sessions for all staff members. Train self-help groups for different sections of the staff, facilitated by the psychiatry department. Provide support through mentoring, counselling, and emotional support programs. Educate doctors about compassion fatigue to prevent it from escalating into more severe personal and professional issues. Emphasize the importance of self-care practices such as exercise, hobbies, and proper sleep among resident doctors. Social

Media Engagement activities like use of social media platforms to share stories and raise awareness about the challenges faced by doctors.

The steps that can be taken to reduce the high prevalence of burnout can include: Engaging in enjoyable activities with family, disengage from work: take a vacation, even a short one. Create mandatory nonwork commitments, including family, friends and hobbies. Suggestions included increasing security in hospitals, enforcing consumer protection laws, and issuing non-bailable warrants against perpetrators of violence. Other suggestions included effective teamwork, reduced workload, reasonable working hours, respect from administration and patients, appropriate compensation, better workplace environment, and provision of recreational activities.

Though psychiatry is a medical subject taught to all medical graduates, they ignore the signs of stress or mental trauma and do not use the guidelines to evaluate themselves. There is a need for integrating mental health education into medical training that can help create a more supportive environment for doctors to prioritize their mental well-being. The study supports the idea of formation of a specialized cell dedicated to take care of the mental well-being of the doctors and other healthcare staff of the medical facility.

## VI. Limitations

The present study was not able to compare variables of those who answered versus those who did not because of the anonymity of the survey, and there is a possibility that the residents with the greatest risk of burnout and compassion fatigue may be less likely to take the survey. The present study was done on only those residents who consented to give information for the survey, so, at this point, the findings of the study cannot be generalized on the medical professionals but can be used to prepare a baseline data for the mental health of the doctors. This study cannot address causality or directionality of the observed associations, given its cross-sectional design.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

- [1] Sanghera, J.; Pattani, N.; Hashmi, Y.; Varley, K.F.; Cheruvu, M.S.; Bradley, A.; Burke, J.R. The Impact Of Sars-Cov-2 On The Mental Health Of Healthcare Workers In A Hospital Setting-A Systematic Review. *J. Occup. Health* 2020, 62, E12175.
- [2] De Hert S. Burnout In Healthcare Workers: Prevalence, Impact And Preventative Strategies. *Local Reg Anesth.* 2020 Oct 28; 13:171-183. Doi: 10.2147/Lra.S240564. Pmid: 33149664; Pmcid: Pmc7604257.
- [3] Kesarwani V, Husaain Zg, George J. Prevalence And Factors Associated With Burnout Among Healthcare Professionals In India: A Systematic Review And Meta-Analysis. *Indian J Psychol Med.* 2020 Mar 9;42(2):108-115. Doi: 10.4103/ljpsym.ljpsym\_387\_19. Pmid: 32346250; Pmcid: Pmc7173664.
- [4] <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>.
- [5] Maya Romani & Khalil Ashkar (2014) Burnout Among Physicians, *Libyan Journal Of Medicine*, 9:1, Doi: 10.3402/Ljm.V9.23556
- [6] Grover S, Sahoo S, Bhalla A, Avasthi A. Psychological Problems And Burnout Among Medical Professionals Of A Tertiary Care Hospital Of North India: A Cross-Sectional Study. *Indian J Psychiatry* 2018; 60:175-88.
- [7] Dhusia Ah, Dhaimade Pa, Jain Aa, Shemna Ss, Dubey Pn. Prevalence Of Occupational Burnout Among Resident Doctors Working In Public Sector Hospitals In Mumbai. *Indian J Community Med* 2019; 44:352-6.
- [8] Maslach C, Jackson Se, Leiter Mp. *Maslach Burnout Inventory Manual*. 3rd And 4th. Menlo Park, Ca: Mind Garden, Inc.; 2012
- [9] Lu W, Wang H, Lin Y, Li L. Psychological Status Of Medical Workforce During The Covid-19 Pandemic: A Cross-Sectional Study. *Psychiatry Res J [Internet]*. 2020 [Cited 2021 May 27]; Available From: Pmid:32276196
- [10] Wang C, Pan R, Wan X, Tan Y, Xu L, Ho Cs, Et Al. Immediate Psychological Responses And Associated Factors During The Initial Stage Of The 2019 Coronavirus Disease (Covid-19) Epidemic Among The General Population In China. *Int J Environ Res Public Heal [Internet]*. 2020; 17:1729.
- [11] Xiao H, Zhang Y, Kong Bcd D, Li Abcg S, Yang N. The Effects Of Social Support On Sleep Quality Of Medical Staff Treating Patients With Coronavirus In China. [Cited 2021 May 28];
- [12] Rossi R, Soggi V, Pacitti F, Di Lorenzo G, Di Marco A, Siracusano A, Et Al. Mental Health Outcomes Among Frontline And Second-Line Health Care Workers During The Coronavirus Disease 2019 (Covid-19) Pandemic In Italy [Internet]. *Jama Netw. Open. American Medical Association*; 2020 [Cited 2021 Jun 13]. P. E2010185–E2010185.
- [13] Tan Byq, Chew Nws, Lee Gkh, Jing M, Goh Y, Yeo Lll, Et Al. Psychological Impact Of The Covid-19 Pandemic On Health Care Workers In Singapore [Internet]. *Ann. Intern. Med. Nlm (Medline)*; 2020
- [14] Ahmad, Shoaiba,B; Yaqoob, Sadiac; Safdar, Sifwad; Cheema, Huzaiifa Ahmade; Islam, Zarminaf; Iqbal, Nidag; Tharwani, Zoab Habibf; Swed, Saryah; Ijaz, Mohammad Sobana; Rehman, Majeed Ura; Shahid, Abiaa; Tahir, Ufaqi; Ahmad, Shkaibj; Bilal, Wajeehaf; Essar, Mohammad Yasirk,\*; Iqbal, Saleeml; Choudry, Zafar Alim. Burnout In Health Care Workers During The Fourth Wave Of Covid-19: A Cross Sectional Study From Pakistan. *Annals Of Medicine & Surgery* 80: August 2022. | Doi: 10.1016/J.Amsu.2022.104326
- [15] Lasalvia A, Amaddeo F, Porru S, Et Al. Levels Of Burn- Out Among Healthcare Workers During The Covid-19 Pandemic And Their Associated Factors: A Cross- Sectional Study In A Tertiary Hospital Of A Highly Burdened Area Of North- East Italy. *Bmj Open* 2021;11:E045127. Doi:10.1136/ Bmjopen-2020-045127