Frequency of Burnout Syndrome in Doctors during COVID-19 Pandemic in a Tertiary Care Hospital

Muhammad Farrukh Siddiqui[1], Syeda Saroosh Abidi[1], Saima Zainab[2], Kashmala Quershi[3], Aneeta Khoso[4]

ABSTRACT

Objective: To determine the frequency of burnout syndrome in junior doctors who worked in COVID 19 units of a tertiary care hospital.
Study Design: Cross-sectional study.
Place and Duration: The study was conducted at Liaquat National Hospital and Medical College Karachi by the Department of Community Medicine during 1st August 2020 to 30th June 2021.
Methodology: The study population was house officers, interns, medical officers and junior residents working solely in COVID 19 isolation wards, high dependency units and intensive care units. The data was collected on structured questionnaire which had sections of socio-demography and Maslach Burnout Inventory-Human Services survey (MBI-HSS). MBI-HSS is reliable and validated tool for assessment of burnout syndrome. It evaluates three sub-dimensions of burnout that is emotional exhaustion (EE), depersonalization (DP) and low personal accomplishment (PA). Data analysis was done on SPSS version 21.
Results: Total 106 doctors were working in different COVID 19 units and all of them had participated in the study. Majority were females and young. Around 55% of participants had high emotional exhaustion scores. All the participants had high (>9) depersonalization scores, and low (<32) personal accomplishment scores. Doctors working less than eight hours a day had low levels of emotional exhaustion and depersonalization scores and high personal accomplishment as compared to doctors working more than eight hours a day. There was no significant difference in scores among the designations of junior doctors.
Conclusion: The health authorities need to take supportive measures to improve mental health of workers for attaining better health outcomes.
Keywords: Burnout Syndrome, Maslach Burnout Inventory, Healthcare Workers, COVID 19, Doctors, Tertiary Care.

How to Cite This:
Siddiqui AF, Abidi SS ,Zainab S ,Quershi K ,Khoso A. Frequency of Burnout Syndrome in Doctors during COVID-19 Pandemic in a Tertiary Care Hospital. Isra Med J. 2023; 15(2): 60-64. DOI: https://doi.org/10.55282/imj.oa1357.

INTRODUCTION

Burnout syndrome is a consequence of working in high-pressure environments and emotionally demanding circumstances. It is perceived as practically inevitable in the workers of health delivery services. Burnout syndrome is a three dimensional phenomenon which includes; emotional exhaustion and depersonalization and reduced sense of personal accomplishment.[1,2] Burnout syndrome among the healthcare worker is rising globally. In developing countries the burden ranges from 2.5% to 87.9%.[3]

COVID 19 pandemic exacerbated the burnout syndrome among healthcare workers including physicians, junior doctors and nurses as they are part of front-line task force during epidemics or pandemics.[4-6] They are at high risk as they work on the front line[7] for long hours, even on weekends and stay in the hospital away from their families.[8] The healthcare teams faced continuous shortage of staff as workers had to isolate after being infected. Certain physical factors also added to the equation such as the prolonged wearing of personal protective equipment, excessive heat, lack of proper hydration, and sleep deprivation.[9] The consequences of burnout syndrome among junior doctors are severe and express frequent medical errors, depression and anxiety. It also compromises patient care and patient satisfaction.[10]

Burnout syndrome is an occupational phenomenon. The Maslach Burnout Inventory-Human Services survey (MBI-HSS) is a validated and reliable tool to identify the burnout syndrome. It has 22 items divided into three subscales namely emotional exhaustion, depersonalization and low personal accomplishment.[1] The literature has shown the increase incidence of burnout among doctors during pandemic. Studies from China and the UK identified depression, anxiety, and uncertainty about the future of healthcare workers during to the

1. Undergraduate Student Final Year MBBS, Liaquat National Hospital and Medical College, Karachi.
2. Associate Professor of Community Medicine, Liaquat National Hospital and Medical College, Karachi.
3. House Officer, Liaquat National Hospital and Medical College, Karachi
4. Lecturer, School of Clinical and Biomedical Sciences University of Bolton, UK

Correspondence:
Dr Saima Zainab
Associate Professor of Community Medicine,
Liaquat National Hospital and Medical College, Karachi
Email: dr.saima.zainab@lnh.edu.pk

pandemic.[11,12] The burnout syndrome among doctors involved in COVID 19 care in European countries ranged verily. It was reported in Italy 37%, Spain 41%, Portuguese 53% and Australia as 30%.[13] Studies in Egypt mentioned that one in two doctors had high EE and DP and low PA.[14] Burnout syndrome has detrimental effects on the efficiency of doctors.[9] The doctors at early stage of their careers have increased workload, more workplace responsibilities, sleep deprivation and low income. The workload increased many folds during COVID 19 pandemics. The compromised work life balance and career uncertainty further exacerbated mental stress and anxiety. The growing burden of burnout syndrome internationally emphasizes national health systems to cate br to the problem. The key is to recognize and prevent it.[12]

Understanding the burden of burnout syndrome among doctors is crucial for healthcare institutions. Recognizing the implications of burnout syndrome for the overall healthcare system can lead to the implementation of targeted measures to retain the medical workforce. By addressing burnout and supporting the well-being of healthcare professionals, institutions can ensure the sustainability and quality of healthcare services. Research on the burden of burnout provides data that can be used by policymakers and healthcare advocates to push for changes in healthcare policies. This includes advocating for better working conditions, increased mental health support, and reforms in medical education. It will shed light on the extent of the problem and provides a foundation for advocacy, policy changes, and targeted interventions. Therefore, this study was aimed to assess the frequency of burnout syndrome in junior doctors during the COVID 19 pandemic and to highlight the associated factors

METHODOLOGY

It was a cross-sectional survey conducted at Liaquat National Hospital and Medical College Karachi by the Department of Community Medicine. The study duration was from August 2020 to June 2021. The ethical approval and endorsement of the research study were taken from the ethical review committee (ERC) of the Liaquat National Hospital on 1st October, 2020 with reference number 0550-2020 LNH-ERC. Informed consent was taken from all participants. The participants in no way were subjected to unjustifiable discomfort during questionnaire filling. They were also allowed to discontinue participation in the study at any time, at any stage during the study.

The study participants were the junior doctors worked in hospital during COVID 19 pandemic. The inclusion criteria were those doctors who were performing duty in the COVID 19 isolation wards, high dependency units and intensive care units. The exclusion criterion was those who were unwilling to participate. In the study all 106 doctors participated and response rate was 100%. The doctors recruited were house officers, medical officers, and junior trainee residents (R1 & R2). The data was collected on a structured questionnaire. The questionnaire was self-reported, anonymous and in English language. The questionnaire comprised to two sections. The first sections acquired data on basic demographic and workplace environment information and the second section comprised of a validated questionnaire named Maslach Burnout Inventory-Human Services Survey (MBI-HSS) to identify the burnout syndrome.[15] The MBI-HSS questionnaire comprised of three subscales of burnout syndrome. The subscales consisted of 8 items for emotional exhaustion (EE), 6 items for depersonalization (DP) and 8 opposite items for professional accomplishments (PA). Responses were scored on a six-point Likert scale for each subscale, and tabulated into three tiers (low, moderate or high). The Likert-scale questionnaire used a rating guide as 6=Always, 5= Very Often, 4=Often, 3=Regular, 2=Now, 1=Seldom and 0=Never. The subscales have a score range of EE= 0-48, PA = 0-48, DP = 0-36.The following were the cut-offs scores of each subscale of the MBI-HSS; **[15]**

EE: low, ≤13; moderate, 14-26; high, ≥27,

DP: low, ≤5; moderate, 6-9; high, ≥10,

PA: low, ≤ 33; moderate, 32-39; high, ≥40 (inverse scale) [15].

Data Analysis: The data was analyzed on SPSS version 21. Descriptive statistics (frequency and percentage) were calculated for categorical variables like gender, marital status, mode of transportation, and employment. Mean and standard deviation for continuous variables like age, duty hours and years of practice, etc. The t-test was applied to observe the significant difference in scores among the groups. The level of p-Value ≤0.05 was considered significant.

RESULTS

Total of 106 participants were working in COVID-19 units as the front-line task force with 100% response rate. Demographic statistics were represented in Table I.

Table-I: Demographic characteristics of study participants and scores according to the subscales of Maslach Burnout Inventory-Human Services Survey (N=106)

Variables		Frequency	Percentage
Gender	Male	36	34
	Female	70	66
Age	20-25	40	37.7
	26-30	63	59.4
	31-35	3	2.8
Job Title	House Officers	50	47.2
	Medical Officers	14	13.2
	Residents	42	39.6
Emotional exhaustion(EE) scores	Low <13	2	1.9
	Average 14 -26	46	43.4
	High >26	58	54.7
Depersonalization (DP) scores	Low <6	0	0
	Average 6-9	0	0
	High >9	106	100
Professional Accomplishments (PA) scores	Low <32	106	100
	Average 32-39	0	0
	High >39	0	0

The majority of the participants were female. Distributions of participant's scores according to the subscales of EE, DP, and PA showed more than half of the participants scored high on the EE

 DOI: https://doi.org/10.55282/imj.oa1357

scale, all of them had high DP scores and low PA scores. The results revealed that the study participants had high burnout syndrome.

Table II shows the mean scores of subscales of Maslach Burnout Inventory-Human Services Survey (depersonalization DP, emotional exhaustion EE, and personal accomplishment PA) using descriptive analysis. It was noted that according to the MBI-HSS, the mean values indicated a low average value for PA and high values for DP and EE. Most values were recorded on the high end of the scale.

Table-II: Mean Scores of subscales of Maslach Burnout Inventory-Human Services Survey among the study participants (N=106)

Subscales of MBI-HSS	Number of participants	Min score	Max score	Mean Score	Standard deviation
Emotional exhaustion (EE)	106	8	45	27.7	6.7
Depersonalization (DP)	106	10	36	21.3	5.3
Professional Accomplishments (PA)	106	14	40	25	5.4

Table-III: One-sample t-Test mean values of EE, PA, and DP according to the classifications defined in the Maslach Burnout Inventory-Human Services Survey scale. (N=106)

Subscales of MBI-HSS	t-test value	df	Mean difference	90% CI of the difference		p-Value
				Lower	upper	
EE (test value = 26)	2.6	105	1.75	0.46	3.04	0.008
DP (test value = 10)	21.92	105	11.33	10.3	12.35	0
PA (test value = 40)	-28.47	105	-14.99	-16.03	-13.94	0

A one-sample t-test was conducted to find if the mean values of EE, PA, and DP were significantly high according to the classifications defined in the BMI-HSS scale. Results of one-sample t-tests are presented in Table III.

The test results illustrate that very low levels of personal accomplishment (PA), and a sense of high depersonalization (DP) and emotional exhaustion (EE) were statistically significant across the participants.

Table IV shows the comparison of mean scores among the groups of participants for EE, DP, and PA in which the mean scores of the participants according to the groups of independent variables are compared using a t-test. The results revealed that overall scores among all groups were high in EE and DP and low in PA. However, the difference in means among groups of independent variables was not statistically significant.

DISCUSSION

The study showed high burnout syndrome among junior doctors in COVID-19 units. Almost all of the participants had high levels of emotional exhaustion and depersonalization, and low levels of personal accomplishment. Burnout syndrome was found to be more frequent among females and young doctors. The participants with long working hours and frequent on-call duties were affected more with burnout syndrome.

The high prevalence of burnout syndrome among healthcare workers, particularly in high-stress environments such as COVID-19 units, is consistent with numerous previous studies. The literature have consistently shown that healthcare workers, especially those in direct contact with COVID-19 patients, are at a heightened risk of burnout syndrome due to the overwhelming workload and emotional toll of caring.[16-20] The observed gender disparity among the participants in this study is in line with the findings of researches which highlighted that female healthcare workers often experience higher levels of burnout compared to their male counterparts, possibly due to additional familial and societal pressures.[21, 22]

Table-IV: Comparison of mean scores among the groups of participants for EE, DP and PA (N=106)

Variables		Number of participants	Emotional exhaustion (EE)			Depersonalization (DP)			Professional Accomplishments (PA)		
			Mean	SD	p-Value	Mean	SD	p-Value	Mean	SD	p-Value
Gender	Male	36	26.9	7.9	0.39	21.6	6.3	0.64	25.8	5.4	0.24
	Female	70	28.1	5.9		21.1	4.7		24.5	5.4	
Age	≤25 years	40	28	5.8	0.7	22.5	5.1	0.06	24.1	4.9	0.19
	>25 years	66	27.5	7.2		20.5	5.3		25.5	5.6	
Duty hours/ day	≤ 8 hours	34	26.5	7.6	0.18	21.5	5.5	0.79	24.8	5.6	0.86
	>8 hours	72	28.3	6.1		21.2	5.2		25	5.3	
Calls per week	≤ 2 calls	58	27.1	6.9	0.3	21.7	5.7	0.34	24.8	5.1	0.78
	> 2 calls	48	28.5	6.4		20.7	4.7		25.1	5.7	
Job title	House Officer	50	27.5	6.3	0.55	22.2	5.6	0.25	24.1	5.06	0.29
	Medical Officer	14	29.5	6.2		19.9	4.1		25.3	4.2	
	Resident	42	27.3	7.3		20.7	5.1		25.9	6.09	

DOI: https://doi.org/10.55282/imj.oa1357

Participants with long working hours and frequent on-call duties were more affected by burnout syndrome are found to be consistent with existing research in occupational health and healthcare professions. It has been found that long working hours were a strong predictor of burnout syndrome.[16-23] Extended shifts and overtime work can lead to chronic workplace stress, contributing to emotional exhaustion and reduced personal accomplishment, key components of burnout.[24,25] Studies like those conducted by Akram Z (2021)[16] and Bridgeman PJ (2018)[23] have highlighted the impact of on-call duties on employee well-being. Constant availability and interrupted sleep patterns associated with on-call responsibilities can disrupt work-life balance, leading to increased emotional exhaustion and depersonalization.

Literature has demonstrated that burnout among healthcare professionals, including doctors, significantly affects patient safety and quality of care. Physicians experiencing burnout are more prone to medical errors, reduced empathy, and decreased patient satisfaction, which can have detrimental consequences for patient outcomes.[26] Addressing burnout syndrome preserves the mental and physical health of healthcare professionals and also ensures that patients receive safer and higher-quality care leading to improved overall health outcomes.

CONCLUSION

The health authorities need to take supportive measures to improve the mental health of workers for attaining the better health outcomes.

Recommendations:

- A well-structured shift system should be devised for the health care teams
- The negative impact of pandemics on the well-being of healthcare providers demands future attention and additional research
- Clear protocols, adequate training and personal equipment should be provided to front line health care workers
- Coping approaches, counseling, and other interventions should be introduced at an undergraduate level.
- There is also individual responsibility to engage in the well-being of the team

AUTHOR'S CONTRIBUTION

Siddiqui F: Conceptualization of study design, collection of data and literature search, assembling and entry of data, drafting of the article.

Abidi SS: Conceptualization of study design, collection of data and literature search, assembling and entry of data, drafting of the article**.**

Zainab S: Analysis and interpretation of data, Critical revision of the article for important intellectual content, statistical expertise, final approval of the article.

Khoso A: Statistical expertise, final approval of the article.

Quershi K: Proof reading and manuscript revision.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

REFERENCES

1. Malik M, Saeed H, Hussain A, Hashmi A. Burnout and Mental Illness related Stigma among Healthcare Professionals in Pakistan. Arch Pharm Pract. 2023; 14(3): 1-12. DOI:https://doi.org/10.51847/HkHbW7YWLD
2. Claponea RM, Pop LM, Iorga M, Iurcov R. Symptoms of burnout syndrome among physicians during the outbreak of COVID-19 pandemic—a systematic literature review. Healthcare Basel. 2022; 10(6):979. DOI:https://doi.org/10.3390/healthcare10060979
3. Wright T, Mughal F, Babatunde OO. Burnout among primary health-care professionals in low- and middle-income countries: systematic review and meta-analysis. Bull World Health Organ. 2022; 100(6):385-401. DOI:https://doi.org/10.2471/BLT.22.288300
4. Kelly BD. Quarantine, restrictions and mental health in the COVID-19 pandemic. QJM. 2021; 114(2):93-94. DOI:https://doi.org/10.1093/qjmed/hcaa322
5. Shah K, Chaudhari G, Kamrai D, Lail A, Patel RS. How essential is to focus on physician's health and burnout in coronavirus (COVID-19) pandemic? Cureus. 2020; 12(4):7538. DOI:https://doi.org/10.7759/cureus.7538
6. Kisely S, Warren N, Mahon ML, Dalais C, Henry I, Siskind D. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis. BMJ. 2020; 369:1642. DOI: https://doi.org/10.1136/bmj.m1642
7. Misra A. Doctors and healthcare workers at frontline of COVID 19 epidemic: Admiration, a pat on the back, and need for extreme caution. Diabetes Metab Syndr. 2020; 14(3): 255–256. DOI: https://doi.org/10.1016/j.dsx.2020.03.006
8. Wu Y, Wang J, Luo C, Hu S, Lin X, Anderson AE, et al. A comparison of burnout frequency among oncology physicians and nurses working on the frontline and usual wards during the COVID-19 epidemic in Wuhan, China. J Pain Symptom Manage. 2020; 60(1):e60-e65. DOI:https://doi.org/10.1016/j.jpainsymman.2020.04.008
9. Dimitriu MCT, Stoian PA, Smaranda AC. Burnout syndrome in Romanian medical residents in time of the COVID-19 pandemic. Med Hypotheses. 2020; 144: 10997. DOI:https://doi.org/10.1016/j.mehy.2020.109972
10. Rodrigues H, Cobucci R, Oliveira A, Cabral JV, Medeiros L, Gurgel K, et al. Burnout syndrome among medical residents: A systematic review and meta-analysis. PLoS One. 2018; 13(11):e0206840. DOI:https://doi.org/10.1371/journal.pone.0206840
11. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. Lancet Psychiatry. 2020; 7(4):e15-e16. DOI:https://doi.org/10.1016/S2215-0366(20)30078-X
12. Koh D. Occupational risks for COVID-19 infection. Occup Med Lond. 2020; 70(1):3-5.

DOI:https://doi.org/10.1093/occmed/kqaa036
13. Elghazally SA, Alkarn AF, Elkhayat H, Ibrahim AK, Elkhayat MR. Burnout impact of covid-19 pandemic on health-care professionals at Assiut university hospitals. Int J Environ Res Public Health. 2021; 18(10):5368. DOI:https://doi.org/10.3390/ijerph18105368
14. Fadle AA, Khalifa AA. Burnout syndrome (BOS) among resident doctors in an Egyptian tertiary care university hospital: Prevalence and determinants during the COVID-19 pandemic. Int J Soc Psychiatry. 2023; 69(2):396-405. DOI:https://doi.org/10.1177/00207640221104698
15. Mitake T, Iwasaki S, Deguchi Y, Nitta T, Nogi Y, Kadowaki A, et al. Relationship between Burnout and Mental-Illness-Related Stigma among Nonprofessional Occupational Mental Health Staff. Biomed Res Int. 2019; 2019:5921703. DOI:https://doi.org/10.1155/2019/5921703
16. Akram Z, Sethi A, Khan AM, Zaidi FZ. Assessment of burnout and associated factors among medical educators. Pak J Med Sci. 2021; 37(3):827. DOI:https://doi.org/10.12669/pjms.37.3.3078
17. Güler Y, Şengül S, Çaliş H, Karabulut Z. Burnout syndrome should not be underestimated. Rev Assoc Med Bras. 2019: 65(11)):1356–1360.DOI:https://doi.org/10.1590/1806-9282.65.11.1356
18. Liang Y, Chen M, Zheng X, Liu J. Screening for Chinese medical staff mental health by SDS and SAS during the outbreak of COVID-19. J Psychosom Res. 2020; 133:1101-1102.DOI:https://doi.org/10.1016/j.jpsychores.2020.110102
19. Chua SE, Cheung V, Cheung C. Psychological Effects of the SARS Outbreak in Hong Kong on High-Risk Health Care Workers. Can J Psychiatry. 2004; 49(6):391-393. DOI:https://doi.org/10.1177/070674370404900609
20. Tuna T, Özdin S. Levels and predictors of anxiety, depression, and burnout syndrome in physicians during the COVID-19 pandemic. Int J Ment Health Addict. 2021; 19(6):2470-2483. DOI:https://doi.org/10.1007/s11469-021-00505-2
21. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease. JAMA Netw Open. 2020;3(3):e203976. DOI:10.1001/jamanetworkopen. 2020.397
22. Pérez BY, Fleites FZ, Puig JE. Gender and fear of COVID-19 in a Cuban population sample. Int J Ment Health Addict. 2022; 20(1):83–91. DOI:https://doi.org/10.1007/s11469-020-00343-8
23. Bridgeman PJ, Bridgeman MB, Barone J. Burnout syndrome among healthcare professionals. Am J Health Syst Pharm. 2018; 75(3):147-152. DOI: https://doi.org/10.2146/ajhp 170460
24. Xiong Y, Peng L. Focusing on health-care providers' experiences in the COVID-19 crisis. Lancet Glob Health. 2020; 8(6):e740-e741. DOI:https://doi.org/10.1016/S2214-109X(20)30214-X
25. Ridell RJ, Orvelius L. Quality of Life in Healthcare Workers during COVID-19-A Longitudinal Study. Int J Environ Res Public Health. 2023; 20(14):6397. DOI:https://doi.org/10.3390/ijerph20146397
26. Moukarzel A, Michelet P, Durand AC, Sebbane M, Bourgeois S, Markarian T, et al. Burnout syndrome among emergency department staff: prevalence and associated factors. BioMed Res Int. 2019:6462472. 1-10 DOI:https://doi.org/10.1155/2019/6462472