

The Prevalence of Burnout among Physicians Post Covid-19 Pandemic at King Abdulaziz Medical City, Jeddah, Saudi Arabia

Basem Ahmed AlGamdi¹, Adel Jubran AlRogi², Ibrahim Khaled Beshawri³,
Bsaim Abdulsalam Altirkistani³, Nidaa Mohammed Almeahmadi⁴, Randa Ahmed Bajunaid⁵,
Lamar Hattan Kuwaity³, Arjwan Omar Alamoudi³

¹Department of Emergency Medicine, Ministry of the National Guard – Health Affairs, Jeddah, Saudi Arabia.

²Family Medicine Department, Ministry of the National Guard – Health Affairs, Jeddah, Saudi Arabia.

³College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

⁴Internal Medicine Department, King Abdulaziz Medical City, Jeddah, Saudi Arabia.

⁵Department of Emergency Medicine, King Fahad Medical City, Riyadh, Saudi Arabia.

ABSTRACT

Background: The COVID-19 pandemic, declared a global crisis in March 2020, significantly impacts the well-being of healthcare workers, leading to burnout. Various factors, such as heavy workloads and lack of support, contribute to higher burnout rates among healthcare professionals. Several specialties are more susceptible to burnout and experience its consequences. Therefore, this study aims to assess burnout rates in emergency medicine physicians, intensive care unit, and internal medicine physicians at a Saudi Arabian tertiary care center post-COVID-19 pandemic.

Materials and Methods: The Maslach Burnout Inventory (MBI) questionnaire was the core of the survey questions. The survey was distributed in-person and through WhatsApp as well to emergency medicine physicians, intensive care physicians, and internal medicine physicians at King Abdulaziz Medical City (KAMC), Jeddah. The data analysis was performed through JMP software.

Results: A total of 95 physicians were included, most of which were from the internal medicine department. The mean scores of emotional/ occupational exhaustions (EE), Depersonalization/ loss of empathy (DP), and Personal accomplishment (PA) assessment were as follow: 27.21 ± 13.89 , 8.83 ± 7.13 , 28.64 ± 10.90 , respectively. Statistically significant results were found between healthcare's specialties and both EE and DP levels. Out of all the participants, 48% showed to have burnout, and females reported higher burnout levels than male physicians.

Conclusion: This study addressed the current reported burnout post covid-19 pandemic period in comparison to the reported studies before and during covid-19 to further understand the level of burnout among healthcare workers. Levels of emotional exhaustion were higher in terms of intensity in females in comparison to males. More than half of the participants in this study reported lack of personal accomplishments.


Keywords: Emergency Medicine, Burnout, Post Covid-19, Saudi Arabia.

*Correspondence to:

Dr. Basem Ahmed Algamdi,
Assistant Professor,
Department of Emergency Medicine,
College of applied sciences (joint appointee),
King Saud bin Abdulaziz University for Health Sciences,
Jeddah, Saudi Arabia.
Consultant Trauma Emergency Medicine
e-mail: ghamdiba@mngaha.med.sa

Article History:

Received: 07-10-2024, Revised: 28-10-2024, Accepted: 19-11-2024

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2024.10.6.001	

INTRODUCTION

Covid-19 has spread all over the world and it was declared as a worldwide pandemic in March 2020 by the World Health Organization (WHO).¹ Undoubtedly, outbreaks can result in major impacts on frontline healthcare workers' wellbeing since they are predisposed to the occupational risk and psychological effects associated with new virus exposure. Therefore, it is crucial to handle this topic carefully due to possible negative consequences on patients' quality of care and physicians' overall health.^{1,2}

Burnout, for instance, occurs when goals and expectations are either too high or reality is too low, and it is characterized by emotional exhaustion, a reduced sense of personal accomplishment, and depersonalization.^{3,4} Several factors contributed to the rise of burnout level among healthcare workers during the pandemic such as increased heavy workload, lack of support from families or institutions, frequent exposure to Covid-19 patients, and insufficient time to cope with stressors.^{5,6}

When it comes to frequently predisposed specialties to have burnout, emergency medicine (EM), Intensive care unit (ICU), and Internal medicine (IM) are appropriate examples regarding burnout due to the nature of their workload and exposure. For instance, EM is a demanding specialty with long working hours, high intensity working environment, and constant variation of clinical cases, which require action to be taken quickly and wisely. Thus, it showed that EM possesses a high emotional burden to the physicians involved.^{7, 8} EM physicians reported more susceptibility to burnout compared with physicians in other departments (38%) and the general population (30%).⁹ However, not only EM, but also ICU staff reported high rate of burnout per-Covid-19 pandemic. In addition, one third of healthcare workers had burnout during Covid-19, regardless of which specialty they are in.¹⁰ Therefore, even IM physicians may have a high degree of burnout during Covid-19 pandemic. Therefore, this study primarily aims to assess the prevalence of burnout in post-Covid-19 pandemic in comparison to other studies among EM, ICU, and IM physicians in a tertiary care center in Saudi Arabia.

MATERIALS AND METHODS

Study Design, Settings, Participants, and Data Collection

Method: The present research was a cross-sectional study design that assessed the prevalence of burnout post-Covid-19 pandemic among EM, ICU, and IM physicians. It was conducted in the main hospital of King Abdulaziz Medical City (KAMC), Jeddah, between February 2023 and June 2023. The questionnaire was distributed by the research team to the physicians in-person for those who were available in duties and reachable and through WhatsApp as well for those who had off days or on leave. Neither identifiers nor personal information were collected to ensure participants' privacy and confidentiality. Also, all collected data were kept in a secure place protected by a password and restricted only to the research team members. The ethical approval was obtained from the King Abdullah International Medical Research Center's Institutional Review Board (IRB).

Questionnaire Elements: The questionnaire started with consent to fill out the survey. Participants that answered "No" to the consent were immediately excluded from the survey and would not be able to proceed with the survey elements. The questionnaire consisted of 4 major sections, starting with the participants' demographics. This section included gender, age, and physicians' rank/level such as PGY 1, etc. Next, the degree of burnout was assessed by incorporating The Maslach Burnout Inventory (MBI). This included 22 questions; each consisted of 7 choices as scores. The scores were as follows: 0 = never; 1 = at least a few times a year; 2 = at least twice a month; 3 = several times a month; 4 = once a week; 5 = several times a week; and 6 = every day. The Maslach Burnout Inventory subdivided these questions into three main categories:

1. Occupational exhaustion (EE); which included questions 1, 2, 3, 6, 8, 13, 14, 16, 20

2. Depersonalization or loss of empathy (DP); which included questions 5, 10, 11, 15, 22

3. Personal accomplishment assessment (PA); which was reflected in questions 4,7,9,12,17,18,19,21

A low score in both EE (<17) and DP (<5) reflected a low burnout degree, unlike PA where a low score (<33) reflected a high burnout degree. Total burnout was then identified by the following

criteria: High EE and/or High DP was considered as Burnout regardless of PA result.

Data Analysis: Data collected from the survey was imported as Microsoft Excel File for statistical analysis. Statistical analyses were performed using the JMP statistical software (SAS Institute, version 15.2.0.). Continuous variables were reported using the mean and standard deviation while frequencies and percentages were considered for categorical variables. Chi-square and logistic regression were utilized for further comparisons. P-values < 0.05 were considered for statistical significance.

RESULTS

A total of 95 physicians were included, out of which 61 (64.21%) were males. The mean age was 29.89±6.15. The majority 60 (63.16%) of the participants were from the IM department, while physicians from EM and ICU constituted 25 (26.32%) and 10 (10.53%) of the responses, respectively. Also, as shown in Table 1, 25 (26.32%) of participants were PGY1 while only 9 (9.47%) were consultants.

Emotional Exhaustion (EE): The mean score of EE among participants was 27.21±13.89. Also, 40 (42.11%) of participants had high EE as shown in *Figure 1*. Moreover, 22 (64.71%) females had high EE while 22 (36.07%) males had a moderate level in EE with a statistically significant association (P=0.0039). Thirty-two (53.33%) of IM physicians and 4 (40%) ICU physicians had a high degree of burnout in this section; while 11(44%) and 10 (40%) of EM physicians had low and moderate levels in EE, respectively. Thus, physicians' specialty and EE level showed a statistically significant association (P=0.0355). (Table 2)

Depersonalization (DP): The mean score of DP among participants was 8.83±7.13. Furthermore, (30.5%) of the participants reported a high DP level as shown in *Figure 2*. In addition, 13 (38.24) females had a high DP level while 27 (44.26) males had a low level in DP as illustrated in *Table 2*. Nevertheless, gender and DP showed no statistically significant association (P=0.3127). In this section, a high level of burnout was reported by IM and ICU physicians, with statistics of 23 (38.33%) and 4 (40%) respectively. There was a significant association between the physicians' specialty and DP levels (p=0.0382).

Personal Accomplishments (PA): The mean score of PA among participants was 28.64±10.90. The prevalence of low PA among participants was (63.2%) as shown in *Figure 3*. Both females and males reported higher percentages regarding low levels of PA, 27 (79.41%) and 33 (54.10%), respectively. Gender and level of PA had a significant association (P=0.0220). Low levels of PA were reflected by most of IM and EM physicians, 41 (68.33%) and 15 (60%), respectively (*Table 2*). Unlike EE and DP, no significant association was found between PA and physicians' specialty (P=0.1457).

Total Burnout: Based on the determined classification and definition of burnout in this study, 48% of participants showed to have burnout as shown in *Table 3*. The majority of females, 23 (67.65%), reported to have burnout in comparison to males ,23 (37.70%), with statistically significant association (P=0.0051). The Burnout Level by department is shown in *Figure 4*. More than half of IM physicians, 36 (60), had burnout. Likewise, 5 (50) of ICU physicians showed to have burnout. In contrast, most EM physicians in this study 20 (80%) showed to not have burnout level according to the determined classification. There was a

statistically significant association between specialty and level of burnout, (P=0.0035). Moreover, even though 10 (90.91%) PGY4 physicians had burnout level, which constituted the highest level of burnout amongst training ranks, there was no significant association between training rank and burnout (P=0.1190).

Logistic Regression

A logistic regression was computed predicting burnout based on gender, departments, and physicians' training ranks.

Characteristics were noted by regression analysis as follows: females (OR= 5.37; 95% CI= 16.06-1.79; P= 0.0026) had a higher possibility to experience burnout more than males. Also, IM physicians had higher odds to have burnout compared to EM physicians (OR= 16.40; 95% CI= 85.39-3.15; P= 0.0009) and to ICU physicians (OR= 2.02; 95% CI= 9.63-0.42; P= 0.3736). Furthermore, consultants showed higher odds for burnout compared to others.

Table 1: Participants' Demographics

Demographics	N(%)
Gender	
Male	61(64.21)
Female	34(35.79)
Department	
Internal Medicine Department	60(63.16)
Emergency Department	25(26.32)
Intensive Care Unit Department	10(10.53)
Rank	
R1	25(26.32)
R2	14(14.74)
R3	13(13.68)
R4	11(11.58)
Fellow	12(12.63)
Specialist / Registrar	11(11.58)
Consultant	9(9.47)
Have you ever been tested +ve for COVID-19?	
Yes	62(65.26)
No	33(34.74)

Table 2: Burnout according to participants' gender and working department

Maslach Burnout Inventory		Gender		Department		
Section	Level	Male	Female	Internal Medicine Department	Emergency Department	Intensive Care Unit Department
EE	Low	21(34.43)	6(17.65)	13(21.67)	11(44)	3(30)
	Moderate	22(36.07)	6(17.65)	15(25)	10(40)	3(30)
	High	18(29.51)	22(64.71)	32(53.33)	4(16)	4(40)
	P-value	0.0039		0.0355		
DP	Low	27(44.26)	10(29.41)	18(30)	15(60)	4(40)
	Moderate	18(29.51)	11(32.35)	19(31.67)	8(32)	2(20)
	High	16(26.23)	13(38.24)	23(38.33)	2(8)	4(40)
	P-value	0.3127		0.0382		
PA	Low	33(54.10)	27(79.41)	41(68.33)	15(60)	4(40)
	Moderate	11(18.03)	5(14.71)	10(16.67)	5(20)	1(10)
	High	17(27.87)	2(5.88)	9(15)	5(20)	5(50)
	P-value	0.022		0.1457		

Table 3: Prevalence of burnout among the participants

	Burnout	No burnout	P- Value
Total	46(48.42)	49(51.58)	---
Gender			
Male	23(37.70)	38(62.30)	0.0051
Female	23(67.65)	11(32.35)	
Department			
Internal Medicine Department	36(60)	24(40)	0.0035
Emergency Department	5(20)	20(80)	
Intensive Care Unit Department	5(50)	5(50)	
Rank			
R1	9(36)	16(64)	0.119
R2	6(42.86)	8(57.14)	
R3	7(53.85)	6(46.15)	
R4	10(90.91)	1(9.09)	
Fellow	5(41.67)	7(58.33)	
Specialist / Registrar	5(45.45)	6(54.55)	
Consultant	4(44.44)	5(55.56)	

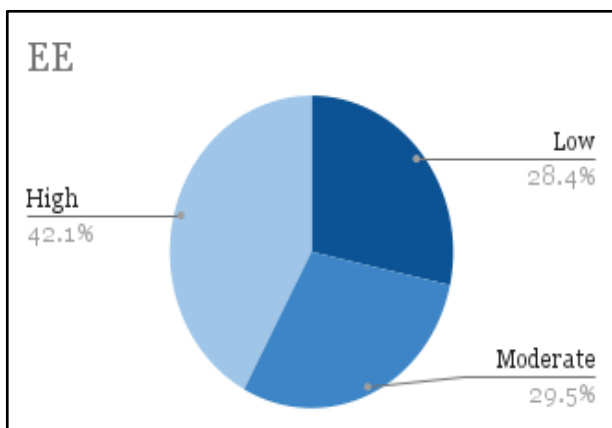


Figure 1: Emotional Exhaustion (EE)

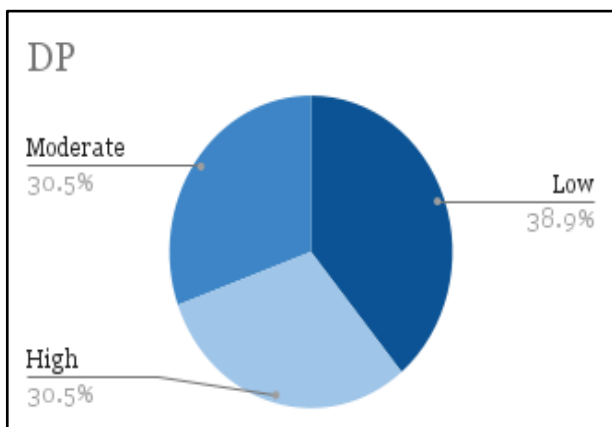


Figure 2: Depersonalization or loss of empathy (DP)

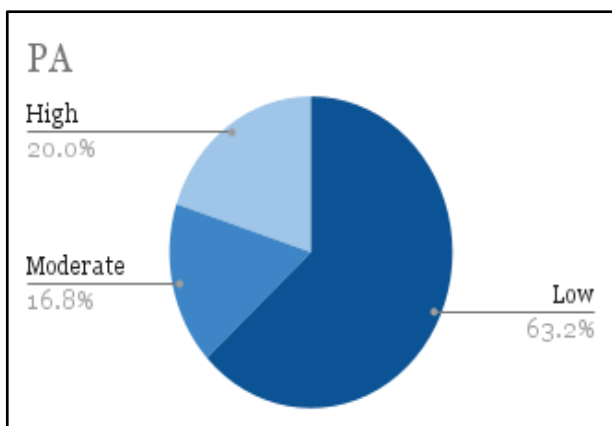


Figure 3: Personal accomplishment assessment (PA)

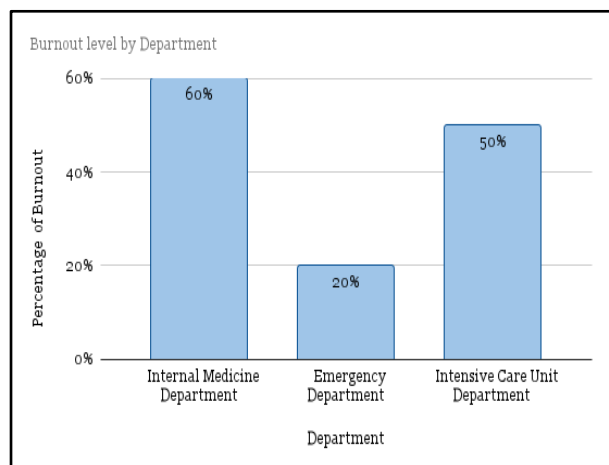


Figure 4: Burnout level by department

DISCUSSION

The present research has yielded several significant findings regarding burnout among physicians in different specialties. Overall, the study found that burnout was prevalent, with an overall rate of 48%. This burnout prevalence was further broken down into specific rates for Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA), which were observed at 42.11%, 30.53%, and 63.2%, respectively. Interestingly, the study revealed variations in burnout levels across different frontline specialties. Notably, EM physicians exhibited a lower susceptibility to burnout, whereas IM physicians had a higher propensity for burnout. Specifically, the burnout rates for EM, ICU, and IM physicians were 20%, 50%, and 60%, respectively. Gender-based differences in burnout susceptibility were also evident in the research. Female physicians were found to be more likely to experience burnout compared to their male counterparts. Additionally, the study highlighted an increased risk of burnout among consultants when contrasted with other medical practitioners' ranks.

Our study revealed a markedly higher overall current burnout and incidence of burnout in each different domains when compared to the findings reported by Shanafelt et al. before the onset of the COVID-19 pandemic. For instance, Shanafelt et al. employed the 22-Item Maslach Burnout Inventory-Human Services Survey (MBI-HSS) with specific cutoff values to define burnout (EE score of ≥ 27 , DP score of ≥ 10 , PA score of ≤ 33), where burnout was identified if a participant had a high EE and/or high DP. Their research indicated that 34% of faculty physicians in the department of IM experienced burnout. The incidence percentages of burnout in each domain were as follows: 30.2% for EE, 13.3% for DP, and 13.2% for PA.¹¹ On the other hand, our study revealed a considerably lower burnout rate compared to findings in research conducted during the COVID-19 pandemic. To illustrate, in a study conducted between June and August 2020, Rashid et al. reported an overall burnout prevalence of 55.4% among frontline healthcare staff. They employed the MBI-HSS with specific cutoff values to identify burnout (EE ≥ 27 , DP ≥ 10 , and PA ≤ 33). Their definition of burnout included participants with high scores for EE, DP, and reduced PA. The incidence percentages of burnout in each domain were as follows: 58.3% for EE, 97% for DP, and 98.2% for PA.¹²

Moreover, a study conducted during the later phases of the COVID-19 pandemic, utilizing the Abbreviated Maslach Burnout Inventory (aMBI-9), revealed a higher incidence of overall burnout, affecting 62% of the entire study. In this study, burnout was defined as occurring when either the DP or EE scales reached a high burnout level, as determined by cutoff values of DP > 6 , PA < 13 , and EE > 10 . Respondents in this study reported a notably higher prevalence of burnout levels for EE, DP, and PA, with corresponding percentages of 47.4%, 46.5%, and 48.5%, respectively. These findings contrast to our research.¹³ There are several potential reasons for these variations between the studies. One of the explanations provided by Rotenstein et al. is the sensitivity of burnout prevalence to measurement methods, such as the scales and criteria used to define burnout cases.¹⁴ Another plausible explanation is the temporal difference between the studies concerning COVID-19 cases and efforts to mitigate the pandemic. This temporal distinction is substantiated by the findings of a systematic review and meta-analysis study during the

COVID-19 pandemic which showed that studies conducted during the initial stages of the pandemic indicated a burnout prevalence of 60.7%, while during the later stages of the pandemic, the prevalence decreased to 49.3%.¹⁵

Furthermore, Shanafelt et al.'s study, observed a dramatical increase in burnout and a decline in job satisfaction among U.S. physicians from 2020 to 2021 due to COVID19 pandemic and work demands.¹⁶ This could be attributed to several factors. Some of these factors were highlighted in several studies done by Alsulimani et al., Nishimura et al., and Nonaka et al. These studies encompassed factors like increased workloads during the pandemic, average daily sleep duration, frequency of COVID-19 testing, perceived responsibility for handling COVID-19 cases, regular contact with COVID-19 patients, and instances of self-quarantine.^{5, 6, 17} Previous studies have consistently indicated that EM specialty are at a heightened risk of burnout when compared to their peers in other medical specialties. This trend has often been attributed to the demanding frontline role played by EM physicians and staff, involving the management of a high volume of critically ill patients, extended work hours, emotional stress, and elevated exposure risks, especially during the COVID-19 pandemic. Additionally, factors such as being a resident and having fewer years of experience have been associated with increased susceptibility to burnout. These established findings remained consistent both before and during the COVID-19 pandemic.^{5, 18, 19} However, our study yielded contrasting results. It revealed that EM physicians exhibit a lower propensity for burnout, while consultants are highly susceptible to experiencing burnout. There are several further reasons explaining these differences. One of them is limited sample size, another explanation relates to the heterogeneous distribution of consultants and residents across different specialties. For example, the high number of residents responses in IM department lead to high number of overall burnout levels in this specialty. This is supported by Maunder et al., Jalili et al., and Alsulimani et al. research which demonstrated that residents and trainees displayed a higher level of burnout compared to other job titles.^{5, 20, 21}

The literature review highlighted numerous factors associated with elevated burnout levels among residents, such as their role as frontline healthcare providers, exposure to prolonged work hours, sleep deprivation, demanding job requirements, their relative youth and inexperience in the medical field, work-home conflicts, and the responsibility of reporting to supervisors. Moreover, resident physicians often encountered unfavorable attitudes from their superiors.^{22, 23} Regarding gender differences, our study revealed a higher prevalence of burnout among females in contrast to males, a trend supported by the findings of the literature before and during the pandemic.^{12, 19, 21, 24} Additionally, a study conducted in the United States involving 3,176 medical practitioners during the pandemic indicated that females reported job-related stress, the impact of caregiving on work, and feelings of being less respected and heard by leadership. This is why they were 2.19 times more likely to experience burnout than their male counterparts.²⁵

CONCLUSION

Covid-19 imposed great emotional strain on healthcare workers, with higher levels in IM physicians, EM physicians, and ICU

physicians respectively. Levels of emotional exhaustion were higher in terms of intensity in females in comparison to males. Burnout levels varied according to the department, with ICU and IM experiencing high levels of burnout, in comparison to EM which experienced moderate to low levels of burnout. While depersonalization levels were higher in ICU physicians, and lowest in ER physicians. More than half of the participants in this study reported lack of personal accomplishments, with higher levels experienced in females.

LIMITATIONS AND RECOMMENDATIONS

This study addressed the current reported burnout post covid-19 pandemic period in comparison to the reported studies before and during covid-19 to further understand the level of burnout among healthcare workers. Nevertheless, the study findings might be limited by the fact that there are different classifications, definitions, and assessments of burnout level which lead to restricting its proper understanding of burnout status in healthcare workers. Also, there was a low response rate from the targeted participants, resulting in low sample size and limiting the generalizability and further statistical comparisons. Therefore, it is recommended to further study this topic on larger centers and samples to assess burn out levels post covid-19 pandemic in Saudi Arabia.

This study was performed in accordance with the Declaration of Helsinki and all relevant guidelines and regulations. This study approved by King Abdullah International Medical Research Centre (KAIMRC), Jeddah, Saudi Arabia. IRB approval study number NRJ22J/104/09. An informed consent was obtained from participants before filling in the questionnaire.

REFERENCES

1. Zakaria MI, Remeli R, Ahmad Shahamir MF, Md Yusuf MH, Azizah Ariffin MA, Noor Azhar AM. Assessment of burnout among emergency medicine healthcare workers in a teaching hospital in Malaysia during COVID-19 pandemic. *Hong Kong Journal of Emergency Medicine*. 2021 Jul;28(4):254-9.
2. Chuang CH, Tseng PC, Lin CY, Lin KH, Chen YY. Burnout in the intensive care unit professionals: a systematic review. *Medicine*. 2016 Dec;95(50).
3. Elshaer NS, Moustafa MS, Aiad MW, Ramadan MI. Job stress and burnout syndrome among critical care healthcare workers. *Alexandria Journal of Medicine*. 2018 Oct 23;54(3):273-7.
4. Brindley PG. Psychological burnout and the intensive care practitioner: A practical and candid review for those who care. *Journal of the Intensive Care Society*. 2017 Nov;18(4):270-5.
5. Alsulimani LK, Farhat AM, Borah RA, AlKhalifah JA, Alyaseen SM, Alghamdi SM, Bajnaid MJ. Health care worker burnout during the COVID-19 pandemic: a cross-sectional survey study in Saudi Arabia. *Saudi medical journal*. 2021 Mar;42(3):306.
6. Nishimura Y, Miyoshi T, Hagiya H, Kosaki Y, Otsuka F. Burnout of healthcare workers amid the COVID-19 pandemic: A Japanese cross-sectional survey. *International journal of environmental research and public health*. 2021 Mar 2;18(5):2434.
7. Wilson W, Raj JP, Narayan G, Ghiya M, Murty S, Joseph B. Quantifying burnout among emergency medicine professionals. *Journal of emergencies, trauma, and shock*. 2017 Oct;10(4):199.
8. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, West CP, Sloan J, Oreskovich MR. Burnout and satisfaction with

- work-life balance among US physicians relative to the general US population. *Archives of internal medicine*. 2012 Oct 8;172(18):1377-85.
9. Arora M, Asha S, Chinnappa J, Diwan AD. Burnout in emergency medicine physicians. *Emergency Medicine Australasia*. 2013 Dec;25(6):491-5.
 10. Gualano MR, Sinigaglia T, Lo Moro G, Rousset S, Cremona A, Bert F, Siliquini R. The burden of burnout among healthcare professionals of intensive care units and emergency departments during the COVID-19 pandemic: a systematic review. *International journal of environmental research and public health*. 2021 Aug 2;18(15):8172.
 11. Shanafelt TD, West CP, Sloan JA, Novotny PJ, Poland GA, Menaker R, Rummans TA, Dyrbye LN. Career fit and burnout among academic faculty. *Archives of internal medicine*. 2009 May 25;169(10):990-5.
 12. Rashid F, Erfan Uddin RA, Mehedi HH, Dhar S, Bhuiyan NH, Sattar MA, Chowdhury S. Burnout syndrome among frontline doctors of secondary and tertiary care hospitals of Bangladesh during COVID-19 pandemic. *PloS one*. 2022 Nov 22;17(11):e0277875.
 13. Petrino R, Riesgo LG, Yilmaz B. Burnout in emergency medicine professionals after 2 years of the COVID-19 pandemic: a threat to the healthcare system?. *European Journal of Emergency Medicine*. 2022 Aug;29(4):279.
 14. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, Mata DA. Prevalence of burnout among physicians: a systematic review. *Jama*. 2018 Sep 18;320(11):1131-50.
 15. Macaron MM, Segun-Omosehin OA, Matar RH, Beran A, Nakanishi H, Than CA, Abulseoud OA. A systematic review and meta analysis on burnout in physicians during the COVID-19 pandemic: A hidden healthcare crisis. *Frontiers in psychiatry*. 2023 Jan 12; 13:1071397.
 16. Shanafelt TD, West CP, Dyrbye LN, Trockel M, Tutty M, Wang H, Carlasare LE, Sinsky C. Changes in burnout and satisfaction with work-life integration in physicians during the first 2 years of the COVID-19 pandemic. *In Mayo Clinic Proceedings* 2022 Dec 1; 97(12):248-2258.
 17. Nonaka S, Makiishi T, Nishimura Y, Nagasaki K, Shikino K, Izumiya M, Moriya M, Sadohara M, Ohtake Y, Kuriyama A. Prevalence of burnout among internal medicine and primary care physicians before and during the COVID-19 pandemic in Japan. *Internal Medicine*. 2022 Mar 1;61(5):647-51.
 18. Shanafelt TD, West CP, Sinsky C, Trockel M, Tutty M, Satele DV, Carlasare LE, Dyrbye LN. Changes in burnout and satisfaction with work-life integration in physicians and the general US working population between 2011 and 2017. *In Mayo Clinic Proceedings* 2019 Sep 1 (Vol. 94, No. 9, pp. 1681-1694). Elsevier.
 19. Abdulla L, Al-Qahtani DM, Al-Kuwari MG. Prevalence and determinants of burnout syndrome among primary healthcare physicians in Qatar. *South African Family Practice*. 2011 Jul 1;53(4):380-3.
 20. Maunder RG, Heeney ND, Strudwick G, Danielle Shin H, O'Neill B, Young N. Burnout in hospital-based healthcare workers during COVID-19. *Science Briefs of the Ontario COVID-19 Science Advisory Table*. 2021 Oct 7;2(46):1-24.
 21. Jalili M, Niroomand M, Hadavand F, Zeinali K, Fotouhi A. Burnout among healthcare professionals during COVID-19 pandemic: a cross-sectional study. *International archives of occupational and environmental health*. 2021 Aug;94:1345-52
 22. Thomas NK. Resident burnout. *Jama*. 2004 Dec 15;292(23):2880-9. DOI: 10.1001/jama.292.23.2880
 23. Prins JT, Gazendam-Donofrio SM, Tubben BJ, Van der Heijden FM, Van de Wiel HB, Hoekstra-Weebers JE. Burnout in medical residents: a review. *Medical education*. 2007 Aug;41(8):788-800. DOI : 10.1111/j.1365-2923.2007.02797.x
 24. Alrawashdeh HM, Al-Tammemi AA, Alzawahreh MK, Al-Tamimi A, Elkholi M, Al Sarireh F, Abusamak M, Elehamer NM, Malkawi A, Al-Dolat W, Abu-Ismael L. Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. *BMC public health*. 2021 Dec;21:1-8.
 25. Dillon EC, Stults CD, Deng S, Martinez M, Szwercinski N, Koenig PT, Gregg L, Cobb JK, Mahler E, Frosch DL, Le Sieur S. Women, younger clinicians', and caregivers' experiences of burnout and well-being during COVID-19 in a US healthcare system. *Journal of general internal medicine*. 2022 Jan 1:1-9.

Source of Support: Nil. **Conflict of Interest:** None Declared.

Copyright: © the author(s) and publisher. IJMPP is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882. This is an open access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Cite this article as: Basem Ahmed AlGamdi, Adel Jubran AlRogi, Ibrahim Khaled Beshawri, Bsaim Abdulsalam Altirkistani, Nidaa Mohammed Almeahmadi, Randa Ahmed Bajunaid, Lamar Hattan Kuwaity, Arjwan Omar Alamoudi. The Prevalence of Burnout among Physicians Post Covid-19 Pandemic at King Abdulaziz Medical City, Jeddah, Saudi Arabia. *Int J Med Res Prof*. 2024 Nov; 10(6): 1-6. DOI:10.21276/ijmrrp.2024.10.6.001