Original Article

Assessment of burnout and professional fulfillment in practicing doctors and their association with self-reported medical errors: A hospital-based cross-sectional study

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Author's Contribution

[1,3] *Conception of study*
[3] *Experimentation/Study conduction*
[1,2,3] *Analysis/Interpretation/Discussion*
[1,2,3,4,5] *Manuscript Writing*
[2,4,5] *Critical Review*
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Abstract

Background: The well-being of health care workers is essential for providing good patient care. Burnout is an epidemic plaguing the healthcare system worldwide and its undesirable effects on healthcare workers as well as patients have been reported time and again.

Objectives: To measure the levels of burnout and professional fulfillment among practicing doctors and to determine any association of burnout and professional fulfillment with self-reported medical errors.

Materials and Methods: It is a descriptive cross-sectional study. Practicing doctors in Allied hospitals of Rawalpindi Medical University were included, while those in administration and Heads of Departments were excluded. The sample size was calculated by using the WHO calculator with a confidence interval of 95%. Convenience sampling was used. A self-structured, close-ended questionnaire validated by senior professors was used. The Maslach Burnout Inventory and Professional Fulfilment Index (PFI) were added to the questionnaire. Medical errors were assessed using a self-made scale. Data were analyzed using SPSS version 23. The significance level was set at P-Value <0.05.

Results: Most of the participants belonged to the age group of 25-35 years. Males made up 46.5% of the population while females were 53.5%. Most of the participants (69.7%) had a good level of professional fulfillment. A significant proportion of the participants (82.5%) experienced only a mild degree of burnout. Most of the participants (79.4%) rarely reported medical errors. Results showed a significant negative correlation between professional fulfillment and burnout scores and a significant positive correlation between burnout scores and medical error reporting scores.

Conclusion: The majority of the participants had a good level of professional fulfillment and a mild degree of burnout. There was a significant positive correlation between medical errors and burnout among doctors of allied hospitals of RMU.

Keywords: Burn out, Medical Errors, Physicians, Self-Report.

Introduction

Burnout is thought to be a menace for healthcare-oriented professions like medicine, nursing, etc. These professions require providers to be available for their patients whenever an emergency arises and even though they develop a strong level of emotional contact with their patients, such a lifestyle can be quite taxing and demanding.[1]

Burnout is a condition of extreme emotional and physical exhaustion, depersonalization, and a feeling of low personal accomplishment that occurs in people working in stressful conditions.[1,2] Many studies have shown that burnout is an epidemic plaguing the healthcare system worldwide and its undesirable effects on healthcare workers as well as patients have been reported time and again. A study conducted on internal medicine residents reported that 76% of residents experienced some form of burnout and the residents who experienced burnout were more likely to report a medical error than those who did not. This shows that burnout can have a detrimental impact on patient safety and care.[2]

Physician burnout continues to be a mounting problem. An analysis suggested that physicians in healthcare work for more hours in a week, are less satisfied with their work-life balance, and experience more exhaustion and burnout as compared to professionals working in other fields.[3] Burnout is also a problem in medical students.[4] A healthcare survey in Atlanta showed that up to 21% to 43% of medical students experienced burnout.[5] Similarly, a survey conducted in Sao Paulo reported that up to 57.7% of students were at risk of developing burnout syndrome.[6]

In South Asian countries such as Pakistan where health care systems are less resilient and mature, burnout is expected to be more prevalent but this aspect has not been explored much. A study conducted in tertiary care hospitals of Rawalpindi showed dissatisfaction with the working environment due to prolonged working hours and increased workload.[7] A study conducted at two medical colleges in Pakistan showed a burnout prevalence of 47% among medical students.[8] Thus, burnout can be considered as an occupational hazard for doctors practicing medicine as well as medical students.

Medical error is any reported untoward effect that may occur while providing patient care which has the potential to cause harm. It is reported that up to 50% of patients may be affected by some form of medical error.[9] Hence it is important to recognize these adverse events and work to prevent them to improve patient safety. Many studies have reported an association between perceived fatigue and burnout with medical errors.[10,11] Hence, we can consider burnout as a potential risk factor for medical errors.

In short, burnout has a considerable detrimental impact on medical practice, interpersonal relationships, patient satisfaction, and patient safety so it is imperative to address this issue to avoid the major adverse effects on the healthcare system.[12] Moreover; there is not much evidence on the relationship of burnout with medical errors in resource-limited countries like Pakistan.

Professional fulfillment (PF) is an important part of a physician's well-being and is one of the key contributors to having a drive and motivation for work and providing good patient care. The level of satisfaction that a physician has with his/her job is influenced by some intrinsic and extrinsic factors. Inadequate support while providing care, limited flexibility in working hours, low appreciation, and suboptimal compensation for work are some factors that decrease professional fulfillment and satisfaction.[13] Studies in the USA reported that burnout and emotional exhaustion have been associated with reduced PF, a higher degree of sleep impairment, and a perception of decreased support from department and hospital leadership.[14]

Thus, our study explores a relationship between burnout and professional fulfillment with medical errors which directly have an impact on patient safety. The results of this study will guide us to devise ways to reduce burnout and increase professional fulfillment.

Materials and Methods

It is a descriptive cross-sectional study conducted at the three Allied hospitals of Rawalpindi Medical University from March 2021 to November 2021. Doctors (house officers, medical officers, post-graduate trainees, and junior consultants) workings in the allied hospitals were included in our study while doctors involved in hospital administration and head of departments were excluded. A sample size of 383 was calculated by using the WHO calculator with a confidence interval of 95%, absolute precision of 5%, and an assumed prevalence of burnout of 50%.[3] Convenience sampling technique was used.

A self-structured, close-ended questionnaire validated by senior professors working in the Community Medicine department was used. The Maslach Burnout Inventory, which is considered to be the gold standard for measuring burnout, was included in the questionnaire.[13]

The burnout score measured by the scale ranged from 0-40 which was categorized into mild (0-20), moderate (21-25), and extreme burnout (>25). Professional Fulfilment Index (PFI) was used to measure professional fulfillment.[14] PFI measured by the scale ranged from 0-24 which was categorized into average PF (0-10), good PF (10-20), and excellent PF (>20). Medical errors were assessed using a self-made scale.

Data were analyzed using SPSS version 23. Mean and standard deviations were calculated for quantitative variables. Frequencies and percentages were calculated for categorical variables. The correlation coefficient was calculated to find out the correlation between burnout and medical errors as well as burnout and professional fulfillment. The significance level was set at $p \leq 0.05$.

Results

Most of our participants belonged to the age group of 25-35 years. Males made up 46.5 percent of the population while females were 53.5 percent.

A significant proportion of the participants (316, 82.5%) experienced only a mild degree of burnout, (38, 9.9%) had moderate burnout and only 26(6.8%) experienced severe burnout (Table I).

Table I: Burnout among study participants (n) as per Maslach Burnout Inventory * (n=380)

Burnout Score	*n*	*%*
Mild (0-20)	316	82.5
Moderate (21-25)	38	9.5
Severe (>25)	26	6.8

** Adapted from Maslach C, Jackson SE, Leiter MP. Maslach burnout inventory. Scarecrow Education; 1997.*

Most of the participants (203, 53.0%) were from the Department of Surgery and Allied (Figure 1).

Medical errors were reported frequently in majority of the participants (304, 79.4%) while others reported medical errors occasionally. Only 5.7 percent (22) of participants rarely reported medical errors (Table II).

Table II: Self-reported medical errors (n=369)

Occurrence of medical errors	*n*	*%*
Frequent	304	79.4
Occasional	57	14.9
Rare	8	5.7

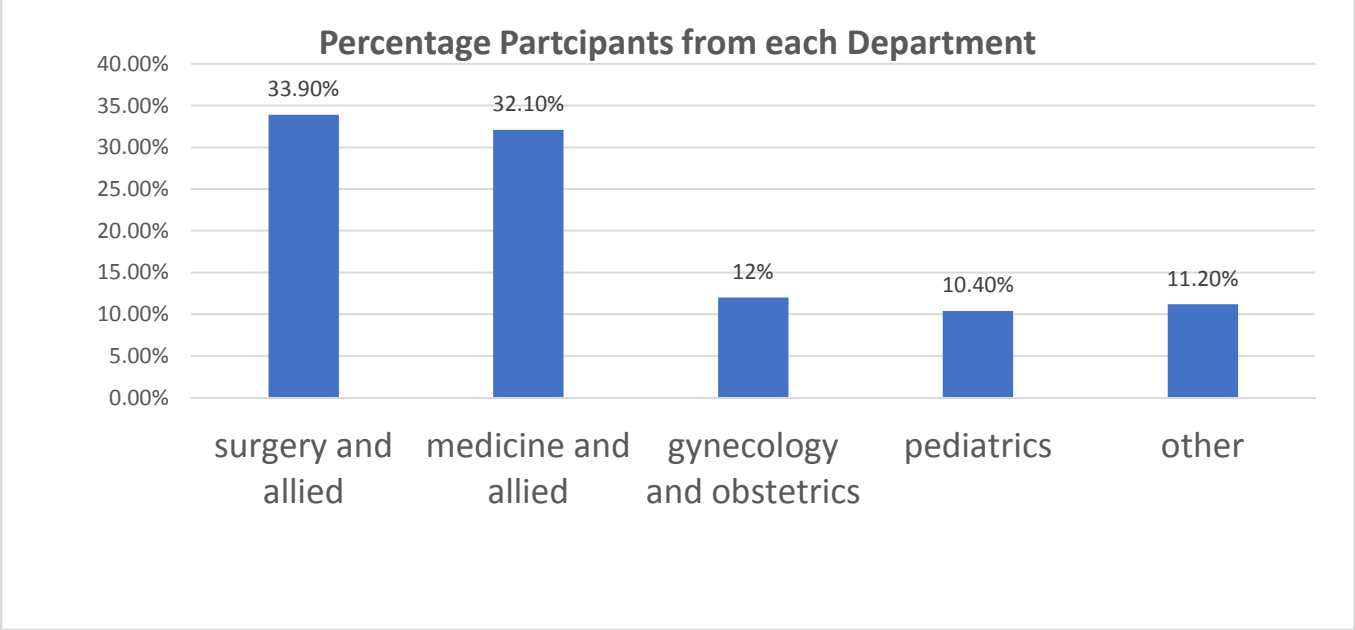

Figure 1: Percentage of participants from each department (n=386)

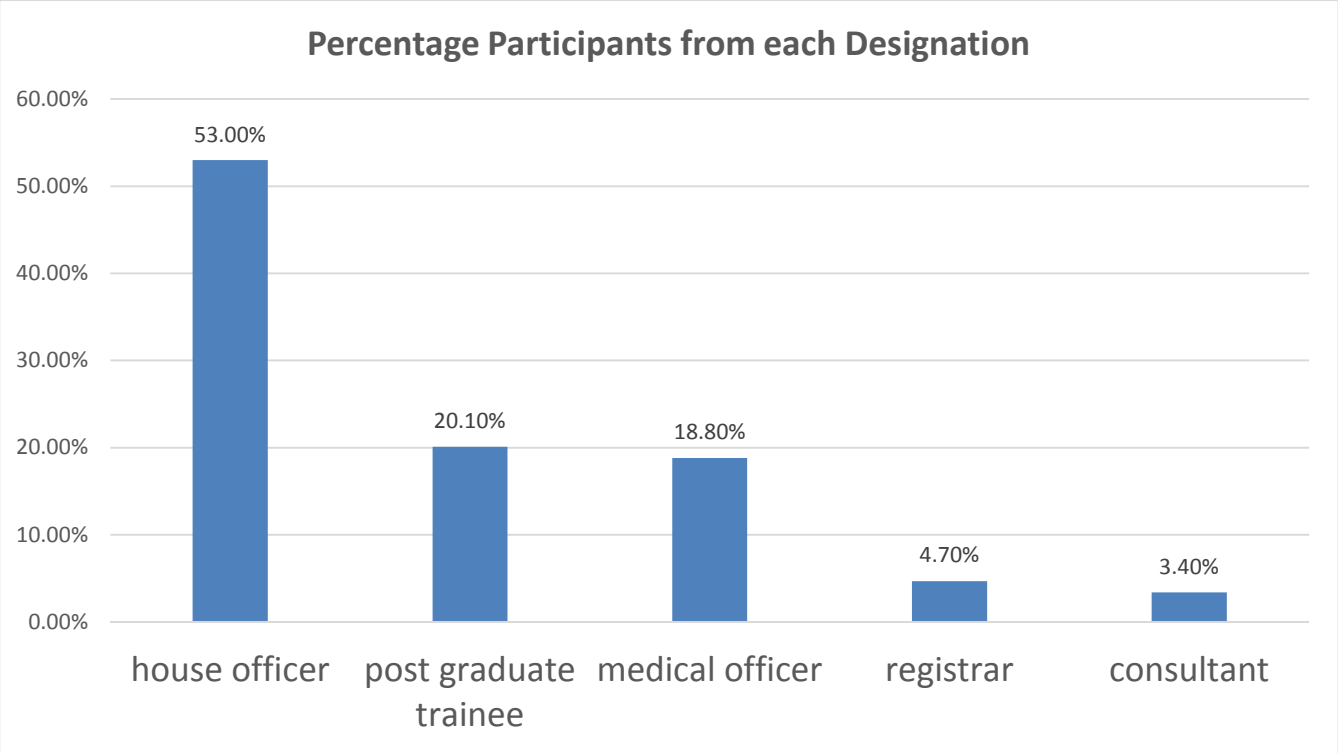

Figure 2: Percentage of participants from each designation (n=386)

Figure 2 displays the designations of the participants. Most of them were working as house officers.
Figure 3 shows that majority of the participants, (267, 69.7%) had a good level of professional fulfillment while 71 (18.5%) had an average level of professional fulfillment. Only 51 participants (11.8%) had an excellent level of professional fulfilment.

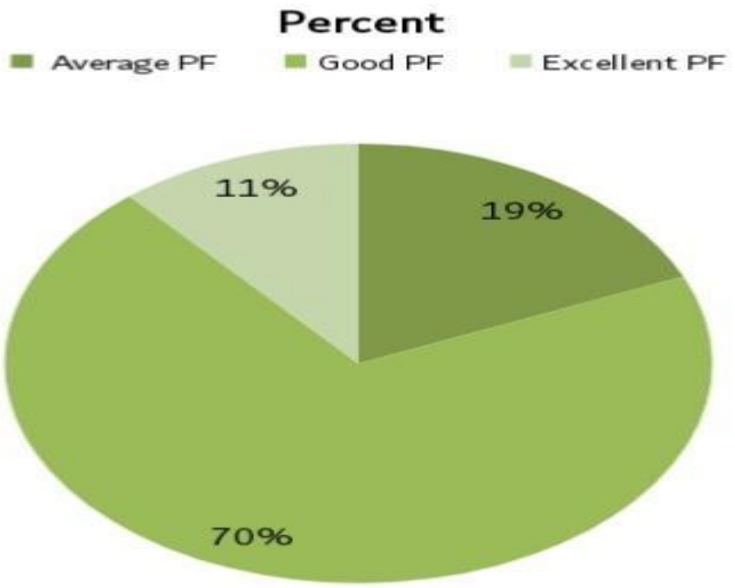

Figure 3: Percentage of professional fulfillment of study participants (n=386)

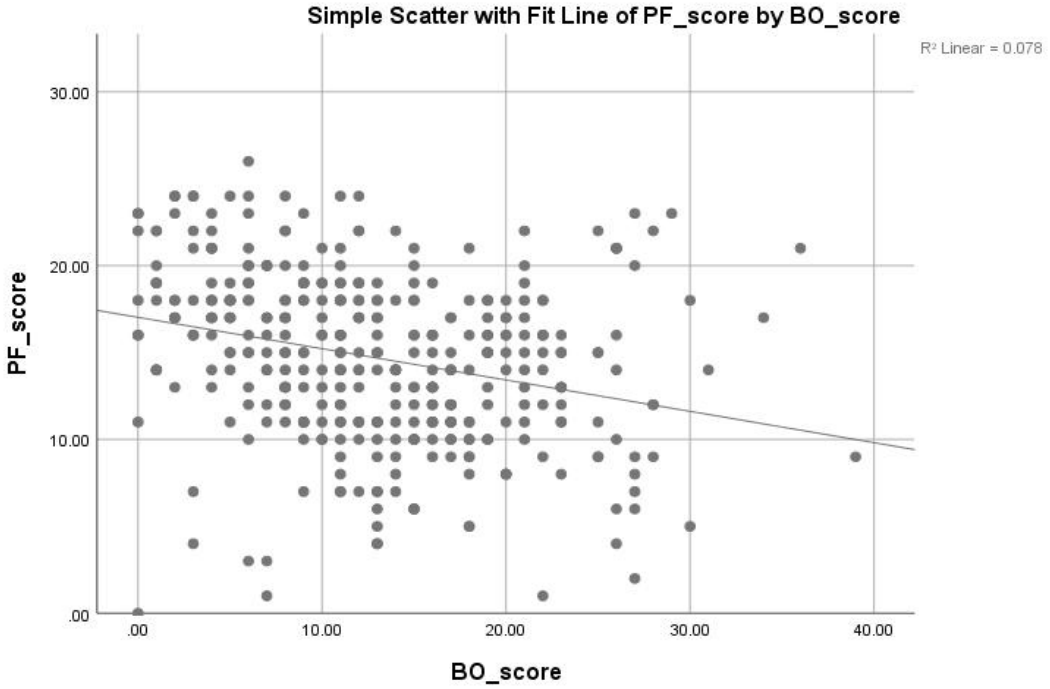

Figure 4: Relationship between professional fulfillment and burnout
BO: Burnout, PF: Professional Fulfillment.

Figure 4 shows a highly significant but weak negative correlation between professional fulfillment and burnout scores (p = 0.000, r = -0.236).

Figure 5 displays a highly significant but weakly positive correlation between burnout score and medical error reporting score (p = 0.000, r = 0.244).

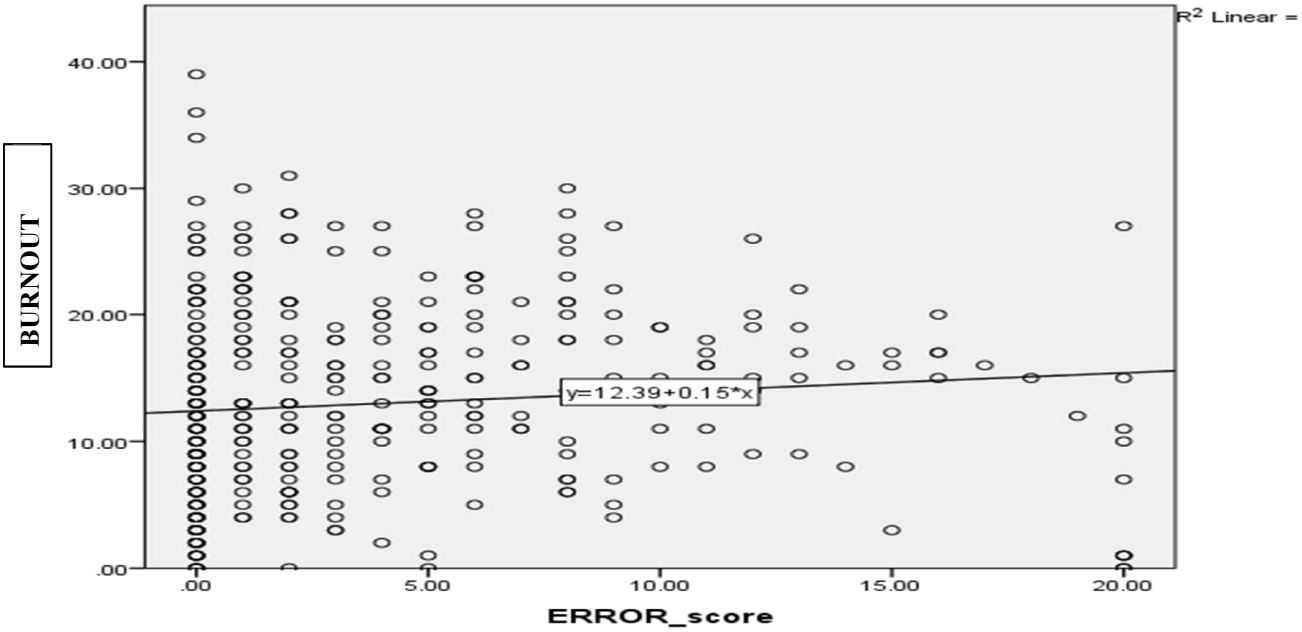

Figure 5: Relationship between medical errors and burnout scores

Discussion

Our study has shown that the majority of healthcare workers experience mild burnout and results show frequently reported medical errors in 79.4% of the study population.

Regarding professional fulfillment (PF), most of the participants had a good level of PF but the frequency of excellent PF was less. Burnout has a well-documented negative impact on healthcare workers who are the backbone of the healthcare system. It not only decreases well-being and quality of life but also increases the occurrence of medical errors. A study on pediatric resident physicians reported that physicians experiencing depression and burnout were three times more likely to commit harmful medical error.[15] Medical errors not only hamper patient safety but also foster adverse mental and emotional effects on healthcare providers.[16]

The frequency of severe burnout is considerably less in our study population. Regarding the prevalence of burnout, our study revealed mild (82.5%) to moderate (10%) burnout among doctors. These results are comparable to a study in Islamabad where most doctors had a moderate level of burnout and only 13.5% experienced a high degree of burnout.[17] Another study conducted on orthopedic residents in Karachi reported a higher frequency of moderate burnout of 43% as compared to a severe degree burnout of 15%.[18] These results show that burnout and exhaustion are prevalent in mild to moderate form in our health care setting but severe burnout is relatively less common. Thus, we need to devise ways to decrease the progression of this burnout to much more severe levels in order to improve the well-being of our doctors.

In our study burnout had a statistically significant negative correlation with PF thus implying that higher levels of burnout are associated with decreased PF and vice versa. Another study conducted on orthopedic surgeons in Pakistan reported that healthcare workers with higher levels of PF were less likely to report the indicators of burnout.[21]

We also report a significant positive correlation between burnout and self-reported medical errors. This is similar to a study in America that found a significant relationship between major medical errors reported by the surgeon and the surgeon's degree of burnout.[22] Another study in the UK showed that the poor well-being of physicians and a high level of burnout increase the risk of poor patient safety outcomes such as medical errors.[23] This shows that the higher the degree of burnout and exhaustion in health care workers, the more they are likely to commit medical errors which have a great impact on the patient's quality of life.

The magnitude of burnout in the healthcare profession has been gauged in several studies and its detrimental effects on both physician well-being and patient safety outcomes have been documented. There needs to be an effective intervention to decrease the problem of increasing burnout among physicians. Such interventions should be directed toward both physicians as well as the hospital organizational structure.

Physician-directed approaches should focus on improving stress management, communication skills, and coping strategies to well equip doctors for handling professional stressors. Organization-oriented approaches should focus on improving the work schedule and work environment to create a healthcare infrastructure that is more conducive to physician well-being.[24] Such interventions will make our physicians healthier and our hospitals safer.

Conclusion

Most of the participants had a good level of professional fulfillment, showing mild to moderate degree of burnout. However medical errors have ben frequently self-reported. This is the time to deal with the issue of burnout at this stage in order to minimize medical errors.

References

1. Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. World psychiatry. 2016 Jun 5 ;15(2):103-11.
2. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. Annals of internal medicine.2002 Mar 5;136(5):358-67.
3. Shanafelt TD, Sinsky C, Dyrbye LN, Trockel M, West CP. Burnout among physicians compared with individuals with a professional or doctoral degree in a field outside of medicine. Elsevier. InMayo Clinic Proceedings 2019 Mar 1; 94(3):549-551.
4. Erschens R, Keifenheim KE, Herrmann-Werner A, Loda T, Schwille-Kiuntke J, Bugaj TJ, Nikendei C, Huhn D, Zipfel S, Junne F. Professional burnout among medical students: Systematic literature review and meta-analysis. Medical teacher. 2019 Feb 1;41(2):172-83.
5. Santen SA, Holt DB, Kemp JD, Hemphill RR. Burnout in medical students: examining the prevalence and associated factors. Southern medical journal. 2010 Aug 1;103(8):758-63.

6. Almeida GD, Souza HR, Almeida PC, Almeida BD, Almeida GH. The prevalence of burnout syndrome in medical students. Archives of Clinical Psychiatry (São Paulo). 2016 Jan; 43:6-10.
7. Sultana A. Level of job satisfaction in doctors. Journal of Rawalpindi Medical College. 2009 Dec 30; 13(2):95-7.
8. Muzafar Y, Khan HH, Ashraf H, Hussain W, Sajid H, Tahir M, Rehman A, Sohail A, Waqas A, Ahmad W. Burnout and its associated factors in medical students of Lahore, Pakistan. Cureus. 2015 Nov 29;7(11).
9. West CP, Tan AD, Habermann TM, Sloan JA, Shanafelt TD. Association of resident fatigue and distress with perceived medical errors. Jama. 2009 Sep 23;302(12):1294-300.
10. Kang EK, Lihm HS, Kong EH. Association of intern and resident burnout with self-reported medical errors. Korean journal of family medicine. 2013 Jan 28;34(1):36.
11. Tawfik DS, Profit J, Morgenthaler TI, Satele DV, Sinsky CA, Dyrbye LN, Tutty MA, West CP, Shanafelt TD. Physician burnout, well-being, and work unit safety grades in relationship to reported medical errors. InMayo Clinic Proceedings 2018 Nov 1; 93(11): 1571-1580. Elsevier.
12. Panagioti M, Geraghty K, Johnson J, Zhou A, Panagopoulou E, Chew-Graham C, Peters D, Hodkinson A, Riley R, Esmail A. Association between physician burnout and patient safety, professionalism, and patient satisfaction: a systematic review and meta-analysis. JAMA internal medicine. 2018 Oct 1;178(10):1317-31.
13. Iwanicki EF, Schwab RL. A cross validation study of the Maslach Burnout Inventory. Educational and psychological measurement. 1981 Dec 1;41(4):1167-74.
14. Trockel M, Bohman B, Lesure E, Hamidi MS, Welle D, Roberts L, Shanafelt T. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. Academic Psychiatry. 2018 Feb;42(1):11-24.
15. Brunsberg KA, Landrigan CP, Garcia BM, Petty CR, Sectish TC, Simpkin AL, Spector ND, Starmer AJ, West DC, Calaman S. Association of pediatric resident physician depression and burnout with harmful medical errors on inpatient services. Academic medicine: journal of the Association of American Medical Colleges.2019 Aug 1;94(8):1150.
16. Robertson JJ, Long B. Suffering in silence: medical error and its impact on health care providers. The Journal of emergency medicine. 2018 Apr 1;54(4):402-9.
17. Mazhar SB, Gilani S, Ain QT, Khan S. High burn out among doctors working in a tertiary care hospital; a wakeup call. J Pak Med Assoc. 2019 Mar 1; 69:349.
18. Siddiqui AA, Jamil M, Kaimkhani GM, Wasim M, Katto MS, Yaqoob U, Adeel M. Burnout among orthopedic surgeons and residents in Pakistan. Cureus. 2018 Aug 4;10(8).
19. Jyothindran R, d'Etienne JP, Marcum K, Tijerina A, Graca C, Knowles H, Chaudhari BR, Zenarosa NR, Wang H. Fulfillment, burnout and resilience in emergency medicine—Correlations and effects on patient and provider outcomes. PloS one. 2020 Oct 19;15(10):e0240934.
20. Higgins MCSS, Siddiqui AA, Kosowsky T, Unan L, Mete M, Rowe S, Marchalik D. Burnout, professional fulfillment, intention to leave, and sleep-related impairment among radiology trainees across the United States (US): A Multisite Epidemiologic Study. Acad Radiol. 2022 Feb 28; S1076-6332(22)00105-2.
21. Lazarides AL, Belay ES, Anastasio AT, Cook CE, Anakwenze OA. Physician burnout and professional satisfaction in orthopedic surgeons during the COVID-19 Pandemic. Work. 2021 Jan 1(Preprint):1-8.
22. Shanafelt TD, Balch CM, Bechamps G, Russell T, Dyrbye L, Satele D, Collicott P, Novotny PJ, Sloan J, Freischlag J. Burnout and medical errors among American surgeons. Ann Surg. 2010 Jun;251(6):995-1000.
23. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: A systematic review. PLoS One. 2016 Jul 8;11(7): e0159015.
24. Patel RS, Sekhri S, Bhimanadham NN, Imran S, Hossain S. A review on strategies to manage physician burnout. Cureus. 2019 Jun 3;11(6).