Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article **Open Access**

Association of job burnout with clinical empathy and quality of life among medical students

Ali Naderi[1]; Elahe Derakhshan-Nezhad[2]; *Zahra Chaichy[3]; Zanireh Salimi[4]

[1]*M.D, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.*
[2]*Student Research Committee, Mashhad University of Medical Sciences, Mashhad, Iran.*
[3]*Department of Pediatric Diseases, Mashhad University of Medical Sciences, Mashhad, Iran.*
[4]*Associate professor of psychiatry, Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.*

Abstract

Introduction: Considering the increasing prevalence of job burnout among medical students and its potential adverse effects on clinical empathy and quality of life, this research aimed to investigate the prevalence of job burnout and its association with clinical empathy and quality of life among medical students.

Materials and Methods: This descriptive cross-sectional was conducted on 104 medical students of the Pediatrics Department of Mashhad University of Medical Sciences in April 2023. The research tools included Jefferson Scale of Empathy (medical students' version), World Health Organization Quality-of-Life Scale, and Maslach Burnout Inventory. Data were analyzed using SPSS 26 and Pearson's correlation test.

Results: Totally, 104 interns and externs participated in this study, of whom 64.4% had moderate burnout, and 24% had severe burnout. Also, 84.6 and 56.7% moderately suffered from emotional exhaustion and depersonalization problems, respectively, and 75% had moderate levels of personal success. There was an inverse relationship between job burnout and clinical empathy. A substantial difference was found in job burnout between female and male students.

Conclusion: The job burnout rate among medical students seems to be high. Considering the inverse association between clinical empathy and job burnout, reducing job burnout could be an effective solution to improve clinical empathy.

Keywords: Clinical empathy, Job burnout, Medical student, Quality of life

Please cite this paper as:
Naderi A, Derakhshan-Nezhad E, Chaichi Z, Salimi Z. Association of job burnout with clinical empathy and quality of life among medical students. Journal of Fundamentals of Mental Health 2025 Sep-Oct; 27(5): 305-311.
DOI: 10.22038/JFMH.2025.84201.3188

Introduction

Job burnout is defined as an individual's response to interpersonal and chronic emotional stressors in the workplace, which includes the three dimensions of emotional exhaustion, depersonalization problems, and lack of personal success (1). Burnout syndrome occurs when people experience

***Corresponding Author:**
Department of Pediatric Diseases, Mashhad University of Medical Sciences, Mashhad, Iran.
zarichaichy@gmail.com
Received: Nov. 20, 2024
Accepted: Jun. 16, 2025

combined crises in all three of these dimensions most of the time. They feel chronically exhausted, have withdrawn mentally, socially, and emotionally from their work, and have lost confidence in their capacity to have a constructive impact. Basically, this means that they experience high stress, have a hostile job environment, and have a pessimistic evaluation of themselves (2). Several studies have investigated the prevalence of job burnout among medical professionals.

Unfortunately, a relatively high prevalence has been reported among medical students (3). Studies have shown that symptoms of depression and burnout may increase during medical school (4). Job burnout in medical students affects their performance as therapists (5). Studies have suggested that certain factors in the learning environment are associated with burnout, reduced empathy, and career regret among medical students (6,7).

Empathy is a powerful communication ability that refers to the potential to understand and share the experiences, concerns, and perspectives of another person (8). Empathy is the ability to understand another person's inner feelings and experiences, even when we are not in that situation (9). Physicians' empathy with patients and the physician-patient relationship are positively associated with functional health (10). Nowadays, clinicians are expected to show empathy, compassion, and altruism while treating patients. This issue is evident in the ethical codes written in the documents of many medical associations (11). In addition to patients, empathy has a positive effect on physicians' life. Empathy not only has a direct negative effect on burnout but also has an indirect impact on job satisfaction and job commitment (12). Studies have shown that the empathy of medical students decreases during their studies due to a series of factors, despite the great emphasis on learning and teaching empathy (5). Another factor that is associated with job burnout is quality of life (13,14). Quality of life is defined as a person's mental understanding of well-being and fulfillment of individual goals in a social and cultural context, which includes satisfaction with life and feelings of happiness, all of which are aspects of human health. Quality of life is a multidimensional structure consisting of four psychological, physical, social, and environmental dimensions (15). Considering the increasing prevalence of job burnout among medical students and its potential adverse effect on clinical empathy and quality of life, the current research aimed to evaluate the prevalence of job burnout and its association with quality of life and clinical empathy among medical students.

Materials and Methods

This study was conducted on general medical students of the Pediatrics Department of Mashhad University of Medical Sciences in April 2023, who were selected using convenient sampling method. The inclusion criterion included studying at the internship an externship levels, and the exclusion criterion included having a history of psychological illness. The place of data collection was Akbar and Dr. Sheikh children's educational hospitals as well as the pediatric departments of Imam Reza and Qaem hospitals.

Research instruments

A) The Jefferson Scale of Empathy (medical students' version): It contained 10 items, the respondent gave each statement a score from 1 to 5 based on his/her agreement with the statements, with 1 indicating disagreement and 5 indicating maximum agreement. The reliability of this questionnaire was confirmed based on Cronbach's alpha coefficient of 0.88 and reliability coefficient of 0.49 (16).

B) The World Health Organization Quality-of-Life Scale: This scale included 26 items: seven items in the physical area, six items in the psychological area, four items in the social area, and nine items in the environmental area. The validity and reliability of the Persian version of this questionnaire were confirmed in Iran (17).

C) The Maslach Burnout Inventory: It consisted of 22 statements: nine statements about emotional exhaustion, eight statements about lack of personal success, and five statements about depersonalization. Respondents' feelings toward each statement were measured with scores from 1 (equal to never) to 5 (equal to every day). The validity of this questionnaire was confirmed based on Cronbach's alpha coefficient of 0.71-0.90 and reliability coefficient of 0.60-0.80. The validity and reliability of this questionnaire were confirmed in various surveys conducted in Iran (18).

D) Demographic Checklist: It included questions about age, gender, educational year, marital status, and education level.

The statistics of the students present in the educational centers of the pediatric departments of Akbar, Dr. Sheikh, Imam Reza, and Qaem hospitals were obtained from the medical school. Then by referring to each center, the questionnaires were provided to the students online and then completed by them if they were willing to participate in this study. The research population comprised 146 general medical students. According to Krejcie and Morgan's sample size formula (19), the sample size was determined to be 104 samples. Since the questionnaires were provided to the students online, and there was no possibility of not answering the questions, there was no missing data. This study followed the STROBE (strengthening the reporting of observational studies in epidemiology) cross sectional reporting guidelines (20). Data were analyzed using SPSS version 26, descriptive statistics, and Pearson's correlation test.

Results

In this study, 104 students participated. Their demographic variables are presented in Table 1. Frequency distribution of medical students based on burnout levels and its subclasses are shown in Table 2.

Table 1. Demographic characteristics of the participants

Characteristics		Number (%)	Average Age
Gender	Male	53 (51.0)	24.15
	Female	51 (49.0)	24.02
Marital status	Single	75 (72.1)	24.04
	Married	29 (27.9)	24.21
Native status	Native	56 (53.8)	24.27
	Non-native	48 (46.2)	23.88
Level of education	Extern	39 (37.5)	22.90
	Intern	65 (62.5)	24.80
Total		104 (100)	24.09

Table 2. Frequency distribution of medical students based on burnout levels and its subclasses

Burnout dimensions	Severity of burnout			Mean	Standard Deviation
	Mild N (%)	Moderate N (%)	Severe N (%)		
Emotional exhaustion	3 (2.9)	88 (84.6)	13 (12.5)	25.93	6.05
Depersonalization problems	41 (39.4)	59 (56.7)	4 (3.8)	12.37	3.40
Lack of personal success	16 (15.4)	78 (75.0)	10 (9.6)	23.83	4.84
Burnout	12 (11.5)	67 (64.4)	25 (24.0)	65.21	10.58

There was a statistically significant inverse correlation between job burnout and clinical empathy ($P< 0.001$), which indicates that clinical empathy increases as job burnout decreases. No remarkable correlation was detected between job burnout and quality of life. As shown in Table 3, there was a significant difference between male and female

students in terms of job burnout (*P*= 0.043). In other words, the average job burnout in female students (66.04 ± 7.56) was higher than in male students (64.42 ± 12.85).

However, no significant difference was found between married and single students in any variable (*P*> 0.05).

Table 3. Comparing the variables of job burnout, empathy, and quality of life and their subclasses based on the students' gender and marital status

Variable	Gender				t	P	Marital Status				t	P
	Male		Female				Single		Married			
	Mean	SD	Mean	SD			Mean	SD	Mean	SD		
Burnout	64.42	12.85	66.04	7.56	-.781	0.043	65.75	9.69	63.83	12.67	0.829	0.675
Emotional exhaustion	25.36	6.46	26.53	5.60	-.986	0.464	26.28	5.76	25.03	6.77	0.940	0.579
Depersonalization problems	12.72	3.39	12.02	3.41	1.045	0.567	12.49	3.44	12.07	3.35	0.569	0.786
Lack of personal success	23.36	5.26	24.31	4.35	-1.007	0.497	23.83	4.25	23.83	6.19	-0.001	0.175
Empathy	33.17	5.24	33.63	4.08	-.495	0.690	33.41	3.72	33.34	6.67	0.066	0.093
Quality of life	76.79	17.17	76.71	13.82	.028	0.314	76.11	14.37	78.41	18.42	-0.677	0.231
Physical health	20.25	5.02	20.29	3.69	-.056	0.122	20.41	4.17	19.90	5.02	0.535	0.208
Psychological health	19.13	4.71	19.08	4.81	.057	0.325	19.01	4.43	19.34	5.52	-.319	0.091
Community relations	9.32	2.67	9.51	2.52	-.370	0.966	9.24	2.49	9.86	2.82	-1.099	0.294
Social environment	24.98	5.80	24.63	4.28	.352	0.235	24.52	4.74	25.55	5.94	-0.926	0.321

Table 4 compares the variables of job burnout, empathy, and quality of life and their subcategories based on the students' education levels and native status. There was no significant difference between externs and interns in any variable (*P*> 0.05). There was also no significant difference between native and non-native students in any variable (*P*> 0.05).

Table 4. Comparing the variables of job burnout, empathy, and quality of life and their subcategories

Variable	Level of education				t	P	Native status				t	P
	Extern		Intern				Native		Non-native			
	Mean	SD	Mean	SD			Mean	SD	Mean	SD		
Burnout	65.44	7.91	65.08	11.95	0.167	0.281	64.18	10.54	66.42	10.60	-1.077	0.846
Emotional exhaustion	25.97	5.71	25.91	6.29	0.054	0.786	25.45	5.99	26.50	6.14	-0.884	0.731
Depersonalization problems	12.33	2.69	12.40	3.79	-0.096	0.162	12.09	3.32	12.71	3.51	-0.924	0.900
Lack of personal success	24.03	4.30	23.71	5.16	0.323	0.728	23.70	4.99	23.98	4.70	-0.296	0.808
Empathy	33.05	3.63	33.60	5.24	-0.575	0.442	33.27	5.44	33.54	3.68	-0.295	0.286
Quality of life	74.62	14.26	78.03	16.24	-1.086	0.862	77.39	15.97	76.00	15.16	0.454	0.786
Physical health	19.79	4.09	20.55	4.59	-0.850	0.809	20.18	4.56	20.37	4.26	-0.226	0.550
Psychological health	18.36	5.04	19.55	4.52	-1.249	0.303	19.11	4.88	19.10	4.61	0.003	0.749
Community relations	8.97	2.12	9.68	2.82	-1.344	0.113	9.80	2.45	8.96	2.71	1.673	0.640
Social environment	24.82	4.49	24.80	5.45	0.020	0.322	25.18	4.96	24.37	5.27	0.801	0.730

Discussion

This study evaluated the relationship between the three variables of job burnout, clinical empathy, and quality of life among medical students of the Pediatrics Department of Mashhad University of Medical Sciences in April 2023. According to the results, 64.4% of the students had moderate job burnout, and 24% had severe job burnout. Among medical students, 84.6 and 56.7% moderately suffered from emotional exhaustion and depersonalization problems, respectively, and 75% had moderate levels of personal success. There was an inverse relationship between clinical empathy and job burnout. The average job burnout in female students was higher than in male students.

One of the main variables investigated in this study was clinical empathy. The mean score of clinical empathy among medical students was approximately 33 out of the maximum score of 50. This score, which is ideally slightly higher than half of the clinical empathy score, indicates that medical students' situation is not satisfactory in terms of clinical empathy. This issue has been confirmed in various studies.

A similar study conducted by Bigdeli et al. on medical students of the Iran University of Medical Sciences in Tehran- Iran showed a significantly negative association between empathy and occupational burnout. They also found a negative association between quality of life and occupational burnout, which was not shown in the present study (21). Sathaporn et al. in Thailand found below-average empathy scores among more than half of clinical-year medical students. About 63.5 and 39.7% of medical students had a high level of emotional exhaustion and depersonalization scores, respectively. They detected a statistically significant difference between job burnout (emotional exhaustion and depersonalization) and empathy scores (22). Wu et al. in China showed that medical students' empathy negatively and significantly predicted learning burnout; their empathy positively predicted mental resilience, and their resilience negatively predicted learning burnout. They also showed that resilience partially mediated the relationship between empathy and learning burnout of medical students and highlighted the mediating role of resilience in the effect of empathy on learning burnout of medical college students (23). A systematic review and meta-analysis by Almutairi et al. evaluated the prevalence of burnout among medical students and showed an overall prevalence rate of 37.23%. The prevalence rates of emotional exhaustion, depersonalization, and personal accomplishment were 38.08, 35.07, and 37.23%, respectively (24). Similarly, in another study by Shadid et al. 77% of the students had severe job burnout (25). Cecil et al. showed that 55% of medical students had high levels of emotional exhaustion, 34% had depersonalization problems, and 46.6% had low levels of personal success. Factors affecting mental disorders have been reported to be female gender, years of education, and lack of physical activity (26). Kilic et al. found that two academic burnout domains (emotional exhaustion and cynicism) significantly changed according to the study year. Cynicism increased as the academic years progressed, and emotional exhaustion peaked at the critical graduation moments during the academic curriculum. Overall, women presented higher academic burnout traits than men, but univariate analysis revealed that they especially displayed higher emotional exhaustion. Hierarchical regression analyses showed that perceived stress, cognitive empathy, and perceived social support were significant predictors of academic burnout. They found that perceived stress was a major predictor of academic burnout (27). Changes in the levels of health and perceived stress were examined in a recent study by McKerrow et al. the results showed that first-year students had a higher level of health but eventually graduated with high perceived stress (28).

The well-being and mental health of medical students is of great interest to researchers because of its impact on patient care. Unfortunately, a high prevalence of depression symptoms and suicidal ideation has been reported among medical students in North America and around the world (29).

An important point is the need to pay attention to the quality of life of students during their studies. Creating conditions to improve quality of life could have positive effects on improving learning and patient care. Evidence shows that there is a direct association between health-related quality of life and students' academic success. Academic success is an indicator of a student's learning, which could also predict a student's professional competence (30). This study had some

limitations. The cross-sectional nature of the study and lack of longitudinal evaluation of the variables is one of the limitations. The lack of evaluating the socio-economic status of the students and other confounding factors is another limitation.

Also, the sample used in this study was small, limiting the generalizability of the findings. It is suggested that future studies be conducted with larger sample sizes to identify effective factors in reducing job burnout and improving the quality of life and clinical empathy of medical students to design and develop effective strategies and interventions.

Conclusion

The burnout rate among externs and interns seems to be quite high. Considering the inverse relationship between clinical empathy and job burnout, reducing job burnout could be an effective solution to improve clinical empathy.

Conflict of Interest

The authors declare no conflict of interest.

Funding

No funding

Ethical Considerations

This research was approved by the Ethics Committee of the Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Informed consent was obtained from the participants.

Code of Ethics

IR.MUMS.IRH.REC.1402.0211

Authors' Contributions

Study concept and design: Z.CH, data collection: A.N, data analysis and interpretation: A.N, drafting of the manuscript: E.D, critical revision of the manuscript for important intellectual content: Z.CH and E.D, statistical analysis: Z.CH, administrative, technical, and material support: E.D and Z.S, study supervision: Z.CH.

References

1. Maslach C, Jackson SE, Leiter MP. MBI: The Maslach Burnout Inventory manual. 3rd ed. Palo Alto, CA: Consulting Psychologists Press; 1996.
2. Maslach C, Leiter MP. The burnout challenge: Managing people's relationships with their jobs. Harvard: Harvard University Press; 2022.
3. Rosales-Ricardo Y, Rizzo-Chunga F, Mocha-Bonilla J, Ferreira JP. Prevalence of burnout syndrome in university students: A systematic review. Salud Mental 2021; 44(2): 91-102.
4. Ranasinghe PD, Owusu JT, Bertram A, Michtalik H, Yeh HC, Cofrancesco Jr J, et al. Depressive symptoms and burnout among medical students: a prospective study. J Gen Intern Med 2022; 37(1): 64-9.
5. Wachholtz A, Rogoff M. The relationship between spirituality and burnout among medical students. J Contemp Med Educ 2013; 1(2): 83-91.
6. Krishnasamy C, Ong SY, Loo ME, Thistlethwaite J. How does medical education affect empathy and compassion in medical students? A meta-ethnography: BEME Guide No. 57. Med Teach 2019; 41(11): 1220-31.
7. Dyrbye LN, Lipscomb W, Thibault G. Redesigning the learning environment to promote learner well-being and professional development. Acad Med 2020; 95(5): 674-8.
8. Calloway-Thomas C. Empathy in the global world: An intercultural perspective. Newcastle: Sage; 2010.
9. Ventura S. Empathy: Advanced research and applications. Croatia: IntechOpen; 2023.
10. Olaisen RH, Schluchter MD, Flocke SA, Smyth KA, Koroukian SM, Stange KC. Assessing the longitudinal impact of physician-patient relationship on functional health. Ann Fam Med 2020; 18(5): 422-9.
11. Bouma HK. Is empathy necessary for the practice of "good" medicine. Open Ethics J 2008; 2(1): 1-12.
12. Yue Z, Qin Y, Li Y, Wang J, Nicholas S, Maitland E, et al. Empathy and burnout in medical staff: Mediating role of job satisfaction and job commitment. BMC Public Health 2022; 22(1): 1033.
13. de Moraes MG, Hirota VB, Verardi CE. The relationship between burnout and quality of life. Cad Pós Grad Distúrb Desenvolv 2019; 19(1): 51-64.
14. Wang QQ, Lv WJ, Qian RL, Zhang YH. Job burnout and quality of working life among Chinese nurses: A cross-sectional study. J Nurs Manag 2019; 27(8): 1835-44.
15. World Health Organization. The world Health organization quality of life (WHOQOL), 2012. [cited 2012]. Available from: URL: https://www.who. int/publications/i/item/WHO-HIS-HSI-Rev.
16. Shariat SV, Eshtad E, Ansari S. Empathy and its correlates in Iranian physicians: A preliminary psychometric study of the Jefferson Scale of Physician Empathy. Med Teach 2010; 32(10): e417-21.
17. Nejat S, Montazeri A, Holakouie Naieni K, Mohammad K, Majdzadeh S. The World Health Organization Quality of Life (WHOQOL-BREF) questionnaire: Translation and validation study of the Iranian version. J Sch Public Health Inst Public Health Res 2006; 4(4): 1-12.
18. Akkasheh G, Sepehrmanesh Z, Ahmadvand A. [Prevalence of burnout in senior medical students of Kashan University of Medical Sciences in 2008]. Qom University of Medical Sciences journal 2010; 4(3): 37-41. (Persian)

19. Krejcie RV, Morgan DW. Determining sample size for research activities. Educ Psychol Meas 1970; 30(3): 607-10.
20. von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies. Lancet 2007; 370(9596): 1453-7.
21. Bigdeli S, Arabshahi SK, Zazoly AZ, Norouzi A, Yazd NA, Hosseini AF. Empathy, quality of life, and occupational burnout among medical students. Res Dev Med Educ 2021; 10(1): 21.
22. Sathaporn K, Pitanupong J. Factors associated with the improvement of the empathy levels among clinical-year medical students in Southern Thailand: A university-based cross-sectional study. BMC Psychol 2022; 10(1): 128.
23. Wu W, Ma X, Liu Y, Qi Q, Guo Z, Li S, et al. Empathy alleviates the learning burnout of medical college students through enhancing resilience. BMC Med Educ 2022; 22(1): 481.
24. Almutairi H, Alsubaiei A, Abduljawad S, Alshatti A, Fekih-Romdhane F, Husni M, et al. Prevalence of burnout in medical students: A systematic review and meta-analysis. Int J Soc Psychiatry 2022; 68(6): 1157-70.
25. Shadid A, Shadid AM, Shadid A, Almutairi FE, Almotairi KE, Aldarwish T, et al. Stress, burnout, and associated risk factors in medical students. Cureus 2020; 12(1): e6633.
26. Cecil J, McHale C, Hart J, Laidlaw A. Behaviour and burnout in medical students. Med Educ Online 2014; 19(1): 25209.
27. Kilic R, Nasello JA, Melchior V, Triffaux JM. Academic burnout among medical students: Respective importance of risk and protective factors. Public Health 2021; 198: 187-95.
28. McKerrow I, Carney PA, Caretta-Weyer H, Furnari M, Miller Juve A. Trends in medical students' stress, physical, and emotional health throughout training. Med Educ Online 2020; 25(1): 1709278.
29. Damião Neto A, Lucchetti AL, da Silva Ezequiel O, Lucchetti G. Effects of a required large-group mindfulness meditation course on first-year medical students' mental health and quality of life: A randomized controlled trial. J Gen Intern Med 2020; 35: 672-8.
30. Sarwar S, Aleem A, Nadeem MA. Health related quality of life (HRQOL) and its correlation with academic performance of medical students. Pak J Med Sci 2019; 35(1): 266-70.