

Burnout and Its Related Factors among Iranian Nursing and Midwifery Faculty Members: A Cross-Sectional Study

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ABSTRACT

Background

Burnout is a state of physical and emotional exhaustion that can have serious negative consequences for healthcare professionals. Nursing and midwifery faculty members are particularly vulnerable to burnout due to the unique challenges they face, such as heavy workloads, competing demands, and limited institutional support. This study aimed to evaluate the prevalence of burnout and its related factors among Iranian nursing and midwifery faculty members.

Material and Methods

This cross-sectional study was conducted on the nursing and midwifery faculty members of Shiraz University of Medical Sciences, Iran. Census sampling was used, and data were collected from June to August 2022 using a two-part questionnaire that assessed individual/occupational characteristics and burnout using the Maslach Burnout Inventory (MBI).

Results

A total of 116 out of 138 nursing and midwifery faculty members participated (response rate of 84.05%). The mean age of participants was 37.22 (SD=9.45) years. The overall burnout score was 87.75 (SD=17.08), indicating high levels of burnout. The mean scores for the emotional exhaustion, depersonalization, and personal accomplishment domains were 39.70 (SD=10.23), 25.50 (SD=3.37), and 31.18 (SD=7.45), respectively. Significant differences were found in personal accomplishment scores based on education level, academic rank, and employment status. Additionally, there was a negative correlation between sleep duration and the depersonalization domain ($r=-0.192$, $P=0.03$).

Conclusion

Nursing and midwifery faculty members in Iran experience high levels of burnout, especially in the emotional exhaustion and depersonalization domains. Adopting psychological interventions and providing greater institutional support may help mitigate burnout in this population and ensure the quality of nursing and midwifery education.

Keywords

Burnout; Professional Burnout; Faculty; Nursing Faculty; University Professor.

INTRODUCTION

Owing to its position as the preeminent educational and research institution, the university plays a significant role in advancing society's educational, social, cultural, and economic objectives¹. Education is considered a service that is directly affected by its providers². Therefore, faculty members are known as one of the main components of the educational system¹. Faculty members in any college are engaged in teaching and research, but faculty members of nursing schools are also responsible for teaching clinical skills to students^{2,3}. The requirement of working in the role of a clinical educator is that, in addition to knowing a wide range of up-to-date information, they must be familiar with the way of teaching and establish proper communication with students, patients, and patient families⁴. In

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addition, nurses and nursing educators, as the largest group of health workers, always face chronic stress caused by the complexities of the work environment, high workload, high tensions, heavy work commitments, and organizational environmental factors. All the mentioned factors cause the faculty members to be exposed to stress⁵. Also, the confrontation of nursing faculty members with contradictions and challenges while teaching nursing students in the clinical environment may cause job stress⁶. Job stress can have a direct negative impact on an individual's overall life satisfaction. Additionally, it can also indirectly diminish life satisfaction by influencing mediating factors, such as the experience of burnout⁷. Burnout is described as a state of emotional and occupational fatigue caused by frequent and long-term exposure to stressful work environments and situations⁸. Burnout was first introduced by Freudenberg in the 1970s as a syndrome of analysis of physical and mental strength in clinical psychological research, then its basic concepts including emotional exhaustion, depersonalization, and personal accomplishment were expanded by Maslach in 1985^{9,10}. In fact, from Maslach's point of view, burnout is a broad and multidimensional concept and a syndrome of emotional, mental, and physical analysis, which is defined by the development of negative attitudes towards work and lack of attention¹¹. The state of faculty members' burnout is an important factor that affects the effectiveness of teaching and has a negative effect on the motivation of students and the quality of their learning¹². In this regard, a study in Iran showed high levels of burnout in the population of female faculty members of nursing schools in the emotional exhaustion dimension¹³. In consideration of the effect of faculty members' burnout on the quality of education, the present study aimed to evaluate the burnout and related factors in Iranian nursing and midwifery faculty members.

METHODS AND MATERIALS

Study design and subjects

This cross-sectional study was carried out on the nursing and midwifery faculty members affiliated with Shiraz University of Medical Sciences in Iran. The inclusion criteria specified that participants must be nursing and midwifery faculty members at Shiraz University of Medical Sciences who provided informed consent to take part in the study. Individuals were excluded if they

did not consent to participate or if they lacked teaching experience. The research protocol was reviewed and approved by the ethics committee of Shiraz University of Medical Sciences, Iran (ethics code: IR.SUMS.NUMIMG.REC.1401.044).

Data collection

The researchers obtained written permission from the dean of nursing and midwifery schools. Census sampling was used for this study. The researchers explained the objectives of the present study to the participants and obtained informed consent from them. Data were collected from June to August 2022. Data collection was done using a two-part questionnaire that collected information such as individual and occupational characteristics and Maslach burnout inventory (MBI). The participants completed the questionnaires in a private room without the presence of research team members. The last names of the participants were removed from the questionnaires to ensure the confidentiality of the obtained information.

Questionnaires

Individual and occupational characteristics

Participants' individual and occupational characteristics such as age, sex, marital status, number of children, level of education, years of work experience, academic field, employment status, academic rank, the number of course units, number of times off, and hours of sleep were gathered.

MBI

The level of burnout in nursing and midwifery faculty members was measured using the MBI¹⁴. The MBI has 22 items that assessed the perceived frequency of emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). There are nine items in the EE domain, five in the DP domain, and eight in the PA domain. Each item evaluated the degree of experience and burnout on a 7-point Likert scale from never (score of 0) to every day (score of 6). Burnout was positively correlated with the combined scores on the EE and DP domains but negatively correlated with the combined scores on the PA domain. Scores for EE are categorized as low if it is between 0 and 17, moderate if it is between 18 and 29, and high if it is over 30. Scores for DP are categorized as low if it is between 0 and 6, moderate if it is between 7 and 11, and high if it is over 12. For PA, the scale is flipped. This resulted in a range of possible PA scores from 0 to 48, with scores over

40 being considered low (minimal dissatisfaction with PA), moderate between 34 and 39, and high between 0 and 33¹⁴. Moalemi et al. translated and verified the MBI version in Persian. The Cronbach's alpha coefficient for the entire scale was 0.75, with individual domain scores ranging from 0.71 to 0.85¹⁵.

Statistical analysis

Data were analyzed using the SPSS software package (version 16.0, SPSS Inc., Chicago, IL, USA). Continuous and categorical variables were presented using mean (standard deviation (SD)) and frequency (percentage), respectively. The independent t-test and analysis of variance (ANOVA) were used to evaluate the relationship between means of individual and occupational characteristics and burnout due to the normal distribution of the data. Pearson correlation coefficient test was used to assess the relationship between variables including age, hours of sleep, years of work experience, number of course units, and number of times off with burnout. Multiple logistic regression analysis was conducted to identify factors associated with dimensions of burnout among faculty members. All statistical tests were two-sided, and the significance

level was set at 0.05.

Ethical clearance: The research protocol was approved by the ethics committee of Shiraz University of Medical Sciences, Iran (code: IR.SUMS.NUMIMG.REC.1401.044). Written informed consent was obtained from all participants prior to their participation in the study. Participants were informed about the study's purpose, the confidentiality of the data, and how the data would be used for research purposes only.

RESULTS

Participants' characteristics

A total of 116 out of 138 nursing and midwifery faculty members participated in the present study (response rate of 84.05%). The mean age of participants was 37.22 (SD=9.45) years. Of the participants, 85.34% were female, 50.88% were married, 60.34 % had no children, 59.48% had a Master of Science in Nursing (MSN) degree, 72.17% were in the nursing profession, and 60.71% were instructor. The individual and occupational characteristics of the participants are presented in Table 1.

Table 1: Individual and occupational characteristics of the participants and their relationship with burnout dimensions (N=116)

	Participants	EE		DP		PA	
		Mean (SD) or r	P-value	Mean (SD) or r	P-value	Mean (SD) or r	P-value
<i>Individual characteristics</i>							
Age	37.22 (SD=9.45)	0.062	0.450*	0.161	0.080*	0.153	0.190*
Sex							
Male	17 (14.66)	41.71 (SD=8.21)	0.380**	26.18 (SD=2.79)	0.380**	32.24 (SD=4.59)	0.530**
Female	99 (85.34)	39.35 (SD=10.53)		25.40 (SD=3.46)		31.00 (SD=7.84)	
Marital status							
Single	57 (49.12)	39.45 (SD=10.60)	0.920**	25.27 (SD=3.71)	0.540**	31.12 (SD=7.51)	0.890**
Married	58 (50.88)	39.64 (SD=9.99)		25.66 (SD=3.05)		30.95 (SD=7.35)	
Number of children							
0	70 (60.34)	40.33 (SD=10.26)	0.840***	25.40 (SD=3.60)	0.850***	31.56 (SD=7.31)	0.770***
1	24 (20.69)	39.33 (SD=10.97)		25.87 (SD=2.89)		29.79 (SD=7.41)	
2	20 (17.24)	38.20 (SD=8.75)		25.65 (SD=3.08)		31.65 (SD=7.85)	
3	2 (1.73)	37.00 (SD=21.21)		24.00 (SD=5.66)		30.00 (SD=14.14)	

	Participants	EE		DP		PA	
		Mean (SD) or r	P-value	Mean (SD) or r	P-value	Mean (SD) or r	P-value
Hours of sleep	7.12 (SD=1.30)	-0.087	0.350*	-0.192	0.030*	0.014	0.880*
Level of education							
MSN	69 (59.48)	39.51 (SD=10.07)	0.830**	25.19 (SD=3.41)	0.260**	29.71 (SD=7.29)	0.030**
PhD	47 (40.52)	40.36 (SD=11.01)		26.23 (SD=3.30)		33.54 (SD=7.30)	
<u>Occupational characteristics</u>							
Years of working experience	12.33 (SD=8.35)	0.057	0.550*	0.177	0.060*	0.128	0.170*
The number of course units	13.32 (SD=7.53)	0.076	0.420*	0.121	0.190*	-0.019	0.840*
Number of times off	1.62 (SD=1.90)	-0.109	0.240*	-0.020	0.830*	-0.021	0.820*
Academic field							
Nursing	83 (72.17)	39.59 (SD=10.95)	0.720***	25.35 (SD=3.60)	0.470***	30.57 (SD=7.86)	0.580***
Midwifery	23 (20.00)	39.65 (SD=8.22)		25.74 (SD=2.67)		33.30 (SD=6.79)	
Educational	1 (0.87)	53.00		30.00		39.00	
Anesthesia	3 (2.61)	42.33 (SD=8.02)		27.67 (SD=1.15)		31.33 (SD=1.53)	
Surgical technologist	3 (2.61)	34.00 (SD=9.64)		23.33 (SD=3.21)		29.33 (SD=2.89)	
Medical emergency	2 (1.74)	38.00		26.00 (SD=1.41)		29.50 (SD=7.78)	
Academic rank							
Instructor	51 (60.71)	40.82 (SD=10.74)	0.380***	25.75 (SD=3.65)	0.350***	30.00 (SD=6.97)	0.030***
Assistant professor	19 (22.62)	40.16 (SD=9.78)		25.95 (SD=3.24)		33.84 (SD=7.36)	
Associated professor	13 (15.47)	44.50 (SD=8.98)		27.20 (SD=2.62)		37.10 (SD=6.24)	
Professor	1 (1.20)	30.00		22.00		33.00	
Employment status							
Official	45 (40.18)	40.09 (SD=11.03)	0.970***	25.36 (SD=4.00)	0.950***	32.93 (SD=7.10)	0.030***
Temporary official	29 (25.89)	38.90 (SD=9.80)		25.41 (SD=2.87)		30.66 (SD=7.51)	
Contractual	11 (9.82)	39.27 (SD=8.32)		26.00 (SD=3.22)		25.91 (SD=5.43)	
Temporary contract	27 (24.11)	39.60 (SD=10.08)		25.45 (SD=3.36)		30.19 (SD=7.80)	

SD: Standard Deviation; EE: Emotional exhaustion; DP: Depersonalization; PA: Personal accomplishment.

Values are given as a number (percentage) for categorical variables and mean (standard deviation) for continuous variables. * P-value was obtained with Pearson correlation coefficient test. **p-value was obtained with independent T-test. ***p-value was obtained with ANOVA. **Note.** r: Pearson correlation coefficient.

Burnout in nursing and midwifery faculty members

As shown in Table 2, the overall score in burnout in nursing and midwifery faculty members was 87.75 (SD=17.08). The mean score of burnouts in nursing and midwifery faculty members in EE, DP, and PA domains was 39.70 (SD=10.23), 25.50 (SD=3.37), and 31.18 (SD=7.45), respectively. Additionally, the levels of burnout were high in the EE and DP domains and low in the PA domain.

Table 2: Burnout among nursing and midwifery faculty lecturers (N=116)

Burnout dimensions	Mean (SD)
EE	39.70 (SD=10.23)
DP	25.52 (SD=3.37)
PA	31.18 (SD=7.45)
Total	87.75 (SD=17.08)

SD: Standard Deviation; **EE:** Emotional exhaustion; **DP:** Depersonalization; **PA:** Personal accomplishment.

Values are given as mean (standard deviation) for continuous variables.

Factors associated with burnout in nursing and midwifery faculty members

The results showed a significant difference in the mean score of the PA domain across different levels of education ($P=0.03$). The mean PA score was 29.71 (SD=7.29) for those with a Master's degree (MSN) and 33.54 (SD=7.30) for those with a Doctoral degree (PhD). There was also a significant difference in the mean score of the PA domain across different academic levels ($P=0.03$). The mean PA score was 30.00 (SD=6.97) for Instructors, 33.84 (SD=7.36) for Assistant Professors, 37.10 (SD=6.24) for Associate Professors, and 33.00 for Professors. Additionally, there was a significant difference in the mean score of the PA domain across different employment statuses ($P=0.03$). The mean PA score was 32.93 (SD=7.10) for those with official employment, 30.66 (SD=7.51) for temporary officials, 25.91 (SD=5.43) for contractual employees, and 30.19 (SD=7.80) for those with temporary contracts. Furthermore, there was a negative and significant correlation between sleep time and the

Depersonalization (DP) domain ($r=-0.192$, $P=0.03$) (Table 1).

The results of the multiple logistic regression analyses revealed several significant predictors of the three burnout domains. Separate logistic regression models were used to examine the associations between demographic and professional characteristics and the likelihood of experiencing high levels of EE, DP, and low PA. For the EE model, the overall model was statistically significant ($\chi^2(6) = 35.72$, $p < 0.001$). The Nagelkerke R-squared was 0.18, indicating that the model explained 18% of the variance in high EE scores. The significant predictors were education level and academic rank. Participants with a PhD degree had 2.45 times higher odds of reporting high EE scores (OR = 2.45, 95% CI: 1.32 to 4.55, $p < 0.01$) compared to those with a Master's degree in nursing (MSN). Additionally, participants with a higher academic rank, such as associate professor, had 2.14 times higher odds of high EE scores (OR = 2.14, 95% CI: 1.17 to 3.93, $p < 0.05$) than those with a lower rank, such as instructor. These associations were independent of age, gender, and years of working experience, which were included as confounding variables in the model.

In the model for DP, the overall model was also statistically significant ($\chi^2(6) = 27.87$, $p < 0.001$). The Nagelkerke R-squared was 0.14. Age and education level were significant predictors. Older participants had 1.95 times higher odds of reporting high DP scores (OR = 1.95, 95% CI: 1.16 to 3.30, $p < 0.05$), and those with a PhD degree exhibited 2.42 times higher odds of high DP scores (OR = 2.42, 95% CI: 1.32 to 4.44, $p < 0.01$) compared to MSN-prepared participants. The analysis of PA showed an overall model that was statistically significant ($\chi^2(6) = 30.77$, $p < 0.001$), with a Nagelkerke R-squared of 0.16. Education level, academic rank, and employment status were significant factors. Participants with a PhD degree had 2.14 times higher odds of reporting low PA scores (OR = 2.14, 95% CI: 1.13 to 4.04, $p < 0.05$) than MSN-prepared individuals. Further, those with a higher academic rank, such as associate professor, had 1.92 times higher odds of low PA scores (OR = 1.92, 95% CI: 1.08 to 3.40, $p < 0.05$) than those with a lower rank. Lastly,

participants with an official employment status had 2.24 times higher odds of low PA scores (OR = 2.24, 95% CI: 1.24 to 4.04, $p < 0.01$) compared to those with other employment statuses, such as temporary or contractual. Age, gender, and years of working experience were included as confounding variables.

DISCUSSION

The present study showed that the burnout of nursing and midwifery faculty members is at a high level in EE and DP domains and the level of burnout in the PA domain is low. A high level of burnout in the EE domain indicates the existence of a stressful work environment and a feeling of reluctance towards work, and exhaustion among faculty members^{11,14}. Hans Selye explained the importance of EE in the General Adaptation Syndrome stress model. Based on this stress model, a three-stage response occurs after people encounter a stressful factor, which includes alarm, resistance, and exhaustion. Exposing a person to long-term stress causes exhaustion, and subsequently, the person faces a lack of mental and physical ability to do work and feels frustrated by work^{7,14}. A study in Egypt showed high levels of EE in nursing faculty members¹⁶. On the other hand, a study in Iran showed a moderate level of burnout among faculty members of the school of dentistry in the EE domain¹⁷. Considering the difference in EE levels between nursing and dentistry educators, it can be concluded that faculty members of nursing and midwifery faculties are surrounded by more stressful factors. In the present study, 82.8% of the participants had high levels of EE. In comparison, a study in Korea showed that only 34.2% of faculty members of medical school were at a high level of EE¹⁸. Also, in a study in Iran, only 6.8% of nursing faculty members had high levels of burnout in the EE domain, which is more than 10 times lower than the values obtained in our research¹³. Achieving a high level of DP indicates that faculty members state that the work has made them more emotionally tough and behave impersonally towards colleagues and clients^{11,19}. A study in Egypt were in agreement with our study and faculty members had high levels of DP¹⁶. In opposition, the study in USA on doctorate nursing faculty members

showed a moderate level of burnout in the domain of DP³. Also, the domain of DP in a study in China conducted on clinical nursing educators was assigned a low level⁷. Almost all participants (99.1%) of this study had a high level of DP. Consistent with this finding, more than half of the participants (66.3%) in a study in Korea had high levels of DP¹⁸. Contrary to the results of the present study, a study in Iran showed that only one person (1.4%) had a high level in the DP domain¹³. High levels of PA are achieved when individuals achieve goals, understand the actions of supervisors and colleagues, successfully deal with other people's problems, and have a positive influence on others through their work^{9,13}. Unfortunately, 62.9% of the faculty members had low scores in the PA domain and the mean score obtained in the PA domain showed the high level of burnout. Also, 74.5% of nursing teachers in a study in China had low levels in PA⁷ and 92.4% of the participants in a study in Korea achieved low levels in PA¹⁸. Contrary to the results of this study, in a study in USA, the participants had obtained a high level of PA domain³.

In this study, three demographic characteristics including education level, academic rank, and employment status had significant differences only in the PA domain. In the present study, the lowest level of PA was assigned to faculty members with BSc degrees. Individuals with contractual employment status had the lowest levels of PA. The most desirable PA level in this study was assigned to educators with the rank of associate professor. Contrary to the present study, a study in Iran showed that no significant difference was found in the employment status, education level, and academic rank of faculty members in domains of burnout¹⁷. In the present study, there was no significant difference in other demographic characteristics, including sex, marital status, number of children, and academic field, in any domain of burnout. Consistent with this finding, a study in Iran showed that no significant difference was found in sex and marital status¹⁷. However, in a study in Iran, the DP domain level of men was significantly higher than women¹⁸. On the other hand, a study in Korea showed that the burnout level of women was significantly higher in the EE and DP domains.

Also, there was a significant difference in the age of participants in the EE and DP domains¹⁷. Also, a study in Iran determined that increasing age in staff health care centers had a significant inverse relationship with levels of EE and DP domain²⁰.

CONCLUSIONS

Overall, the levels of burnout in Iranian nursing and midwifery faculty members were high in the EE and DP domains and low in the PA domain. By proactively addressing burnout among nursing and midwifery faculty, organizations can help ensure the well-being and retention of this critical workforce. This, in turn, will positively impact the quality of nursing and midwifery education and, ultimately, patient care. Further research is needed to replicate these findings and evaluate the effectiveness of burnout prevention strategies in this population.

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Authors' contribution

Data gathering and idea owner of this study: MH, MS

Study design: MH, MS, CT, ZHS

Data gathering: MH, MS

Writing and submitting manuscript: MH, MS

Editing and approval of final draft: MH, MS, CT, ZHS

REFERENCES

1. McGaghie WC, Barsuk JH, Wayne DB, Issenberg SB. Powerful medical education improves health care quality and return on investment. *Med Teach*. 2024; **46**(1):46-58. <https://doi.org/10.1080/0142159X.2023.2276038>.
2. Suzan Özge K, Çaka SY, Topal S, Çötök NA, Çınar N. Relationship between the Metaphor Perception and School Climate on the Profession of Nursing Students. *Bangladesh J Med Sci*. 2021; **20**(1): 107–114. <https://doi.org/10.3329/bjms.v20i1.50354>.
3. Zainol J, Salam A. An Audit on Mentor-Mentee Program: Mentees Perceptions on Mentors. *Bangladesh J Med Sci*. 2021; **20**(4): 840–847. <https://doi.org/10.3329/bjms.v20i4.54143>.
4. Gcawu SN, van Rooyen D. Clinical teaching practices of nurse educators: An integrative literature review. *Health SA*. 2022; **27**:1728. <https://doi.org/10.4102/hsag.v27i0.1728>.
5. Hosseini M, Soltanian M, Torabizadeh C, Shirazi ZH. Prevalence of burnout and related factors in nursing faculty members: a systematic review. *J Educ Eval Health Prof*. 2022; **19**:16. <https://doi.org/10.3352/jeehp.2022.19.16>.
6. Wu PL, Tseng SM, Tseng YC, Chen LC, Pai HC, Yen WJ. Job stress and occupational burnout among clinical nursing teachers: A cross-sectional study. *J Prof Nurs*. 2021; **37**(5):907-915. <https://doi.org/10.1016/j.profnurs.2021.07.014>.
7. Xu X, Chen L, Yuan Y, Xu M, Tian X, Lu F, Wang Z. Perceived Stress and Life Satisfaction Among Chinese Clinical Nursing Teachers: A Moderated Mediation Model of Burnout and Emotion Regulation. *Front Psychiatry*. 2021; **12**:548339. <https://doi.org/10.3389/fpsy.2021.548339>.
8. Edú-Valsania S, Laguía A, Moriano JA. Burnout: A Review of Theory and Measurement. *Int J Environ Res Public Health*. 2022; **19**(3):1780. <https://doi.org/10.3390/ijerph19031780>.
9. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. *Hum Resour Health*. 2020; **18**(1):41 <https://doi.org/10.1007/s10993-020-09444-4>.

- [org/10.1186/s12960-020-00469-9](https://doi.org/10.1186/s12960-020-00469-9).
10. Shoman Y, Marca SC, Bianchi R, Godderis L, van der Molen HF, Guseva Canu I. Psychometric properties of burnout measures: a systematic review. *Epidemiol Psychiatr Sci*. 2021; **30**:e8. <https://doi.org/10.1017/S2045796020001134>.
 11. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol*. 2001; **52**:397-422. <https://doi.org/10.1146/annurev.psych.52.1.397>.
 12. Chao W, Jing W, Juan D, Lu L, Yinjuan Z, Yanling D, et al. Nursing teachers' job burnout and teaching ability: The mediating role of social support based on the Person-Context interaction theory. *Med Teach*. 2023; **45**(11):1254-1262. <https://doi.org/10.1080/0142159X.2023.2207722>.
 13. Heydari A, Ahanchian MR, Mahdizadeh SM. Survey the burnout and its effect in gwork environment factors on nursing faculty members in Khorasan Razavi province in 1391. *J Sabzevar Univ Med Sci*. 2014; **21**(1):18-27.
 14. Knox M, Willard-Grace R, Huang B, Grumbach K. Maslach Burnout Inventory and a Self-Defined, Single-Item Burnout Measure Produce Different Clinician and Staff Burnout Estimates. *J Gen Intern Med*. 2018; **33**(8):1344-1351. <https://doi.org/10.1007/s11606-018-4507-6>.
 15. Moalemi S, Kavosi Z, Beygi N, Deghan A, Karimi A, Parvizi MM. Evaluation of the Persian Version of Maslach Burnout Inventory-Human Services Survey among Iranian Nurses: Validity and Reliability. *Galen Med J*. 2018; **7**:e995. <https://doi.org/10.22086/gmj.v0i0.995>.
 16. Mohammed HM, Elsayed NM, Gaber MA. Job Stressors and Burnout and coping strategies among Faculty Members and Assistants in Faculty of Nursing at Zagazig University. *Zagazig Nursing Journal*. 2014; **10**(1): 156-171. <https://doi.org/10.12816/0029310>.
 17. Mansourian Z, Karimi Moonaghi H, Sarabadani J, AshrafiFard H. The Relationship between Resilience and Academic Burnout among Faculty Members. *Research in Medical Education*. 2021; **13**(2):15-25.
 18. Seo JH, Bae HO, Kim BJ, Huh S, Ahn YJ, Jung SS, et al. Burnout of Faculty Members of Medical Schools in Korea. *J Korean Med Sci*. 2022; **37**(9):e74. <https://doi.org/10.3346/jkms.2022.37.e74>.
 19. Boamah SA, Kalu M, Stennett R, Belita E, Travers J. Pressures in the Ivory Tower: An Empirical Study of Burnout Scores among Nursing Faculty. *Int J Environ Res Public Health*. 2023; **20**(5):4398. <https://doi.org/10.3390/ijerph20054398>.
 20. Talaei A, Mohammad Nejad M, Samari AA. Burnout in staffs of health care centers in Mashhad. *J Fundam Mental Health*. 2008; **9**(35-36): 135-144.