Surgical Nurses' Burnout and Empathy

Cerrahi Hemşirelerinde Tükenmişlik ve Empati

Sabahat Şahin¹, Sevim Akbal²

¹İstanbul Okan University, Institute of Graduate Education, Department of Nursing, İstanbul, Türkiye ²Trakya University Keşan Hakkı Yörük School of Health, Department of Nursing, Edirne, Türkiye

Cite this article as: Şahin S, Akbal S. The relationship between empathy and burnout: a study on surgical nurses. J Acad Res Nurs. 2025;11(1):20-6

ABSTRACT

Objective: This descriptive study investigated the relationship between surgical nurses' empathy and burnout levels.

Methods: The study was conducted between May and October 2021 in the surgical units of a training and research hospital in İstanbul. The sample consisted of 100 surgical nurses with at least six months of work experience. Data were collected face-to-face using a personal information form, the Maslach Burnout Inventory (MBI), and the Basic Empathy Scale (BES).

Results: Participants had a mean MBI "emotional exhaustion" subscale score of 31.44 ± 6.00 , indicating high levels of burnout. Participants with limited social lives due to adverse working conditions had a mean MBI "emotional exhaustion" subscale score of 32.58 ± 5.37 (p<0.05). Participants' MBI "depersonalization" subscale scores were negatively correlated with their BES total (r=-0.220) and "emotional empathy" subscale scores (r=-0.244) (p<0.05).

Conclusion: Surgical nurses with professional dissatisfaction, poor sleep quality, and limited sociability are likely to experience burnout. Surgical nurses who believe they are underpaid and viewed in a negative light by the public are also particularly susceptible to burnout.

Keywords: Nursing, burnout, empathy

ÖZ

Amaç: Bu araştırma cerrahi birimlerde çalışan hemşirelerde empati ve tükenmişlik düzeylerini ve bunlar arasındaki ilişkiyi değerlendirmek amacıyla gerçekleştirildi.

Yöntem: Araştırma, İstanbul'da bulunan bir eğitim araştırma hastanesinin cerrahi birimlerinde Mayıs-Ekim 2021 tarihleri arasında 100 hemşire ile tanımlayıcı olarak gerçekleştirildi. Çalışmaya dahil olma kriteri cerrahi birimlerde en az 6 ay çalışmış olmaktır. Veriler kişisel bilgi formu, Maslach Tükenmişlik Ölçeği (MBI) ve Temel Empati Ölçeği (BES) kullanılarak yüz yüze görüşme yöntemi ile toplandı.

Bulgular: Örneklem grubunun MBI "duygusal tükenme" düzeyi 31,44±6,00 olarak bulundu ve bu değer yüksek tükenmişlik değerini göstermektedir. Olumsuz çalışma koşulları nedeniyle sosyal yaşamları sınırlı olan katılımcıların ortalama MBI "duygusal tükenmişlik" alt ölçek puanı 32,58±5,37 idi (p<0,05). Hemşirelerin MBI "duyarsızlaşma" alt boyutu ile BES toplam puanı (r=-0,220) ve "duygusal empati" alt boyutu arasında (r=-0,244) negatif yönlü düşük düzeyde anlamlı bir ilişki olduğu tespit edildi (p<0,05).

Sonuç: Hemşirelerin tükenmişlik düzeylerini etkileyen faktörler incelendiğinde; mesleki memnuniyetsizlik, kötü uyku kalitesi, yetersiz gelir, sosyal yaşamın olumsuz etkilenmesi ve hemşirelik mesleğinin toplumsal imajının olumsuz algılanması, hem tükenmişlik düzeyiyle hem de düşük empati düzeyiyle ilişkili bulunmuştur.

Anahtar kelimeler: Hemşire, tükenmişlik, empati

ORCID IDs: SŞ. 0000-0002-4195-7920; SA.0000-0002-6216-2342



Corresponding Author: Sevim Akbal,

E-mail: sen.sevim13@gmail.com

Received Date: 15.01.2023 Accepted Date: 04.12.2024 Epub: 11.03.2025 Publication Date: 29.04.2025



INTRODUCTION

Nursing is a special profession because nurses touch human life. However, nursing is challenging as it takes a toll on physical and mental health due to professional responsibilities, shifts, long working hours, and heavy workloads. Therefore, nurses experience high levels of job stress and burnout (1-5).

Surgical nurses provide seamless and holistic care. They are responsible for preparing patients for surgery, monitoring them postoperatively, and intervening in emergencies ^(6,7). Surgical nurses work 8, 12, or 16-hour shifts without a break due to the high volume of patients. Dynamic, variable, and demanding working conditions make surgical nurses more susceptible to burnout ^(4,8).

Burnout comprises the components of emotional exhaustion, depersonalization, and reduced personal accomplishment ⁽⁹⁾. Surgical nurses play a critical role in postoperative care ⁽⁷⁾, the quality of which depends on how much burnout they may be experiencing ^(6,8).

Empathy, with its cognitive, emotional, and behavioral components, is understanding and sharing the experiences and emotions of others ⁽¹⁰⁾. The cognitive components refer to the ability to perceive and understand the communication and experiences of others. In contrast, the emotional components include emotional sensitivity and the ability to feel the emotions of others. The behavioral components is the ability to communicate and understand things from another person's perspective ⁽¹⁰⁻¹²⁾. Empathic sensitivity is innate but can be developed over time. In the nurse-patient relationship, empathy is critical because it enables nurses to understand their patients' experiences and emotions. Empathy is also associated with positive therapeutic outcomes, and its absence may contribute to burnout ⁽¹⁰⁻¹²⁾.

There is both a positive and negative relationship between burnout and empathy. Some studies show that empathy makes healthcare professionals susceptible to emotional exhaustion (13,14). Zenasni et al.(15) focused on the relationship between burnout and empathy in primary care and proposed three different hypotheses. First, clinicians experiencing burnout are less likely to have empathy for patients. Second, empathy causes burnout because one needs to use personal resources to develop empathy. Third, empathy protects clinicians from burnout. Impaired empathy may be a feature of burnout, but we cannot state that burnout is a feature of low empathy (14).

There is a large body of research on empathy and burnout experienced by nurses. However, only a few studies investigate the relationship between empathy and burnout in surgical nurses. Therefore, this study investigated the relationship between surgical nurses' empathy and burnout.

MATERIAL AND METHOD

This descriptive study investigated the relationship between empathy and burnout in surgical nurses. The study was conducted between May and October 2021 in the surgical units (neurosurgery, pediatric surgery, general surgery, orthopedics, urology, otolaryngology, and ophthalmology) of a training and research hospital in Istanbul. The sample consisted of 100 nurses with at least six months of work experience. All participants worked 12-hour day and night shifts.

Data were collected face-to-face using a personal information form, the Maslach Burnout Inventory (MBI), and the Basic Empathy Scale (BES).

Research Questions

What is the burnout level of surgical nurses?

What is the empathy level of surgical nurses?

Is there a relationship between burnout and empathy among surgical nurses?

Personal Information Form

The personal information form was based on a literature review conducted by the researchers ^(5,6,14-25). It consisted of items on socio-demographic and professional characteristics (Table 1).

MBI

The inventory was adapted to Turkish by Ergin $^{(16)}$. The inventory consists of 22 items and three subscales: Emotional exhaustion (9 items), reduced personal accomplishment (8 items), and depersonalization (5 items). The items are rated on a five-point Likert-type scale (0 to 4). The original "emotional exhaustion", "reduced personal accomplishment" and "depersonalization" subscales have Cronbach's alpha (α) values of 0.90, 0.79, and 0.71, respectively. In the present study, the "emotional exhaustion", "reduced personal accomplishment" and "depersonalization" subscales had Cronbach's alpha (α) values of 0.88, 0.82, and 0.82, respectively.

BES

BES was developed by Jolliffe and Farrington $^{(17)}$ and adapted to Turkish by, Topcu et al. $^{(18)}$. It is the latest instrument to assess both cognitive and emotional empathy levels in healthcare professionals. The scale consists of 20 items and two subscales: emotional empathy (α =0.76) and cognitive empathy (α =0.80). In the present study, the BES "emotional empathy" and "cognitive empathy" subscales had Cronbach's alpha values of 0.77 and 0.76, respectively. Higher scores indicate higher levels of basic empathy.

Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS for Windows, v. 22.0) at a significance level of 0.05. The Kolmogorov-Smirnov test was used for normality testing. The data were analyzed using the descriptive tests, Independent Samples t-test and one-way analysis of variance. Pearson's correlation coefficient was used to determine the relationship between scale scores.

Ethical Considerations

The study was approved by the Ethics Committee of Okan University (approval no.: 133, date: 17.02.2021). All nurses were



informed about the research purpose, procedure, confidentiality. They were briefed that participation was voluntary and that they could withdraw at any time. Also written consent was obtained from participation. The study adhered to the ethical principles outlined by the Declaration of Helsinki. Authorization was obtained from the developers of the scales.

RESULTS

Almost half of the participants were between the ages of 25 to 30 (48%). More than half of the participants were women (69%) (Table 1). Participants had a mean MBI "emotional exhaustion" subscale

Table 1. Socio-demographic Characte	eristics	
Age (years)	(n)	(%)
20-24	39	39.0
25-30	48	48.0
31-35	4	4.0
36-40	3	3.0
≥41	6	6.0
Gender		
Man	31	31.0
Woman	69	69.0
Marital status		
Married	30	30.0
Single	70	70.0
Education (degree)		
High school	4	4.0
Associate	9	9.0
Bachelor's	79	79.0
Master's	8	8.0
Work experience (year)		
0-5	67	67.0
6-10	23	23.0
11-20	3	3.0
≥21	7	7.0
Being happy with the job		
Yes	9	9.0
Most of the time	20	20.0
Sometimes	40	40.0
No	31	31.0
Finding the income adequate		
Yes	4	4.0
No	84	84.0
Undecided	12	12.0
The image of nursing in the eyes of the	public public	
Positive	11	11.0
Negative	82	82.0
No idea	7	7.0

score of 31.44±6.00, indicating high levels of burnout (>27: high-level burnout). They had a mean MBI "depersonalization" subscale score of 11.97±3.45, indicating normal levels of depersonalization. They had a mean MBI "reduced personal accomplishment" subscale score of 28.26±3.33 (0-31: highly reduced personal accomplishment) (Table 2).

Participants had a mean BES score of 59.54 ± 4.57 (median: 58). They had mean BES "cognitive empathy" and "emotional empathy" subscale scores of 29.50 ± 2.70 (median: 27) and 30.04 ± 3.63 (median: 33), respectively (Table 2).

Participants who were unhappy with their job had a mean MBI "emotional exhaustion" subscale score of 35.83±4.47 (p<0.05). Participants with poor sleep quality had a mean MBI "emotional exhaustion" subscale score of 33.79±5.41 (p<0.05). Participants who believed they were underpaid had a mean MBI "emotional exhaustion" subscale score of 32.15±5.41 (p<0.05). Participants with limited social lives due to adverse working conditions had a mean MBI "emotional exhaustion" subscale score of 32.58±5.37 (p<0.05). Participants who believed their profession had a negative image in the eyes of the public had a mean MBI "emotional exhaustion" subscale score of 32.06±5.63 (p<0.05) (Table 3).

Female participants (60.55 ± 4.22) had a significantly higher mean total BES score than their male counterparts (57.29 ± 4.58) (p<0.05). Female participants (30.07 ± 2.27) had a significantly higher mean BES "cognitive empathy" subscale score than their male counterparts (28.22 ± 3.16) (p<0.05) (Table 4).

Participants' MBI "depersonalization" subscale scores were negatively correlated with their BES total (r=-0.220) and "emotional empathy" subscale scores (r=-0.244) (p<0.05) (Table 5).

DISCUSSION

Our participants had high MBI "emotional exhaustion" subscale scores. Li et al. (6) also reported that surgical nurses had high burnout levels and low quality of life, adversely affecting their productivity. Research, in general, shows that nurses experience high levels of burnout (19-25) due to occupational stress and adverse working conditions, resulting in unproductivity and malpractice (19-24,26,27)

Table 2. Scale Scores							
Scale scores	Mean ± SD	Min-Max					
Emotional exhaustion	31.44±6.00	13-45					
Depersonalization	11.97±3.45	5-21					
Reduced personal accomplishment	28.26±3.33	20-36					
BES total	59.54±4.57	46-70					
Cognitive empathy	29.50±2.70	18-34					
Emotional empathy	30.04±3.63	19-38					
SD: Standard devitation, BES:	Basic Empathy Scale, M	in: Minumum, Max					

		Emotion	al exhau	ıstion		Depersonalization			Reduced personal accomp			nplishment	
	n	Mean	SD	F/t	р	Mean	SD	F/t	р	Mean	SD	F/t	р
Sleep quality							·					·	
High	5	27.20	4.49			11.40	1.81			30.20	2.16	F: 0.91	0.40
Medium	47	29.48	5.42	F: 8.54	0.01*	11.68	3.25	F: 0.46	0.63	28.10	3.08		
Low	48	33.79	5.83			12.31	3.78			28.20	3.60		
Being happy with	the job			1						1	,	'	'
Yes	9	24.88	3.91			9.66	3.12		0.04*	30.77	2.63	F / 00	
Most of the time	20	26.45	5.28	F: 23.13	12 001+	10.70	2.17			30.20	2.21		0.01*
Sometimes	40	32.00	4.57		F: 23.13 U	0.01*	12.17 3.09 F: 3.88 0	0.01*	27.67	3.20	F: 6.99	0.01*	
No	31	35.83	4.47			13.19	4.13			27.03	3.39		
Finding the incom	e adequ	ate											
Yes	4	22.25	2.06		7.75	1.25			32.50	1.29			
No	84	32.15	5.41	F: 6.57	0.01*	13.01	3.32	F: 3.81	0.02*	27.21	3.21	F: 4.18	0.01*
Undecided	12	29.50	7.94			12.08	3.98			28.16	3.51		
The image of nurs	ing in th	e eyes of	the pub	lic									
Positive	11	26.90	5.18			8.72	2.24			30.72	3.79	F: 4.30	0.01*
Negative	82	32.06	5.63	F: 3.77	0.02*	12.54	3.35	F: 7.75	0.01*	27.84	3.10		
No idea	7	31.28	8.84	1	10.28	3.14			29.28	3.54			
The impact of wor	king life	on social	life										
Positive	5	24.60	9.60			11.60	5.94			30.60	3.43	F: 2.92	0.05*
Negative	82	32.58	5.37	F:10.12	0.01*	12.14	3.41	F: 0.64	0.52	27.90	3.34		
Undecided	13	26.84	4.45			11.00	2.64			29.61	2.46		
*p<0.05 F: ANOVA, t:	Independ	lent Sample	s t-test. N	ЛВІ: Maslach	Burnout	Inventory	SD: Stand	dard devita	tion	•		•	

		Basic Er	npathy So	ale total		Cognitive empathy				Emotional empathy			
	n	Mean	SD	F/t	р	Mean	SD	F/t	р	Mean	SD	F/t	р
Gender													
Man	31	57.29	4.58	t: -3.47	3.47 0.01*	28.22	3.16	t: -3.31	0.01+	29.06	2.87	t: -1.81	0.07
Woman	69	60.55	4.22	t: -3.4/		30.07	2.27	t: -3.31	0.01*	30.47	3.86		0.07
Sleep quality	,			<u>'</u>						'	'		
High	5	56.00	2.64		F: 2.10 0.12	30.00	1.73		0.88	26.00	3.74	F: 4.57	0.10
Moderate	47	60.19	3.93	F: 2.10		29.40	2.63	F: 0.11		30.78	2.84		
Low	48	59.27	5.14			29.54	2.88			29.72	4.03		
Being happy	with t	he job											
Yes	9	59.88	5.13		F: 1.19 0.31	29.11	1.69		0.60	30.77	4.54	F: 0.81	0.48
Most of the time	20	57.85	4.33	F: 1.19		28.85	2.99	F: 0.61		29.00	2.77		
Sometimes	40	60.15	3.81			29.72	2.77			30.42	3.52		
No	31	59.74	5.34			29.74	2.69			30.00	3.98		
Finding the i	ncome	adequat	:e			<u>'</u>				'			
Yes	4	58.75	5.73			30.25	1.70		0.84	28.50	4.79	F: 0.38	
No	84	59.61	4.56	F: 0.09	0.91	29.48	2.78	F: 0.17		30.13	3.58		0.67
Undecided	12	59.25	4.65			29.33	2.49			29.91	3.82		



		Basic Empathy Scale total			Cognitive empathy				Emotional empathy				
	n	Mean	SD	F/t	р	Mean	SD	F/t	р	Mean	SD	F/t	р
The image of	nursir	ng in the	eyes of th	e public									
Positive	11	60.00	4.79			30.63	1.28			29.36	4.20		
Negative	82	59.60	4.55	F: 0.45	F: 0.45 0.63	29.48	2.82	F: 2.32	0.10	30.12	3.56	F: 0.21	0.81
No idea	7	58.00	4.76]		27.85	2.11			30.14	3.97		
The impact o	f work	ing life o	n social lif	e									
Positive	5	57.00	6.32	F 0 00	0.44	28.60	2.96	F: 0.30	0.73	28.40	4.92	E 0 (0	0.54
Negative	82	59.70	4.57	F: 0.82		29.52	2.84			30.18	3.63	F: 0.60	

		BES Total	Cognitive empathy	Emotional empathy	
Constituted and acceptance	r	-0.220*	0.172	0.149	
Emotional exhaustion	р	0.028	0.087	0.139	
D	r	-0.243*	0.083	-0.244*	
Depersonalization	р	0.015	0.414	0.014	
De de cardon a consenta a cardon de la cardo	r	0.014	0.152	0.096	
Reduced personal accomplishment	р	0.890	0.131	0.344	

Our participants who were unhappy with their job had higher "emotional exhaustion" and "depersonalization" scores than those who were happy with their job. However, participants who were happy with their job had higher "reduced personal accomplishment" scores than those who were not. Stankovic et al. (28) found that healthcare professionals with psychological resilience were less likely to experience burnout. Adrienn et al. (29) argue that people with emotion regulation strategies and positive thinking skills are less likely to suffer from burnout and more likely to have personal accomplishments. The relationship between job satisfaction and emotional exhaustion seems to be consistent with the literature. However, we can better understand the relationship between satisfaction and burnout if we illuminate the personal and organizational factors that influence job satisfaction.

Our participants had moderate to poor sleep quality. Participants with poor sleep quality had higher "emotional exhaustion" scores than those with high sleep quality. Silva et al. (30) determined that transplantation nurses had poor sleep quality, adversely affected by work stress. Nurses often have to deal with stressors causing poor sleep quality and burnout. Stressors also result in fatigue and poor concentration (31,32).

Participants who believed they were underpaid had higher "emotional exhaustion" and "depersonalization" scores than those who did not. Participants who believed their profession had a negative image in the eyes of the public also had higher "emotional exhaustion" and "depersonalization" scores than those who did not. Income is essential for a high quality of life. Therefore, underpaid nurses have difficulty maintaining their

living standards and accessing activities that help them cope with stress. Perceived low socio-economic status negatively affects self-esteem and causes burnout (33).

Participants who believed they had limited social lives due to adverse working conditions had higher "emotional exhaustion" scores than those who did not. Some nurses have little to no social life because they work day and night. Therefore, they have little energy to cope with stressors. The inability to juggle work and social life is a risk factor for burnout (34). Decreased ability to cope with stress sometimes leads to emotional burnout (28,35).

All participants had a higher mean "cognitive empathy" score than the "emotional empathy" score, suggesting that surgical nurses, like emergency nurses, can make ethical decisions quickly. Du et al. (36) argue that emergency nurses have more cognitive empathy than nurses from other units because they can make ethical decisions. However, more research is warranted. Empathy is a measure of sensitivity. Women have more empathy than men due to their higher emotional sensitivity (10,12,37-39). Our female participants were more empathetic than their male counterparts. Specifically, female participants had higher cognitive empathy scores than their male counterparts. This may be due to women's higher levels of empathy.

Our results showed a weak negative correlation between depersonalization and emotional empathy. Although our participants had a normal "depersonalization" score, their "emotional empathy" score was below the median, suggesting that they have higher depersonalization and lower emotional empathy. These findings are consistent with the literature. For

example, Catlow et al. (40) found that surgical and medical nurses avoided empathy because they experienced burnout. Excessive empathy can also lead to emotional exhaustion and burnout (14). Although empathy positively affects the quality of care, healthcare professionals who are unable to cope with stressors experience burnout when they have excessive empathy (41).

Recommendations

We need to identify the factors that affect nurses' professional satisfaction and take steps to make them more satisfied with their job. We must also identify nurses' needs and provide recommendations to ensure they fulfill their duties without compromising their standards and social lives. Hospitals should provide healthcare professionals with training programs to help them develop empathy without burnout.

Study Limitations

The study had three limitations. First, the study was conducted only in one center. Second, we could not determine how different working conditions affect surgical nurses' burnout and empathy levels because they worked under standardized conditions. Third, the results are sample-specific and cannot be generalized to all surgical nurses. Since we conducted the study in a single center, we excluded institutional characteristics, which may have helped us identify the factors determining nurses' burnout and empathy levels.

CONCLUSION

Surgical nurses experience burnout due to occupational dissatisfaction, poor sleep quality, inadequate income, limited social life, and negative social image in the eyes of the public. In addition, there is a negative correlation between empathy and burnout.

Ethics

Ethics Committee Approval: The study was approved by the Ethics Committee of Okan University (approval no.: 133, date: 17.02.2021).

Informed Consent: Written consent was obtained from participation.

Footnotes

Author Contributions

Concept: SŞ, SA; Design: SŞ, SA; Data Collection or Processing: SŞ; Analysis or Interpretation: SŞ; Literature Search: SŞ; Writing: SŞ, SA.

Conflict of Interest: The authors declare that there is no conflict of interest.

Funding: The authors declare that the study received no funding.

REFERENCES

- Allan SM, Bealey R, Birch J, Cushing T, Parke S, Sergi G, et al. The prevalence of common and stress-related mental health disorders in healthcare workers based in pandemic-affected hospitals: a rapid systematic review and meta-analysis. Eur J Psychotraumatol. 2020; 11(1): 1810903. [Crossref]
- Roelen CAM, van Hoffen MFA, Waage S, Schaufeli WB, Twisk JWR, Bjorvatn B, et al. Psychosocial work environment and mental healthrelated long-term sickness absence among nurses. Int Arch Occup Environ Health. 2018; 91(2): 195-203. [Crossref]

- Khamisa N, Oldenburg B, Peltzer K, Ilic D. Work related stress, burnout, job satisfaction and general health of nurses. Int J Environ Res Public Health. 2015; 12(1): 652-66. [Crossref]
- Samur M, Seren Intepeler S. Nurses' view of their work environment, health and safety: a qualitative study. J Nurs Manag. 2019; 27(7): 1400-8. [Crossref]
- Luan X, Wang P, Hou W, Chen L, Lou F. Job stress and burnout: a comparative study of senior and head nurses in China. Nurs Health Sci. 2017; 19(2): 163-9. [Crossref]
- Li X, Jiang T, Sun J, Shi L, Liu J. The relationship between occupational stress, job burnout and quality of life among surgical nurses in Xinjiang, China. BMC Nurs. 2021; 20(1): 181. [Crossref]
- Özer N. Cerrahi ve cerrahi hemşireliğinin tarihçesi, cerrahinin sınıflandırılması, cerrahi gerektiren durumlar ve hasta üzerindeki etkileri. In: Eti Aslan F, editor. Cerrahi bakım vaka analizleri ile birlikte. 2. Baskı. Ankara: Akademisyen Tıp Kitabevi; 2017. p. 3-30. [Crossref]
- Bilazer F, Konca G, Uğur S, Uçak H, Erdemir F, Çıtak E. 7 gün-24 saat/hasta başında: Türkiye'de hemşirelerin çalışma koşulları. Ankara; 2008. [Crossref]
- Maslach C, Jackson SE. The measurement of experienced burnout. J Organ Behav [Internet]. 1981; 2(2): 99-113. [Crossref]
- Marcysiak M. Dąbrowska O, Marcysiak MB. Understanding the concept of empathy in relation to nursing. Pol Prog Heal Sci. 2014; 4(2): 76. [Crossref]
- Hall E, Cuellar NG. Immigrant health in the United States: a trajectory toward change. Vol. 27, Journal of Transcultural Nursing. SAGE Publications Inc.; 2016. p. 611-26. [Crossref]
- Cuff BMP, Brown SJ, Taylor L, Howat DJ. Empathy: a review of the concept. Emot Rev. 2016; 8(2): 144-53. [Crossref]
- Picard J, Catu-Pinault A, Boujut E, Botella M, Jaury P, Zenasni F. Burnout, empathy and their relationships: a qualitative study with residents in general medicine. Psychol Health Med. 2016; 21(3): 354-61. [Crossref]
- 14. Wilkinson H, Whittington R, Perry L, Eames C. Examining the relationship between burnout and empathy in healthcare professionals: a systematic review. Burn Res. 2017; 6: 18-29. [Crossref]
- 15. Zenasni F, Boujut E, Woerner A, Sultan S. Burnout and empathy in primary care: three hypotheses. Br J Gen Pract. 2012; 62(600): 346-7. [Crossref]
- Ergin C. Doktor ve hemşirelerde tükenmişlik ve Maslach Tükenmişlik Ölçeğinin uyarlanması. In: VII Ulusal Psikoloji Kongresi. Ankara: Hacettepe Üniversitesi; 1992. [Crossref]
- 17. Jolliffe D, Farrington DP. Development and validation of the basic empathy scale. J Adolesc. 2006; 29(4): 589-611. [Crossref]
- Topcu Ç, Erdur-Baker Ö, Çapa Aydın Y. Temel empati ölçeği türkçe uyarlaması: geçerlik ve güvenirlik çalışması. Türk Psikolojik Danışma ve Rehb Derg. 2010; 4(34): 174-82. [Crossref]
- Yang G, Liu J, Liu L, Wu X, Ding S, Xie J. Burnout and resilience among transplant nurses in 22 hospitals in China. Transplant Proc. 2018; 50(10): 2905-10. [Crossref]
- Erdağı S, Özer N. Cerrahi kliniklerde çalışan hemşirelerin çalışma ortamlarının, hasta güvenliği kültürü algılarının ve tükenmişlik durumlarının incelenmesi. Anadolu Hemşirelik ve Sağlık Bilim Derg. 2015; 18(2): 94-106. [Crossref]
- Akyüz İ. Hemşirelerin tükenmişlik ve depresyon düzeylerinin çalışma koşulları ve demografik özellikler açısından incelenmesi. İşletme ve İktisat Çalışmaları Derg. 2015; 3(1): 21-34. [Crossref]
- Yüksel Kaçan C, Örsal O, Köşgeroğlu N. Hemşirelerde tükenmişlik düzeyinin incelenmesi. Cumhuriyet Hemşirelik Derg. 2017; 5(2): 65-74. [Crossref]
- Chen Z, Leng J, Pang Y, He Y, Heng F, Tang L. Demographic, occupational, and societal features associated with burnout among medical oncology staff members: cross-sectional results of a Cancer Center in Beijing, China. Psychooncology. 2019; 28(12): 2365-73. [Crossref]
- Geuens N, Franck E, Verheyen H, De Schepper S, Roes L, Vandevijvere H, et al. Vulnerability and stressors for burnout within a population of hospital nurses: a qualitative descriptive study. Can J Nurs Res. 2021; 53(1): 16-26. [Crossref]
- 25. Zhang Y, Wu X, Wan X, Hayter M, Wu J, Li S, et al. Relationship between burnout and intention to leave amongst clinical nurses: The role of spiritual climate. J Nurs Manag. 2019; 27(6): 1285-93. [Crossref]
- Dall'Ora C, Griffiths P, Ball J, Simon M, Aiken LH. Association of 12 h shifts and nurses' job satisfaction, burnout and intention to leave: findings from



- a cross-sectional study of 12 European countries. BMJ Open. 2015; 5(9): e008331. [Crossref]
- Zhang SX, Liu J, Afshar Jahanshahi A, Nawaser K, Yousefi A, Li J, et al. At the height of the storm: healthcare staff's health conditions and job satisfaction and their associated predictors during the epidemic peak of COVID-19. Brain Behav Immun. 2020; 87: 144-6. [Crossref]
- Stankovic M, Papp L, Ivánkovits L, Lázár G, Pető Z, Töreki A. Psychological immune competency predicts burnout syndrome among the high-risk healthcare staff: A cross-sectional study. Int Emerg Nurs. 2022; 60: 101114. [Crossref]
- Adrienn V, Emese J, Alexandra P, Éva B. The characteristics and changes of psychological immune competence of breast cancer patients receiving hypnosis, music or special attention. Mentálhigiéné és Pszichoszomatika. 2019; 20(2): 139-58. [Crossref]
- Silva E Silva V, Hornby L, Lotherington K, Rochon A, Regina Silva A, Pearson H, et al. Burnout, compassion fatigue and work-related stressors among organ donation and transplantation coordinators: A qualitative study. Intensive Crit Care Nurs. 2022; 68: 103125. [Crossref]
- 31. Darawad MW, Nawafleh H, Maharmeh M, Hamdan-Mansour AM, Azzeghaiby SN. The relationship between time pressure and burnout syndrome: a cross-sectional survey among Jordanian nurses. Health (Irvine Calif). 2015; 07(01): 14-22. [Crossref]
- 32. Mao P, Cai P, Luo A, Huang P, Xie W. Factors in organ donation coordinators: a cross-sectional study in China. Ann Transplant. 2018; 23: 647-53. [Crossref]

- 33. Özpehlivan M, Altan S. Duygusal emek ve tükenmişlik ilişkisi. Int J Manag Adm. 2019; 3(5): 80-100. [Crossref]
- 34. Boutou A, Pitsiou G, Sourla E, Kioumis I. Burnout syndrome among emergency medicine physicians: an update on its prevalence and risk factors. Eur Rev Med Pharmacol Sci. 2019; 23(20): 9058-65. [Crossref]
- Hoogendoorn ME, Brinkman S, Spijkstra JJ, Bosman RJ, Margadant CC, Haringman J, et al. The objective nursing workload and perceived nursing workload in intensive care units: analysis of association. Int J Nurs Stud. 2021; 114: 103852. [Crossref]
- 36. Du J, Huang S, Lu Q, Ma L, Lai K, Li K. Influence of empathy and professional values on ethical decision-making of emergency nurses: a cross sectional study. Int Emerg Nurs. 2022; 63: 101186. [Crossref]
- 37. Kamas L, Preston A. Empathy, gender, and prosocial behavior. J Behav Exp Econ. 2021; 92: 101654. [Crossref]
- Benenson JF, Gauthier E, Markovits H. Girls exhibit greater empathy than boys following a minor accident. Sci Rep. 2021; 11(1): 7965. [Crossref]
- Dores AR, Martins H, Reis AC, Carvalho IP. Empathy and coping in allied health sciences: gender patterns. Healthcare (Basel). 2021; 9(5): 497. [Crossref]
- Catlow R, Aikins-Snyper F, Carson M, Jaggi A, Bench S. Empathy in action in healthcare (EACH): A mixed methods study of nurses' and therapists' empathy. Int J Orthop Trauma Nurs. 2020; 39: 100777. [Crossref]
- Stavropoulou A, Rovithis M, Sigala E, Pantou S, Koukouli S. Greek nurses' perceptions on empathy and empathic care in the intensive care unit. Intensive Crit Care Nurs. 2020; 58: 102814. [Crossref]