

## Determination of Psychological Symptoms in Nurses: Sample of a University Hospital

Hemşirelerde Psikolojik Semptomların Belirlenmesi: Bir Üniversite Hastanesi Örneği

Tuba ÇÖMEZ İKİCAN<sup>1</sup>, Şehrinaz POLAT<sup>2</sup>, Aslı YEŞİL<sup>3</sup>

### ABSTRACT

Nurses, who play a critical and essential role in patient care, are exposed to various predictable and unpredictable stressors and are psychosocially affected. This study aimed to assess psychological symptoms in nurses working in a University Hospital. The study was conducted in a cross-sectional, descriptive design. The study was conducted between February-April 2021 on 757 nurses working in a University Hospital. Data were collected using the "Personal Information Form" and the "Brief Symptom Inventory (BSI)-53". The results showed that the total and subscale scores of the BSI-53 were low among the nurses who participated in this study. It was also found that there was a significant relationship between the total scale score, and age, having worked as a nurse for a long time, not having chosen nursing by choice and not choosing it again if given a chance, and experiencing stress in areas related to work, role, team members, management, patients and their relatives, non-medical problems of patients and their relatives, physical environment and interpersonal relationships. It is thought that these results will guide the development of nurses' mental health and provide data for new studies.

**Anahtar Kelimeler:** Hospital, Nurse, Psychological symptom.

### ÖZ

Hasta bakımında kritik ve önemli bir rol oynayan hemşireler, öngörülebilir ve öngörülemeyen çeşitli stres faktörlerine maruz kalmakta ve sonucunda psikososyal olarak etkilenmektedirler. Bu çalışmanın amacı, bir Üniversite Hastanesinde çalışan hemşirelerin psikolojik semptomlarının belirlenmesidir. Çalışma Şubat-Nisan 2021 tarihleri arasında üniversite hastanesinde çalışan 757 hemşire ile gerçekleştirilmiştir. Veriler "Kişisel Bilgi Formu" ve "Kısa Semptom Envanteri (KSE)-53" kullanılarak toplanmıştır. Çalışmaya katılan hemşirelerin KSE-53 ölçeği toplam ve alt boyut puanlarının düşük olduğu saptanmıştır. Ayrıca toplam ölçek puanı ile yaş, uzun süre hemşire olarak çalışma, hemşireliği isteyerek seçmeme ve şans verilse tekrar seçmeme, iş, rol, ekip üyeleri, yönetim, hasta ve yakınları, hasta ve yakınlarının tıbbi olmayan sorunları, fiziksel çevre ve kişilerarası ilişkilerle ilgili alanlarda stres yaşama arasında pozitif yönlü ve anlamlı bir ilişki olduğu belirlenmiştir. Bu sonuçların hemşirelerin ruh sağlığının geliştirilmesinde yol gösterici olacağı ve yeni çalışmalar için veri sağlayacağı düşünülmektedir.

**Keywords:** Hastane, Hemşire, Psikolojik semptom

*Istanbul Üniversitesi Klinik Araştırmalar Etik Kurulu'ndan etik onay alınmıştır (Tarih:27/11/2020, Sayı:246160).*

<sup>1</sup> Dr. Öğretim Üyesi, Tuba ÇÖMEZ İKİCAN, Ruh Sağlığı ve Hastalıkları Hemşireliği, İstanbul Üniversitesi Hemşirelik Fakültesi Ruh Sağlığı ve Hastalıkları Hemşireliği ABD, tuba.comez@istanbul.edu.tr, ORCID: 0000-0003-0929-8168

<sup>2</sup> Doç. Dr., Şehrinaz POLAT, Hemşirelikte Yönetim, İstanbul Üniversitesi Hemşirelik Fakültesi, Hemşirelikte Yönetim ABD, polats@istanbul.edu.tr, ORCID: 0000-0002-1884-897X

<sup>3</sup> Dr. Öğretim Üyesi, Aslı YEŞİL, Psikoloji, Bursa Teknik Üniversitesi İnsan ve Toplum Bilimleri Fakültesi Sosyal Psikoloji ABD, yesilasli8@gmail.com, ORCID: 0000-0002-9068-6303

**İletişim / Corresponding Author:**  
**e-posta/e-mail:**

Tuba ÇÖMEZ İKİCAN  
tuba.comez@istanbul.edu.tr

**Geliş Tarihi / Received:** 28.06.2024  
**Kabul Tarihi/Accepted:** 22.12.2024

## INTRODUCTION

Nurses, who are an indispensable part of the health system and constitute the most populous group, are health professionals who have very important responsibilities in protecting, promoting, maintaining, treating, and caring for health.<sup>1</sup>

Nurses, who have many roles such as caregiving, therapeutic, educational, and consultant in health practices, often work with individuals and their relatives who experience difficult and stressful life events that occur in the course of life, such as childbirth, death, and illness.<sup>2,3</sup> Working with patients and their relatives who are experiencing intense stress and anxiety causes nurses to be affected psychosocially over time and affects them negatively in mental health.<sup>2,4-6</sup> Especially about patients, sudden losses, violence, acute developing conditions, witnessing the suffering of patients, having communication problems with patient relatives, not being able to see the necessary and sufficient respect, and violence negatively affect the psychological health of nurses and causes depression, anxiety, somatic complaints, sleep disorders, and burnout.<sup>2,3,5,7</sup> When the various studies carried out on this subject are examined, it has been found that nurses experience more job stress, burnout, anxiety, secondary trauma, and psychological violence among the occupational groups providing health care services.<sup>2,4,5,8,9</sup>

In addition to the factors related to patients and their relatives, organizational reasons role and task confusion, team incompatibilities and communication difficulties, shift and long hours working system, insomnia, physical inadequacies of working environments, and excessive workload also significantly affect the psychological status of nurses.<sup>2,5,6,10</sup> It has been revealed in various studies that depression, anxiety disorders, and burnout occur in nurses, mainly due to disagreements occurring in the working environment.<sup>5,11,12</sup> In addition, a study conducted by Havaei et al. with nurses showed that problems in workplace safety, access to resources and

materials, organizational support, and relationships with team members also negatively affect the psychological health of nurses and cause anxiety, depression, post-traumatic stress disorder, and high levels of emotional exhaustion.<sup>13</sup>

The pandemics and disasters process, which has affected the whole World in many ways in recent years, has also caused medical personnel, especially nurses who provide one-on-one care to patients, to be exposed to difficult working conditions, increased workloads, decreased motivation, negative emotions, and traumatic life events.<sup>13-15</sup> All these difficulties have increased the incidence of mental disorders in nurses.<sup>15,16</sup> A study by Kaçkin and his colleagues determined that nurses were negatively affected psychologically and socially due to the working conditions during the pandemic, experienced burnout and secondary trauma, and needed psychosocial support.<sup>17</sup> Similarly, in another study conducted by Fawaz and Itani, it was found that nurses feel depressed and frequently experience emotions such as fear, anxiety, and anger.<sup>18</sup>

Determining the psychological symptoms that indicate mental problems is essential and necessary to detect mental problems that may occur at an early stage. In addition, it is necessary to detect psychological symptoms to solve existing problems.<sup>4,19,20</sup> It is also very important for nurses, who provide care by addressing the individual from a holistic health perspective, to maintain their mental health regarding the quality of care they provide to their patients. Because various mental problems reduce the work efficiency of nurses and increase the likelihood of making medical errors.<sup>21,22</sup> As a result, the quality of nursing care provided to patients may be negatively affected.<sup>11,23</sup>

This study aimed to determine the psychological symptoms of nurses working in a University Hospital.

### Research questions

1. What are the psychological symptom levels of nurses?

2. What personal and professional characteristics of nurses affect their psychological state?
3. What are the stress events that affect the psychological state of nurses?

## MATERIAL AND METHOD

### Design and Participants

This cross-sectional, descriptive study was conducted between February-April 2021 with a nurse in a University Hospital. The universe of the study consists of 1327 nurses. The minimum sample size was found to be 298 using the known population sampling method. Post-hoc power analysis showed that the power value was 1. It is known that the power value can be high in large samples. Individuals aged between 20-65 years, without In the study, all nurses were reached without sample calculation, and data were collected from 757 nurses who agreed to participate in the study. The study determined the rate of reaching the universe as 57.04%. psychiatric disorders, and working as a nurse for at least two years were included in the study.

### Procedure and Data Collection

Data were collected using a “Personal Information Form” and, “Brief Symptom Inventory-53 (BSI-53).” The process was carried out using self-reporting by nurses who worked in a university hospital. The necessary explanations were provided to the nurses who accepted participation in the study about the study's objective and how to fill the measurement instruments. Filling out the forms lasted about 7–13 minutes.

### Measures

**Personal Information Form:** This form has been created by the researchers on the basis of the literature<sup>6,11</sup> and it consisted of nine questions on socio-demographic characteristics (age, gender, education level, etc.), and occupational characteristics (starting age of occupation, total working time as a nurse, willingness to choose the nursing profession, re-choosing the nursing

profession, get help from people and share problems with people).

**Brief Symptom Inventory-53 (BSI-53):** The BSI-53 is a self-assessment scale consisting of 53 items that were developed by Derogatis (1992) to measure various psychological symptoms. The scale is in Likert style, including four choices from “0-none” to “4-advanced”. The scale has five sub-dimensions: depression, anxiety, negative self, somatization, and anger/aggression. The score to be taken on the scale ranges from 0 to 212, and a high score indicates more psychological symptoms. The reliability-validity analysis of the Turkish Form of the scale was performed by Şahin&Durak (1994).<sup>24</sup> Cronbach’s alpha value was 0.92 in the original study, while Cronbach’s alpha value in this study was found as 0.95.

### Data Analysis

Data analysis was performed using SPSS 25. Data were analyzed using descriptive statistics, chi-squared and Mann-Whitney U tests, and Kruskal-Wallis test. In the evaluation of the data, the normality of the distribution of the scales was tested using the Kolmogorov-Smirnov test, and non-parametric tests were used as it was found that the scales were not normally distributed.<sup>25</sup> Correlation analysis was used to determine relationships between variables, and Spearman Correlation Coefficients were calculated. In addition, regression analysis was performed to determine how much of the observed changes in the dependent variable were explained by the variables.<sup>25</sup>

### Ethical Considerations

This study was approved by the University of Istanbul, Clinical Research Ethics Committee (Date-Issue: 27/11/2020-246160, then permissions were obtained from the data

collection institution. The purpose of this study was explained to the nurses by the researchers, and necessary information was provided. In addition, an "Informed Consent Form" according to the "Declaration of Helsinki" was prepared, and signed by the participants; thus, written consent was obtained.

## Limitations of Research

The research is limited to the data obtained from the nurses who participated in the study and the questions in the questionnaire. In this context, the evaluations were made on the basis of the nurses' answers and should not be generalized. Another limitation is that the study was single-centre and there was no follow-up.

## RESULTS AND DISCUSSION

The mean age of the study participants was  $29.63 \pm 8.8$  (min:20-max:64) the mean starting age of occupation was  $21.82 \pm 2.45$  (min:20-max:31) and the mean total working time as a nurse was  $8.24 \pm 8.99$  (min:1-max:44). 82,2% (n=623) of the participants were female, 62,1% (n=470) were single, 69,2% (n=524) were university graduates, 85,3% (n=646) choose the nursing profession willingly, 59% (n=447) would choose the nursing profession again and 91,5% (n=693) there are people around his/her with whom he/she can get help and share his problems.

**Table 1. Perceptions of the Stress of Nurses (N=757)**

		n	%
Task Stress (Difficulty of the job, workload, et al.)	Yes	517	68,3
	No	240	31,7
Role-related Stress (Ambiguity of task and role definition, role conflict, et al.)	Yes	314	41,5
	No	443	58,5
Team-related Stress (Lack of teamwork, intra-team conflicts, et al.)	Yes	319	42,1
	No	438	57,9
Management-related Stress (Lack of personnel and materials, communication difficulties, et al.)	Yes	415	54,8
	No	342	45,2
Patients/families-related Stress (chronic, pediatric, terminal, et al.)	Yes	227	30,0
	No	530	70,0
The Stress of Patients/Families Other than Medical Problems	Yes	285	37,6
	No	472	62,4
Physical Environment-related Stress	Yes	352	46,5
	No	405	53,5
Person-related Stress (anxiety, self-confidence, et al.)	Yes	108	14,3
	No	649	85,7

Considering the stress perceived by the participants in the study, it was determined that 68,3% (n=517) had task stress, 41,5% (n=314) had role-related stress, 42,1% (n=319) had team-related stress, 54,8% (n=415) had management-related stress, 30% (n=227) had patients/families-related stress, 37,6% (n=288) had patients/families-related stress other than medical problems, 46,5%

(n=352) had physical environment-related stress, and 14,3% (n=108) had person-related stress (Table 1).

**Table 2. BSI-53 Scores of Nurses (N=757)**

Scale	Subscales	Median (Min.-Max.)	Mean±SD
<b>Brief Scale-53</b>	Anxiety	0,08 (0-4)	0,33±0,53
	Depression	0,33 (0-4)	0,55±0,67
	Negative self	0,17 (0-4)	0,38±0,56
	Somatization	0,22 (0-4)	0,38±0,54
	Hostility	0,29 (0-4)	0,53±0,59
	<b>Total</b>	1,71 (0-212)	3,23±4,07

According to BSI-53, those who receive a high score indicate more psychological symptoms. Participants had a mean, anxiety, depression, negative self, somatization, and hostility subscale score of  $0,33 \pm 0,53$ ,  $0,55 \pm 0,67$ ,  $0,38 \pm 0,56$ ,  $0,38 \pm 0,54$ , and  $0,53 \pm 0,59$  respectively. They had a low total BSI-53 score of  $3,23 \pm 4,07$  (Table 2).

Similarly, a significant difference was found between age, total working time as a nurse, choosing a nursing profession willingly, and choosing a profession again, in terms of the BSI-53 scale total score. There was a significant difference between task-stress, role-related stress, team-related stress, management-related stress, patients/families-related stress, the stress of patients/families other than medical problems, physical-environment related stress and person-related stress, in terms of the total score of the BSI-53 scale ( $p < 0.001$ ) (Table 3).

The regression analysis on the effects of BSI-53 scores of variables showed that the model was statistically significant ( $F=23,59$ ;  $p<0,001$ ), suggesting that choosing a profession again ( $\beta=0,20$ ;  $t=4,94$ ,  $p<0,001$ ),

team-related stress ( $\beta=0,13$ ;  $t=3,32$ ,  $p<0,001$ ), physical environment-related stress ( $\beta=0,10$ ;  $t=2,61$ ,  $p<0,05$ ), and person-related stress ( $\beta=0,16$ ;  $t=3,93$ ,  $p<0,001$ ) have a statistically positive effect on the BSI-53 scores (Table 4)

**Table 3. Comparison of BSI-53 Scale Total Score With Variables (N =757)**

		Mean±SD	Test Value	p
Age	26 years and younger	17,65±26,38	$U=49701,5$	<b>0,00**</b>
	26 years and older	28,32±30,07		
Total working time as a nurse	Three years under	17,07±24,53	$U=39986,0$	<b>0,00**</b>
	Three years and over	28,65±31,59		
Choosing the nursing profession willingly	Yes	20,27±25,48	$U=26462,5$	<b>0,00**</b>
	No	36,05±39,06		
Willing to choose the nursing profession again if they had the right to choose	Yes	14,98±21,15	$U=37330,5$	<b>0,00**</b>
	No	33,70±34,04		
Task stress	Yes	26,32±30,11	$U=48527,5$	<b>0,00**</b>
	No	14,53±22,79		
Role-related stress	Yes	30,96±33,2	$U=51626,0$	<b>0,00**</b>
	No	16,65±22,92		
Team-related stress	Yes	30,25±33,95	$U=52344,0$	<b>0,00**</b>
	No	17,0±22,22		
Management-related stress	Yes	26,29±31,7	$U=48666,0$	<b>0,00**</b>
	No	18,08±23,36		
Patients/families-related stress	Yes	30,79±32,39	$U=18381,5$	<b>0,00**</b>
	No	19,07±25,94		
The stress of patients/families other than medical problems	Yes	29,13±32,13	$U=59344,5$	<b>0,00**</b>
	No	18,63±25,32		
Physical Environment-related stress	Yes	30,47±32,89	$U=18381,5$	<b>0,00**</b>
	No	15,73±21,93		
Person-related stress	Yes	41,47±35,25	$U=36869,5$	<b>0,00**</b>
	No	19,44±25,97		

U: Mann Whitney U,  $p<0,05$  \*\* $p<0,01$

**Table 4. The Regression Analysis on The Effect of BSI-53 Scores of Variables (N =757)**

BSI-53 Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients Beta	t	p	Lower Bound	Upper Bound
R <sup>2</sup> : 21,4% F: 23,59 p: 0,000 d: 1,791	Constant	-48,98	6,29		7,66	<b>0,00**</b>	-61,35	-36,62
	Choose a profession again	11,63	2,35	0,20	4,94	<b>0,00**</b>	7,00	16,25
	Team-related stress	7,45	2,24	0,13	3,32	<b>0,00**</b>	3,04	11,85
	Physical environment-related stress	5,40	2,33	0,10	2,32	<b>0,021*</b>	0,83	9,97
	Person-related stress	12,52	3,19	0,16	3,93	<b>0,00**</b>	6,26	18,78
	Economic loss	9,50	3,49	0,11	2,72	<b>0,07*</b>	2,64	16,36
	Disease	9,69	3,30	0,12	2,93	<b>0,00**</b>	3,20	16,18

The psychological well-being of nurses is very important in ensuring and maintaining high-quality and safe patient care. One of the most essential factors affecting nurses psychologically is the perceived stress factor. Although the study shows that the sources of stress perceived by nurses are of various types, it has been found that work stress caused by reasons such as high workload and challenging work, and stress associated with management caused by lack of personnel,

materials, and communication difficulties experienced with managers have high rates.

The study conducted by Babapour et al. (2022) shows that nurses often experience too much stress caused by work and management.<sup>11</sup> Similarly, was a study by Jordan et al. (2016) found that nurses' work-related stress factors are pretty high.<sup>26</sup> A review of the literature showed that there were many studies with similar results.<sup>10,20,27-29</sup> This research finding, parallel to the literature,



also shows that excessive workload increases the stress of nurses. Staff and material shortages also contribute to an increase in workload. In addition to all these, it is believed that nurses experience communication difficulties with their managers, and their inability to convey the stress they perceive leads to an even more significant increase in their stress.

The research found that the nurses' scale total and subscale score averages were low. When these results were compared with similar studies in the literature, they were relatively low.<sup>6,20,30</sup> The low mean scale score of the nurses is a positive finding in terms of their mental health. It is thought that this result may be related to the fact that most of the nurses have a higher level of education than the country's average as bachelor graduates, that they have chosen the nursing profession voluntarily, that they would prefer the nursing profession if they had the chance to choose a profession again, that they have a higher level of education than the country's average as bachelor graduates, that they have chosen the nursing profession voluntarily, that they would prefer the nursing profession if they had the chance to choose a profession again. A huge part of daily life is spent in the business environment and with activities related to the work being studied. For this reason, the profession determines what kind of work an individual will do how to live a life. In particular, performing in the nursing profession, among the occupational groups where burnout is most common, significantly affects individuals mentally.<sup>19,22,31</sup> In this study, it is believed that the fact that nurses willingly chose and continued their profession also supports the result that psychological symptoms are less. In addition, the research found that there are individuals around the nurses who can get help and share their problems, and there is a finding of social support. Social support is a variable that is closely related to human health. Social support, which significantly affects the process and outcome of stressful life events, strengthens coping skills in individuals.<sup>9,12</sup> Social support is very important in the nursing profession with an excessive stress load.

According to Chen et al. (2020), in the study, it was determined that psychological symptoms are less common in nurses who have more social support systems.<sup>10</sup> Similarly, in a study by Karaca et al. (2019), it was also found that there is a negative relationship between social support and mental problems in nurses.<sup>12</sup> In this research, in parallel with the literature, it is thought that the presence of individuals around nurses who can get help and share their problems ensures that psychological symptoms are reduced.

The study found that those who had been working as a nurse for 3 years or more and whose age was 26 years or older had higher mean total scale scores and formed a significant difference. Nursing is among the occupational groups where burnout is most frequently experienced due to challenging working conditions, complexities associated with the scope of duty, and the need for high responsibility.<sup>19,32,33</sup> There are many studies determined that there is a positive relationship between burnout, which causes deterioration in mental health, and working as a nurse for a long time.<sup>4,29,32</sup> In this study, it is thought that the higher incidence of psychological symptoms in participants who have been working as nurses for a long time and are, therefore, older is related to the fact that they are experiencing or starting to experience burnout in the profession. An essential finding of the study is that the nurses who did not choose the profession voluntarily and would not choose this profession again if they had the chance had higher scale total mean scores, and there was a significant difference. A large part of the life process is spent in the work environment and with activities related to the work. For this reason, the profession determines also what the individual will do and what kind of life he/she will live. Especially in the nursing profession, the working system includes shift work and long hours of shifts. In occupations that are chosen and maintained involuntarily, individuals cannot achieve sufficient job satisfaction and may experience various mental problems such as burnout, depression, hopelessness, and anxiety over time.<sup>34,35</sup> This finding, which was also determined by regression analysis, is a

result parallel with the literature that nurses who chose the profession involuntarily and would not choose it if they had the chance again exhibited more psychological symptoms.

In the study, it was determined that the total score averages of the nurses who experienced stress related to work, role, team members, management, patients and their relatives, non-medical problems of patients and their relatives, physical environment, and interpersonal relationships were higher and made a significant difference.

The stress factor is an essential factor that negatively affects the life of individuals regardless of which area they live in, leading to various mental problems.<sup>28,29</sup> In stress,

individuals may exhibit various psychological symptoms by feeling unhappy, angry, exhausted, or anxious. This is mainly happening in demanding professions such as nursing, where mistakes can lead to fatal consequences. In many studies conducted to determine the stress levels of nurses and related factors, it has been determined that there is a positive relationship between perceived stress and mental health.<sup>10,28,29</sup> This finding, also determined by regression analysis, shows that psychological symptoms are more common in nurses who experience stress related to work, role, team members, management, patients and their relatives, non-medical problems of patients and their relatives, physical environment, and interpersonal relationships.

## CONCLUSION AND RECOMMENDATIONS

As a result, in line with the data obtained, the total and subscale scores of the BSI-53 of the nurses participating in this study were low. Also, it was determined that there was a significant relationship between the total score on the scale and age, working as a nurse for a long time, not choosing the nursing profession willingly and not choosing this profession again if they had the chance, and experiencing stress in areas related to work, role, team members, management, patients and their relatives, non-medical problems of patients and their relatives, physical environment and interpersonal relationships. It is thought that these results will guide the development of the mental health of nurses and will provide data for new studies. Based on the study's results, several suggestions can be made to improve nurses' mental health and job satisfaction. First, it is important to develop and implement psychological support

programs for nurses. These programs may include individual and group therapy, stress management training, and regular psychological counseling. Job satisfaction and motivation programs should be organized for nurses to increase their job satisfaction. To reduce team-related stress, activities and training programs should be organized to strengthen teamwork and promote healthy communication among team members. Ergonomic measures should be taken to improve the physical environment of the nurses' workplace to reduce stress levels and increase comfort. To manage personal stress, nurses can be trained in stress management and coping strategies. Strengthening communication with management can also increase nurses' job satisfaction. Open channels of communication can be established by holding regular feedback meetings.

## REFERENCES

1. WHO, 2019 [https://cdn.who.int/media/docs/default-source/health-workforce/dek/classifying-health-workers.pdf?sfvrsn=7b7a472d\\_3&download=true](https://cdn.who.int/media/docs/default-source/health-workforce/dek/classifying-health-workers.pdf?sfvrsn=7b7a472d_3&download=true) Access: 01.09.2023.
2. Günüşen NP. Protection and of Strengthening nurses' mental health. *Turkey Clinics J Psychiatr Nurs-Special Topics*. 2017;3(1): 12-18.
3. Roelen CA, van Hoffen MF, Waage S, Schaufeli WB, Twisk JW, Bjorvat B, et al. Psychosocial work environment and mental health-related long-term sickness absence among nurses. *International Archives of Occupational and Environmental Health*. 2018;91(2):195-203 <https://doi.org/10.1007/s00420-017-1268-1>
4. Hamed RA, Abd Elaziz Y, Ahmed AS. Prevalence and predictors of burnout syndrome, post-traumatic stress disorder, depression, and anxiety in nursing staff in various departments. *Middle East Curr Psychiatry*. 2020;27:36. <https://doi.org/10.1186/s43045-020-00044-x>.

5. Sampson M, Melnyk BM, Hoying J. The MINDBODYSTRONG intervention for new nurse residents: 6-month effects on mental health outcomes, healthy lifestyle behaviors, and job satisfaction. *Worldviews on Evidence-Based Nursing*. 2020;17(1): 16-23. <https://doi.org/10.1111/wvn.12411>
6. Cevizci O, Müezzın E.E. Investigation of the psychological symptoms and psychological resistance in health professionals. *Cyprus Turkish Journal of Psychiatry & Psychology*. 2019;1(3):166-172. <https://doi.org/10.35365/ctjpp.19.1.21>
7. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: A systematic review. *PLoS ONE*. 2016;11(7):e0159015. <https://doi.org/10.1371/journal.pone.0159015>
8. Jamali J, Roustaei N, Ayatollahi SMT, Sadeghi E. Factors affecting minor psychiatric disorder in southern Iranian nurses: a latent class regression analysis. *Nursing and Midwifery Studies*. 2015;4(2): e28017. <https://doi.org/10.17795/nmsjournal28017>
9. Giffkins J, Loudoun R, Johnston A. Coping strategies and social support needs of experienced and inexperienced nurses performing shiftwork. *Journal of Advanced Nursing*. 2017;73(12):3079-3089. <https://doi.org/10.1111/jan.13374>
10. Chen J, Li J, Cao B, Wang F, Luo L, Xu J. Mediating effects of self-efficacy, coping, burnout, and social support between job stress and mental health among young Chinese nurses. *Journal of Advanced Nursing*. 2020;76(1):163-173. <https://doi.org/10.1111/jan.14208>
11. Babapour AR, Gahassab-Mozaffari N, Fathnezhad-Kazemi A.. Nurses' job stress and its impact on quality of life and caring behaviors: A cross-sectional study. *BMC Nursing*. 2022;21(1): 1-10. <https://doi.org/10.1186/s12912-022-00852-y>
12. Karaca A, Yildirim N, Cangur S, Acikgoz F, Akkus, D. Relationship between mental health of nursing students and coping, self-esteem and social support. *Nurse Education Today*. 2019;76:44-50. <https://doi.org/10.1016/j.nedt.2019.01.029>
13. Havaei F, Ma A, Staempfli S, MacPhee M. Nurses' workplace conditions impacting their mental health during COVID-19: A cross-sectional survey study. *Healthcare*. 2021;9(1):84. <https://doi.org/10.3390/healthcare9010084>
14. Al Thobaity A, Alshammari, F. Nurses on the frontline against the covid-19 pandemic: an integrative review. *Dubai Medical Journal*. 2020;3(3):87-92. <https://doi.org/10.1159/000509361>
15. Galanis P, Vraika I, Fragkou D, Bilali A, Kaitelidou, D. Nurses' burnout and associated risk factors during the Covid-19 pandemic: A systematic review and meta-analysis. *Journal of Advanced Nursing*. 2021;77(8):3286-3302. <https://doi.org/10.1111/jan.14839>
16. Halcomb E, McInnes S, Williams A, Ashley C, James S, Fernandez R, Calma K. The experiences of primary healthcare nurses during the COVID-19 pandemic in Australia. *Journal of Nursing Scholarship*. 2020;52(5):553-563. <https://doi.org/10.1111/jnu.12589>
17. Kackin O, Ciydem E, Aci OS, Kutlu, FY. Experiences and psychosocial problems of nurses caring for patients diagnosed with COVID-19 in Turkey: A qualitative study. *International Journal of Social Psychiatry*. 2021;67(2):158-167. <https://doi.org/10.1177/0020764020942788>
18. Fawaz M, Itani M. The psychological experiences of Lebanese ground zero front-line nurses during the most recent COVID-19 outbreak post-beirut blast: A qualitative study. *International Journal of Social Psychiatry*. 2022;68(4):754-761. <https://doi.org/10.1177/002076402110049>
19. Mousavi SV, Ramezani M, Salehi I, Hossein Khanzadeh AA, Sheikholeslami F. The relationship between burnout dimensions and psychological symptoms (Depression, anxiety, and stress) among nurses. *Journal of Holistic Nursing and Midwifery*. 2017;27(2):37-43.
20. Onan N, Barlas G, Karaca S, Yildirim N, Taskiran O, Sumeli F. The relations between perceived stress, communication skills and psychological symptoms in oncology nurses. *Clinical and Experimental Health Sciences*. 2015;5(3):170-177. <https://doi.org/10.5455/musbed.20150602021515>
21. Melnyk B, Orsolini L, Tan A, Arslanian-Engoren C, Melkus GD, Dunbar-Jacob J. et al. A national study links nurses' physical and mental health to medical errors and perceived worksite wellness. *Journal of Occupational and Environmental Medicine*. 2018;60(2):126-131. <https://doi.org/10.1097/JOM.0000000000001198>
22. Sullivan V, Hughes V, Wilson DR. Nursing burnout and its impact on health Nursing Clinics. 2022;57(1):153-169. <https://doi.org/10.1016/j.cnur.2021.11.011>
23. Vasconcelos SC, de Souza SL, Sougey EB, de Oliveira Ribeiro EC, do Nascimento JJC, Formiga MB, et al. Nursing staff members mental's health and factors associated with the work process: An integrative review. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*. 2016;12:167-176. <https://doi.org/10.2174/1745017901612010167>
24. Şahin NH, Durak A. Brief Symptom Inventory BSI: Adaptation for Turkish youth. *Turkish Journal of Psychology*. 1994;9(31): 44-56.
25. Büyüköztürk Ş. Data analysis handbook for social sciences, Pegem Publishing. Edition, Ankara, 2002.
26. Jordan TR, Khubchandani J, Wiblehauser M. The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. *Nursing Research and Practice*. 2016;1-11. <https://doi.org/10.1155/2016/5843256>
27. Almaza JU, Albougami AS, Alamri MS. Exploring nurses' work-related stress in an acute care hospital in KSA. *Journal of Taibah University Medical Sciences*. 2019;14(4):376-382. <https://doi.org/10.1016/j.jtumed.2019.04.006>
28. Khamisa N, Peltzer K, Ilıc D, Oldenburg B. Work-related stress, burnout, job satisfaction and general health of nurses: A follow-up study. *International Journal of Nursing Practice*. 2016;22(6):538-545. <https://doi.org/10.1111/ijn.12455>
29. Vernekar SP, Shah H. A study of work-related stress among nurses in a tertiary care hospital in Goa. *International Journal of Community Medicine and Public Health*. 2018;5(2):657-661. <https://doi.org/10.18203/2394-6040.ijcmph20180246>
30. Perry L, Lamont S, Brunero S, Gallagher R, Duffield C. The mental health of nurses in acute teaching hospital settings: A cross-sectional survey. *BMC Nursing*. 2015;14:1-8. <https://doi.org/10.1186/s12912-015-0068-8>
31. Lee HF, Yen M, Fetzer S, Chien TW. Predictors of burnout among nurses in Taiwan. *Community Mental Health Journal*. 2015;51:733-737. <https://doi.org/10.1007/s10597-014-9818-4>
32. Ruiz-Fernández MD, Pérez-García E, Ortega-Galán ÁM. Quality of life in nursing professionals: burnout, fatigue, and compassion satisfaction. *International Journal of Environmental Research and Public Health*. 2020;17(4):1253. <https://doi.org/10.3390/ijerph17041253>
33. Tzolakis G, Vasiliki Diamantidou MD. Nursing staff burnout: A critical review of the risk factors. *International Journal of Caring Sciences*. 2022;15(1):668-679.
34. Yılmaz YÇ, Buldukoğlu K. Assessment of compassion satisfaction, burnout, and compassion fatigue levels of the nurses: A university hospital example. *HUHEMFAD-JOHUFON*. 2021;8(2):144-150. <https://doi.org/10.31125/hunhemsire.966330>
35. Ayaz Alkay S, Yaman-Sözbir, Ş, Bayrak Kahraman B. The effect of nursing internship program on burnout and professional commitment. *Nurse Education Today*. 2018;68:19-22. <https://doi.org/10.1016/j.nedt.2018.05.020>