



# Silent Struggles in Critical Care: Functional Impact and Predictors of Depression Among ICU Nurses

Yoğun Bakımda Sessiz Mücadeleler: Yoğun Bakım Hemşirelerinde Depresyonun Fonksiyonel Etkisi ve Belirleyicileri

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## ABSTRACT

**Aim:** This study aimed to explore the prevalence of depressive symptoms among nurses working in intensive care units (ICUs) and to analyze how these symptoms relate to both individual (e.g., age) and occupational (e.g., stress level, job satisfaction) variables. Furthermore, it sought to assess the functional consequences of depression using the final item of the Patient Health Questionnaire-9 (PHQ-9) scale.

**Materials and Methods:** A descriptive cross-sectional design was employed among ICU nurses from a tertiary-level hospital. Data were gathered through a structured questionnaire incorporating the PHQ-9, a job satisfaction measure, and a perceived stress scale. Statistical analyses included descriptive evaluations, correlation tests, and chi-square analyses, with effect sizes computed via Cramer's V where appropriate.

**Results:** More than half of the nurses (55.4%) demonstrated moderate-to-severe depressive symptoms. Depression scores showed significant associations with age ( $r=-0.210$ ,  $p=0.016$ ), perceived stress ( $p<0.001$ , Cramer's  $V=0.344$ ), and job satisfaction ( $p<0.001$ , Cramer's  $V=0.297$ ). According to the PHQ-9 item assessing functional impairment, 36.2% of participants indicated that depressive symptoms had a moderate-to-severe impact on their daily and professional functioning ( $p<0.001$ , Cramer's  $V=0.484$ ).

**Conclusion:** Depression appears to be highly prevalent among ICU nurses and is influenced by both personal and workplace factors. The strong link between depressive symptoms and functional impairment highlights the importance of comprehensive mental health evaluations in nursing populations. Early recognition of vulnerable individuals, along with institutional programs addressing stress management and job satisfaction, may enhance nurses' psychological well-being and improve the overall quality of critical care delivery.

**Keywords:** Depression, intensive care unit nurses, PHQ-9, functional impairment, occupational stress, job satisfaction, mental health

## ÖZ

**Amaç:** Bu araştırma, yoğun bakım ünitesinde (YBÜ) görev yapan hemşirelerde depresyon belirtilerinin görülme sıklığını belirlemeyi; depresyon ile bireysel (yaş) ve mesleki (stres düzeyi, iş doyumunu) değişkenler arasındaki ilişkileri incelemeyi; ayrıca Hasta Sağlık Anketi-9 (PHQ-9) ölçeğinin son maddesi aracılığıyla depresyonun günlük işlevsellik üzerindeki etkisini değerlendirmeyi amaçlamıştır.

**Gereç ve Yöntem:** Tersiyer düzeyde bir hastanede görev yapan YBÜ hemşireleri arasında tanımlayıcı kesitsel bir çalışma tasarımı kullanılmıştır. Veriler, PHQ-9, iş doyumunu ölçeği ve algılanan stres ölçeğini içeren yapılandırılmış bir anket formu aracılığıyla toplanmıştır. Elde edilen veriler tanımlayıcı istatistikler, korelasyon analizleri ve ki-kare testleriyle değerlendirilmiş; etki büyüklükleri Cramer's V katsayısı ile hesaplanmıştır.

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**Received:** 08.11.2025 **Accepted:** 23.12.2025 **Publication Date:** 04.03.2026

**Cite this article as:** Düzgün A, Yanatma S, Kalın BS, Kırac Utku İ, Çavdar E. Silent struggles in critical care: functional impact and predictors of depression among ICU nurses. Nam Kem Med J. 2026;14(1):58-64



**Bulgular:** Katılımcıların %55,4'ünde orta ile şiddetli düzey arasında değişen depresif belirtiler saptanmıştır. Depresyon puanları ile yaş ( $r=-0,210$ ,  $p=0,016$ ), stres düzeyi ( $p<0,001$ , Cramer's V =0,344) ve iş doyumu ( $p<0,001$ , Cramer's V =0,297) arasında anlamlı ilişkiler bulunmuştur. PHQ-9'un "fonksiyonel etki" maddesi değerlendirildiğinde, hemşirelerin %36,2'si depresyonun günlük yaşam ve mesleki işlevsellik üzerinde orta-şiddetli düzeyde olumsuz etki yarattığını bildirmiştir ( $p<0,001$ , Cramer's V =0,484).

**Sonuç:** Yoğun bakım hemşirelerinde depresyon yaygın bir sorundur ve hem bireysel hem de mesleki etkenlerden etkilenmektedir. Depresyonun işlevsellik üzerindeki belirgin etkisi, hemşirelerin ruhsal durumlarının bütüncül biçimde değerlendirilmesi gereğini ortaya koymaktadır. Erken tanı ve stresle baş etme ile iş doyumunu artırmaya yönelik kurumsal girişimler, hem çalışanların psikolojik iyilik halini hem de verilen bakımın kalitesini geliştirebilir.

**Anahtar Kelimeler:** Depresyon, yoğun bakım hemşireleri, PHQ-9, fonksiyonel bozulma, mesleki stres, iş memnuniyeti, mental sağlık

## INTRODUCTION

Nurses form the cornerstone of healthcare delivery and routinely operate under challenging circumstances that demand emotional engagement, sustained alertness, rotating shifts, and uninterrupted patient contact. These persistent stressors increase their susceptibility to psychological strain, often reflected through conditions such as depression, anxiety, or occupational burnout<sup>1,2</sup>. The occurrence of depressive symptoms among nurses remains notably greater than that observed in the general population. According to recent meta-analyses, approximately one out of every three nurses reports some degree of depression, with particularly elevated prevalence rates reported in studies from Asian regions<sup>3,4</sup>. Such psychological burdens can negatively affect both nurses' personal well-being and the safety of the patients under their care, highlighting the necessity of viewing depression as a significant occupational health issue.

Among all nursing subspecialties, those working in intensive care units (ICUs) encounter some of the most mentally demanding conditions, driven by the high acuity of their patients, the necessity for complex clinical judgments, and the frequent confrontation with ethically challenging situations<sup>5,6</sup>. Workplace stress among ICU nurses is further intensified by factors such as insufficient staffing, irregular shift schedules, and the constant exposure to critically ill or life-threatening patient cases<sup>7</sup>. A recent systematic review demonstrated that nurses working in ICUs experience markedly higher levels of depression and anxiety than their counterparts in general hospital wards<sup>8</sup>. Furthermore, conceptual models such as the Job Demands-Resources framework illustrate that excessive work demands combined with inadequate organizational resources foster burnout and emotional fatigue, which in turn may evolve into depressive symptoms<sup>9</sup>.

Psychological resilience has been recognized as an important protective mechanism against mental health deterioration. Evidence from various studies suggests that interventions such as mindfulness practices, emotional regulation training, and organizational well-being initiatives can play a preventive role in reducing the likelihood of depression among nurses<sup>10,11</sup>. Despite the expanding body of international research, depression among intensive care nurses continues to be

insufficiently investigated in many middle-income nations, including Türkiye. Most Turkish studies to date have primarily addressed general occupational stress or burnout, rather than employing validated instruments specifically designed to measure depressive symptoms<sup>12,13</sup>.

The Patient Health Questionnaire-9 (PHQ-9) is a well-established, self-report instrument developed in accordance with DSM-5 diagnostic criteria. It is commonly utilized to assess both the occurrence and the severity of depressive symptoms in clinical and research settings<sup>14</sup>. The Turkish adaptation of the PHQ-9 has also demonstrated strong reliability and validity, confirming its suitability for use among healthcare professionals in Türkiye<sup>15</sup>. In addition, the final item of the PHQ-9 "How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?" specifically reflects the degree of functional impairment caused by depressive symptoms, thereby providing a broader understanding of depression that extends beyond mere symptom intensity<sup>14,15</sup>.

Given the scarcity of national data on this topic, the present study sought to determine the prevalence of depressive symptoms among intensive care nurses in Türkiye using the PHQ-9 scale. It also aimed to examine how depression relates to demographic variables (such as age, gender, and professional experience) and occupational characteristics (including stress level and job satisfaction). In addition, the research evaluated the functional impact of depression through the final item of the PHQ-9, highlighting the extent to which psychological symptoms interfere with nurses' daily routines and professional performance.

## MATERIALS AND METHODS

This study utilized a descriptive and cross-sectional design to examine depressive symptoms among nurses employed in the second- and third-level ICUs of University of Health Sciences Türkiye, Diyarbakır Gazi Yaşargil Training and Research Hospital between February and March 2025. All study procedures were conducted in accordance with the ethical standards of the Declaration of Helsinki. Ethical approval was granted by the University of Health Sciences Türkiye, Gazi Yaşargil Training and

Research Hospital Ethics Committee (decision no: 316, date: 17.01.2025), and written informed consent was obtained from every participant prior to inclusion.

The study population consisted of all nurses aged 18 years or older who were working in the designated ICUs during the study period. A total of 130 nurses who completed the distributed questionnaires in full were included in the final analysis.

### Statistical Analysis

Data were collected using a structured questionnaire composed of three integrated sections. The first section gathered sociodemographic and professional characteristics, including variables such as age, gender, educational attainment, total professional experience, duration of ICU-specific employment, type of shift worked, patient load, and any previous history of depression. The second section focused on occupational perceptions, evaluating perceived stress levels and overall job satisfaction over the preceding two weeks using Likert-type items. The third section incorporated the PHQ-9, a validated tool used to assess the presence and severity of depressive symptoms.

The internal consistency of the PHQ-9 scale was examined using Cronbach’s alpha coefficient. Depression severity was classified according to internationally recognized thresholds: scores between 0-4 indicated minimal depression, 5-9 mild, 10-14 moderate, 15-19 moderately severe, and 20-27 severe depression.

Prior to statistical evaluation, incomplete responses were excluded using the listwise deletion method, and outliers were identified and removed based on standardized z-scores. Statistical analyses were performed using IBM SPSS Statistics version 25.0. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated to summarize the data. The Kolmogorov–Smirnov test was employed to assess the normality of variable distributions. Correlations between PHQ-9 scores and ordinal variables were analyzed using Spearman’s rank correlation test. Relationships between categorical variables and depression levels were examined using Pearson’s chi-square, Fisher’s exact, and Fisher-Freeman-Halton tests where appropriate. A p-value less than 0.05 was considered statistically significant in all analyses.

### RESULTS

A total of 130 nurses working in ICUs participated in the study. The median age of the participants was 31 years (range: 21-45). Among them, 50 nurses (38.5%) were female and 80 (61.5%) were male. The mean total professional experience was 9.2±4.0 years, while the average duration of work in intensive care settings was 6.1±4.1 years. The majority of respondents (82.3%) reported working on rotating shifts, and the median number of patients cared for per shift was four (range: 0-10) (Table 1).

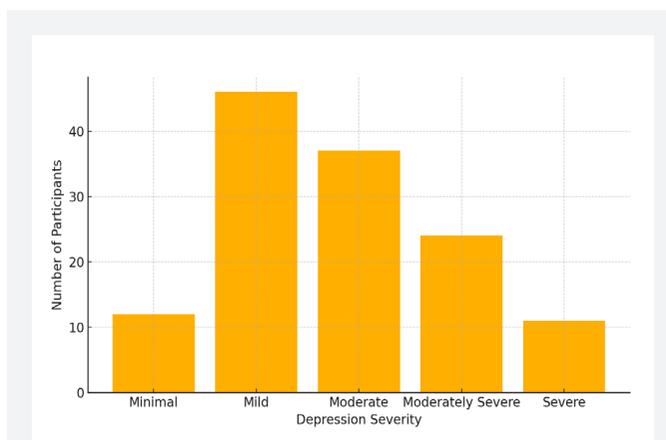
The internal reliability of the PHQ-9 was found to be excellent, with a Cronbach’s alpha of 0.894. The mean total PHQ-9 score was 11.2±5.4, indicating a generally moderate level of depressive symptoms. Based on severity categories, 12 nurses (9.2%) showed minimal symptoms, 46 (35.4%) mild, 37 (28.5%) moderate, 24 (18.5%) moderately severe, and 11 (8.5%) severe symptoms of depression. Altogether, 72 participants (55.4%) demonstrated moderate-to-severe levels of depression (Figure 1).

Correlation analyses examining associations between PHQ-9 scores and participant characteristics revealed a significant negative correlation with age ( $r=-0.210$ ,  $p=0.016$ ), indicating that younger nurses tended to report higher depressive symptom levels. No significant relationships were detected between PHQ-9 scores and the number of monthly night shifts ( $p=0.211$ ), total years of professional experience ( $p=0.136$ ), duration of ICU experience ( $p=0.177$ ), length of employment in the current unit ( $p=0.703$ ), number of patients cared for per shift ( $p=0.548$ ), or monthly shift frequency ( $p=0.211$ ).

**Table 1. Sociodemographic and professional characteristics of participants**

Variable	Value
Age, median (range), years	31 (21-45)
Total professional experience, mean ± SD (years)	9.2±4.0
ICU experience, mean ± SD (years)	6.1±4.1
Gender, n (%)	
Female	50 (38.5%)
Male	80 (61.5%)
Rotating shifts, n (%)	107 (82.3%)
Number of patients cared for, median (range)	4 (0-10)

SD: Standard deviation, ICU: Intensive care unit



**Figure 1.** Distribution of participants by PHQ-9 depression severity levels

PHQ-9: Patient Health Questionnaire-9

When occupational variables were examined, a statistically significant relationship was identified between perceived stress levels and depression severity ( $p < 0.001$ ). The corresponding effect size, calculated with Cramer's V, was 0.344, suggesting a moderate strength of association. Job satisfaction was likewise significantly related to depressive symptoms ( $p < 0.001$ ; Cramer's V = 0.297).

No other significant associations were observed between depression levels and demographic or professional characteristics, including gender, educational status, shift schedule, number of patients assigned, history of depression, or use of antidepressant medication. Comprehensive data are provided in Table 2.

Analysis of responses to the final PHQ-9 item, which evaluates the functional consequences of depressive symptoms, showed

that half of the participants (50.0%) stated these symptoms had a "slight" effect on their daily lives. Meanwhile, 21 nurses (16.2%) described a "moderate" impact, 16 (12.3%) a "considerable" impact, and 10 (7.7%) reported the effect as "very severe." Only 18 nurses (13.8%) indicated that depression had "no effect at all" on their functioning (Table 3).

A statistically significant association was also detected between responses to the PHQ-9 functional impact item and overall depression severity ( $p < 0.001$ ). The strength of this relationship was substantial (Cramer's V = 0.484). As illustrated in Figure 2, higher levels of reported functional difficulty corresponded to a greater proportion of nurses experiencing more severe depressive symptoms.

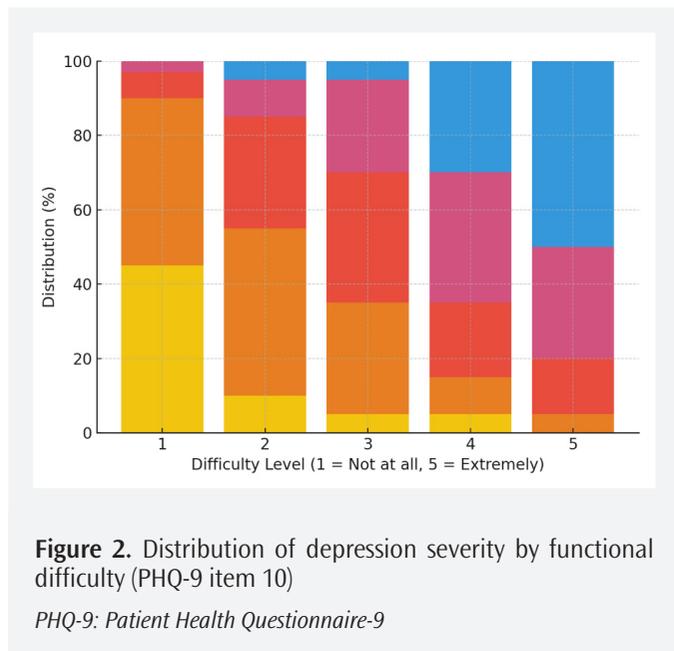
**Table 2. Depression severity by demographic and occupational factors in ICU nurses**

Variable	Depression levels					p-value
	Minimal	Mild	Moderate	Moderately severe	Severe	
<b>Gender</b>						
Female	6	26	25	16	7	0.737
Male	6	20	12	8	4	
<b>Education level</b>						
Health high school	1	2	0	0	1	0.071
Associate degree	0	3	3	4	4	
Bachelor's degree	11	36	33	19	6	
Master's degree or above	0	5	1	1	0	
<b>Shift type</b>						
Day	2	9	8	2	1	0.731
Night	0	0	1	0	0	
Rotating	10	37	28	22	10	
<b>History of depression</b>						
Yes	0	1	4	4	1	0.145
No	12	45	33	20	10	
<b>Use of antidepressants</b>						
Yes	0	0	0	1	0	0.362
No	12	46	37	24	11	
<b>Stress level</b>						
Very low	4	6	0	0	0	<0.001
Low	5	11	7	1	0	
Moderate	2	22	16	5	1	
High	0	5	10	10	7	
Very high	1	2	4	8	3	
<b>Job satisfaction</b>						
Very low	2	4	6	8	6	0.001
Low	1	9	13	8	3	
Moderate	2	26	12	7	1	
High	4	6	5	1	1	
Very high	3	1	1	0	0	

ICU: Intensive care unit

Table 3. Functional impact of depressive symptoms based on the PHQ-9 “difficulty” item		
Difficulty level (1= not at all, 5= extremely)	Number of participants (n)	Percentage (%)
Not at all	18	13.8%
A little	65	50.0%
Moderately	21	16.2%
Considerably	16	12.3%
Extremely	10	7.7%

PHQ-9: Patient Health Questionnaire-9



**DISCUSSION**

The present study revealed that depressive symptoms of moderate-to-severe intensity were highly prevalent among intensive care nurses. It also identified significant associations between depression levels, occupational stress, and job satisfaction. These findings are consistent with international evidence suggesting that nurses especially those working in high-acuity environments are at an increased risk of developing mental health problems<sup>1-3,8</sup>.

The proportion of nurses in our study who exhibited moderate-to-severe depressive symptoms (55.4%) was higher than global estimates, which typically range between 34% and 45%<sup>3,8,16</sup>. Similarly, Xie et al.<sup>8</sup> reported high rates of depression among ICU nurses, while post-pandemic studies such as that of Labrague<sup>17</sup> also demonstrated elevated psychological distress among nursing staff. These findings collectively indicate that intensive care environments amplify occupational stressors and increase vulnerability to depression.

The significant association identified between PHQ-9 scores and perceived stress highlights the substantial influence of workplace environment and organizational dynamics. Factors

such as excessive workload, inadequate social support, and rotating shift schedules are well-documented contributors to emotional exhaustion and psychological strain among nurses<sup>5,9</sup>. Furthermore, the observed link between higher depression severity and lower job satisfaction is consistent with both international and Turkish studies that identify the work environment and organizational climate as key determinants of mental well-being among healthcare professionals<sup>12,13,18</sup>. The Job Demands-Resources framework offers a conceptual basis for understanding these relationships, proposing that elevated job demands combined with insufficient organizational resources lead to increased psychological burden and emotional strain among employees<sup>9</sup>.

The recently published multicenter HELLO Trial demonstrated that organizational interventions designed to enhance positive communication significantly reduced burnout among ICU staff. These findings reinforce the relevance of the observed associations between depression, job satisfaction, and stress in our study, highlighting the need for a comprehensive, multidimensional approach to the psychosocial well-being of ICU personnel<sup>19</sup>.

Another important observation in this study was the association between age and depressive symptom levels. Younger nurses demonstrated higher PHQ-9 scores, aligning with prior research that identifies early-career nurses as a particularly vulnerable group, largely due to their limited coping strategies and reduced access to professional support systems<sup>20</sup>. Accordingly, targeted approaches such as structured mentorship initiatives and resilience-building programs may strengthen psychological stability and coping capacity among early-career nurses<sup>10,11</sup>.

Functional impairment, as evaluated through the final item of the PHQ-9, demonstrated a strong and significant association with the severity of depressive symptoms. This observation is consistent with the seminal work of Kroenke et al.<sup>14</sup> and later validation studies, which established functional disruption as a fundamental marker of clinical depression severity<sup>15</sup>. Accordingly, the present findings emphasize the practical value of incorporating assessments of functional impact into mental health evaluations, particularly in occupational and healthcare contexts.

From a public health standpoint, institutional measures aimed at regulating workload, optimizing shift arrangements, and strengthening psychosocial support systems are essential to protect the mental health of ICU staff. Evidence-based approaches including mindfulness-based interventions, structured debriefing sessions, and programs that foster organizational resilience have consistently been shown to lower rates of depression and burnout among healthcare professionals<sup>10,11,21</sup>.

### Study Limitations

This study has certain limitations that should be acknowledged. Its cross-sectional design precludes establishing causal relationships, and the use of self-administered questionnaires may have introduced potential reporting bias. Despite these constraints, the research possesses notable strengths, including an adequate sample size, the application of validated psychometric instruments, and a specific focus on ICU nurses a population that remains relatively underrepresented in the context of mental health studies in Türkiye. Taken together, the findings underscore the pressing need for both institutional and individual-level strategies aimed at enhancing psychological resilience and protecting the overall well-being of professionals working in intensive care environments.

### CONCLUSION

In summary, this study offers an in-depth examination of the prevalence of depressive symptoms among ICU nurses and explores their associations with both individual factors (such as age) and occupational determinants (including stress level and job satisfaction).

The results suggest that younger nurses, those experiencing greater occupational stress, and those with diminished job satisfaction are more vulnerable to psychological distress. A particularly important finding is the strong association between depressive symptoms and functional impairment, underscoring the need for a more comprehensive and multidimensional approach to the evaluation and management of depression. Nurses serve not only as caregivers but also as vital professionals who ensure patient safety, continuity, and quality of care. In high-intensity environments such as ICUs, their psychological health plays a decisive role in maintaining these standards. Early detection of frequently neglected mental health conditions such as depression along with the reinforcement of individual coping mechanisms, promotion of team-based psychosocial support, and the implementation of organizational strategies to reduce workplace stress are essential for preventing burnout and sustaining high-quality healthcare services.

As one of the few studies conducted in Türkiye employing the PHQ-9 to evaluate depression among ICU nurses, this

research makes a valuable contribution to the national and international literature. It emphasizes the critical importance of prioritizing mental health and well-being at both individual and institutional levels within the healthcare system.

These findings underscore the need for ICU administrators to implement structured mental-health support programs, enhance organizational communication, and strengthen resilience-building initiatives to protect staff well-being. Integrating such strategies into routine ICU practice may not only mitigate psychological distress among nurses but also contribute to improved patient safety and care quality.

Future multicenter and longitudinal studies are needed to clarify causal relationships and to evaluate the long-term impact of organizational and individual-level interventions on the mental health of ICU nurses.

### Ethics

**Ethics Committee Approval:** Ethical approval was granted by the University of Health Sciences Türkiye, Gazi Yaşargil Training and Research Hospital Ethics Committee (decision no: 316, date: 17.01.2025).

**Informed Consent:** Written informed consent was obtained from all participants prior to their inclusion in the study.

### Footnotes

#### Authorship Contributions

Concept: A.D., S.Y., Design: A.D., S.Y., Data Collection or Processing: A.D., S.Y., B.S.K., Analysis or Interpretation: A.D., S.Y., İ.K.U., E.Ç., Literature Search: A.D., B.S.K., E.Ç., Writing: A.D., S.Y., B.S.K., İ.K.U., E.Ç.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

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