Original Article

Depressive Symptoms and their Associated Factors among Physicians and Nurses in Military Healthcare Settings in Taif, Saudi Arabia

Tariq Hameed R Alotaibi[1], Nasser Awadh S Alshehri[2], Manal Saeed M Al Bogami[3], Maram Saeed M Al Bogami[4] and Shahad Eid Alotaibi[5]

ABSTRACT

Objective: This study aims to assess the prevalence of depression among healthcare workers, including physicians and nurses, and identify the factors contributing to its development

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the two military hospitals in Taif, Saudi Arabia: Al-Hada Armed Forces Hospital and Prince Mansour Community Military Hospital, from June 2024 to June 2025.

Methodology: The study was conducted to assess depression among healthcare workers in Taif, Saudi Arabia. The study included all physicians and nurses working at Al-Hada Armed Forces Hospital and Prince Mansour Community Military Hospital during the study period, provided they had worked there for at least six months.

Results: The sample consisted of 500 HCWs in the age range of 23-59 years. The study found that 64.8% of participants had depression, with 46.4% mild, 3.8% moderately severe, and 0.8% severe. Depression was more common in females (69.5%) than males (59.8%), with severe cases also higher in females (6.6% vs. 2.5%, p=0.036). Job-related factors played a key role, with head nurses (85.7%) and intern physicians (72.7%) having the highest depression rates, while physical therapists and nursing assistants had the lowest (38.5%). Depression was most prevalent among general surgeons and psychiatrists (80%) and least among radiologists (46.2%) and ICU workers (50%). Personal factors also contributed, as those who had lost a loved one in the past six months had significantly higher depression rates (71.8% vs. 64.2%, p<0.001).

Conclusion: The study highlights a high prevalence of depression among healthcare workers, with females, head nurses, and intern physicians at greater risk. Job role and workplace significantly influenced depression levels, with general surgeons, psychiatrists, and workers at Al-Hada Armed Forces Hospital experiencing higher rates.

Key Words: depression, health care workers, doctors, nurses, mental health, Taif

doi:http://doi.org/10.60110/medforum.37.10.25

Citation of article: Alotaibi THR, Alshehri NAS, Al Bogami MSM, Al Bogami MSM, Alotaibi SE. Depressive Symptoms and their Associated Factors among Physicians and Nurses in Military Healthcare Settings in Taif, Saudi Arabi. Med Forum 2026;37(10):129-133. doi:http://doi.org/10.60110/medforum.37.10.25.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

[1.] Psychiatry Division, Department of Medical Specialties, College of Medicine, Majmaah University, Majmaah, Saudi Arabia.
[2.] Consultant of Psychiatry, Psychiatry Department / Senior Registrar, Family Medicine Department[3], Prince Sultan Military Medical City, Riyadh, Saudi Arabia.
[4.] Registrar, Family Medicine Department, Riyadh Second Health Cluster, Riyadh, Saudi Arabia.
[5.] Senior Registrar, Family Medicine Department, King Abdullah bin Abdulaziz University Hospital, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia.

Correspondence: Tariq Hameed R Alotaibi, Psychiatry Division, Department of Medical Specialties, College of Medicine, Majmaah University, Majmaah, Saudi Arabia
Contact No: 966547770511
Email: T.Hameed@mu.edu.sa

Received: June, 2026
Reviewed: July-August, 2026
Accepted: September, 2026

Depression is one of the most prevalent mental health disorders worldwide and represents an important cause of psychological distress, functional impairment, reduced quality of life, and occupational disability. Depression can be described as a state of sadness, emotional distress, discouragement, hopelessness, irritability, lack of motivation, and a diminished interest or enjoyment in life.[1] The World Health Organization (WHO) in 2012 reported that depression is the main cause of disability for the population.[2] Many studies have reported on the prevalence and actual causes of depression in physicians and nurses.[3] A systematic review and meta-analysis that included studies from 15 countries estimated that the prevalence of depression among physicians ranged from 20.9% to 43.2%, with a pooled estimate of 28.8%.[4] In a systematic review and meta-analysis of studies conducted on intensive care unit nurses, the prevalence of depression was 12%.[5] According to WHO,

depression originates from a complex interaction of biological, psychological, and social factors. Gender differences are apparent regarding the prevalence of depression, with higher rates among women compared to men, due to factors associated with social responsibilities or hormonal imbalances associated with menstruation, menopause, and childbirth.[6]

Depression may impair job performance and productivity and increase employee turnover.[7] It could also negatively affect patient care. Healthcare workers are more prone to develop depression compared to others due to the stressful nature of their job.[8] The risk of psychological distress may differ between physicians and nurses because their occupational responsibilities and working environments are not identical.[9] Physicians frequently experience pressure related to diagnostic and therapeutic decision-making, prolonged duty hours, professional expectations, medico-legal concerns, and limited work–life balance.[10] Nurses, meanwhile, often have prolonged direct patient contact, rotating shifts, demanding bedside responsibilities, emotional interaction with patients and relatives, and exposure to workplace aggression. Night-shift work is particularly important among nursing professionals and has been significantly associated with depression, potentially through disruption of circadian rhythms, inadequate sleep, and chronic fatigue. More broadly, workplace bullying, violence, excessive job demands, inadequate resources, and poor social support have repeatedly emerged as potentially modifiable determinants of poor mental health among healthcare professionals.[11]

METHODOLOGY

A cross-sectional study was conducted to assess depression among healthcare workers in Taif, Saudi Arabia, at two military hospitals: Al-Hada Armed Forces Hospital (368 beds) and Prince Mansour Community Military Hospital (210 beds) from June 2024 to June 2025.

Data Collection: Data was collected using a self-administered questionnaire with three sections. The first gathered socio-demographic details and potential depression-related factors, including age, gender, marital status, nationality, job title, specialty, salary satisfaction, chronic illness, smoking, recent loss, BMI, work duration, night shifts, and family history of depression. The second section included the Patient Health Questionnaire-2 (PHQ-2) (Appendix 2), a preliminary depression screening tool with a sensitivity of 97% and specificity of 67%. The third section featured the Patient Health Questionnaire-9 (PHQ-9) (Appendix 3), used for screening, diagnosing, and assessing depression severity, with a sensitivity of 61% and specificity of 94%. A PHQ-2 score of ≥3 indicated possible depression, prompting PHQ-9 administration. The PHQ-9 score classified depression as follows: 0-4 (none), 5-9 (mild), 10-14 (moderate), 15-19 (moderately severe), and 20-27 (severe). Both tools are publicly available. The dependent variable in this study was depression among physicians or nurses. The independent variables included socio-demographic factors such as age, nationality, marital status, job title, specialty, and salary satisfaction. Work-related factors, including work duration, night shift status, and smoking status, were also considered. Additionally, health-related variables, such as chronic disease history, family history of depression, loss of a loved one in the past six months, and body mass index (BMI), were examined for their potential association with depression. A pilot study was conducted on approximately 10% of the sample to assess the clarity, format, and sequence of the questionnaire. Since no significant modifications were necessary, data from the pilot study were included in the final analysis.

Statistical Analysis: Data were entered into a personal computer and analyzed using SPSS version 25. Descriptive statistics, including mean, standard deviation, range, frequency, and percentage, were used to summarize data. Chi-square tests were performed to explore associations between depression severity and categorical variables. One-way ANOVA was used to compare means across multiple groups. Depression was treated as a dichotomous variable in multivariate logistic regression to identify significant predictors while controlling for confounders. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) were reported, with statistical significance set at $p < 0.05$.

RESULTS

The study sample consists of a nearly equal gender distribution, with 48.2% males and 51.8% females. Participants' ages range from 23 to 59 years, with a mean age of 32.5 years and a standard deviation of 6.5 years, indicating some variation in age.

Table No. 1: Demographic characteristics of the participants (n=500)

Variable	Frequency (%) / Mean ± SD
Gender	
Male	241 (48.2)
Female	259 (51.8)
Age (years)	
Range	23–59
Mean ± SD	32.5 ± 6.5
Working place	
Al-Hada Military Hospital	318 (63.6)
Prince Mansour Military Hospital	182 (36.4)
Nationality	
Saudi	317 (63.4)
Non-Saudi	183 (36.6)
Marital status	
Single	162 (32.4)
Married	314 (62.8)
Divorced/Widowed	24 (4.8)

Job title	
Consultant physician	69 (13.8)
Senior specialist/Specialist physician	112 (22.4)
Resident physician	189 (37.8)
Intern	11 (2.2)
Head nurse	7 (1.4)
Registered nurse	99 (19.8)
Others	13 (2.6)
Years of work in the current facility (n = 461)	
<3 years	93 (20.2)
3–5 years	258 (55.9)
>5 years	110 (23.9)
Night shift work	
Yes	120 (24.0)
No	380 (76.0)
Specialty	
Internal Medicine	88 (17.6)
General Surgery	60 (12.0)
Orthopedics	28 (5.6)
Obstetrics & Gynaecology	67 (13.4)
Family Medicine	87 (17.4)
Pediatrics	59 (11.8)
Psychiatry	20 (4.0)
ICU	10 (2.0)
Emergency Department	25 (5.0)
Radiology	13 (2.6)
ENT	15 (3.0)
Others	28 (5.6)
Satisfaction with salary	
No	208 (41.6)
Yes	292 (58.4)

Regarding workplace distribution, 63.6% are recruited from Al-Hada Military Hospital, while 36.4% are from Prince Mansour Military Hospital. In terms of nationality, the majority, 63.4%, are Saudi nationals, whereas 36.6% are non-Saudi. Marital status data reveals that 32.4% are single, the majority, 62.8%, are married, and a smaller proportion, 4.8%, are divorced or widowed (Table 1). Depression severity was more prevalent among females than males (69.5% vs. 59.8%), with moderately severe/severe depression also being higher in females (6.6% vs. 2.5%). These differences were statistically significant (p=0.036). However, other demographic factors, including age, nationality, and marital status, showed no significant association with depression (Table 2).

A statistically significant association was observed between gender and depression severity (p = 0.036), with moderately severe/severe depressive symptoms being more common among females than males (6.6% vs. 2.5%), while absence of depression was more frequent among males (40.2% vs. 30.5%). Mean age did not differ significantly across depression categories, ranging from 31.0 ± 5.8 years in the moderately severe/severe group to 32.9 ± 7.1 years in the moderate group (p = 0.680). Workplace showed a significant association with depression severity (p = 0.001); participants from Al-Hada Military Hospital more frequently had mild depressive symptoms (51.6%), whereas a higher proportion of participants from Prince Mansour Military Hospital had no depression (46.7%) (Table 3).

Table No. 2: Association between participants` demographic characteristics and depression, based on PHQ-9 questionnaire

Variable	No depression, n = 176 n (%)	Mild, n = 232 n (%)	Moderate, n = 69 n (%)	Moderately severe/Severe, n = 23 n (%)	p-value
Gender					0.036*
Male (n = 241)	97 (40.2)	107 (44.4)	31 (12.9)	6 (2.5)	
Female (n = 259)	79 (30.5)	125 (48.3)	38 (14.7)	17 (6.6)	

*Statistically significant at $p < 0.05$.

Table No. 3: Association of sociodemographic characteristics with severity of depressive symptoms among study participants (n = 500)

Variable	No depression, n = 176	Mild, n = 232	Moderate, n = 69	Moderately severe/Severe, n = 23	p-value
Gender					0.036*
Male (n = 241)	97 (40.2)	107 (44.4)	31 (12.9)	6 (2.5)	
Female (n = 259)	79 (30.5)	125 (48.3)	38 (14.7)	17 (6.6)	
Age (years), Mean ± SD	32.6 ± 6.5	32.4 ± 6.5	32.9 ± 7.1	31.0 ± 5.8	0.680**
Working place					0.001*
Al-Hada Military Hospital (n = 318)	91 (28.6)	164 (51.6)	46 (14.5)	17 (5.3)	
Prince Mansour Military Hospital (n = 182)	85 (46.7)	68 (37.4)	23 (12.6)	6 (3.3)	
Nationality					0.558*
Saudi (n = 317)	115 (36.3)	147 (46.4)	39 (12.3)	16 (5.0)	
Non-Saudi (n = 183)	61 (33.3)	85 (46.4)	30 (16.4)	7 (3.8)	
Marital status					0.320*
Single (n = 162)	52 (32.1)	78 (48.1)	22 (13.6)	10 (6.2)	
Married (n = 314)	118 (37.6)	138 (43.9)	45 (14.3)	13 (4.1)	
Divorced/Widowed (n = 24)	6 (25.0)	16 (66.7)	2 (8.3)	0 (0.0)	

DISCUSSION

The present study demonstrated a substantial burden of depressive symptoms among physicians and nurses, with 64.8% of the 500 participants having some degree of depressive symptoms. Mild symptoms were the most frequent, affecting 46.4% of participants, followed by moderate symptoms in 13.8% and moderately severe/severe symptoms in 4.6%, while 35.2% had no depressive symptoms. These findings indicate that psychological distress is common among healthcare professionals, although most affected participants fell within the milder category. The high frequency of depressive symptoms is clinically important because persistent psychological distress among healthcare workers may adversely affect pe Depression leads to disability among HCWs, which leads to functional impairment in both their workplace and personal lives. This could result in deterioration in patient care. Few studies have been published about depression among hospital HCWs in Saudi Arabia. Therefore, this study was conducted to explore the prevalence and determinants of depression among HCWs (physicians and nurses) working at two main military hospitals in Taif governorate.[12]

In the present study, depression was reported among 31% of the healthcare workers, based on the PHQ-2 questionnaire, while according to the PHQ-9 questionnaire, depression was reported among 64.8% of them. It was mild in 46.4%, moderately severe, and severe among 3.8% and 0.8% of them, respectively. Variable results were reported elsewhere (locally and worldwide). The clearly observed discrepancy between the above-mentioned studies may be partly attributable to the different nature of the target population, different methodological approaches, and different tools used to diagnose depression. Therefore, a comparison between them is not practical.[13] Gender was significantly associated with the severity of depressive symptoms in the present study ($p = 0.036$). Although mild symptoms were common in both sexes, moderately severe/severe symptoms were more frequent among females than males (6.6% vs. 2.5%), whereas the proportion without depression was higher among males (40.2% vs. 30.5%).[14] This finding is consistent with evidence from Saudi healthcare settings suggesting greater psychological vulnerability among female healthcare professionals. The overall findings highlight that depressive symptoms among physicians and nurses are likely influenced by a combination of individual and occupational factors. Particularly noteworthy in the present study were the significant associations with gender and working place, whereas age, nationality, and marital status were not significantly related to symptom severity.[15,16] Previous research has similarly emphasized the importance of occupational environment, professional role, work experience, and workplace stress in determining the mental health of healthcare professionals.[17] In a Saudi armed-forces hospital study, depression affected 43.9% of healthcare workers and shorter professional experience was associated with greater risk, further supporting the importance of workplace-related determinants.[18] The present findings should be interpreted in light of certain limitations. The cross-sectional nature of the study prevents determination of temporal or causal relationships between associated factors and depressive symptoms. Self-reported assessment may also introduce reporting and response biases. Furthermore, the study was conducted in two healthcare facilities, which may limit generalizability to healthcare workers in other regions and institutions. Potentially important variables such as workload, weekly working hours, sleep quality, burnout, workplace violence, social support, previous psychiatric illness, and recent stressful life events may also influence depressive symptoms and should be considered in future studies. Prospective multicenter investigations incorporating occupational and psychosocial variables and multivariable regression analysis would provide a more comprehensive understanding of independent predictors of depression among physicians and nurses.

CONCLUSION

It is concluded that depressive symptoms were common among physicians and nurses, with nearly two-thirds of participants experiencing some degree of depression, predominantly mild symptoms. Female gender and working place were significantly associated with the severity of depressive symptoms, whereas age, nationality, and marital status showed no significant association. These findings highlight the need for routine mental health screening, confidential psychological support, and workplace-based interventions aimed at reducing occupational stress among healthcare professionals. Further multicenter prospective studies are recommended to identify independent predictors and modifiable workplace factors contributing to depression in this population.

Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Tariq Hameed R Alotaibi, Nasser Awadh S Alshehri
Drafting or Revising Critically:	Manal Saeed M Al Bogami, Maram Saeed M Al Bogami, Shahad Eid Alotaibi
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None

Ethical Approval: No.E-2828 Dated 16.02.2024

REFERENCES

1. Joseph B. A Comment on "Perceptions of Accredited Social Health Activists on Depression: A Qualitative Study from Karnataka, India". Indian J Psychol Med 2018;40(2):195-196. doi: 10.4103/IJPSYM.IJPSYM_12_18. PMID: 29962582; PMCID: PMC6008998.
2. Żołnierczyk-Zreda D, Holas P. Psychospołeczne warunki pracy a depresja i zaburzenia depresyjne: przegląd badań [Psychosocial working conditions and major depression or depressive disorders: Review of studies]. Med Pr 2018;69(5):573-581. Polish. doi: 10.13075/mp.5893.00703. Epub 2018 Oct 18. PMID: 30338765.
3. Akhtar N, Zainab S, Rabab U, Hussain A. Frequency of depression and coping strategies among nurses in a tertiary care hospital in Karachi. Ann ASH KMDC 2025;30(2):128-35.
4. Fond G, Fernandes S, Lucas G, Greenberg N, Boyer L. Depression in healthcare workers: results from the nationwide AMADEUS survey. Int J Nurs Stud 2022;135:104328.
5. Limaye D, Limaye V, Pitani RS, Fortwengel G, Sydymanov A, Otzipka C, et al. Development of a quantitative scoring method for STROBE checklist. Acta Pol Pharm Drug Res 2018; 75(5):1095-106.
6. AlFahhad N. Prevalence and factors associated with depression among health care workers in National Guard Hospital in Riyadh, KSA. Int J Med Dev Ctries 2018;2(3):92–96.
7. Lee C, Yun B, Lee WT, Sim J, Kim CN, Won JU, et al. Resilience and Depressive Symptoms among Medical Staff in a Military Hospital Dedicated to the Treatment of COVID-19. Int J Environ Res Public Health 2022;19(18):11576. doi: 10.3390/ijerph191811576. PMID: 36141840; PMCID: PMC9517336.
8. Zhao Y, Tao Y, Bao X, Ding Q, Han C, Luo T, et al. A study on differences about the influencing factors of depressive symptoms between medical staff and residents during 2022 city-wide temporary static management period to fighting against COVID-19 pandemic in Shanghai. Front Public Health 2023;10:1083144. doi: 10.3389/ fpubh.2022.1083144. PMID: 36699891; PMCID: PMC9868696.
9. Shi L, Lu ZA, Que JY, Huang XL, Liu L, Ran MS, et al. Prevalence of and Risk Factors Associated With Mental Health Symptoms Among the General Population in China During the Coronavirus Disease 2019 Pandemic. JAMA Netw Open 2020;3(7):e2014053. doi:10.1001/jamanetworkopen.2020.14053. PMID: 32609353; PMCID: PMC7330717.
10. Feng Q, Zhou H, Wang L, Kang C. A Study on the Effect of the Pre-Go-Live Training in Anxiety and Depression of Medical Staff Based on the Data of Wuhan Fangcang Shelter Hospital During COVID-19 in the Era of Big Data. Front Public Health 2022;10:909241. doi: 10.3389/fpubh.2022.909241. PMID: 35712278; PMCID: PMC9197494.
11. Gu Y, Zhu Y, Xu G. Factors associated with mental health outcomes among health care workers in the Fangcang shelter hospital in China. Int J Soc Psychiatr 2022;68(1):64-72. doi:10.1177/ 0020764020975805. Epub 2020 Dec 9. PMID: 33295238.
12. Maharaj S, Lees T, Lal S. Prevalence and risk factors of depression, anxiety, and stress in a cohort of Australian nurses. Int J Environ Res Public Health 2018;16(1):61.
13. Cocker F, Sanderson K, LaMontagne AD. Estimating the economic benefits of eliminating job strain as a risk factor for depression. J Occup Environ Med 2017;59(1):12-7.
14. Sundarapperuma T.D., Gamage M.W.K., Rathnayake N. et al. Psychological disturbances encountered by the healthcare professionals, military professionals and general public in Sri Lanka during COVID-19 pandemic: a cross-sectional study. BMC Psychiatr 2023;23:452. https://doi.org/10.1186/s12888-023-04918-2
15. Kalski SB, Konaszewski K, Büssing A, Surzykiewicz J. Resilience and mental well-being during the COVID-19 pandemic: serial mediation by persistent thinking and anxiety about coronavirus. Front Psychiatr 2022;27(12):2603. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC88 29387/.
16. Alwhaibi M, Alhawassi TM, Balkhi B, Al Aloola N, Almomen AA, Alhossan A, et al. Burnout and Depressive Symptoms in Healthcare Professionals: A Cross-Sectional Study in Saudi Arabia Healthcare 2022;10:2447. https://doi.org/10.3390/ healthcare10122447
17. Hasan MT, Anjum A, Biswas MAAJ, Hossain S, Alin SI, Koly KN, et al. A Survey on Depressive Symptoms and Its Correlates Amongst Physicians in Bangladesh During the COVID-19 Pandemic. Front. Psychol 2022:13:846889. doi: 10.3389/fpsyg.2022.846889
18. Taha Abdullah N, Mohammed Dhahir N. Depressive Symptoms among Nurses who Working in Pediatric Wards. J Pioneering Med Sci 2025;14(5):1-7.