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Prevalence of Depression and Anxiety among Nurses in Teaching Hospitals of Kabul University of Medical Sciences

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Research Article

Keywords: anxiety, depression, hospital, nurses, prevalence

Posted Date: November 11th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11326659/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

Depression and anxiety are among the most prevalent mental health disorders worldwide and represent significant public health concerns. Among nurses, these conditions may adversely affect psychological well-being, job performance, and the quality of patient care. Early identification of mental health problems is essential for implementing timely and appropriate interventions. This study aimed to determine the prevalence of depression and anxiety among nurses working in teaching hospitals affiliated with Kabul University of Medical Sciences.

Method

A descriptive cross-sectional study was conducted among 179 nurses selected proportionally from four teaching hospitals affiliated with Kabul University of Medical Sciences. Data were collected using the Hospital Anxiety and Depression Scale (HADS). Descriptive statistics were used to estimate the prevalence of depression and anxiety, and chi-square analysis was performed to assess the association between the two conditions.

Results

A total of 179 nurses participated in the study, including 119 (66.5%) females and 60 (33.5%) males. Most participants were aged 20 to 29 years (n = 103, 57.5%), married (n = 106, 59.2%), had 1 to 5 years of work experience (n = 106, 59.2%), and held a bachelor's degree (n = 109, 60.9%). The prevalence of anxiety and depression was 38.5% and 36.0%, respectively. Chi-square analysis demonstrated a statistically significant association between depression and anxiety, with higher levels of depression associated with greater severity of anxiety symptoms.

Conclusion

The findings indicate a substantial burden of anxiety and depression among nurses working in teaching hospitals affiliated with Kabul University of Medical Sciences. These results highlight the need for workplace mental health programs, regular psychological screening, and targeted interventions to promote nurses' well-being and support the delivery of high-quality patient care.

Introduction

Depression and anxiety are among the most common mental health disorders worldwide and constitute major public health concerns across all age groups (1). Depression is characterized by persistent feelings of sadness, loss of interest or pleasure in daily activities, fatigue, disturbances in sleep and

appetite, and impaired social and occupational functioning (2). Globally, depression affects a substantial proportion of the population, with prevalence estimates reported at 14.6% in high-income countries and 11.1% in low- and middle-income countries (3). In the United States, approximately 16 million adults experience depression annually (4). The prevalence of major depressive episodes also varies considerably across different settings and populations, ranging from 1.5% to 19.0% in previous studies (5).

Anxiety is characterized by excessive worry, fear, and psychological distress accompanied by cognitive, emotional, behavioral, and physiological symptoms (6, 7). Persistent anxiety can adversely affect mental and physical health, work performance, and overall quality of life and may increase the risk of suicidal ideation and other mental disorders (8, 9). According to the World Health Organization, approximately 264 million people worldwide live with anxiety disorders, accounting for nearly 3.6% of the global population (10)Nursing is widely recognized as a physically and emotionally demanding profession (11). Nurses frequently encounter high workloads, shift work, critically ill patients, and emotionally challenging clinical situations, all of which may increase their vulnerability to mental health problems, particularly anxiety and depression (12,13). These conditions can negatively affect nurses' well-being, job satisfaction, productivity, and professional performance. Furthermore, poor mental health among nurses may compromise teamwork, patient safety, and the quality of healthcare services (14).

The prevalence of depression and anxiety among nurses varies considerably across countries and healthcare settings. In the United States, the prevalence of depression among nurses has been reported to range from 35% to 41% (15). In Australia, approximately 32.4% of nurses have been reported to experience depression, whereas in Iran, the prevalence has been documented to range between 1.7% and 40.9% (16). A study conducted among 1,592 nurses in China found that 61.7% experienced mild depressive symptoms and 25.1% experienced moderate to severe depressive symptoms (17). Similarly, a meta-analysis conducted by Slusarska et al. that included 23 studies from nine countries reported pooled prevalence rates of 22% for depression and 29% for anxiety among nurses (22). Another study from China reported prevalence rates of 33.9% for depression and 27.1% for anxiety among nurses (21).

Although international studies have provided valuable evidence regarding the mental health status of nurses, differences in healthcare systems, workplace conditions, cultural contexts, and available support services may limit the applicability of these findings to Afghanistan. To date, evidence on depression and anxiety among nurses in Afghanistan remains scarce. Therefore, this study aimed to determine the prevalence of depression and anxiety among nurses working in teaching hospitals affiliated with Kabul University of Medical Sciences. The findings may contribute to a better understanding of nurses' mental health needs and provide evidence to inform workplace mental health programs, supportive interventions, and policies aimed at improving nurses' well-being and maintaining high-quality patient care.

Method

A descriptive cross-sectional study was conducted in the teaching hospitals of Kabul University of Medical Sciences, including Ali Abad, Maiwand, Shahrara, and the Institute of Cardiac Diseases. Nurses with at least six months of work experience who were willing to participate were included in the study. Newly hired or absent nurses, as well as those who declined participation, were excluded

Study Design and Setting

A descriptive cross-sectional study was conducted in four teaching hospitals affiliated with Kabul University of Medical Sciences (KUMS): Ali Abad Hospital, Maiwand Hospital, Shahrara Hospital, and the Institute of Cardiac Diseases.

Study Population and Sampling

The study population comprised nurses employed in the selected hospitals. Nurses with at least six months of work experience who provided informed consent were eligible to participate. Newly employed nurses, nurses who were absent during data collection, and those who declined participation were excluded.

The sample size was calculated using Cochran's formula: $n = z^2p(1-p)\backslash d^2(25)$. The formula was calculated for a 95% confidence interval, a 10% margin of error, and a 12% expected proportion (26). The calculated sample size was 179 nurses.

The sample was proportionally allocated across the four hospitals according to the number of nurses employed at each institution using the following formula:

$n_i = (N_i/N) \times n$, where n_i represents the number of nurses selected from hospital i, N_i is the total number of nurses at that hospital, N is the overall number of nurses across all hospitals (290), and n is the total sample size (179). Based on this allocation, 92 nurses were recruited from Ali Abad Hospital (N = 150), 53 from Maiwand Hospital (N = 86), 22 from Shahrara Hospital (N = 35), and 12 from the Institute of Cardiac Diseases (N = 19). Following proportional allocation, participants were recruited using convenience sampling within each hospital. Due to staffing constraints and heavy workloads, probability sampling was not feasible. Therefore, the possibility of selection bias should be considered when interpreting the findings.

Data Collection Instrument

Data were collected using a structured questionnaire consisting of two sections. The first section gathered sociodemographic information, including age, sex, marital status, educational level, years of work experience, and hospital of employment.

The second section was the Hospital Anxiety and Depression Scale (HADS) to assess the level of depression and anxiety among nurses (27). The HADS was developed by Zigmond and Snaith in 1983 as a screening instrument for anxiety and depression in clinical settings and has subsequently been translated and validated in several languages, including Persian (27, 28). The Persian version of the instrument was used in the present study. Internal consistency reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.78. The HADS comprises 14 items divided into two seven-item subscales: anxiety (HADS-A) and depression (HADS-D).Each item is measured on a four-point scale, ranging from 0 to 3 (not at all, up to yes, definitely), yielding a total score ranging from 0 to 21 on each of these two subscales (29, 30). A score of 7 or less on the subscales indicates normal anxiety and depression levels, 8–10 indicates doubtful cases of anxiety and depression, and 11–21 indicates a definite case of anxiety and depression (20).

Data Collection and Statistical Analysis

Data were collected after obtaining informed consent from all participants. Statistical analyses were performed using IBM SPSS Statistics version 24. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant characteristics and estimate the prevalence of anxiety and depression. The chi-square test was employed to examine associations between demographic characteristics and levels of anxiety and depression. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval

for the study was obtained from the Research Committee of Kabul University of Medical Sciences prior to data collection. All participants received detailed information regarding the study objectives, procedures, and their rights as research participants. Participation was entirely voluntary, and written informed consent was obtained from all participants. Participants were informed that they could withdraw from the study at any time without penalty.

Confidentiality and anonymity were maintained throughout the study. No personal identifiers were collected, and all data were used exclusively for research purposes. The study was conducted in accordance with internationally recognized ethical principles for medical research involving human participants, ensuring respect for autonomy, beneficence, and justice throughout the research process.

Result

Sociodemographic Characteristics of Participants

A total of 179 nurses participated in the study, including 119 (66.5%) females and 60 (33.5%) males. More than half of the participants were aged 20–29 years (n = 103, 57.5%), and most were married (n = 106, 59.3%). Regarding educational attainment, 109 (60.9%) participants held a bachelor's degree, while 70 (39.1%) had a diploma. The majority of nurses reported 1–5 years of work experience (n = 101, 56.4%). Detailed sociodemographic characteristics are presented in Table 1.

Table 1
Sociodemographic characteristics of participants (N = 179)

Characteristic	Category	n	%
Gender	male	60	33.5
	female	119	66.5
Age(years)	≤ 20	7	3.9
	20–29	103	57.5
	30–39	50	29
	40–49	14	7.8
	≥ 50	5	2.8
Marital status	single	73	40.7
	married	106	59.3
Educational level	diploma	70	39.1
	Bachelor’s degree	109	60.9
Work Experience	≤ 1 year	11	6.1
	1–5 years	101	56.4
	6–10 years	39	21.8
	≥ 10 years	28	16.6

Prevalence of Anxiety

The prevalence of definite anxiety among nurses was 38.5% (95% CI: 31.4%-45.6%), while 23.5% (95% CI: 17.3%-29.7%) were classified as doubtful cases. Overall, 61.5% of participants exhibited either definite or doubtful symptoms of anxiety.

Bivariate analysis using the chi-square test showed no statistically significant association between anxiety status and sociodemographic characteristics, including age group (p = 0.173), gender (p = 0.821),

marital status (p = 0.924), educational level (p = 0.207), and work experience (p = 0.133). The distribution of anxiety across participant characteristics is presented in Table 2.

Table 2
Prevalence of anxiety among nurses

Characteristic	Category	Classification of anxiety			
n(%)	**Normal**	**Doubtful case**	**Definite case**	**p- value**	
	n(%)	**n(%)**			
Gender	male	22(36.7%)	13(21.7%)	25(41.7%)	0.821
	female	46(38.7%)	29(24.4%)	44(37%)	
Age(years)	□ 20	1(14.3%)	4(57.1%)	2(28.6%)	o.173
	20–29	35(34%)	26(25.2%)	42(40.8%)	
	30–39	24(48%)	6(12%)	20(40%)	
	40–49	6(42.9%)	5(35.7%)	3(21.4%)	
	≥ 50	2(40%)	1(20%)	2(40%)	
Marital status	single	28(38.4%)	18(24.7%)	27(37%)	0.924
	married	40(37.7%)	24(22.6%)	42(39.6%)	
Educational level	diploma	21(30%)	19(27.1%)	30(42.9%)	0.207
	Bachelor’s degree	47(43.1%)	23(21.1%)	39(35.8%)	
Work Experience	□ 1 year	3(27.3%)	5(45.5%)	3(27.3%)	0.133
	1–5 years	35(34.7%)	22(21.8%)	44(43.6%)	
	6–10 years	21(53.8%)	9(23.1%)	9(23.1%)	
	□ 10 years	9(32.1%)	6(21.4%)	13(46.4%)	

Prevalence of Depression

Overall, 36.0% of participants (95% CI: 28.5%-42.8%) met the criteria for definite depression, while 21.0% (95% CI: 15.2%-27.2%) were classified as doubtful cases. In total, 57.0% of nurses reported either definite or doubtful symptoms of depression.

Chi-square analysis indicated no statistically significant associations between depression status and participants' age (p = 0.408), gender (p = 0.489), marital status (p = 0.648), educational level (p = 0.152), or work experience (p = 0.210). The distribution of depression according to sociodemographic characteristics is summarized in Table 3.

Table 3
Prevalence of depression among nurses

Characteristic	Category	Classification of depression			
n(%)	**Normal**	**Doubtful case**	**Definite case**	**p- value**	
	n(%)	**n(%)**			
Gender	male	24(40%)	11(18.3%)	25(41.7%)	0.489
	female	53(44.5%)	27(22.7%)	39(32.8%)	
Age(years)	□ 20	3(42.9%)	2(28.6%)	2(28.6%)	0.408
	20–29	44(42.7%)	24(23.3%)	35(34%)	
	30–39	23(46%)	7(14%)	20(40%)	
	40–49	3(21.4%)	5(35.7%)	6(42.9%)	
	≥ 50	4(80%)	0	1(20%)	
Marital status	single	33(45.2%)	13(17.8%)	27(37%)	0.648
	married	44(41.5%)	25(23.6%)	37(34.9%)	
Educational level	diploma	28(40%)	20(28.6%)	22(31.4%)	0.152
	Bachelor's degree	49(45%)	18(16.5%)	42(38.5%)	
Work Experience	□ 1 year	3(27.3%)	5(45.5%)	3(27.3%)	0.210
	1–5 years	42(41.6%)	19(18.8%)	40(39.6%)	
	6–10 years	20(51.3%)	10(25.6%)	9(23.1%)	
	□ 10 years	12(42.9%)	4(14.3%)	12(42.9%)	

Association between Anxiety and Depression

A statistically significant association was observed between anxiety and depression ($\chi 2 = 69.617$, df = 4, p □ 0.001). The strength of this relationship, measured by Cramer's V (V = 0.44), indicated a moderate to strong correlation. Furthermore, a significant linear trend was detected ($\chi 2 = 65.573$, $p < 0.001$), suggesting a dose–response pattern in which higher levels of depression were associated with increased severity of anxiety. These findings highlight a substantial comorbidity between depression and anxiety among the study population.

Discussion

The study, conducted among 179 nurses, revealed that 38.5% experienced symptoms of anxiety and 36% reported depression. These findings are consistent with those of Misganaw et al. (2023) in Ethiopia, who reported anxiety in 33.9% of nurses(10). In contrast, an Australian study (2013) documented

substantially lower prevalence rates of depression (13.6%) and anxiety (15.2%)(31), which may reflect sociocultural differences and the comparatively higher professional status of nurses in Australia.

This study assessed the prevalence of anxiety and depression among nurses working in teaching hospitals affiliated with Kabul University of Medical Sciences. The findings revealed that 38.5% of nurses experienced anxiety symptoms and 36.0% experienced depressive symptoms, indicating a substantial burden of psychological distress among the nursing workforce.

The prevalence of anxiety observed in the present study is comparable to that reported by Misganaw et al. (2023) in Ethiopia, where 33.9% of nurses experienced anxiety symptoms (10). In contrast, a study conducted in Australia reported considerably lower prevalence rates of depression (13.6%) and anxiety (15.2%) among nurses (31). Differences in healthcare infrastructure, workplace conditions, access to mental health services, staffing levels, and sociocultural factors may partially explain these variations. In countries with more developed healthcare systems and stronger occupational support mechanisms, nurses may experience lower levels of psychological distress.

Conversely, Pang et al. (2020) reported substantially higher prevalence rates of anxiety (47.5%) and depression (56.7%) among nurses in China (32). One possible explanation is that the study was conducted during the COVID-19 pandemic in hospitals providing care for patients with coronavirus disease, a circumstance associated with increased occupational stress and psychological burden among healthcare professionals. Similarly, Tsaras et al. (2018) reported prevalence rates of 48.2% for anxiety and 52.7% for depression among nurses in Greece (1). The higher prevalence observed in that study may be related to differences in study settings and participant characteristics, which may be explained by the inclusion of assistant nurses—who comprised 59.1% of their sample—and the mental hospital setting, both of which may contribute to elevated stress levels.

The findings also demonstrated a significant association between anxiety and depression, indicating that nurses with higher levels of depressive symptoms were more likely to report anxiety symptoms. This result is consistent with existing evidence suggesting that anxiety and depression frequently co-occur and may share common occupational and psychosocial risk factors. The coexistence of these conditions can further impair nurses' well-being, job performance, and capacity to provide high-quality patient care.

Several limitations should be considered when interpreting the findings. First, the cross-sectional design precludes the establishment of causal relationships between study variables. Second, the study was conducted exclusively in teaching hospitals affiliated with Kabul University of Medical Sciences, which may limit the generalizability of the findings to nurses working in other healthcare settings. Third, convenience sampling was used to recruit participants, potentially introducing selection bias and affecting the representativeness of the sample. Despite these limitations, the study provides important baseline evidence regarding the mental health status of nurses in Afghanistan, a context in which empirical data remain limited.

Given the substantial prevalence of anxiety and depression identified in this study, healthcare administrators and nursing managers should strengthen workplace mental health support systems. Regular mental health screening, access to counseling services, stress management programs, and supportive supervision may help reduce psychological distress among nurses. Furthermore, efforts to improve staffing levels, clarify professional roles and responsibilities, and promote healthy work environments may contribute to better psychological well-being and enhanced quality of patient care.

Conclusion

This study demonstrated a substantial prevalence of anxiety (38.5%) and depression (36.0%) among nurses working in teaching hospitals affiliated with Kabul University of Medical Sciences. Although no significant associations were observed between anxiety or depression and sociodemographic characteristics, a significant association was identified between the two conditions, indicating that nurses with depressive symptoms were more likely to experience anxiety symptoms.

These findings highlight the need for workplace mental health initiatives, including regular psychological screening, counseling services, and stress management interventions. Strengthening institutional support mechanisms and fostering a supportive work environment may contribute to improving nurses' psychological well-being, enhancing the quality of patient care, and promoting a more resilient healthcare workforce.

Declarations

Conflict of Interest

The authors declare no conflicts of interest related to this study. No financial, personal, or professional relationships influenced the design, conduct, or reporting of this research.

Author Contribution

All authors actively and equally contributed to the work throughout all stages of the study, from its conception to the final manuscript preparation and approval.

Acknowledgement

The authors would like to express their sincere gratitude to the Research Committee of Kabul University for granting ethical approval and guidance throughout the study. We are also deeply thankful to the nursing managers and staff of Ali Abad, Maiwand, Shahrara, and the Institute of Cardiac Diseases hospitals for their cooperation and support during data collection. Special appreciation is extended to all nurses who participated in this study and generously contributed their time and valuable information.

Data Availability

The datasets generated and/or analysed during the current study are available from the corresponding author upon reasonable request.

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