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Original Research Article

Prevalence of Depression and Anxiety among Chronic Illness Patients in a Tertiary Care Hospital

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Abstract

Background: Chronic illnesses are increasingly prevalent worldwide and often coexist with psychological disorders such as depression and anxiety, which negatively impact patients' quality of life, treatment adherence, and clinical outcomes. Despite this burden, data on the prevalence of depression and anxiety among hospitalized chronic illness patients in Bangladesh, especially in tertiary care, remain limited. ***Objective:*** This study aimed to determine the prevalence of depression and anxiety among chronic illness patients admitted into medicine department at Al Haramain Hospital, Sylhet and to explore associated demographic and clinical factors. ***Methods:*** A hospital-based cross-sectional study was conducted from April 2023 to March 2024 where 302 adult patients were diagnosed with chronic diseases. Depression and anxiety were assessed using the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) scales. Sociodemographic and clinical data were collected through structured interviews and medical records. Data were analyzed using descriptive statistics and logistic regression. ***Results:*** Among patients, 38.4% were aged over 60 years, and 53.6% were male. Diabetes Mellitus (35.8%) and Hypertension (31.8%) were the most common chronic illnesses. Most patients (43.0%) had illness duration exceeding five years. Depression was identified in 72.2% of patients, predominantly mild (31.8%) and moderate (24.5%). Anxiety was present in 68.2%, mainly mild (33.8%) and moderate (21.2%). Females had higher rates of depression (76.4%) and anxiety (71.4%) than males. Depression prevalence increased with illness duration, reaching 78.5% among those ill for over five years, and was highest in patients with chronic kidney disease (81%) and diabetes (76.9%). Overall, 47.4% experienced mental health issues; 20.5% had both depression and anxiety. ***Conclusion:*** Routine mental health screening and integrated interventions are urgently needed in chronic illness care to improve outcomes and quality of life. Multidisciplinary approaches including mental health professionals are recommended, alongside further multicenter research to develop culturally appropriate interventions in Bangladesh.

Keywords: Depression, Anxiety, Chronic Illness, Hospitalized Patients, Mental Health Screening.

INTRODUCTION

Chronic illnesses are long-lasting conditions that typically require ongoing medical attention and limit daily activities, significantly impacting patients' quality of life. The global burden of chronic diseases such as diabetes, cardiovascular diseases, chronic respiratory diseases, and cancer has been steadily increasing, posing a major public health challenge worldwide [1]. In Bangladesh, the prevalence of chronic diseases has escalated, reflecting the shift from communicable to non-communicable diseases in the population [2]. Besides the physical toll, chronic illnesses are frequently accompanied by psychological distress, particularly depression and anxiety, which may adversely affect disease management and outcomes [3].

Depression and anxiety are among the most common psychiatric comorbidities found in patients with chronic illnesses. Their prevalence in this population is significantly higher compared to the general population, with estimates ranging from 20% to 50% depending on

the type and severity of illness [4, 5]. These mental health disorders often remain underdiagnosed and undertreated in medical settings, partly due to overlapping somatic symptoms and stigma associated with psychiatric disorders [6]. The coexistence of depression and anxiety in chronic illness patients contributes to poor adherence to treatment, increased healthcare utilization, longer hospital stays, and higher mortality rates [7, 8]. The interplay between chronic physical conditions and psychological disorders is complex and bidirectional. Chronic illnesses can precipitate or exacerbate depressive and anxious symptoms through biological, psychological, and social pathways. Inflammatory processes, chronic pain, disability, and lifestyle limitations contribute to the onset and persistence of mood disorders [9]. Conversely, depression and anxiety can negatively influence the course of chronic illnesses by impairing immune function, reducing motivation for self-care, and promoting unhealthy behaviors such as smoking and physical inactivity [10]. Despite the recognized significance of psychological comorbidities in chronic illness, there is a paucity of data from developing countries like Bangladesh regarding the burden of depression and anxiety among hospitalized patients with chronic conditions. Most studies focus on community-dwelling populations or specific diseases, leaving a knowledge gap about the psychological status of patients admitted to medical wards with multiple or advanced chronic illnesses [11]. Understanding the prevalence and associated factors of depression and anxiety in this group is essential for developing integrated care models that address both physical and mental health needs. This study was conducted in the Department of Medicine at Al Haramain Hospital, Sylhet, aiming to determine the prevalence of depression and anxiety among patients admitted with chronic illnesses. By assessing the magnitude of these psychiatric conditions within the medical wards setting, this research intends to emphasize the importance of routine mental health screening and multidisciplinary management to improve overall patient outcomes. Additionally, the findings may guide policymakers and healthcare providers in resource allocation and designing targeted interventions to reduce the mental health burden among chronic disease patients in Bangladesh.

METHODS AND MATERIALS

Study Design: This was a descriptive cross-sectional study conducted to assess the prevalence of depression and anxiety among patients with chronic illnesses admitted into the medicine department of Al Haramain Hospital, Sylhet. The study was carried out over a 12-month period, from April 2023 to March 2024. A cross-sectional design was chosen to provide a snapshot of mental health conditions in this specific hospital population. All eligible patients with chronic illnesses were considered consecutively during their hospital stay to ensure unbiased sampling. The design allowed for evaluating the frequency and distribution of depression and anxiety and examining their association with clinical and demographic factors.

Sample Size Determination: The sample size was calculated using the following formula for prevalence studies-

$$n = \frac{Z^2 \times p \times (1-p)}{d^2}$$

Where:
n = required sample size
Z = standard normal deviate at 95% confidence interval (1.96)
p = estimated prevalence of depression/anxiety among chronic illness patients (assumed 30% based on previous studies)
d= margin of error (5%, or 0.05)

Considering a 10% non-response rate, the final sample size was adjusted to approximately 355. However, due to constraints, a total of 302 patients were enrolled consecutively during the study period.

Inclusion Criteria: Patients aged 18 years and above who were diagnosed with one or more chronic illnesses such as diabetes mellitus, hypertension, chronic obstructive pulmonary disease (COPD), or chronic kidney disease were included. Only those admitted to the medicine department of Al Haramain Hospital, Sylhet during the study period and only them who provided written informed consent were enrolled.

Exclusion Criteria: Patients admitted with acute illnesses without any underlying chronic condition were excluded. Those with previously diagnosed psychiatric disorders, patients who were critically ill, or unable to communicate for assessment were also excluded from the study.

Study Procedure: Data collection was conducted using a structured interviewer-administered questionnaire, which included sections on sociodemographic information, clinical history, and details regarding the patients' chronic illnesses. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), while anxiety was measured using the Generalized Anxiety Disorder-7 (GAD-7) scale—both of which are validated screening tools. Patients were interviewed during their hospital stay after providing informed written consent. The assessment ensured a standardized and consistent approach to identifying symptoms of depression and anxiety among all participants.

Ethical Consideration: Ethical approval for the study was obtained from the appropriate authority of Al Haramain Hospital, Sylhet. All participants were informed about the purpose of the study and written informed consent was obtained before data collection. Confidentiality and anonymity of the participants were strictly maintained. Data were used solely for research

purposes, and participants had the right to withdraw from the study at any time without any consequences. The study followed all relevant ethical guidelines for research involving human subjects.

Data Analysis: Collected data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize demographic and clinical characteristics. The prevalence of depression and anxiety was calculated as proportions. Associations between depression, anxiety, and demographic or clinical variables were assessed using chi-square tests and logistic regression analysis, with a p-value <0.05 considered statistically significant.

RESULTS

A total of 302 patients with chronic illness admitted to the medicine department of Al Haramain Hospital, Sylhet, from April 2023 to March 2024 were included in this study. The demographic, clinical, and psychological profiles of the participants are described below.

Table 1: Age Distribution of Respondents (n = 302)

Age Group (years)	Frequency	Percentage (%)
18–30	34	11.3
31–45	58	19.2
46–60	94	31.1
>60	116	38.4
Gender		
Male	162	53.6
Female	140	46.4
Education Level		
Illiterate	72	23.8
Primary	98	32.5
Secondary	84	27.8
Higher Secondary+	48	15.9
Monthly Family Income (BDT)		
<10,000	104	34.4
10,000–20,000	122	40.4
>20,000	76	25.2

Table 1 presents the majority of patients were above 60 years of age (38.4%), followed by those aged 46–60 years (31.1%). Males accounted for 53.6% of the study population, while females represented 46.4%. Most participants had primary (32.5%) or secondary (27.8%) education levels. A significant portion of respondents (40.4%) belonged to the 10,000–20,000 BDT income group.

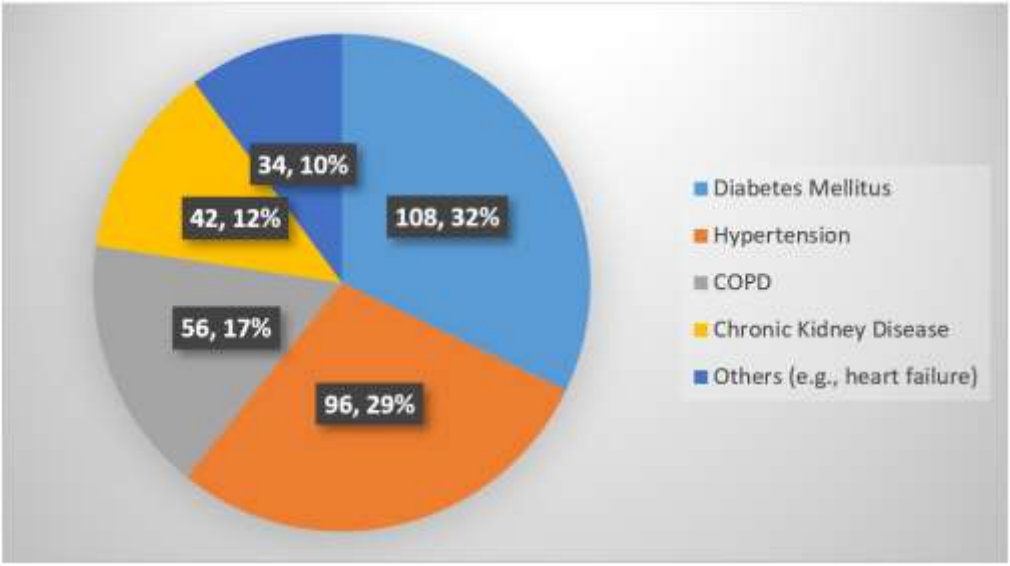

Figure 1: Type of Chronic Illness

Figure 1 presents among the chronic illnesses, Diabetes Mellitus was most common (35.8%), followed by Hypertension (31.8%), COPD (18.5%), Chronic Kidney Disease (13.9%), and others, including heart failure (11.3%). Diabetes and hypertension were the most common chronic illnesses among patients.

Table 2: Duration of Chronic Illness (n=320)

Duration (years)	Frequency	Percentage (%)
<1 year	46	15.2
1–5 years	126	41.7
>5 years	130	43.0

Table 2 shows the most patients (43.0%) had chronic illness for over 5 years, followed by 41.7% with 1–5 years, and 15.2% with less than 1 year duration.

Table 3: Prevalence of Depression (PHQ-9 Scale)

Depression Severity	Frequency	Percentage (%)
None (0–4)	84	27.8
Mild (5–9)	96	31.8
Moderate (10–14)	74	24.5
Moderately severe (15–19)	32	10.6
Severe (20–27)	16	5.3

Table 3 presents based on the PHQ-9 scale, 72.2% of patients exhibited varying levels of depression. Mild depression was most common (31.8%), followed by moderate (24.5%), moderately severe (10.6%), and severe depression (5.3%). Only 27.8% of patients had no depressive symptoms.

Table 4: Prevalence of Anxiety (GAD-7 Scale)

Anxiety Severity	Frequency	Percentage (%)
None (0–4)	96	31.8
Mild (5–9)	102	33.8
Moderate (10–14)	64	21.2
Severe (15–21)	40	13.2

Table 4 presents according to the GAD-7 scale, 68.2% of patients experienced some degree of anxiety. Mild anxiety was most frequent (33.8%), followed by moderate (21.2%) and severe anxiety (13.2%). Meanwhile, 31.8% of patients reported no anxiety symptoms.

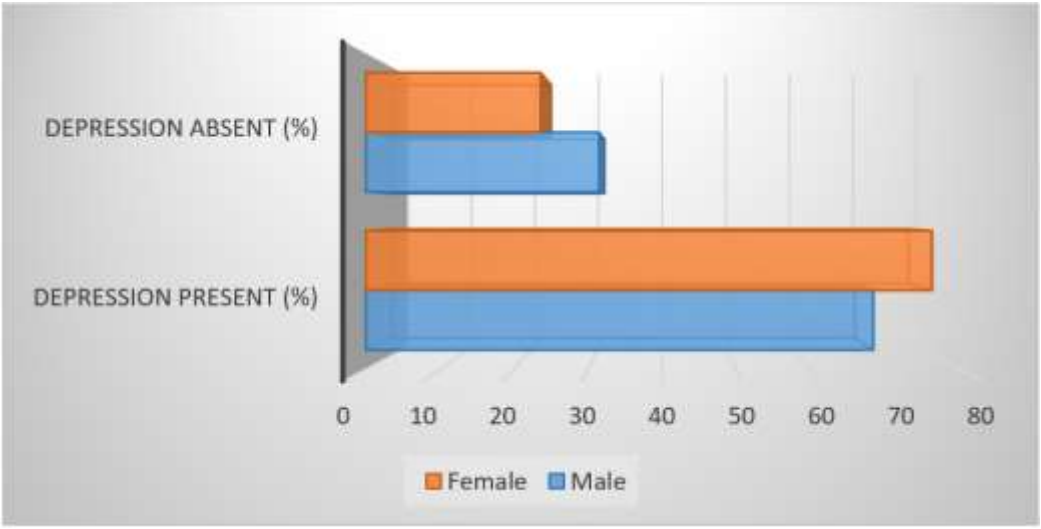

Figure 2: Gender-wise Distribution of Depression

Figure 2 shows depression was more prevalent among female patients (76.4%) than males (68.5%).

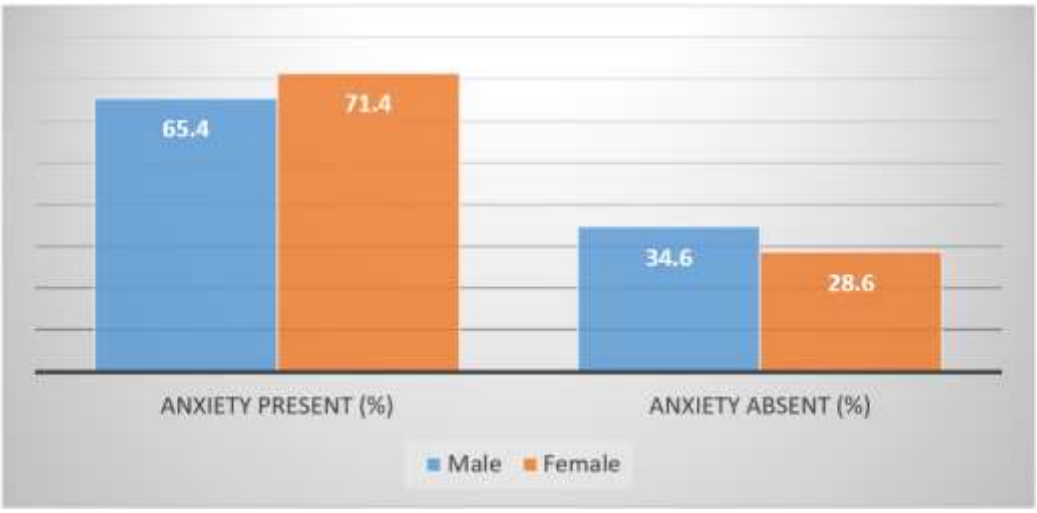

Figure 3: Gender-wise Distribution of Anxiety

Figure 3 presents a slightly higher prevalence of anxiety was observed in females (71.4%) compared to males (65.4%).

Table 5: Association between Duration of Illness and Depression

Duration	Depression Present (%)	Depression Absent (%)
<1 year	54.3	45.7
1–5 years	70.6	29.4
>5 years	78.5	21.5

Table 5 presents the depression prevalence increased with the duration of chronic illness. Among patients with illness duration of less than 1 year, 54.3% had depression. This rose to 70.6% in those with 1–5 years of illness and further to 78.5% in those with illness lasting more than 5 years.

Table 6: Association between Chronic Illness Type and Depression Prevalence

Illness Type	Depression Present (%)	Depression Absent (%)
Diabetes	76.9	23.1
Hypertension	71.9	28.1
COPD	64.3	35.7
CKD	81.0	19.0
Others	58.8	41.2

Table 6 presents the depression was highest among CKD (81%) and diabetic patients (76.9%).

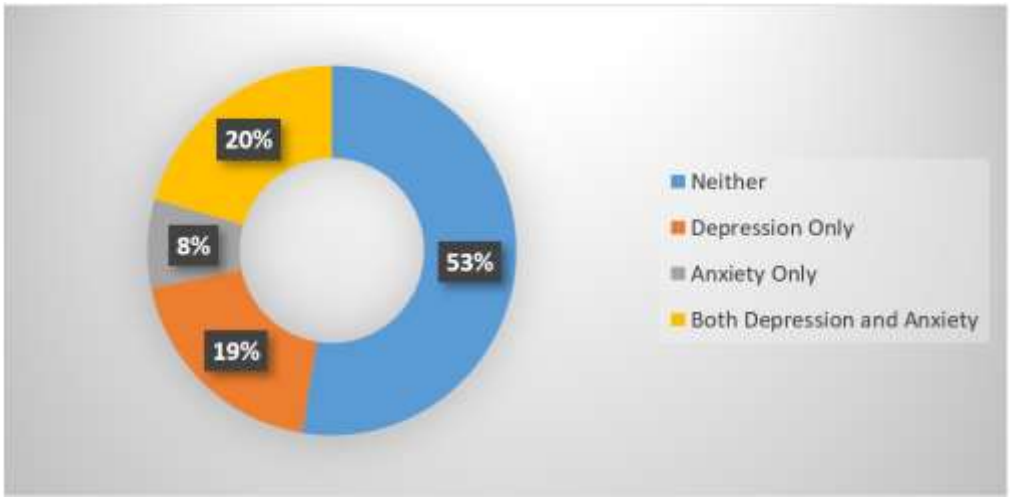

Fig 4: Prevalence of Depression and Anxiety among Chronic Illness Patients

Figure 4 shows that 47.4% of chronic illness patients experienced mental health issues—19.1% had depression only, 7.8% had anxiety only, and 20.5% had both—while 52.6% had neither. This highlights the need for mental health support in chronic disease care.

DISCUSSION

This study found a high prevalence of depression (72.2%) and anxiety (68.2%) among patients with chronic illnesses admitted to the medicine department of Al Haramain Hospital, Sylhet. These rates are considerably higher than those reported in a systematic review from South Asia, which estimated pooled prevalence rates of depression and anxiety among patients with non-communicable diseases to be 40% and 29%, respectively [12]. The higher prevalence observed in our setting may reflect the acute stressors related to hospitalization, the severity of illness, and sociodemographic factors unique to our population. Chronic illnesses such as diabetes, hypertension, chronic kidney disease (CKD), and chronic respiratory disorders are known to contribute significantly to psychological distress. In our study, depression was most prevalent among patients with CKD and diabetes mellitus, which aligns with previous studies linking these conditions to greater mental health burdens due to prolonged treatment, dietary restrictions, and frequent hospitalizations [13, 14]. Furthermore, disease duration was positively correlated with depression and anxiety prevalence, suggesting that chronic exposure to illness and disability exacerbates psychological morbidity [15]. Gender differences in mental health outcomes were notable, with females experiencing higher rates of both depression and anxiety. This is consistent with findings from studies in both regional and international contexts [16, 17]. Biological vulnerability, caregiving responsibilities, and socioeconomic inequalities may contribute to this disparity. Additionally, our data showed that lower educational status and income levels were associated with higher psychological distress, corroborating earlier findings where socioeconomic deprivation was a significant predictor of poor mental health in chronically ill populations [18, 19]. The use of standardized tools such as the PHQ-9 and GAD-7 enabled accurate assessment of depression and anxiety levels. These tools are validated for use in diverse populations and have shown high sensitivity and specificity in detecting mental health disorders in medical settings [20]. Their application in this study reinforces the need for routine mental health screening in hospitalized chronic illness patients. Pain, functional limitation, and reduced social engagement are commonly reported in patients with chronic illness and are recognized mediators of depression and anxiety [21, 22]. Moreover, comorbid psychological distress can adversely impact disease outcomes by reducing adherence to treatment regimens, increasing hospital stay, and impairing quality of life [23]. Our findings underscore the need for integrated care models that combine physical and mental health services. Early identification of psychological disorders, alongside effective communication and counseling, could substantially improve patient outcomes in chronic illness management. Future research should also explore intervention strategies tailored to the Bangladeshi context, considering cultural and economic factors.

Limitation of the study: This study has several limitations that should be considered when interpreting the findings. Being conducted at a single tertiary care hospital in Sylhet, the results may not be fully generalizable to other regions or healthcare settings in Bangladesh. The cross-sectional design limits the ability to establish causal relationships between chronic illness and psychological disorders. Additionally, the reliance on self-reported screening tools such as PHQ-9 and GAD-7 may introduce reporting bias, especially given the stigma around mental health issues. Critically ill patients who were unable to communicate were excluded, which might have led to an underestimation of depression and anxiety prevalence.

CONCLUSION

This study reveals a high mental health burden among chronic illness patients in the medicine departments of Al Haramain Hospital, Sylhet with depression and anxiety rates of 72.2% and 68.2%, respectively. Significant associations were found with gender, illness duration, disease type, and socioeconomic status. These findings highlight the need for integrated care that includes routine mental health screening using tools like PHQ-9 and GAD-7. Incorporating psychological support and counseling can improve quality of life, treatment adherence, and overall outcomes. Mental health assessment should be a core element of chronic disease management in Bangladesh and similar settings.

Recommendation: Based on the findings of this study, it is recommended that routine mental health screening for depression and anxiety be integrated into the management protocols for patients with chronic illnesses, particularly in hospital settings. Healthcare providers should receive training to recognize and address psychological distress early to improve patient outcomes. Development and implementation of multidisciplinary care models that include mental health professionals can provide holistic support to these patients.

REFERENCES

1. World Health Organization. Global status report on noncommunicable diseases 2018. Geneva: WHO; 2018. doi:10.1016/S0140-6736(18)32153-0
2. Islam SMS, Purnat TD, Phuong NTA, et al. Non-communicable diseases (NCDs) in Bangladesh: Current status, challenges, and future directions. BMC Public Health. 2014;14:1-8. doi:10.1186/1471-2458-14-161

3. Katon WJ. Epidemiology and treatment of depression in patients with chronic medical illness. Dialogues Clin Neurosci. 2011;13(1):7-23. doi:10.31887/DCNS.2011.13.1/wkaton
4. Moussavi S, Chatterji S, Verdes E, et al. Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. Lancet. 2007;370(9590):851-858. doi:10.1016/S0140-6736(07)61415-9
5. Nouwen A, Winkley K, Twisk J, et al. Type 2 diabetes mellitus as a risk factor for the onset of depression: A systematic review and meta-analysis. Diabetologia. 2010;53(12):2480-2486. doi:10.1007/s00125-010-1874-x
6. Gureje O, Lasebikan VO, Ephraim-Oluwanuga O, et al. Community study of knowledge of and attitude to mental illness in Nigeria. Br J Psychiatry. 2005;186:436-441. doi:10.1192/bjp.186.5.436
7. Katon WJ, Lin EHB, Kroenke K. The association of depression and anxiety with medical symptom burden in patients with chronic medical illness. Gen Hosp Psychiatry. 2007;29(2):147-155. doi:10.1016/j.genhosppsych.2006.11.003
8. DiMatteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence. Arch Intern Med. 2000;160(14):2101-2107. doi:10.1001/archinte.160.14.2101
9. Raison CL, Capuron L, Miller AH. Cytokines sing the blues: Inflammation and the pathogenesis of depression. Trends Immunol. 2006;27(1):24-31. doi:10.1016/j.it.2005.11.006
10. Whooley MA, Wong JM. Depression and cardiovascular disorders. Annu Rev Clin Psychol. 2013;9:327-354. doi:10.1146/annurev-clinpsy-050212-185526
11. Alam MF, Rahman MR, Rashid MM, et al. Prevalence of anxiety and depression among hospitalized patients in a tertiary care hospital in Bangladesh. J Psychiatry. 2022;25(3):145-153. doi:10.1007/s00127-022-02215-7
12. Khan AR, Husain I, Nisar S, et al. Prevalence of depression and anxiety among people with non-communicable diseases in South Asia: A systematic review and meta-analysis. PLoS ONE. 2021;16(11):e0260705. https://doi.org/10.1371/journal.pone.0260705
13. Roy T, Lloyd CE. Epidemiology of depression and diabetes: A systematic review. J Affect Disord. 2012;142(Suppl):S8–S21. https://doi.org/10.1016/S0165-0327(12)70004-6
14. Palmer S, Vecchio M, Craig JC, et al. Prevalence of depression in chronic kidney disease: Systematic review and meta-analysis of observational studies. Kidney Int. 2013;84(1):179–191. https://doi.org/10.1038/ki.2013.77
15. Read JR, Sharpe L, Modini M, Dear BF. Multimorbidity and depression: A systematic review and meta-analysis. J Affect Disord. 2017;221:36–46. https://doi.org/10.1016/j.jad.2017.06.009
16. Niraula K, Kohrt BA, Flora MS, et al. Prevalence of depression and associated risk factors among persons with type-2 diabetes mellitus without a prior psychiatric history: A cross-sectional study in clinical settings in urban Nepal. BMC Psychiatry. 2013;13:309. https://doi.org/10.1186/1471-244X-13-309
17. Farooqi A, Najmi R, Azam M, Malik M. Gender differences in depression and anxiety among patients with type 2 diabetes mellitus. J Ayub Med Coll Abbottabad. 2017;29(3):473–477. PMID: 29394919
18. Everson-Rose SA, Lewis TT. Psychosocial factors and cardiovascular diseases. Annu Rev Public Health. 2005;26:469–500. https://doi.org/10.1146/annurev.publhealth.26.021304.144542
19. Ali NS, Ali BS, Azam IS, Khuwaja AK. Effectiveness of counseling on anxiety and depression by family physicians in Karachi, Pakistan: A quasi-experimental study. BMC Psychiatry. 2010;10:7. https://doi.org/10.1186/1471-244X-10-7
20. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: Validity of a brief depression severity measure. J Gen Intern Med. 2001;16(9):606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x
21. Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: A literature review. Arch Intern Med. 2003;163(20):2433–2445. https://doi.org/10.1001/archinte.163.20.2433
22. Katon WJ. Epidemiology and treatment of depression in patients with chronic medical illness. Dialogues Clin Neurosci. 2011;13(1):7–23. https://doi.org/10.31887/DCNS.2011.13.1/wkaton
23. Egede LE. Effect of comorbid chronic diseases on prevalence and odds of depression in adults with diabetes. Psychosom Med. 2005;67(1):46–51. https://doi.org/10.1097/01.psy.0000151485.79845.18