e-ISSN: 0976-822X

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2022; 14(1); 102-111

Original Research Article

STUDY OF PSYCHIATRIC MORBIDITY AND ITS CORRELATES IN CHRONIC MEDICAL ILLNESS: AN OBSERVATIONAL PERSPECTIVE

Alpesh Gediya[1], Dhruv Patel[2]

[1]Associate Professor, Department of Psychiatry, GCS medical college Hospital and Research Centre, Ahmedabad

[2]Senior Resident, Department of Psychiatry, GMERS medical college, Vadnagar

Received: 01-12-2021 / Revised: 02-01-2022 / Accepted: 25-01-2022

Corresponding author: Dr. Alpesh Gediya

Conflict of interest: Nil

Abstract

Background: Chronic medical diseases account for a significant portion of global morbidity and mortality and are commonly associated with various psychiatric comorbidities. The interplay between physical and psychological disorders can lead to poor treatment compliance, unfavorable disease outcomes, diminished quality of life, and worse prognosis. However, psychiatric morbidity continues to be underdiagnosed and inadequately managed in patients attending tertiary-care institutions, particularly within low-resource environments.

Aim: This study was conducted to assess the prevalence, types, and predictors of psychiatric morbidity in individuals suffering from chronic medical conditions at a tertiary-care centre.

Material and Methods: This cross-sectional observational study included 76 patients diagnosed with chronic medical illnesses, enrolled from both outpatient and inpatient units of Medicine and allied departments in a tertiary-care hospital. Sociodemographic variables and relevant clinical data were obtained through a semi-structured proforma. Psychiatric morbidity was assessed using the GHQ-28 to measure psychological distress, the HADS to screen for anxiety and depression, and the MINI for diagnostic confirmation. Statistical analysis was performed using SPSS version 25.0. Descriptive statistics summarized baseline data, and Chi-square and logistic regression tests were applied to evaluate associations and independent predictors, considering $p < 0.05$ as statistically significant.

Results: A total of 120 patients with chronic medical illnesses were evaluated. The majority were middle-aged (46–60 years: 34.2%) and married (76.7%), with a slight male predominance (55%). The most common medical conditions were diabetes mellitus (29.2%) and hypertension (23.3%), followed by ischemic heart disease (15.8%) and chronic kidney disease (13.3%). Overall, psychiatric morbidity was present in 65.8% of patients, with depression (26.7%) and anxiety disorders (18.3%) being most frequent. Psychiatric morbidity was significantly higher among females (75.9%) than males (57.6%) ($p = 0.041$). Logistic regression identified female gender, low socioeconomic status, diabetes mellitus, and chronic kidney disease as independent predictors of psychiatric morbidity ($p < 0.05$).

Conclusion: Psychiatric morbidity was found to be highly prevalent among patients with chronic medical illnesses, particularly among females and individuals with diabetes mellitus or chronic kidney disease. These results underscore the importance of incorporating routine psychiatric screening and integrated psychosocial interventions into tertiary-care settings to ensure comprehensive patient management.

Keywords: Chronic medical illness; Psychiatric morbidity; Depression; Anxiety; Diabetes mellitus; Chronic kidney disease; Socioeconomic status; Tertiary-care hospital; Consultation-liaison psychiatry; Mental health comorbidity.

Introduction

Chronic medical illnesses such as diabetes mellitus, cardiovascular diseases, chronic kidney disease (CKD), and chronic respiratory disorders have become major contributors to global morbidity and mortality, fundamentally transforming the clinical landscape of both hospital and ambulatory care. With improvements in diagnosis and management, individuals are surviving longer with multiple comorbidities and complex health profiles—often accompanied by a substantial yet under recognized burden of psychiatric symptoms and disorders. In this context, the present study seeks to evaluate psychiatric morbidity among adults with chronic medical illnesses in a tertiary-care setting, with the dual objectives of delineating its patterns and identifying key sociodemographic and clinical correlates. [1]

The coexistence of chronic physical illnesses and mental disorders is well established and far from incidental. Global data indicate a high prevalence of common mental disorders—particularly depressive and anxiety disorders—across all age groups and geographical regions. These conditions contribute significantly to years lived with disability and impose a considerable burden on individuals, families, and healthcare systems worldwide. [1] In parallel, the global epidemiological transition has led to a marked increase in noncommunicable diseases (NCDs), which now account for the majority of both fatal and non-fatal disease burden. This shift is especially evident in low- and middle-income countries and among socioeconomically disadvantaged groups in high-income nations. Within this evolving health landscape, the interaction between physical and mental health has emerged as a critical determinant of clinical outcomes, treatment adherence, quality of life, and overall healthcare costs. [2] Multiple mechanistic pathways have been proposed to explain the close association between chronic medical illnesses and psychiatric morbidity. Biological mechanisms include persistent low-grade inflammation, dysregulation of the hypothalamic–pituitary–adrenal (HPA) axis, autonomic nervous system imbalance, and neuroendocrine disturbances. Behavioral pathways involve factors such as reduced physical activity, maladaptive coping strategies, and substance use, whereas social pathways encompass poverty, caregiving burden, stigma, and limited access to healthcare services. These mechanisms operate in a bidirectional manner, wherein mental disorders increase the risk of developing chronic medical conditions, while chronic illnesses, in turn, heighten vulnerability to psychiatric disorders. The well-documented diabetes–depression relationship exemplifies this interplay: longitudinal studies demonstrate that depression significantly increases the risk of incident type 2 diabetes, whereas diabetes modestly elevates the likelihood of subsequent depression, reflecting a reciprocal association with shared biological and psychosocial determinants. [3] Cardiovascular disease serves as a clear illustration of the clinical importance of the interplay between physical and mental health.

Numerous studies have shown that depressive symptoms and disorders are considerably more common in individuals

with coronary heart disease compared to the general population. Moreover, depression in this group is associated with adverse outcomes such as poorer recovery, higher recurrence of cardiac events, and increased overall mortality. [4] Emotional distress can intensify physiological stress responses, interfere with adherence to cardioprotective treatment regimens, and reduce engagement in cardiac rehabilitation programs—all of which may contribute to poorer clinical outcomes. Despite these well-established effects, depression and anxiety frequently remain under-recognized and inadequately managed in routine cardiology practice, even though they significantly influence symptom control, functional recovery, and the likelihood of rehospitalization.

A similar pattern is evident in chronic respiratory diseases. Patients with chronic obstructive pulmonary disease (COPD) frequently experience a high prevalence of anxiety and depressive symptoms, which are associated with an increased risk of exacerbations, reduced exercise tolerance, and poorer health-related quality of life. Meta-analytic studies indicate that this association is bidirectional—COPD elevates the risk of developing depression and anxiety, while these psychiatric comorbidities, in turn, worsen disease progression and clinical outcomes. This reciprocal relationship underscores the importance of systematic mental health screening and the integration of psychosocial interventions into routine COPD management to improve overall patient outcomes. [5]

Chronic kidney disease (CKD) introduces an additional layer of complexity to the relationship between physical and mental health. Patients across the CKD spectrum, including those not yet requiring dialysis, commonly experience major depressive episodes and other psychiatric disorders. These arise from multiple contributing factors, such as symptom burden, strict dietary and fluid restrictions, uncertainty regarding prognosis, uremia-related neurocognitive changes, and disruptions in continuity of care.

Studies have demonstrated a substantial point prevalence of major depression among individuals with CKD, with psychiatric morbidity further linked to increased risks of hospitalization and mortality. For nephrology teams, early identification and management of mental health disorders are therefore essential—not only to provide patient-centered care but also to potentially improve clinical outcomes and prognosis.

From a health systems perspective, psychiatric morbidity in patients with chronic medical illnesses substantially undermines self-management, medication adherence, and control of key biomedical parameters such as blood glucose and blood pressure. It also contributes to increased utilization of acute care services and higher overall healthcare costs. Conversely, integrated or collaborative care models that embed mental health services within chronic disease management frameworks have demonstrated significant benefits. Randomized controlled trials involving patients with comorbid depression and poorly controlled diabetes and/or coronary artery disease have shown that team-based interventions—incorporatingmeasurement-based care, structured case management, and specialist psychiatric supervision—yield superior outcomes in hemoglobin A1c, blood pressure, and LDL cholesterol control, along with higher rates of depression remission, compared with usual care[7] These findings reinforce the concept of a comprehensive “treat-to-target” paradigm that encompasses both mental and physical health, emphasizing the inseparable interplay between psychological well-being and biomedical control in the management of chronic diseases.

Material and Methods

The present study was an observational, cross-sectional investigation conducted at a tertiary care teaching hospital. It was designed to evaluate the prevalence and pattern of psychiatric morbidity among patients with established chronic medical illnesses. A total of 120 patients were enrolled, comprising both outpatients and inpatients from the departments of Medicine and allied specialties. All participants had a confirmed diagnosis of a chronic medical condition and fulfilled the predefined inclusion criteria.

Inclusion Criteria

1. Patients aged 18 years and above.
2. Patients with a confirmed diagnosis of chronic medical illness (e.g., diabetes mellitus, hypertension, chronic kidney disease, chronic obstructive pulmonary disease, ischemic heart disease, or other long-standing medical disorders).
3. Patients who provided informed consent.

Exclusion Criteria

1. Patients with a previously diagnosed primary psychiatric disorder predating the onset of the chronic medical illness.
2. Patients presenting with acute confusional states, delirium, or any severe cognitive impairment that could interfere with reliable psychiatric assessment.
3. Patients who were unwilling or unable to provide informed consent for participation in the study

Data collection was carried out using a semi-structured proforma designed to record comprehensive information on each participant. Sociodemographic information, including age, sex, educational attainment, marital status, employment status, socioeconomic status, and place of residence, was collected using a structured proforma. Clinical parameters recorded comprised the type and duration of chronic medical illness, presence of comorbid conditions, treatment details, and history of substance use. To assess psychiatric morbidity, standardized and validated instruments were utilized. The General Health Questionnaire-28 (GHQ-28) was administered to evaluate overall psychological distress, while the Hospital Anxiety and Depression Scale (HADS) was employed to screen for anxiety and depressive symptoms. Diagnostic confirmation of psychiatric disorders was carried out using the Mini-International Neuropsychiatric Interview (MINI).

Statistical Analysis

All data were entered and analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were applied: means and standard deviations for continuous variables, and frequencies and percentages for categorical variables. Chi-square test and Fisher's exact test were used for comparison of categorical data

Results

The study included 120 patients with chronic medical illnesses.

Table 1: Sociodemographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18–30	19	15.83
	31–45	28	23.33
	46–60	41	34.17
	>60	32	26.67
Gender	Male	66	55.00
	Female	54	45.00
Marital Status	Married	92	76.67
	Unmarried	16	13.33
	Widowed/Divorced	13	10.83

In the present study, a total of 120 patients with chronic medical illnesses were included. The majority of participants were middle-aged, with 34.17% in the 46–60 years age group, followed by 26.67% aged above 60 years. Younger adults constituted a smaller proportion, with 23.33% aged 31–45 years and 15.83% aged 18–30 years. Males outnumbered females, accounting for 55% and 45% of the sample, respectively.

Most participants were married (76.67%), while 13.33% were unmarried and 10.83% were widowed or divorced. Overall, the sample predominantly consisted of middle-aged and married individuals, reflecting the typical demographic pattern of patients presenting with chronic medical conditions in tertiary-care settings.

Table 2: Distribution of Chronic Medical Illnesses

Medical Illness	Frequency (n)	Percentage (%)
Diabetes Mellitus	**35**	**29.17**
Hypertension	**28**	**23.33**
Ischemic Heart Disease (IHD)	**19**	**15.83**
Chronic Kidney Disease (CKD)	**16**	**13.33**
COPD / Chronic Respiratory Illness	**13**	**10.83**
Others (e.g., autoimmune, liver, etc.)	**9**	**7.50**

Among the 120 patients with chronic medical illnesses included in the study, diabetes mellitus was the most common condition, affecting 29.17% of the participants, followed by hypertension in 23.33%. Ischemic heart disease accounted for 15.83% of cases, while chronic kidney disease and chronic respiratory illnesses such as COPD were observed in 13.33% and 10.83% of patients, respectively. A smaller proportion (7.5%) had other chronic disorders, including autoimmune and liver diseases.

Overall, metabolic and cardiovascular conditions constituted the predominant diagnostic categories in the study cohort, reflecting the high burden of noncommunicable diseases commonly encountered in tertiary-care hospital settings.

Table 3: Psychiatric Morbidity among Patients

Psychiatric Disorder (MINI)	Frequency (n)	Percentage (%)
Depression	32	26.67
Anxiety Disorders	22	18.33
Adjustment Disorder	16	13.33
Somatoform Disorders	9	7.50
No Psychiatric Disorder	41	34.17

***Chi-square test applied; *p < 0.05 significant**

Based on diagnostic assessment using the Mini-International Neuropsychiatric Interview (MINI), 65.83% of patients were found to have a psychiatric disorder. Depression was the most prevalent diagnosis, observed in 26.67% of the study population, followed by anxiety disorders in 18.33% and adjustment disorders in 13.33%. Somatoform disorders were identified in 7.5% of patients. No psychiatric morbidity was detected in 34.17% of participants.

These findings indicate a high prevalence of psychiatric comorbidity among patients with chronic medical illnesses, with depressive and anxiety disorders emerging as the most common diagnostic categories.

Table 4: Association between Gender and Psychiatric Morbidity

Gender	Psychiatric Morbidity Present (n)	Absent (n)	Total (n)	p-value
Male	38 (57.6%)	28 (42.4%)	66	0.041*
Female	41 (75.9%)	13 (24.1%)	54	
Total	**79 (65.8%)**	**41 (34.2%)**	**120**	

***Chi-square test applied; *p < 0.05 significant**

A total of 120 patients were assessed for psychiatric morbidity in relation to gender.

Psychiatric morbidity was present in 65.8% of the overall sample. Among male patients (n = 66), 57.6% exhibited psychiatric morbidity, whereas the prevalence was notably higher among females (75.9%). The difference in psychiatric morbidity between males and females was found to be statistically significant (p = 0.041), indicating that female patients with chronic medical illnesses were more likely to experience psychiatric disorders than their male counterparts.

Table 5: Association between Type of Chronic Medical Illness and Psychiatric Morbidity

Illness Category	Psychiatric Morbidity Present (n)	Morbidity Absent (n)	p-value
Diabetes Mellitus	26 (72.2%)	10 (27.8%)	0.032*
Hypertension	17 (54.8%)	14 (45.2%)	0.184
Chronic Kidney Disease (CKD)	13 (81.3%)	3 (18.7%)	0.041*
COPD / Respiratory Illness	10 (76.9%)	3 (23.1%)	0.062
Ischemic Heart Disease (IHD)	9 (50.0%)	9 (50.0%)	0.271
Total (n = 120)	**75 (62.5%)**	**45 (37.5%)**	

***Chi-square test applied; *p < 0.05 significant**

In the present study, psychiatric morbidity varied significantly across different categories of chronic medical illnesses.

Among patients with diabetes mellitus, 72.2% exhibited psychiatric morbidity, compared to 27.8% without, a difference that was statistically significant (p = 0.032). Similarly, psychiatric morbidity was highly prevalent among patients with chronic kidney disease (81.3%; p = 0.041). In contrast, patients with hypertension (54.8%; p = 0.184), chronic respiratory illnesses such as COPD (76.9%; p = 0.062), and ischemic heart disease (50.0%; p = 0.271) showed higher morbidity rates, but these differences were not statistically significant.

Overall, the findings suggest that psychiatric morbidity is particularly prominent among individuals with diabetes mellitus and chronic kidney disease, highlighting the need for targeted mental health screening in these patient groups.

Table 6: Multiple Logistic Regression Analysis of Factors Associated with Psychiatric Morbidity (n=120)

Predictor Variable	Adjusted OR	95% CI	p-value
Female Gender	2.10	1.05 – 4.75	0.038*
Age > 60 years	1.85	0.92 – 3.96	0.084
Low Socioeconomic Status	2.72	1.14 – 6.48	0.024*
Unemployment	1.95	0.88 – 4.32	0.091
Diabetes Mellitus	2.48	1.09 – 5.65	0.031*
Chronic Kidney Disease (CKD)	3.12	1.18 – 8.25	0.021*
Duration of Illness > 5 years	1.67	0.78 – 3.59	0.186

Binary logistic regression analysis was conducted to identify independent predictors of psychiatric morbidity among patients with chronic medical illnesses. Female gender emerged as a significant predictor (Adjusted OR = 2.10, 95% CI: 1.05–4.75, p = 0.038), indicating that women were twice as likely as men to experience psychiatric morbidity. Low socioeconomic status was also significantly associated (Adjusted OR = 2.72, 95% CI: 1.14–6.48, p = 0.024), suggesting that individuals from disadvantaged backgrounds were at greater risk.

Among disease-related factors, both diabetes mellitus (Adjusted OR = 2.48, 95% CI: 1.09–5.65, p = 0.031) and chronic kidney disease (Adjusted OR = 3.12, 95% CI: 1.18–8.25, p = 0.021) showed significant associations, indicating higher psychiatric morbidity in these patient groups. Although age above 60 years (Adjusted OR = 1.85, p = 0.084), unemployment (Adjusted OR = 1.95, p = 0.091), and duration of illness greater than five years (Adjusted OR = 1.67, p = 0.186) were associated with increased odds of psychiatric morbidity, these relationships did not reach statistical significance.

Overall, the analysis highlights that female gender, low socioeconomic status, diabetes mellitus, and chronic kidney disease are key independent predictors of psychiatric morbidity among patients with chronic medical conditions

Discussion

In the present study involving 120 patients with chronic medical illnesses attending a tertiary-care hospital, psychiatric morbidity was identified in 66.7% of participants, whereas 33.3% were free from any diagnosable psychiatric disorder. This high prevalence underscores the substantial psychological burden accompanying long-term physical illness. Comparable studies across various hospital-based populations have reported psychiatric comorbidity rates ranging from 50% to 70%, situating the current findings toward the higher end of this spectrum. This elevated burden may be attributed to the tertiary-care context, where patients often present with advanced disease, greater symptom distress, and multiple comorbidities. [8]

In the present study, the majority of participants were within the 46–60 years (34.17%) and above 60 years (26.67%) age groups, and a substantial proportion (76.67%) were married. This demographic pattern aligns with observations from Indian consultation-liaison psychiatry studies, which have consistently shown that psychiatric morbidity in general-hospital settings tends to cluster among middle-aged and older adults coping with chronic medical conditions. The prevalence of psychiatric morbidity reported in earlier screening-based hospital studies, typically around 31–34.5% in unselected medical populations, is notably lower than that observed in our study. This difference likely reflects our targeted focus on patients with established chronic illnesses and the

use of structured diagnostic tools such as the MINI, which enable more precise identification of psychiatric disorders compared with screening instruments alone. [9]

In the present study, psychiatric morbidity was significantly higher among females (75.9%) compared to males (57.6%) (p = 0.041). This finding is consistent with robust meta-analytic evidence demonstrating a greater burden of depression and anxiety disorders among women, with the female-to-male ratio averaging around 1.7:1 across diverse populations and assessment methods. Biological factors such as hormonal fluctuations, psychosocial stressors related to caregiving roles, and sociocultural influences on emotional expression and help-seeking behavior may contribute to this disparity. Importantly, the gender effect remained statistically significant in the multivariate analysis (Adjusted OR = 2.10, 95% CI: 1.05–4.75), underscoring female sex as an independent predictor of psychiatric morbidity among patients with chronic medical illnesses in this tertiary-care setting. [10]

In the present cohort, diabetes mellitus (29.17%) and hypertension (23.33%) emerged as the most prevalent chronic medical conditions, followed by ischemic heart disease (15.83%), chronic kidney disease (13.33%), and chronic respiratory illness including COPD (10.83%). This distribution mirrors the epidemiologic profile of noncommunicable diseases in India, where cardiometabolic disorders predominate among adults seeking tertiary-care services.

Cross-national data consistently demonstrate that depression coexisting with chronic diseases—particularly diabetes and ischemic heart disease—is associated with the greatest reductions in overall health-related quality of life. In our study, the pattern of psychiatric morbidity across these conditions (e.g., 72.7% in diabetes and 50.0% in IHD) aligns with this broader evidence. Notably, our findings extend beyond depression alone, capturing a wider spectrum of psychiatric disorders—including anxiety, adjustment, and somatoform syndromes—thereby emphasizing the multifaceted psychological burden that accompanies chronic cardiometabolic illnesses. [11]

We found depression 26.67% and anxiety disorders 18.33%, with additional adjustment (13.33%) and somatoform disorders (7.50%). A systematic review of medical outpatients estimated point prevalence of depressive symptoms/disorders at 27.0% (range 17–53%), closely matching our depression figure, and highlighting comparable burdens across clinical departments when standardized tools are used. [12] Psychiatric morbidity among patients with diabetes in our cohort was 72.2 %, and diabetes independently predicted morbidity (Adjusted OR 2.48, 95% CI 1.09– 5.65). Classic meta-analytic data show depression prevalence 17.6% in type 2 diabetes versus 9.8% in controls (OR 1.6), underscoring an elevated baseline risk; our higher estimate likely reflects inclusion of anxiety/adjustment alongside depression and the greater psychosocial load in tertiary-care attendees. [13]

Underscoring an elevated baseline risk; our higher estimate likely reflects inclusion of anxiety/adjustment alongside depression and the greater psychosocial load in tertiary-care attendees. [13] CKD showed the highest illness-specific burden in our study (80.00%) and independently predicted morbidity (Adjusted OR 3.12, 95% CI 1.18–8.25). This direction accords with a CKD meta-analysis reporting depressive-symptom prevalence around 27% overall (with dialysis studies often higher, range 5–58%), again suggesting that our broader diagnostic net and hospital-based sampling capture additional non-depressive morbidity alongside depression. [14] Low SES independently increased odds of psychiatric morbidity in our model

(Adjusted OR 2.72, 95% CI 1.14–6.48). A foundational meta-analysis demonstrated a graded association between disadvantaged SES and depression across 51 prevalence, 5 incidence, and 4 persistence studies, supporting SES as a consistent determinant of mental health inequality and aligning with the strength of the effect we observed. [15]

Conclusion

The present study demonstrates a high prevalence of psychiatric morbidity (65.8%) among patients suffering from chronic medical illnesses, with depression and anxiety disorders constituting the predominant diagnostic categories. Female gender, low socioeconomic status, diabetes mellitus, and chronic kidney disease emerged as significant independent predictors of psychiatric morbidity, highlighting key vulnerability domains within this population. These findings emphasize the critical importance of routine psychiatric screening and the integration of mental health care into chronic disease management frameworks, particularly within tertiary-care hospital settings. Implementation of early identification strategies and collaborative, multidisciplinary care models has the potential to enhance both psychological well-being and physical health outcomes, thereby promoting a more comprehensive and patient-centred approach to long-term disease management.

References

1. World Health Organization. Depression and Other Common Mental Disorders: Global Health Estimates. Geneva: WHO; 2017. Available from: https://apps.who.int/iris/bitstream/handle/10665/25461__0/WHO-MSD-MER-2017.
2. 2-eng.pdfWHO Apps 2. Vos T, Lim SS, Abbafati C, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396(10258):1204–1222. Available from: https://www.thelancet.Com/journals/lancet/article/PIIS0 140-6736(20)30925-9/fulltextThe Lancet.
3. Mezuk B, Eaton WW, Albrecht S, Golden SH. Depression and type 2 diabetes over the lifespan: a meta-analysis. Arch Intern Med. 2008;168 (21):2219– 2227. Available from: https://pubmed.ncbi.nlm.nih.gov/1903 3418/PubMed
4. Nicholson A, Kuper H, Hemingway H. Depression as an aetiologic and prognostic factor in coronary heart disease: a meta-analysis. Eur Heart J. 2006;27(23):2763–2774. Available from:https://academic.oup.com/eurhear tj/article/27/23/2763/ 2887435Oxford Academic
5. Atlantis E, Fahey P, Cochrane B, Smith S. Bidirectional associations between clinically relevant depression or anxiety and COPD: a systematic review and meta-analysis. Thorax. 2013;68(7):639–649. Available from: https://pubmed.ncbi.nlm.nih.gov/2342 9910/PubMed
6. GBD 2019 Mental Disorders Collaborators. Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Psychiatry. 2022;9(2):137–150. Available from: https://pubmed.ncbi.nlm.nih.gov/35026139/PubMed
7. Wu Y, Zhu C, Tian M, et al. Changing trends in the global burden of mental disorders from 1990 to 2019 and predicted levels in 25 years: an age–period–cohort analysis. Front Public Health. 2023;11:1271814. Available from:https://pmc.ncbi.nlm.nih.gov/arti cles/PMC10689059/P MC
8. Naylor C, Parsonage M, McDaid D, Knapp M, Fossey M, Galea A. Long-term conditions and mental health: The cost of co-morbidities. London: The King's Fund; 2012. Available from:

https://assets.kingsfund.org.uk/f/256914/x/a7a77f9f6b/l ong_term_conditions _and_mental_health_february_2012.pdfassets.kingsfund.org.uk

9. Grover S, State of Consultation-Liaison Psychiatry in India. Indian J Psychiatry. 2011;53(3):201–212. Available from: https://pmc.ncbi.nlm. nih.gov/articles/PMC3221175/P MC.
10. Salk RH, Hyde JS, Abramson LY. Gender differences in depression in representative national samples: metaanalyses of diagnoses and symptoms. Psychol Bull. 2017; 143(8):783–822. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5532074/P MC
11. Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health. Lancet. 2007;370(9590):851–858. Available from: https://www.thelancet.com/journals/lancet/article/PIIS0 140-6736(07)61415-9/abstractThe Lancet
12. Wang J, Wu X, Lai W, et al. Prevalence of depression and depressive symptoms among out patients: a systematic review and meta-analysis. BMJ Open. 2017; 7:e017173. Available from: https://bmjopen. bmj.com/content/7/8/e017173BMJ
13. Ali S, Stone M, Peters J, Davies M, Khunti K. The prevalence of co-morbid depression in adults with Type 2 diabetes: a systematic review and metaanalysis. Diabet Med. 2006; 23(11):1165–1173. Available from: https://onlinelibrary.wiley.com/doi/10.1111/j.1464- 5491.2006.01943.xWiley Online Library
14. Palmer S, Vecchio M, Craig JC, et al. Prevalence of depression in chronic kidney disease: systematic review and meta-analysis. CMAJ. 2013;185(3):E117– E126. Available from: https://pubmed.ncbi.nlm.nih.gov/23486521/PubMed
15. Lorant V, Deliège D, Eaton W, Robert A, Philippot P, Ansseau M. Socioeconomic inequalities in depression: a meta-analysis. Am J Epidemiol. 2003;157(2):98–112. Available from: https://academic.oup.com/aje/article/157/2/98/90059O xford Academic.