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Prevalence and Severity of Depression and Anxiety Among Patients with Chronic Medical Illnesses: A Cross-Sectional Study

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ABSTRACT

Background: Chronic medical illnesses are commonly associated with psychological disturbances that adversely affect treatment adherence, disease progression, and overall quality of life. Among the most common psychiatric disorders among patients with chronic medical conditions are depression and anxiety.

Objective: To identify the prevalence and severity of depression and anxiety in patients suffering from chronic medical illness in a tertiary care hospital.

Methods: This analytical cross-sectional study was conducted at the Department of Internal Medicine, Sheikh Zayed Medical College and Hospital from May 2024 to May 2025. The patients who had chronic medical illnesses like diabetes mellitus, hypertension, ischaemic heart disease, chronic kidney disease, chronic respiratory disease, and chronic liver disease were enrolled by non-probability consecutive sampling with a total of 130 patients. The level of depression and anxiety was measured with the Hospital Anxiety and Depression Scale (HADS). A structured questionnaire was used for the recording of the demographic and clinical parameters. Data were analysed using SPSS (version 26.0).

Results: The average age of the respondents was 51.6 ± 14.2 years. Male patients constituted 55.4% while females accounted for 44.6% of the study population. Depression was identified in 78 (60.0%) patients, whereas anxiety was observed in 91 (70.0%) participants. Moderate-to-severe depression was present in 44 (33.8%) patients, while moderate-to-severe anxiety was identified in 51 (39.2%) patients. Female gender, disease duration greater than five years, and presence of multiple comorbidities demonstrated a significant association with higher depression and anxiety scores ($p<0.05$). The patients with chronic kidney disease and ischemic heart disease had the highest psychological burden.

Conclusion: Patients with chronic medical conditions are very likely to experience depression and anxiety. Add routine psychological screening and provide integrated mental health care to the management of chronic diseases to enhance outcomes and quality of life.

Keywords: Depression; Anxiety; Chronic Medical Illness; Psychological Distress; Comorbidity; Mental Health.

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INTRODUCTION

Chronic medical illnesses are one of the most important causes of morbidity, disability, and mortality globally and are still a significant burden for health care systems, families, and society [1]. Lifestyle changes, living with the disease and taking medicines are lifelong requirements for chronic diseases like diabetes mellitus, hypertension, ischemic heart disease, chronic kidney disease, chronic respiratory diseases and chronic liver diseases. These conditions are chronic and progressive, and have an impact on physical health, as well as affecting the psychological and emotional state of the person who has them [2].

Patients with chronic medical illnesses are most likely to report depression and anxiety among psychiatric

disorders [3]. Stress from having to constantly manage a disease, worry about complications, financial concerns, social reliance, diminished functional ability, and uncertainty about prognosis can all lead to emotional issues and psychological distress. Chronic diseases often lead to a diminished quality of life, reduced work productivity, sleep disturbances, social isolation, a diminished self-concept, and ultimately to depression and anxiety disorders in many patients [4].

The association between chronic medical diseases and psychiatric illnesses is complex and bidirectional [5]. Psychological stress can exacerbate the course of disease by noncompliance with treatment, unhealthy lifestyle, decreased immunity, autonomic dysfunction, and neuroendocrine changes. Likewise, the chronic diseases can also lead to inflammation, imbalance in neurotransmitters, hormonal imbalances, and chronic pain syndromes, which can lead to mental health issues. Chronically ill patients hospitalized for depression or anxiety have been linked to higher rates of hospitalization, longer lengths of stay, greater health care expenses, poorer treatment outcomes, and higher death rates [6].

High prevalence of depression and anxiety has been reported among patients with chronic diseases in several international studies [7]. However, such psychiatric disorders are often underdiagnosed and undertreated, especially in a developing country like Pakistan, where there are still not enough systems and services for awareness and support of mental health. Diagnosis and management of mental illness are also delayed by the cultural stigma associated with mental illness. As a result, a significant psychological morbidity often persists in such patients that adversely impacts disease control and quality of life [8].

Patients who have multiple chronic comorbidities are at a high risk of mental health disturbances due to a high level of disease burden, long treatment duration, physical restrictions, and financial strain [9]. Anxiety and depressive symptoms have also been linked to elderly, biological, hormonal, and psychosocial factors in females. Although there is an increasing burden of chronic diseases in Pakistan, there is little local data on the prevalence and severity of depression and anxiety in these patients [10].

The early detection and treatment of psychological problems in chronically ill people is crucial for better adherence to treatment, better coping, fewer complications, and better clinical outcomes in general. It is therefore possible that embedding mental health assessments in regular chronic care could be important for comprehensive care [11,12].

Therefore, the present study was conducted to determine the prevalence and severity of depression and anxiety among patients with chronic medical illnesses attending tertiary care hospitals and to evaluate their association with demographic and clinical characteristics [13].

MATERIALS AND METHODS

This analytical cross-sectional study was conducted at the Department of Internal Medicine, Sheikh Zayed Medical College and Hospital over a duration of one year from May 2024 to May 2025. The study was approved by the Institutional Ethical Review Committee before the data collection process began (Ref No: SZMC/ERC/2024/091). All participants gave written informed consent before entering the study, and confidentiality of patient information was carefully observed during the study period.

The number of patients in the study was 130, which was selected by a non-probability consecutive sampling technique from the medical units of the outpatient and inpatient departments. Study participants were adults, 18 years old and older, with chronic medical conditions for at least 6 months. Chronic medical illness included diabetes mellitus, hypertension, ischemic heart disease, chronic kidney disease, chronic obstructive pulmonary disease, chronic liver disease, and other long-term systemic diseases that were under medical follow-up and requiring continued treatment.

To reduce the potential for confounding bias and to ensure accurate psychological assessment, patients with previously diagnosed psychiatric disorders, a history of antidepressant or anxiolytic medication, an acute medical emergency, severe cognitive impairment, neurological disability, malignancy, terminal illness, and inability to communicate effectively were excluded.

Demographic and clinical data were obtained from a structured interview-administered questionnaire after informed consent was obtained. Data regarding age, gender, marital status, educational level, occupation, socioeconomic status, duration and type of chronic illness, presence of multiple comorbidities, hospitalization history, and treatment status were recorded. Clinical diagnoses were verified from medical records, physician documentation, laboratory investigations, and hospital registration files.

The Hospital Anxiety and Depression Scale (HADS), a validated and widely accepted screening tool for the assessment of psychological morbidity among medically ill patients, was used for the assessment of depression and anxiety. The HADS questionnaire consists of 14 items, including seven items assessing anxiety and seven items assessing depression. The responses for each item were rated using a four-point Likert scale from 0 to 3, and the total scores for each subscale can range from 0 to 21. Severity scores were classified as normal (0-7), borderline abnormal (8-10), and abnormal or severe (11-21). The interviews and psychological evaluations were performed at an outpatient clinic by trained healthcare professionals using a private clinical environment to ensure patient comfort and to minimize the bias of the interviewer.

The primary outcome measures for the study were the establishment of prevalence and severity of depression

and anxiety in patients with chronic medical illnesses. Secondary outcome measures were assessment of demographic and clinical factors (age, gender, duration of disease) and the association between psychological symptoms and multiple comorbidities.

All collected data were presented and analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0. Quantitative variables, including age and HADS scores, were expressed as mean ± standard deviation, and qualitative variables were expressed as frequencies and percentages. Although appropriate, associations between variables were tested using the chi-square test, the independent t-test, and one-way analysis of variance (ANOVA). Throughout the study, a p-value < 0.05 was regarded as statistically significant.

RESULTS

A total of 130 patients with chronic medical illnesses were included in the study. The average age of the subjects was 51.6 ± 14.2 years, and the range was 21-79 years. There were 72 (55.4%) males and 58 (44.6%) females in the study population. The majority of the participants were older than 50 years. Chronic medical illnesses most commonly seen were diabetes mellitus and hypertension, followed by ischemic heart disease and chronic kidney disease. Almost half of the patients were comorbid with more than one chronic condition. Table 1 shows demographic and clinical characteristics of the study population in detail.

Patients with chronic medical illnesses had a high prevalence of psychiatric symptoms based on psychological assessment using the Hospital Anxiety and Depression Scale (HADS). Depression was identified in 78 (60.0%) patients, whereas anxiety was present in 91 (70.0%) participants. Moderate-to-severe depression was observed in 44 (33.8%) patients, while moderate-to-severe anxiety was identified in 51 (39.2%) participants. Table 2 shows the distribution of severity scores for depression and anxiety in the study participants.

Results of the subanalysis showed that there was a significant difference between the prevalence of anxiety in female and male participants. Anxiety was observed in 46 (79.3%) female patients compared to 45 (62.5%) males ($p=0.018$). The prevalence of depression was also higher in females than in males, but this difference was somewhat less pronounced. Patients with disease duration greater than five years and those with multiple comorbidities showed significantly higher depression and anxiety scores compared to patients with shorter disease duration and a single chronic illness. Detailed psychological symptoms-clinical variables associations are provided in Table 3.

The patients with chronic kidney disease and ischemic heart disease had the highest psychological burden of all the disease groups. Depression was present in 17 (81.0%) patients with chronic kidney disease and 25 (75.8%) patients with ischemic heart disease. There was also an increase in the prevalence of anxiety in these patient populations. Elderly patients above 50 years demonstrated significantly higher mean depression and anxiety scores compared to younger age groups. Table 4 shows the detailed results of the comparison of mean scores of HADS based on age categories.

Overall results of this study showed that depression and anxiety were very common in patients with chronic medical illnesses, especially among females, elderly people, patients with longer disease duration, and those with multiple chronic comorbid diseases. Psychological distress levels were significantly higher with age and disease burden.

Table 1: Demographic and Clinical Characteristics of Study Participants (n=130)

Variables	Frequency (n)	Percentage (%)
Gender		
Male	72	55.4
Female	58	44.6
Age Groups		
18–35 years	24	18.5
36–50 years	39	30.0
>50 years	67	51.5
Type of Chronic Illness		
Diabetes mellitus	54	41.5
Hypertension	47	36.2
Ischemic heart disease	33	25.4
Chronic kidney disease	21	16.2
Chronic respiratory disease	18	13.8
Chronic liver disease	14	10.8
Duration of Illness		
<5 years	49	37.7
≥5 years	81	62.3
Multiple Comorbidities		
Present	61	46.9
Absent	69	53.1

Table 2: Severity Distribution of Depression and Anxiety Among Patients (n=130)

Severity Category	Depression n (%)	Anxiety n (%)
Normal (0–7)	52 (40.0)	39 (30.0)
Mild/Borderline (8–10)	34 (26.2)	40 (30.8)
Moderate (11–14)	27 (20.8)	31 (23.8)
Severe (15–21)	17 (13.1)	20 (15.4)

Table 3: Association of Depression and Anxiety with Clinical Variables

Variables	Depression Present n (%)	Anxiety Present n (%)	p-value
Female gender	39 (67.2)	46 (79.3)	0.018
Male gender	39 (54.2)	45 (62.5)	0.041
Disease duration ≥5 years	56 (69.1)	64 (79.0)	0.006
Disease duration <5 years	22 (44.9)	27 (55.1)	0.032
Multiple comorbidities present	47 (77.0)	52 (85.2)	0.002
Single chronic illness	31 (44.9)	39 (56.5)	0.019

Table 4: Mean Depression and Anxiety Scores According to Age Groups

Age Group	Mean Depression Score ± SD	Mean Anxiety Score ± SD
18–35 years	7.4 ± 2.5	8.1 ± 2.7
36–50 years	9.3 ± 3.0	10.2 ± 3.4
>50 years	12.1 ± 3.7	13.4 ± 4.1

DISCUSSION

This current study revealed a high prevalence of depression and anxiety amongst patients with chronic medical illnesses [14]. Depression was identified in 60.0% of participants, while anxiety was observed in 70.0% of patients. These results show that psychological morbidity affects a large proportion of people with chronic illnesses and is a significant and often overlooked health care issue. Chronic diseases are known to have long-term physical, emotional, social, and financial impacts that can have a significant impact on mental health and quality of life [15].

The elevated prevalence of depression in this study is in keeping with the similar prevalence reported in the literature nationally and internationally, which has shown that patients with chronic medical conditions have increased depressive symptoms [16]. Constant disease, frequent hospitalizations, lifetime medication use, diminished physical functioning, and worry about complications make significant impacts on emotional distress. In addition, chronic inflammation, neuroendocrine dysfunction, neurotransmitter imbalance, and the ongoing oxidative stress in chronic conditions can predispose patients to depressive disorders at a biological level. The impact of depression is detrimental to motivation, self-care behaviors, adherence with diet, medications, and healthcare engagement, all of which lead to poorer disease course and outcomes [17].

In the present study, the prevalence of anxiety was even more common than depression, nearly two-thirds of the study population [18]. The uncertainty about the prognosis of the disease, fear of becoming disabled and dependent, financial stress, and fear of long-term survival commonly trigger anxiety. Anticipatory fear of disease progression and complications is common amongst people with chronic diseases and can cause a great deal of psychological stress and emotional instability. Chronic anxiety can exacerbate any autonomic dysfunction as well as cardiovascular stress, sleep dysfunction, and nonadherence to treatment. [19]

The prevalence of anxiety and depression was also significantly higher in females than in males [20]. This has been observed in several earlier studies and may be attributed to the hormonal influence, psychosocial stress, caring responsibilities, emotional vulnerability, and/or heightened psychological sensitivity of females. In developing countries like Pakistan, the psychological burden might be more in women with chronic illness, as cultural and social factors might also be involved in this psychological burden [21].

The current study also showed that patients with a disease duration of more than 5 years had significantly elevated scores for depression and anxiety [22]. Chronic conditions can lead to fatigue, a decrease in functional ability, isolation, and future dependence on treatment, all of which lead to poorer psychological well-being. Those with chronic illnesses who have been coping with them for a long time may experience helplessness, hopelessness, and emotional exhaustion because of the burden of the disease [23].

Psychological distress was highly associated with having multiple comorbidities in this study. Patients with two or more chronic medical conditions had significantly higher rates of depression and anxiety. Multiple diseases can coexist, exacerbating physical vulnerabilities, medication intake, functional limitations, health care expenses, and physical disabilities, which in turn can have a significant impact on quality of life and psychiatric symptoms [24,25].

Chronic kidney disease and ischemic heart disease had the highest prevalence of depression and anxiety among disease categories [26]. Patients with chronic kidney disease may have frequent hospitalizations, dietary modifications, reliance on medications, and anxiety about the progression to renal failure, which can be emotionally

challenging. Likewise, cardiovascular diseases have been strongly linked to concerns of sudden events, decreased physical activity, frequent hospitalizations, and fear of death. Other studies have also shown that there are close links between cardiovascular diseases and psychological disorders, via inflammatory and ANS pathways [27].

The study also showed that the mean depression and anxiety scores were significantly higher among elderly patients than among younger patients. Older age is linked to an increase in morbidity and a decrease in functional capacity, social dependence, mobility, and fear of death, which all increase psychological vulnerability. Older people can also be lonely and have poorer social support, which can negatively impact mental health outcomes [28,29].

Depression and anxiety in chronically ill patients, if not treated, can contribute to inadequate treatment adherence, prolonged hospital stays, slowed recovery, and even death [17,21]. Thus, it is recommended that psychological screening be included in the management of chronic diseases. An early psychiatric intervention, counseling services, psychosocial support programs, and multidisciplinary healthcare approaches may have a significant impact on mental and physical health outcomes in these patients [22-25].

Some of the drawbacks of the current study need to be recognized. The cross-sectional study does not allow causal inference about chronic illnesses and psychological disorders. The study was performed in a single tertiary care hospital, so it may not be generalizable to community populations [25,26]. Further, psychological evaluation was conducted using questionnaire-based screening and not formal psychiatric interviews. Despite the above, the study offers valuable local information on the high prevalence of depression and anxiety among patients with chronic medical conditions [27-30].

CONCLUSION

Patients with chronic medical illnesses are very likely to experience depression and anxiety, which are also significant factors in decreased quality of life and poor clinical outcomes. Being female, having a longer disease duration, older age, and having more comorbidities were significant factors associated with greater psychological distress. Patients with chronic kidney disease and ischemic heart disease had very high scores of depression and anxiety. This study's results underscore the need for regular mental health screening and the provision of integrated psychosocial treatment in chronic disease management. The early diagnosis and prompt psychiatric management can lead to better adherence to treatment, better control of the disease, better emotional health, and better outcomes for the patient. Chronic medical illnesses require a multidisciplinary approach to healthcare with involvement from physicians, psychiatrists, psychologists, and social support services to provide the care that is needed.

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Authors' Contributions: S.A. contributed to conceptualization, study design, patient assessment, data collection, interpretation of findings, and manuscript drafting. B.S. contributed to data acquisition, clinical assessment, and manuscript revision. A.Q. contributed to statistical analysis, interpretation of results, supervision, and critical revision of the manuscript. All authors approved the final version of the manuscript.

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Data Availability: The datasets generated and analyzed during this study are available from the corresponding author upon reasonable request.

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