



Original Research Article

Prevalence And Clinical Correlates Of Anxiety And Depression Among Patients With Chronic Medical Illnesses: A Cross-Sectional Study In A Care Hospital In South India.

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Abstract: Background: Anxiety and depression are highly prevalent among patients with chronic medical illnesses, yet they remain under-recognised and undertreated in routine clinical settings. In India, where non-communicable diseases constitute a growing public health burden, the intersection of physical and mental health remains inadequately explored, particularly in South Indian hospital populations. **Methods:** This cross-sectional study was conducted over eight months (June 2025–January 2026) in the inpatient and outpatient departments of a care hospital in South India. A total of 50 adult patients with chronic medical illnesses including type 2 diabetes mellitus, hypertension, chronic kidney disease, and cardiovascular disease were recruited through consecutive sampling. Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS). Sociodemographic and clinical data were collected using a structured proforma. Descriptive statistics, chi-square tests, and multivariate logistic regression were performed using SPSS version 26.0. **Results:** The mean age of participants was 54.2 ± 12.7 years; 58% were male. The prevalence of anxiety ($\text{HADS-A} \geq 8$) was 42% ($n = 21$), and depression ($\text{HADS-D} \geq 8$) was 38% ($n = 19$). Comorbid anxiety and depression were present in 28% ($n = 14$). Female gender ($p = 0.032$), low socioeconomic status ($p = 0.018$), longer illness duration (>5 years; $p = 0.041$), and presence of two or more chronic conditions ($p = 0.009$) were significantly associated with anxiety and/or depression. **Conclusion:** Anxiety and depression are highly prevalent among patients with chronic medical illnesses in South India, with significant associations with female gender, low socioeconomic status, longer illness duration, and multimorbidity. Routine screening for psychological distress should be integrated into chronic disease management protocols.

Keywords: Anxiety, depression, chronic illness, HADS, South India, prevalence, non-communicable diseases.

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INTRODUCTION

Chronic medical illnesses, including diabetes mellitus, hypertension, cardiovascular disease, and chronic kidney disease, represent a substantial and growing burden on health systems worldwide. In India, non-communicable diseases (NCDs) account for approximately 66% of all deaths, with cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes constituting the majority [1]. The coexistence of psychological distress with these physical conditions is increasingly recognised as a critical determinant of

treatment adherence, quality of life, and clinical outcomes [2]. Anxiety and depression, in particular, are the most common psychiatric comorbidities in patients with chronic medical illnesses, yet they frequently remain undiagnosed and untreated in busy clinical settings [3].

The relationship between chronic physical illness and psychological distress is bidirectional and complex. Chronic illness imposes significant psychological burdens through functional limitations, symptom

burden, financial strain, and uncertainty about the future, all of which can precipitate or exacerbate anxiety and depression [4]. Conversely, psychological distress can negatively impact self-management behaviours, medication adherence, and health-related decision-making, leading to poorer clinical outcomes and increased healthcare utilisation [5]. Studies from high-income countries have consistently reported elevated prevalence rates of anxiety and depression in chronic illness populations, ranging from 20% to 50% depending on the population and assessment tools used [6,7].

In the South Asian context, evidence on the prevalence and correlates of anxiety and depression among patients with chronic medical illnesses remains fragmented. A systematic review and meta-analysis of studies from Bangladesh, India, and Pakistan reported pooled prevalence estimates of 44% for depression and 29% for anxiety among patients with non-communicable diseases [8]. Within India, studies have demonstrated wide variability in prevalence estimates, with depression rates ranging from 8% to 46% in patients with diabetes and 20% to 61% in patients with chronic kidney disease [9,10]. This heterogeneity reflects differences in study populations, assessment instruments, and diagnostic thresholds, underscoring the need for context-specific research.

Despite the growing recognition of this comorbidity, routine screening for anxiety and depression in patients with chronic medical illnesses is not standard practice in most Indian healthcare settings. This gap is particularly concerning in South India, a region with a high burden of NCDs and a rapidly ageing population [11]. Identifying the prevalence and clinical correlates of anxiety and depression in this population is essential for developing integrated care models that address both physical and mental health needs. The present study was designed to fill this gap by examining the prevalence of anxiety and depression and their associated sociodemographic and clinical factors among patients with chronic medical illnesses in a care hospital in South India.

OBJECTIVE

The primary objective of this study was to determine the prevalence of anxiety and depression among adult patients with chronic medical illnesses attending a care hospital in South India. Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS), a validated instrument widely used in medically ill populations. The study aimed to generate local evidence to inform screening practices and integrated care pathways in this setting.

The secondary objective was to identify sociodemographic and clinical correlates associated with anxiety and depression in this population. Specifically, the study examined associations with age,

gender, socioeconomic status, educational level, type and duration of chronic illness, number of chronic conditions, and treatment adherence. Understanding these correlates is essential for risk stratification and for developing targeted interventions for patients at greatest risk of psychological distress.

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional, hospital-based study was conducted over eight months from June 2025 to January 2026 in the inpatient and outpatient departments of a care hospital in South India. The hospital is a tertiary care centre serving a predominantly urban and semi-urban population, providing services across multiple specialties including internal medicine, endocrinology, nephrology, and cardiology. The study was approved by the Institutional Ethics Committee prior to commencement, and written informed consent was obtained from all participants.

Study Population and Sampling

A total of 50 adult patients with chronic medical illnesses were recruited using consecutive sampling. The sample size of 50 was determined based on resource constraints and the feasibility of conducting detailed clinical assessments within the study period, consistent with similar exploratory studies in comparable settings [12]. Patients were eligible if they were aged 18 years or older, had a documented diagnosis of at least one chronic medical illness (type 2 diabetes mellitus, hypertension, cardiovascular disease, or chronic kidney disease) for a minimum of six months, and were willing to participate. Patients were excluded if they had a pre-existing diagnosis of a psychiatric disorder, were currently receiving psychotropic medication, had cognitive impairment or communication barriers preventing reliable assessment, or were critically ill or unable to provide informed consent.

Data Collection Procedure

Data were collected using a structured proforma designed for this study. Sociodemographic information included age, gender, marital status, educational level, occupation, and socioeconomic status (classified using the Modified Kuppuswamy Scale). Clinical data comprised the type and duration of chronic illness, number of chronic conditions, current medications, treatment adherence (assessed using a self-report measure), and recent hospitalisations. Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS), a 14-item self-report instrument with two subscales: HADS-A (anxiety) and HADS-D (depression). Each subscale has a score range of 0–21, with scores of 8 or above indicating probable clinically significant symptoms [13]. The HADS has been validated in Indian populations and is particularly suitable for medically ill patients as it excludes somatic symptoms that may be attributable to physical illness.

[14]. All assessments were conducted in a private room to ensure confidentiality, and participants were given adequate time to complete the questionnaire. Clinical data were cross-verified with medical records.

Statistical Data Analysis

Data were entered into Microsoft Excel and analysed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were calculated for all variables, with continuous variables expressed as mean $\pm$ standard deviation and categorical variables as

frequencies and percentages. The prevalence of anxiety and depression was calculated with 95% confidence intervals. Associations between categorical variables were examined using the chi-square test or Fisher's exact test where appropriate. Multivariate logistic regression analysis was performed to identify independent correlates of anxiety and depression, with variables showing $p < 0.1$ in univariate analysis entered into the model. Adjusted odds ratios (AOR) with 95% confidence intervals were calculated. A p -value of < 0.05 was considered statistically significant.

RESULTS

Sociodemographic and Clinical Characteristics

A total of 50 patients with chronic medical illnesses were enrolled. The mean age of participants was 54.2 ± 12.7 years, with a range of 28–78 years. Males constituted 58% ($n = 29$) of the sample, and females 42% ($n = 21$). The majority of participants were married (78%, $n = 39$) and resided in urban or semi-urban areas (72%, $n = 36$). Regarding educational status, 34% ($n = 17$) had completed secondary education, while 26% ($n = 13$) had only primary education or less. Socioeconomic classification showed that 44% ($n = 22$) belonged to the lower-middle class, 32% ($n = 16$) to the upper-middle class, and 24% ($n = 12$) to the lower class (Table 1).

In terms of clinical characteristics, type 2 diabetes mellitus was the most common chronic illness (62%, $n = 31$), followed by hypertension (54%, $n = 27$), chronic kidney disease (24%, $n = 12$), and cardiovascular disease (20%, $n = 10$). Multimorbidity was common: 46% ($n = 23$) had two or more chronic conditions. The mean duration of chronic illness was 7.8 ± 5.4 years, with 52% ($n = 26$) having been diagnosed for more than five years. Treatment adherence was reported by 68% ($n = 34$) of participants.

Prevalence of Anxiety and Depression

The prevalence of anxiety (HADS-A ≥ 8) was 42% ($n = 21$; 95% CI: 28.5–56.7%), while the prevalence of depression (HADS-D ≥ 8) was 38% ($n = 19$; 95% CI: 24.8–52.8%). Comorbid anxiety and depression (both subscales ≥ 8) were present in 28% ($n = 14$; 95% CI: 16.2–42.5%). Subscale analysis revealed that 24% ($n = 12$) had borderline anxiety (HADS-A 8–10) and 18% ($n = 9$) had probable anxiety (HADS-A ≥ 11). For depression, 22% ($n = 11$) had borderline depression (HADS-D 8–10) and 16% ($n = 8$) had probable depression (HADS-D ≥ 11). The mean HADS-A score was 7.6 ± 4.3 , and the mean HADS-D score was 7.1 ± 4.1 . Table 2 presents the distribution of HADS scores across severity categories.

Clinical Correlates of Anxiety and Depression

Univariate analysis identified several factors significantly associated with anxiety and/or depression. Female gender was significantly associated with both anxiety ($p = 0.021$) and depression ($p = 0.038$). Low socioeconomic status (lower and lower-middle class) was associated with depression ($p = 0.018$) and the combined outcome of anxiety and/or depression ($p = 0.012$). Longer illness duration (>5 years) was significantly associated with anxiety ($p = 0.041$) and depression ($p = 0.029$). The presence of two or more chronic conditions (multimorbidity) was strongly associated with both anxiety ($p = 0.009$) and depression ($p = 0.014$), as well as with comorbid anxiety and depression ($p = 0.006$). Poor treatment adherence showed a trend toward significance for depression ($p = 0.062$).

In multivariate logistic regression analysis, female gender (AOR = 3.24, 95% CI: 1.18–8.91; $p = 0.023$), low socioeconomic status (AOR = 2.87, 95% CI: 1.09–7.56; $p = 0.034$), illness duration >5 years (AOR = 2.65, 95% CI: 1.02–6.88; $p = 0.046$), and multimorbidity (AOR = 4.12, 95% CI: 1.45–11.72; $p = 0.008$) emerged as independent correlates of anxiety and/or depression. Table 3 presents the results of the multivariate analysis.

Table 1: Sociodemographic and Clinical Characteristics of Participants (N = 50)

Characteristic	Category	n (%)
Age (years)	Mean $\pm$ SD	54.2 $\pm$ 12.7
Gender	Male	29 (58.0)
	Female	21 (42.0)
Marital Status	Married	39 (78.0)
	Unmarried/Widowed/Divorced	11 (22.0)
Residence	Urban/Semi-urban	36 (72.0)
	Rural	14 (28.0)
	$\leq$ Primary	13 (26.0)

Education	Secondary	17 (34.0)
	Graduate and above	20 (40.0)
Socioeconomic Status	Lower	12 (24.0)
	Lower-middle	22 (44.0)
	Upper-middle	16 (32.0)
Type of Chronic Illness	Type 2 Diabetes Mellitus	31 (62.0)
	Hypertension	27 (54.0)
	Chronic Kidney Disease	12 (24.0)
	Cardiovascular Disease	10 (20.0)
Number of Chronic Conditions	1	27 (54.0)
	≥ 2	23 (46.0)
Duration of Illness	≤ 5 years	24 (48.0)
	> 5 years	26 (52.0)
Treatment Adherence	Good	34 (68.0)
	Poor	16 (32.0)

Table 2: Prevalence and Severity of Anxiety and Depression (N = 50)

Category	HADS-A (Anxiety) n (%)	HADS-D (Depression) n (%)
Normal (0–7)	29 (58.0)	31 (62.0)
Borderline (8–10)	12 (24.0)	11 (22.0)
Probable (≥ 11)	9 (18.0)	8 (16.0)
Total with symptoms (≥ 8)	21 (42.0)	19 (38.0)
Mean ± SD Score	7.6 ± 4.3	7.1 ± 4.1

Table 3: Multivariate Logistic Regression of Factors Associated with Anxiety and/or Depression

Variable	Adjusted OR	95% CI	p-value
Female Gender	3.24	1.18–8.91	0.023
Low Socioeconomic Status	2.87	1.09–7.56	0.034
Illness Duration > 5 years	2.65	1.02–6.88	0.046
Multimorbidity (≥ 2 conditions)	4.12	1.45–11.72	0.008

DISCUSSION

The present study found a high prevalence of anxiety (42%) and depression (38%) among patients with chronic medical illnesses in a South Indian care hospital, with more than one in four patients experiencing comorbid anxiety and depression. These findings are consistent with the broader literature from India and South Asia. A systematic review and meta-analysis of studies from Bangladesh, India, and Pakistan reported pooled prevalence estimates of 44% for depression and 29% for anxiety among patients with non-communicable diseases [8]. Similarly, a selective systematic review from India reported prevalence ranges of 3.9–44% for anxiety and 8–44% for depression in patients with diabetes, hypertension, and cardiovascular disease [14]. The prevalence estimates in the present study fall within these ranges, reinforcing the substantial psychological burden borne by patients with chronic medical illnesses in this region.

The finding that female gender was independently associated with anxiety and depression is consistent with existing evidence. A study conducted in Kerala, South India, reported that female gender was significantly associated with anxiety among hypertensive patients (OR 1.607, 95% CI 0.962–2.687) [11]. Similarly, a study of diabetic patients in a tertiary care hospital in South India found that anxiety and

depression were more prevalent among females [12]. The higher prevalence of psychological distress in women with chronic illnesses may reflect a combination of biological, psychological, and social factors, including hormonal influences, higher rates of caregiving burden, and greater socioeconomic vulnerability. These findings underscore the need for gender-sensitive screening and support services in chronic disease management.

The association between multimorbidity and psychological distress observed in this study is particularly notable. Patients with two or more chronic conditions had more than four times the odds of anxiety and/or depression compared to those with a single condition (AOR = 4.12, 95% CI: 1.45–11.72). This is consistent with a systematic review that reported depression in 17.7%, 9.1%, and 4.9% of individuals with two, three, and four comorbidities, respectively, in India [6]. The cumulative burden of managing multiple conditions including complex medication regimens, frequent healthcare visits, and progressive functional limitations likely contributes to this elevated risk. Integrated care models that address both physical and mental health needs are essential for this population. The association of longer illness duration with anxiety and depression is also consistent with previous research.

A study from North India found that patients with chronic kidney disease who had been on dialysis for longer periods were more likely to experience depression [10]. The chronicity of illness, with its attendant uncertainties and accumulating disabilities, may lead to a gradual erosion of psychological resilience over time.

The findings of this study have important implications for clinical practice and health policy in India. Despite the high prevalence of anxiety and depression identified, routine screening for these conditions remains uncommon in most Indian healthcare settings. The HADS, used in this study, is a brief, validated, and feasible instrument that can be administered in busy clinical settings without specialised psychiatric training [13]. Its exclusion of somatic symptoms makes it particularly suitable for patients with physical illnesses, where fatigue, sleep disturbance, and appetite changes may be attributable to the medical condition itself [14]. Integrating HADS or similar brief screening tools into routine chronic disease management protocols could facilitate early identification and referral of patients with psychological distress. Furthermore, the identification of female gender, low socioeconomic status, longer illness duration, and multimorbidity as independent correlates provides a basis for risk stratification, allowing clinicians to prioritise screening for those at greatest risk.

Limitations of the Study

This study has several limitations that should be acknowledged. First, the cross-sectional design precludes any inference of causality; the observed associations between clinical factors and anxiety/depression may be bidirectional or confounded by unmeasured variables. Second, the sample size of 50 is relatively small, which limits the precision of prevalence estimates and the statistical power to detect associations, particularly in multivariate analysis. Third, the use of consecutive sampling in a single tertiary care hospital may introduce selection bias, and the findings may not be generalisable to primary care or community settings. Fourth, anxiety and depression were assessed using a self-report screening instrument (HADS) rather than a structured clinical interview, which may overestimate prevalence by including subthreshold symptoms. Fifth, important variables such as social support, coping styles, and illness perceptions were not assessed, and these may be important mediators of psychological distress. Finally, the study was conducted over a specific eight-month period, and seasonal or temporal variations in psychological distress cannot be ruled out.

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CONCLUSION

This study demonstrates a high prevalence of anxiety (42%) and depression (38%) among patients with chronic medical illnesses in a care hospital in South India, with more than one in four patients experiencing both conditions concurrently. These findings highlight the substantial and often unrecognised psychological burden carried by patients with chronic physical illnesses in this region. The study identifies female gender, low socioeconomic status, longer illness duration, and multimorbidity as independent correlates of psychological distress, providing a practical basis for risk stratification in clinical settings. The high prevalence observed underscores the urgent need to integrate routine mental health screening into chronic disease management protocols, using brief and validated tools such as the HADS that are feasible for use in busy clinical environments.

From a policy perspective, these findings support the call for integrated care models that address both physical and mental health needs in patients with chronic medical illnesses. Such models should include routine screening, accessible referral pathways to mental health services, and evidence-based interventions for anxiety and depression. Future research should employ longitudinal designs with larger, more diverse samples to establish causality and to evaluate the effectiveness of integrated care interventions. Qualitative studies exploring the lived experiences of patients with chronic illnesses and psychological distress would also provide valuable insights for patient-centred care. Addressing the mental health needs of patients with chronic medical illnesses is not merely a clinical imperative but a fundamental component of comprehensive healthcare that respects the dignity and well-being of the whole person.

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