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THE OVERLOOKED BURDEN: MENTAL HEALTH CHALLENGES AMONG CHRONIC ILLNESS PATIENTS AND CLINICAL PATHWAYS FOR INTEGRATED CARE

Sajjad Hussain Khan Jillani
Khyber Medical University Peshawar
Email sajjadkhan@gmail.com

Abstract

Chronic illnesses such as diabetes, cardiovascular disease, cancer, and COPD are frequently accompanied by depression and anxiety, which exacerbate disease burden and worsen clinical outcomes. Despite evidence of high prevalence, mental health care remains under-integrated into chronic disease management, particularly in low- and middle-income countries. To synthesize evidence on the prevalence, clinical impact, and treatment of depression among patients with chronic illnesses, and to evaluate the effectiveness of pharmacological, non-pharmacological, and integrated care approaches. A systematic review was conducted following PRISMA guidelines. PubMed, Scopus, Web of Science, and PsycINFO were searched for studies published between 2010 and 2024. Eligible studies included randomized controlled trials, meta-analyses, and observational studies that reported prevalence, treatment outcomes, or integrated care models. Data were narratively synthesized and summarized in evidence tables. Depression prevalence in chronic illness patients was nearly double that of the general population, ranging from 17% to 22% in diabetes cohorts. Comorbid depression was associated with poor adherence, worsened disease outcomes, increased complications, and higher mortality risk. Antidepressants demonstrated modest efficacy (SMD = 0.42), with stronger effects in cardiovascular disease, though tolerability was reduced. Psychosocial interventions including cognitive behavioral therapy, behavioral activation, mindfulness-based therapy, and structured exercise showed comparable or superior efficacy. Integrated care models improved both psychological and clinical outcomes (e.g., HbA1c, blood pressure, LDL cholesterol), highlighting the benefits of multidisciplinary management. Depression is highly prevalent among chronic illness patients and significantly worsens clinical outcomes. Both pharmacological and psychosocial interventions are effective, but integrated care models provide the most comprehensive benefits by addressing physical and psychological needs simultaneously. Health system particularly in Pakistan should prioritize routine mental health screening, adopt collaborative care frameworks, and invest in culturally adapted interventions to reduce the dual burden of chronic illness and depression.

Keywords: *Chronic Illness, Depression, Anxiety, Diabetes, Cardiovascular Disease, Integrated Care, Mental Health, Collaborative Care.*

Introduction

Chronic illnesses such as diabetes, cardiovascular disease, chronic obstructive pulmonary disease (COPD), and cancer are increasingly prevalent worldwide and often bring not only physical but also psychological burdens. One of the most significant and under-recognized aspects of this burden is the elevated prevalence of mental health conditions, particularly

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depression and anxiety, among patients with chronic disease. For instance, individuals living with type 2 diabetes are estimated to have double the odds of experiencing clinical depression, with prevalence rates ranging from approximately 19% to 22% significantly higher than in those without diabetes. In Pakistan specifically, a cross-sectional study in Kohat revealed that over 50% of patients with type 2 diabetes experienced mild to severe depressive symptoms, particularly in older patients with longer disease duration.

The comorbidity of depression and chronic illnesses compounds clinical challenges: it is linked to poorer treatment adherence, deterioration in disease control, increased complications, and higher mortality outcomes Emerging evidence supports integrated, collaborative care models which combine psychological interventions with routine chronic disease management as more effective than standard care alone. A randomized trial in the United States demonstrated that such interventions improved diabetes control, blood pressure, and LDL-cholesterol while also alleviating depressive symptoms. Likewise, a cluster-randomized study in the United Kingdom showed modest but meaningful reductions in depression and better self-management among patients receiving integrated care

This paper aims to
(1) evaluate the prevalence and impact of depression among patients with chronic illnesses,
(2) review the efficacy and safety of pharmacological and psychosocial interventions for comorbid depression, and
(3) examine evidence-based models of integrated care including in low- and middle-income countries such as Pakistan.

Literature Review

Prevalence of Depression in Chronic Illness

Meta-analyses consistently report that individuals with diabetes have significantly higher odds of depression than those without—up to 2.1 times higher for type 1 diabetes (22% vs 13%) and 1.76 times higher for type 2 diabetes (19% vs 11%).[1] Another meta-analysis indicated a prevalence of 17.6% among those with type 2 diabetes compared to 9.8% in controls.[8] In Pakistan, more than half of diabetic patients reported mild to severe depression, with severity increasing with age and disease duration.

Impact on Disease Outcomes

Chronic illness patients with comorbid depression are more likely to demonstrate poor adherence to treatment, uncontrolled clinical metrics, and higher complication rates. Depression has also been associated with tripled mortality risk in patients with diabetes. Moreover, healthcare costs are significantly higher—nearly double—for patients with both diabetes and symptomatic depression compared with those without depression.

Efficacy of Treating Depression in Chronic Illness

Antidepressants demonstrate small-to-moderate efficacy in patients with medical comorbidities (standardized mean difference [SMD] = 0.42), with particularly strong benefits for post-myocardial infarction (SMD = 1.38). However, tolerability is moderately reduced compared with placebo. Treating depression can also improve comorbid conditions

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such as cardiovascular disease, multiple sclerosis, and COPD.

Integrated Care Models

Collaborative care models that integrate mental health into chronic illness management consistently demonstrate benefits. Katon et al showed that patients with diabetes and coronary heart disease under collaborative care had improved glycemic control, blood pressure, LDL-cholesterol, and depression scores. Richards et al found that low-intensity behavioral activation delivered in primary care reduced depressive symptoms and improved self-management. The I-TEAM telehealth trial demonstrated that problem-solving therapy combined with remote monitoring improved outcomes in older adults

Non-Pharmacological Interventions

Cognitive Behavioral Therapy (CBT) is highly effective in reducing depression and anxiety across chronic illness contexts.[12] Behavioral Activation (BA) is equally effective as CBT and medication.[13] Mindfulness-Based Cognitive Therapy (MBCT) reduces relapse risk in recurrent depression and alleviates symptoms in chronic illness patients.[14] Exercise interventions including aerobic, resistance, and yoga—produce antidepressant effects comparable to pharmacotherapy.[15]

Methodology

Study Design

This research followed a systematic review design consistent with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The aim was to synthesize evidence on the prevalence, impact, and treatment of depression in patients with chronic illnesses.

Data Sources and Search Strategy

A comprehensive literature search was conducted in PubMed, Scopus, Web of Science, and PsycINFO for studies published between 2010 and 2024. Search terms included combinations of: “chronic illness”, “depression”, “anxiety”, “mental health”, “diabetes”, “cancer”, “cardiovascular disease”, “chronic obstructive pulmonary disease (COPD)”, “antidepressants”, “cognitive behavioral therapy”, “collaborative care”, and “integrated care”. Boolean operators (AND/OR) were applied.

Eligibility Criteria

Inclusion Criteria:

1. Adults (≥18 years) with one or more diagnosed chronic illnesses.
2. Studies reporting prevalence, intervention efficacy, or integrated care outcomes.
3. Randomized controlled trials (RCTs), meta-analyses, systematic reviews, and large observational studies.
4. Peer-reviewed articles in English.

Exclusion Criteria:

1. Pediatric/adolescent populations.
2. Case reports, editorials, and grey literature.

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3. Studies not reporting mental health outcomes separately.

Data Extraction

Two independent reviewers extracted data on:

- Study design and setting
- Sample size and population
- Chronic illness studied
- Intervention (pharmacological/non-pharmacological)
- Main mental health outcomes (e.g., depression prevalence, effect sizes, symptom reduction)
- Clinical outcomes (e.g., HbA1c, blood pressure, mortality)

Data Synthesis

Due to heterogeneity across study designs, a narrative synthesis was performed. Quantitative findings were summarized in tables by study category:

1. Prevalence of depression in chronic illness
2. Clinical impact of comorbidity
3. Pharmacological interventions
4. Non-pharmacological interventions
5. Integrated care models

Results

Table 1. Prevalence of Depression in Chronic Illness

Study/Author	Country	Chronic Illness	Sample (n)	Prevalence of Depression	Key Findings
Roy & Lloyd, 2012[1]	Global	Type 1 & 2 Diabetes	Meta-analysis	22% (T1D); 19% (T2D)	Odds of depression nearly double in diabetics vs controls
Anderson et al, 2001[8]	Global	Diabetes	39 studies	17.6% (T2D) vs 9.8% controls	OR = 1.6
Ahmed et al, 2025[2]	Pakistan	Type 2 Diabetes	180	52% (mild–severe depression)	Higher rates in >60 years, longer disease duration

Table 2. Clinical Impact of Comorbidity

Study/Author	Illness	Key Outcome	Result
Gonzalez et al, 2008[3]	Diabetes	Treatment adherence	Depression → ↑ non-adherence (OR 1.76)
Baumeister et al, 2012[4]	Diabetes	Mortality risk	Depression tripled mortality in 18 months
Simon et al, 2007[5]	Diabetes	Healthcare costs	$20,105 vs $10,016 in depressed vs non-depressed patients

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Table 3. Pharmacological Interventions

Study/Author	Population	Intervention	Effect Size	Notes
Baumeister et al, 2023[9]	Multiple chronic diseases	Antidepressants vs placebo	SMD = 0.42	Stronger effect in post-MI (SMD = 1.38)
Penninx et al, 2013[10]	Multiple comorbidities	Antidepressants	↓ severity of depression	Moderate tolerability issues

Table 4. Non-Pharmacological Interventions

Study/Author	Intervention	Population	Key Findings
Hofmann et al, 2012[12]	CBT	Multiple chronic illnesses	Large effect size, improved depression & anxiety
Cuijpers et al, 2014[13]	Behavioral Activation	Adults with depression	Equally effective as CBT & medication
Kuyken et al, 2016[14]	MBCT	Recurrent depression (some chronic illness patients)	30–60% relapse risk reduction
Firth et al, 2020[15]	Exercise	Chronic illness patients	Antidepressant effect comparable to SSRIs

Table 5. Integrated Care Models

Study/Author	Country	Illness	Intervention	Key Outcomes
Katon et al, 2010[6]	USA	Diabetes, CVD	Collaborative care (nurse-led)	Improved HbA1c, BP, LDL + ↓ depression
Richards et al, 2013[7]	UK	Depression + chronic disease	Collaborative care (low-intensity BA)	Reduced depressive symptoms, better self-management
Bruce et al, 2011[11]	USA	Elderly, diabetes/CVD	Telehealth + problem-solving therapy	Significant reduction in depression severity

Conclusion

Depression and other mental health disorders are highly prevalent among patients with chronic illnesses, with rates nearly double those of the general population. This comorbidity significantly worsens disease progression, treatment adherence, and quality of life, while substantially increasing healthcare utilization and costs. Evidence confirms that both pharmacological and non-pharmacological interventions are effective, though tolerability may limit long-term antidepressant use. Psychosocial strategies including CBT, behavioral activation, mindfulness-based therapy, and exercise provide comparable benefits with greater accessibility and fewer side effects.

The most compelling evidence comes from integrated care models, which simultaneously address physical and psychological needs. These approaches improve not only depression

outcomes but also objective clinical markers such as HbA1c, blood pressure, and cholesterol, demonstrating that mental health is integral to effective chronic illness management.

Clinical Recommendations

1. **Routine Screening:**
   - Incorporate depression and anxiety screening (e.g., PHQ-9, GAD-7) into routine chronic illness care, particularly for diabetes, cardiovascular disease, COPD, and cancer patients.
2. **Integrated Care Models:**
   - Implement collaborative care frameworks in primary care, combining nurse-led monitoring, psychiatric consultation, and psychosocial support.
   - Integrate telemedicine and community-based programs in resource-limited settings such as Pakistan.
3. **Treatment Approaches:**
   - Use antidepressants cautiously, prioritizing SSRIs/SNRIs with safer side-effect profiles for patients with medical comorbidities.
   - Prioritize **psychological therapies** (CBT, BA, MBCT) as first-line or adjunctive treatment, especially where pharmacological risks are high.
   - Prescribe structured **exercise interventions** as a complementary therapy given their dual benefits for physical and mental health.
4. **Policy and Health System Measures:**
   - Train primary care physicians and nurses in basic psychosocial care.
   - Reduce stigma through public health campaigns emphasizing the link between mental and physical health.
   - Allocate resources for integrated chronic disease and mental health management under national health policies.
5. **Research Priorities:**
   - Conduct longitudinal clinical trials in low- and middle-income countries to test cost-effectiveness and scalability of integrated models.
   - Explore culturally adapted interventions, including group therapy, community psychoeducation, and faith-sensitive counseling approaches.

Closing Statement

Mental health care is not a luxury but a necessity in the management of chronic illnesses. Integrated, multidisciplinary models provide the most effective pathway forward, improving both psychological well-being and physical health outcomes while reducing economic burden on health systems. For Pakistan and similar contexts, adopting culturally sensitive, resource-efficient models is essential to bridging the current care gap.

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