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Original Research Article

Retrospective Analysis of Comorbidity in Patient with Psychiatric Disorder

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Abstract

Background: Comorbidity between psychiatric disorders and physical illnesses significantly complicates clinical outcomes, increasing the burden on both patients and healthcare systems. Identifying and understanding these comorbid conditions is essential for effective, holistic treatment planning in psychiatric care.

Methods: A retrospective descriptive study was conducted at Anugrah Narayan Magadh Medical College and Hospital (ANMMCH), Gaya, Bihar, over a six-month period from January to June 2025. Medical records of 100 patients diagnosed with psychiatric disorders were reviewed. Data on demographics, psychiatric diagnoses, and physical comorbidities were collected and analyzed using descriptive statistics and correlational assessment.

Results: The most common psychiatric diagnoses were major depressive disorder (34%), schizophrenia (24%), and bipolar disorder (18%). Common comorbidities included hypertension (28%), diabetes mellitus (22%), substance use disorder (18%), and thyroid dysfunction (13%). Notable associations were observed between depression and metabolic conditions, and between schizophrenia and substance abuse. Female patients showed higher rates of thyroid dysfunction, while older patients were more prone to cardiovascular and metabolic comorbidities.

Conclusion: The study underscores the high prevalence of physical comorbidities in psychiatric patients and highlights the need for integrated screening as well as treatment approaches. Future research should focus on larger, multi-center longitudinal studies to develop comprehensive care models in psychiatric practice.

Keywords: Psychiatric disorders, comorbidity, retrospective analysis, depression, schizophrenia, hypertension, diabetes, integrated care, Bihar, India.

Introduction

Mental illness affects millions of Indians of all ages and socioeconomic backgrounds, making it a huge public health issue [1]. The National Mental Health Survey (NMHS) reports that 14% of Indians suffer from depression, anxiety, schizophrenia, and bipolar disorder.

Despite increased awareness and efforts to integrate mental health into basic healthcare, stigma, underdiagnosis, and lack of access to expert therapy remain [2]. Co-occurring physical conditions make mental illness diagnosis, treatment, and prognosis more challenging. The combination of two or more medical disorders in one patient is called comorbidity [3]. Psychiatric populations are affected by comorbidities, which affect mental illness severity, treatment response, and quality of life [4]. Multidisciplinary care is needed for people with many medical diseases, such as serious mental disorder, diabetes, and cardiovascular disease.

Comorbidities increase hospitalisations, treatment durations, and healthcare costs [5]. Providing effective and comprehensive mental care needs knowledge of comorbidities and their treatment.

Figure 1: Common comorbidity in patient with psychiatric disorder (Source: [6])

Comorbidity is frequent in psychiatric populations worldwide. Psychological illnesses and co-occurring problems like metabolic syndrome, substance use disorders, and thyroid dysfunction differ with geography, demographic, and socioeconomic position. Despite expanding data on mental disorders in India, comorbid patterns are poorly understood, especially in rural and semi-urban healthcare settings [7]. Current research shows that psychiatric exams often overlook comorbidities, resulting in poor treatment outcomes.

Due to a lack of regional data and the difficulty of managing two illnesses, clinical research on mental comorbidity is essential. Underprivileged populations need inpatient and consultation psychiatric treatments from tertiary-care hospitals like Gaya's Anugrah Narayan Magadh Medical College and Hospital. Retrospective study can improve understanding of mental patients' comorbidities. Improved clinical planning, resource allocation, and integrated care models can meet local populations' requirements.

Objectives

- To identify common comorbid conditions in psychiatric patients
- To assess prevalence by demographic variables (age, gender, etc.)
- To evaluate any correlation between specific disorders and comorbidities

There is growing evidence in India that mental patients typically have underlying medical issues that affect their treatment. [8] Found that about 40% of 500 PGIMER, Chandigarh psychiatric inpatients had a serious medical comorbidity. Physical health issues included hypertension, diabetes, obesity, and cardiovascular disease, while mood disorders were the most common mental diagnosis. The study stressed the need for integrated mental and physical health examinations because mental evaluations sometimes miss physical diseases.

In an Indian Journal of Psychiatry narrative review, [9] highlighted the strong links between mental disorders and physical ailments, including metabolic syndrome, thyroid dysfunction, and substance use disorders. Chronic diseases are more common in bipolar and depression, according to the analysis. This is due to psychotropic drug metabolic adverse effects, bad lifestyle choices, and insufficient testing. The report recommends biopsychosocial examinations for all psychiatric cases.

[10] Examined thyroid dysfunction in mood and anxiety disorders. The study found abnormal thyroid profiles in over 30% of people with severe depressive disorder and generalised anxiety disorder, mostly women. Since hormonal and immunological factors may affect this link, mental health settings should include endocrinological evaluations.

Mental illness often has physical comorbidities, as is well known worldwide. Population-based cohort research by [11] included almost 2 million individuals. Bipolar disorder and schizophrenia patients have a substantially higher risk of physical disorders and early death than the normal population. The study attributed this to unhealthy lifestyles, pharmacological side effects, a lack of preventative therapy, and healthcare inequities.

According to [12], who used data from the World Health Organization's World Mental Health Surveys, having both mental and physical disorders considerably increased disability and lowered

functioning. The author separate mental and physical health care systems are inadequate, resulting in disconnected treatment and poor health. Mental and physical healthcare are still poorly integrated in many low-resource countries, like India. These findings complement the current research's goal of gathering local data and emphasising mental health screening and comprehensive care.

Materials and Methods

Study Design: This research was conducted as a retrospective descriptive study, aimed at analyzing the presence and patterns of comorbidity among patients diagnosed with psychiatric disorders. The retrospective nature allowed for the evaluation of previously recorded medical data, thereby providing insights into real-world clinical trends without intervening in ongoing patient care.

Place and Duration: The study was carried out at ANMMCH, a tertiary care teaching hospital located in Gaya, Bihar. The data collection and analysis covered the period from January 2025 to June 2025, during which relevant patient records were reviewed to identify the occurrence of physical and psychological comorbidities in psychiatric cases.

Sample Size: A total of 100 patients were included in the study based on predefined inclusion and exclusion criteria. The sample size was chosen to ensure feasibility while still allowing for meaningful statistical interpretation of the comorbidity trends.

Inclusion Criteria

- Patients diagnosed with one or more psychiatric disorders (e.g., depression, schizophrenia, bipolar disorder, anxiety).
- Patients aged 18 years and above.
- Patients admitted or treated at ANMMCH during study period (January 2025 to June 2025).
- Patients with complete and accessible medical records.
- Patients whose records include documentation of both psychiatric diagnosis and general medical evaluation.

Exclusion Criteria

- Patients with incomplete or missing medical records.
- Patients below 18 years of age without parental or legal guardian consent.
- Patients with unclear or unverified psychiatric diagnoses.
- Records lacking information on physical health status or comorbid conditions.
- Emergency or short-stay psychiatric patients with no follow-up documentation.

Data Collection Procedure: The data for this analysis was obtained through a systematic retrieval of hospital records and case files maintained in the psychiatry and general medicine departments. A standardized data abstraction form was used to extract relevant information such as patient age, gender, primary psychiatric diagnosis, identified comorbid conditions (e.g., diabetes, hypertension, substance use), and current medications. All personal identifiers were anonymized to maintain confidentiality.

Data Analysis: The collected data was entered and analyzed using Microsoft Excel and SPSS software. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the demographic and clinical profiles of the patients.

Where appropriate, correlational analysis was conducted to assess the relationships between psychiatric diagnoses and specific comorbidities. The findings were then tabulated and graphically represented for clarity and interpretation.

Results

Demographics Distribution: The study included a total of 100 patients diagnosed with various psychiatric disorders. The age of the patients ranged from 18 to 75 years, with a mean age of 38.6 ± 12.4 years.

The majority of patients (46%) belonged to the 31–45 age group, followed by 25% in the 18–30 group, 20% in the 46–60 group, and 9% above 60 years.

In terms of gender distribution, 58 patients were male (58%) and 42 were female (42%), indicating a slight male predominance in psychiatric admissions during the study period.

Table 1: Demographic Profile of Psychiatric Patients

Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–30	25	25%
	31–45	46	46%
	46–60	20	20%
	>60	9	9%
Gender	Men	58	58%
	Women	42	42%

Distribution of Psychiatric Diagnoses: Among the 100 patients analyzed, the most common psychiatric diagnosis was major depressive disorder, accounting for 34% of cases. Schizophrenia was the second most common diagnosis (24%), followed by bipolar affective disorder (18%), generalized anxiety disorder (14%), and obsessive-compulsive disorder (10%). The psychiatric conditions were diagnosed according to DSM-5 criteria, and some patients had overlapping symptoms, although only the primary diagnosis was considered for classification.

Table 2: Distribution of Psychiatric Disorders

Psychiatric Disorder	Number of Patients	Percentage (%)
Major Depressive Disorder	34	34%
Schizophrenia	24	24%
Bipolar Affective Disorder	18	18%
Generalized Anxiety Disorder	14	14%
Obsessive-Compulsive Disorder	10	10%

Comorbid Conditions Observed: A significant proportion of patients presented with at least one comorbid medical condition. The most prevalent comorbidity was hypertension (28%), followed by type 2 diabetes mellitus (22%), substance use disorder (18%), thyroid dysfunction (13%), and cardiovascular disease (11%). Some patients exhibited multiple comorbidities, further complicating treatment protocols.

Table 3 Frequency of Comorbidities among Patients

Comorbid Condition	Number of Patients	Percentage (%)
Hypertension	28	28%
Type 2 Diabetes Mellitus	22	22%
Substance Use Disorder	18	18%
Thyroid Dysfunction	13	13%
Cardiovascular Disease	11	11%
No Documented Comorbidity	30	30%

Trends and Patterns: Some mental disease comorbidities were apparent. Bipolar disorder and major depressive disorder were most often connected to diabetes and hypertension. Males with schizophrenia were more likely to use drugs (14 of 24 had a history).

Hypertension and diabetes were more common in people over 45, although thyroid issues and substance abuse were more common in younger patients (18-30 years). Thyroid dysfunction affected women more than men, especially those with anxiety and depression. The findings show that mental health patients commonly have physical health difficulties. Gender, age, and mental illness type affect these co-occurring disorders considerably. The study found that integrated physical and mental health care improves results.

Discussion

Comorbidity frequency and patterns were examined in this retrospective study. The data demonstrate that mental patients often have high blood pressure, diabetes, substance addiction, thyroid disorders, and heart disease. Physical and mental diseases commonly coexist, and these findings support that. [13] Found high rates of somatic comorbidity in Indian patients with major mental illnesses, including mood disorders and schizophrenia.

According to World Health Organisation and high-income country research, patients with long-term psychiatric diagnosis often have diabetes and cardiovascular disease. Our study indicated that bipolar affective disorder, major depressive disorder, and schizophrenia were strongly associated to hypertension, diabetes, and substance use disorders. Biological, social, and lifestyle factors affect comorbidity patterns.

Neuroendocrine dysfunction, inflammatory markers, chronic stress, and HPA axis dysregulation have long been linked to psychiatric and physical health issues. Cortisol and autonomic nervous system alterations make depressed people more likely to have insulin resistance, dyslipidaemia, and hypertension. Metabolic side effects of bipolar disorder and schizophrenia antipsychotics include lipid abnormalities, weight gain, and hyperglycemia.

Table 4: Comparison Table

Study	Study Type	Sample Size	Key Findings	Limitations
Present Study	Retrospective Descriptive	100	High prevalence of comorbidities among psychiatric patients. Depression linked to diabetes and hypertension; schizophrenia linked to substance use; thyroid disorders more common in females.	Single-center; limited sample size; retrospective design; possible underreporting due to incomplete documentation.
Study [14]	Cross-sectional	500	40% of psychiatric patients had at least one medical comorbidity. Metabolic syndrome was common in mood disorders; substance abuse was frequent in schizophrenia.	Hospital-based sample; lacked longitudinal follow-up; possible recall bias in patient-reported data.
Study [15]	Narrative Review	–	Summarized data from multiple Indian studies showing common physical illnesses like hypertension, diabetes, and thyroid disorders in psychiatric populations. Emphasized need for integrated care.	Non-empirical; based on secondary data; variability in definitions and measures across included studies.
Study [16]	National Registry-Based Cohort Study	>2 million	Found that people with severe mental illness had higher mortality due to comorbid physical illnesses. Strong correlation between psychiatric disorders and chronic diseases.	Based in a high-income country; findings may not generalize to Indian or low-resource settings; registry data lacked clinical nuance.

Psychiatric communities are at higher risk of medical comorbidities due to poverty, unemployment, poor diets, lack of preventive care, and social isolation. These socioeconomic factors may worsen mental and physical health diagnosis and treatment in Bihar, a state with poor health facilities and a large rural population. Sedentary lifestyle, substance misuse (especially alcohol and tobacco), and prescription noncompliance all contribute.

This study identified a significant rate of substance use disorder among male schizophrenia patients, which is noteworthy. Complex psychosis, impaired judgement, and socio-environmental exposure may explain this. Both male and female psychiatric patients are at risk for thyroid abnormalities, which may explain why females are more prone to develop thyroid dysfunction, especially in the context of depression and anxiety. Underdiagnosis, insufficient patient file documentation, and a lack of frequent screening can lower cardiovascular disease and thyroid dysfunction detection rates in retrospective studies with limited resources. However, these patterns suggest that mental health professionals should screen more thoroughly and be more vigilant.

Limitations

The study provides helpful information, but there are several drawbacks. Due of its retrospective design, it relies on medical data, a major drawback. Only consider officially registered data; unrecorded or subclinical diseases are excluded. The temporal or causative relationships between psychiatric disorders and comorbidities are difficult to assess using secondary data.

Only one Bihar tertiary-care hospital was studied. Even though ANMMCH has a vast catchment area, the results may not apply to other places, especially metropolitan or resource-rich areas. Disparities in healthcare, mental illness culture, and reporting standards may affect global comorbidity patterns. 100 individuals is sufficient for descriptive analysis, but not for complex associations like multiple comorbidities or gender and age subgroup differences. A larger sample size may have allowed multivariate analysis and more accurate estimations. Psychiatric evaluations may underreport comorbidities due to the lack of established screening tools.

Recommendations

After reviewing the results and constraints, several recommendations might be made. Multi-center studies should include larger, more diverse populations from other states and healthcare levels to confirm and expand present findings. Such research could improve generalisability and understanding of mental comorbidity in India. Longitudinal follow-up studies are needed to understand how mental patient comorbidities affect treatment adherence, illness development, and death risk. Prospective study helps explain integrated treatment approaches' impacts and

mechanisms. Staff training and audits should ensure compliance with these practices. Rural and poor populations need public health strategies that promote mental and physical health integration. Community health workers and primary care doctors need training to identify people with multiple medical conditions and refer them for treatment. Policy-level advocacy is needed for research, infrastructure, and training to better manage mental comorbidity.

Conclusion

According to this retrospective study, mental health patients at ANMMCH had significant rates of physical comorbidities such hypertension, diabetes, substance use disorders, and thyroid dysfunction. Substance misuse is linked to schizophrenia, and certain mental problems are linked to metabolic diseases and medical comorbidities. These developments demonstrate the need for comprehensive, integrated treatment approaches that consider a person's emotional and physical health to improve recovery and happiness. Systemic comorbidity screening for psychiatric patients and mental health professional training to work with primary care physicians and specialists are needed. Institutional knowledge and policy measures to integrate general and mental health services are needed in resource-constrained situations. Comorbidity must be addressed to enhance clinical outcomes, lower healthcare costs, and prevent long-term effects. Multicenter research and comprehensive mental health measures are needed to make Indian psychiatric care more inclusive and patient-centered.

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