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Original Research Article

Psychiatric manifestations in ulcerative colitis: a North Indian cohort study

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ABSTRACT

Background: Ulcerative colitis (UC) is a chronic inflammatory bowel disease that causes results in gastrointestinal and other health issues. Psychiatric problems are being recognized more often but are still often missed, particularly in India. Aim of the study was to examine the demographics, disease characteristics, and psychiatric symptoms of UC patients in North India.
Methods: A prospective observational study of 100 UC patients was carried out from September 2021 to September 2023. Demographics, disease extent, severity, and psychiatric outcomes were recorded, and all patients were assessed for depression and anxiety using PHQ-9 and GAD-7 scores.
Results: The mean age of the study cohort was 38.6±12.4 yrs, with 58% being male. Pancolitis was found in 48% of the patients. Clinically significant depression (PHQ-9 ≥10) and anxiety (GAD-7 ≥10) were seen in 28% and 26%, respectively. Sleep disturbances affected 44% of the patients, and fatigue was reported by 47%. Steroid-related psychiatric events occurred in 3%.
Conclusions: Psychiatric symptoms are common in UC and can negatively impact quality of life. Comprehensive care requires regular screening and a team-based approach.

Keywords: Ulcerative colitis, Depression, Anxiety, Psychiatric symptoms, North India

INTRODUCTION

Ulcerative colitis (UC) is a chronic inflammatory bowel disease (IBD) distinguished by continuous inflammation of the colonic mucosa, resulting in abdominal pain, bloody diarrhea, urgency, weight loss, and fatigue.[1,2] In India, UC is increasingly recognized, particularly among urban populations in North India, reflecting shifts in environmental exposures, dietary habits, and lifestyle patterns.[3-5] Compared to Western populations, Indian patients often present at a younger age and may experience a more aggressive disease course.[6,7] While gastrointestinal manifestations are central to diagnosis and treatment, extraintestinal manifestations (EIMs) —including musculoskeletal, dermatological, hepatic, and ocular complications—are increasingly reported.[8,9] Among EIMs, psychiatric comorbidities warrant particular attention due to their negative impact on quality of life, adherence to treatment, and healthcare utilization.[10-12] The gut-brain axis provides a biological framework connecting UC and mental health, where alterations in gut microbiota, enhanced intestinal permeability, systemic inflammation, and dysregulated cytokine signaling (e.g., TNF-α and IL-6) may influence central nervous system function, heightening vulnerability to anxiety and mood disorders.[13,14] Psychosocial factors, including disease unpredictability, fear of incontinence, hospitalization, and social stigma, further contribute to psychological distress.[15]

Depression and anxiety are the most commonly reported psychiatric symptoms in UC, with prevalence estimates ranging from 20–40% for depression and 25–35% for anxiety.[16-18] Associated complications, such as sleep disturbances, fatigue, and cognitive impairment—often referred to as "IBD brain fog"—exacerbate functional limitations.[19] Pharmacological treatments, notably corticosteroids, may induce neuropsychiatric side effects, including mood swings, insomnia, and in rare cases, psychosis.[20] Despite their clinical significance, psychiatric comorbidities in UC frequently remain underdiagnosed and untreated, particularly in resource-constrained settings like India. Early recognition and a multidisciplinary, team-based approach integrating psychiatric evaluation, cognitive behavioral therapy, and appropriate pharmacotherapy can improve both mental health outcomes and gastrointestinal disease control.[21,22] Against this backdrop, this study sought to investigate the demographic profile, disease patterns, as well as psychiatric symptom burden among UC patients in North India over a two-year period.

METHODS

Study design and setting

This study was a prospective observational study carried out in the gastroenterology unit of a tertiary care hospital in North India. The study was designed to capture both the clinical and psychiatric profile of patients with ulcerative colitis (UC) over a two-year period, from September 2021 to September 2023. The tertiary care setting provided access to a diverse patient population, including both urban and rural residents, allowing for a representative assessment of UC presentation in North India.

Participants

This study encompassed 100 consecutive patients with a confirmed diagnosis of UC were enrolled. Diagnosis was established through a combination of endoscopic findings and histopathological confirmation. Inclusion criteria comprised adult patients of either gender with newly diagnosed or previously established UC presenting to the unit between 2021 and 2023. Patients with other inflammatory bowel diseases, significant comorbidities, or incomplete records were excluded. Demographic details, including age, sex, and residence, were recorded at baseline.

Clinical assessments

Detailed clinical evaluation included assessment of disease extent and severity. Disease extent was classified as proctitis (E1), left-sided colitis (E2), or pancolitis (E3) based on endoscopic findings. Key symptoms like bloody diarrhea, pain in the abdomin, tenesmus, weight loss, and fever were documented. These assessments aimed to characterize the clinical spectrum and symptom burden in this cohort, highlighting the relative prevalence of localized versus extensive colonic inflammation.

Psychiatric assessments

All participants underwent psychiatric screening using validated instruments, including the Patient Health Questionnaire-9 (PHQ-9) for depression and the Generalized Anxiety Disorder-7 (GAD-7) scale for anxiety. Additional psychiatric features, such as sleep disturbance, fatigue, cognitive complaints, steroid-related psychiatric events, and suicidal ideation, were systematically recorded. The objective was to quantify the prevalence and severity of psychiatric comorbidities in UC and assess their impact on overall patient well-being.

Data analysis

Data were analyzed using descriptive statistics. Continuous variables were presented as mean±standard deviation (SD) or median with interquartile range (IQR) where appropriate. Categorical variables, including sex, residence, disease extent, symptoms, and psychiatric manifestations, were summarized as frequencies and percentages.

RESULTS

The study population had a mean age of 38.6±12.4 yrs. Males constituted the majority of participants (58%), while females accounted for 42%. A higher proportion of patients resided in urban areas (68%) compared to rural regions (32%), reflecting the predominance of UC cases in urban North Indian populations. These findings indicate that UC in this cohort primarily affected middle-aged adults, with a male predominance and greater representation from urban settings (Table 1).

Table 1: Demographic profile of the study cohort (n=100).

Variables	Value (%)
Age (yrs), mean±SD	38.6±12.4
Age groups (in years)	
<20	6 (6.0)
20–29	24 (24.0)
30–39	30 (30.0)
40–49	22 (22.0)
≥50	18 (18.0)
Sex	
Male	58 (58.0)
Female	42 (42.0)
Residence	
Urban	68 (68.0)
Rural	32 (32.0)

Among the study participants, the extent of disease was most commonly pancolitis (48%), followed by left-sided colitis (34%) and proctitis (18%). Bloody diarrhea was the

predominant symptom, reported by 92% of patients, while abdominal pain affected 78%. Other frequently reported symptoms included tenesmus (40%), weight loss (26%), and fever (12%). These findings indicate a substantial burden of both localized and extensive colonic inflammation, with significant clinical symptomatology among UC patients (Table 2).

Table 2: Disease characteristics and severity of ulcerative colitis patients (n=100).

Variables	Value (%)
Proctitis (E1)	18 (18.0)
Left-sided colitis (E2)	34 (34.0)
Pancolitis (E3)	48 (48.0)
Bloody diarrhea	92 (92.0)
Abdominal pain	78 (78.0)
Tenesmus	40 (40.0)
Weight loss	26 (26.0)
Fever	12 (12.0)

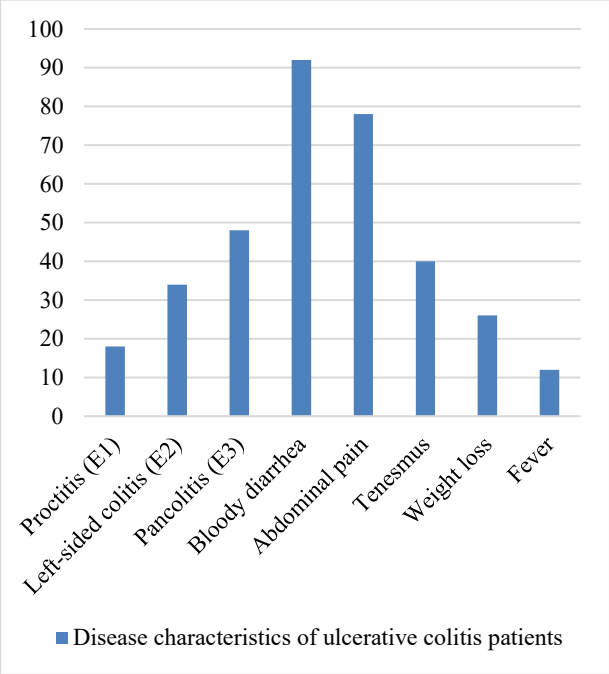

Figure 1: Disease characteristics of patients with ulcerative colitis in the study.

Psychiatric manifestations were common in this cohort of UC patients. The mean PHQ-9 score was 8.6±5.4, reflecting mild depressive symptoms on average. Clinically relevant depression and anxiety were noted in 28% and 26% of study cohort, respectively. Sleep disturbances and fatigue were reported by 44% and 47% of participants, while cognitive complaints ("IBD brain fog") affected 22%. Steroid-related psychiatric events were uncommon (3%), and suicidal ideation was noted in 4% of patients. These results highlight the significant psychological burden associated with UC, underscoring the need for routine mental health assessment (Table 3).

Table 3: Psychiatric manifestations in ulcerative colitis patients (n=100).

Variable	Value (%)
PHQ-9 mean±SD	8.6±5.4
Clinically relevant depression	28 (28.0)
Clinically relevant anxiety	26 (26.0)
Sleep disturbance	44 (44.0)
Fatigue	47 (47.0)
Cognitive complaints	22 (22.0)
Steroid-related psychiatric events	3 (3.0)
Suicidal ideation	4 (4.0)

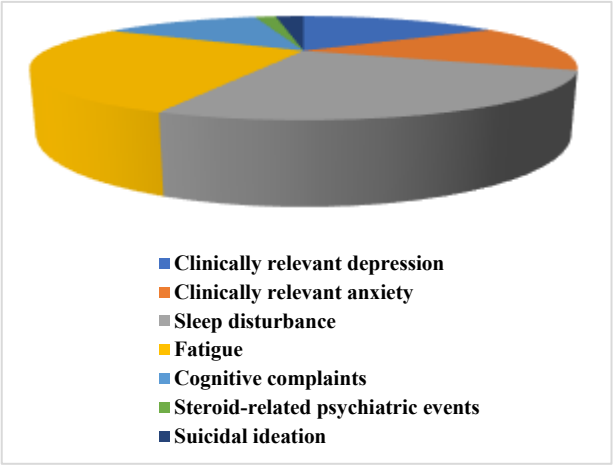

Figure 2: Psychiatric manifestations in the patient cohort.

DISCUSSION

In this North Indian cohort of 100 UC patients, psychiatric comorbidities were common, highlighting the broader impact of the disease beyond the gastrointestinal tract. Clinically significant depression was noted in 28% of the patients while anxiety was noted in 26% of patients, with sleep disturbances, fatigue, and cognitive complaints also frequently reported. These findings underscore that UC imposes a considerable psychological burden, in line with international literature reporting depression and anxiety in 20–40% of UC patients.[23,24] Indian studies similarly indicate high rates of psychiatric issues in IBD, although comprehensive evaluations remain limited.[3,4] Compared to Western populations, patients in our study were younger at disease onset and showed a higher prevalence of pancolitis (48%), which may contribute to greater psychological distress due to more severe disease, increased hospitalizations, and corticosteroid use.[6,7,25,26]

The interaction between UC and psychiatric disorders is increasingly understood through the gut-brain axis. Chronic intestinal inflammation leads to the systemic release of cytokines such as IL-1, IL-6, and TNF-α, which can disrupt neurotransmitter signaling and contribute to depression, fatigue, and mood disturbances.[13,14] Gut microbial imbalances and altered microbial metabolites,

including short-chain fatty acids and tryptophan derivatives, may further exacerbate anxiety and depressive symptoms.[14] Stress acts as both a trigger and consequence of disease activity, influencing gut permeability, immune function, and flare-ups.[26] These findings suggest that psychiatric manifestations in UC are not merely reactive but arise from a complex interplay of biological, microbial, and psychosocial factors.

Therapeutic interventions, particularly corticosteroids, may also influence psychiatric outcomes. In this study, 62% of patients were on steroids, with 3% experiencing steroid-related psychiatric side effects, including mania or psychosis.[20] Only 15% received biologic therapies, reflecting limited accessibility in India compared to Western countries.[9,27] Evidence suggests that sustained remission with biologics may mitigate psychiatric symptoms, highlighting the importance of modern therapeutic strategies for holistic patient care. Additionally, fatigue and sleep disturbances affected nearly half of the cohort, further impacting quality of life, daily functioning, and social participation, while 4% reported suicidal ideation.[10,15,19] Cultural stigma around mental health in India may lead to underreporting, indicating that the true burden could be higher.

These findings emphasize the clinical and public health importance of integrating mental health into UC management. Routine screening with validated tools such as PHQ-9 and GAD-7, early referral to psychiatric or psychological services, and multidisciplinary care can improve both mental health and gastrointestinal outcomes.[21,22] Strengths of the study include its prospective design, systematic psychiatric assessment, and focus on an underrepresented population. Limitations include the single-center design, modest sample size, and reliance on self-reported screening rather than formal psychiatric diagnoses, which precludes establishing causality. Future research should involve multicenter cohorts, longitudinal follow-up, microbiome assessments, and evaluation of integrated gastro-psychiatric care models to determine whether early psychiatric intervention can reduce relapse rates, hospitalizations, and surgical needs.

CONCLUSION

Psychiatric comorbidities are highly prevalent among patients with ulcerative colitis in North India, with significant proportions experiencing depression, anxiety, sleep disturbances, and fatigue. These manifestations substantially impact overall well-being and may influence disease behavior, treatment adherence, and quality of life. Routine mental health screening and integration of psychological support into UC management are therefore essential components of comprehensive care. Larger multicenter and longitudinal studies are needed to better understand the long-term implications of psychiatric symptoms in UC and to evaluate the benefits of multidisciplinary, gastro-psychiatric care models.

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REFERENCES

1. Ungaro R, Mehandru S, Allen PB, Peyrin-Biroulet L, Colombel JF. Ulcerative colitis. Lancet. 2017;389(10080):1756-70.
2. Ordás I, Eckmann L, Talamini M, Baumgart DC, Sandborn WJ. Ulcerative colitis. Lancet. 2012;380(9853):1606-19.
3. Kedia S, Ahuja V. Epidemiology of inflammatory bowel disease in India: The great shift east. Nat Rev Gastroenterol Hepatol. 2022;19(12):739-53.
4. Ng SC, Shi HY, Hamidi N, Underwood FE, Tang W, Benchimol EI, et al. Worldwide incidence and prevalence of inflammatory bowel disease in the 21st century: a systematic review of population-based studies. Gastroenterology. 2018;152(3):741-54.
5. Malik TA. Inflammatory bowel disease: Historical perspective, epidemiology, and risk factors. World J Gastroenterol. 2015;21(29):9631-40.
6. Makharia GK, Ramakrishna BS, Abraham P, Choudhuri G, Misra SP, Ahuja V, et al. Survey of inflammatory bowel diseases in India. Indian J Gastroenterol. 2010;29(4):201-6.
7. Midha V, Sood A, Avasthi G, Singh A, Sood N, Ahuja V, et al. Spectrum of inflammatory bowel disease in a referral centre in northern India. Indian J Gastroenterol. 2004;23(6):214-8.
8. Vavricka SR, Schoepfer A, Scharl M, Lakatos PL, Navarini A, Rogler G. Extraintestinal manifestations of inflammatory bowel disease. Inflamm Bowel Dis. 2015;21(8):1982-92.
9. Harbord M, Annese V, Vavricka SR, Allez M, Barreiro-de Acosta M, Boberg KM, et al. The First European evidence-based consensus on extra-intestinal manifestations in inflammatory bowel disease. J Crohns Colitis. 2016;10(3):239-54.
10. Mikocka-Walus A, Knowles SR, Keefer L, Graff L. Controversies revisited: a systematic review of the comorbidity of depression and anxiety with inflammatory bowel disease. Inflamm Bowel Dis. 2016;22(3):752-62.
11. Graff LA, Walker JR, Bernstein CN. Depression and anxiety in inflammatory bowel disease: a review of comorbidity and management. Gastroenterology. 2009;136(7):2058-68.
12. Neuendorf R, Harding A, Stello N, Hanes D, Wahbeh H. Depression and anxiety in patients with inflammatory bowel disease: A systematic review. J Psychosom Res. 2016;87:70-80.
13. Bernstein CN. The brain-gut axis and stress in inflammatory bowel disease. Gastroenterol Clin North Am. 2017;46(4):839-46.
14. Kelly JR, Kennedy PJ, Cryan JF, Dinan TG, Clarke G, Hyland NP. Breaking down the barriers: the gut microbiome, intestinal permeability and stress-related

psychiatric disorders. Front Cell Neurosci. 2015;9:392.
15. Knowles SR, Graff LA, Wilding H, Hewitt C, Keefer L, Mikocka-Walus A. Quality of life in inflammatory bowel disease: a systematic review and meta-analyses—part II. Inflamm Bowel Dis. 2018;24(5):966-76.
16. Gracie DJ, Hamlin PJ, Ford AC. The influence of psychiatric comorbidity on disease outcome in inflammatory bowel disease: a systematic review and meta-analysis. Am J Gastroenterol. 2019;114(8):1107-1118.
17. Marrie RA, Walld R, Bolton JM, Sareen J, Walker JR, Patten SB, et al. Increased incidence of psychiatric disorders in immune-mediated inflammatory disease. Inflamm Bowel Dis. 2017;23(9):1415-21.
18. Mikocka-Walus A, Pittet V, Rossel JB, von Känel R; Swiss IBD Cohort Study Group. Symptoms of depression and anxiety are independently associated with clinical recurrence of IBD. Aliment Pharmacol Ther. 2016;44(5):508-16.
19. Bager P, Befrits R, Wikman O, Lindgren S, Moum B, Hjortswang H, et al. Fatigue in out-patients with inflammatory bowel disease is common and multifactorial. J Crohns Colitis. 2011;6(6):655-62.
20. Warrington TP, Bostwick JM. Psychiatric adverse effects of corticosteroids. Mayo Clin Proc. 2006;81(10):1361-7.
21. Knowles SR, Mikocka-Walus A. Psychological aspects of inflammatory bowel disease: a biopsychosocial approach. Inflamm Bowel Dis. 2014;20(7):1427-35.
22. Bernstein CN, Hitchon CA, Walld R, Bolton JM, Sareen J, Walker JR, et al. Increased burden of psychiatric disorders in inflammatory bowel disease. Am J Gastroenterol. 2019;114(2):375-82.
23. Byrne G, Rosenfeld G, Leung Y, Qian H, Raudzus J, Nunez C, et al. Prevalence of anxiety and depression in patients with inflammatory bowel disease. Can J Gastroenterol Hepatol. 2017;2017:6496727.
24. Zhang CK, Hewett J, Hemming J, Grant T, Zhao H, Abrams JA, et al. The influence of depression on quality of life in patients with inflammatory bowel disease. Inflamm Bowel Dis. 2013;19(8):1732-9.
25. Maunder R, Levenstein S. The role of stress in the development and clinical course of inflammatory bowel disease: epidemiological evidence. Curr Mol Med. 2008;8(4):247-52.
26. Häuser W, Janke KH, Klump B, Hinz A. Anxiety and depression in patients with inflammatory bowel disease: comparisons with chronic liver disease patients and the general population. Inflamm Bowel Dis. 2011;17(2):621-32.
27. Mikocka-Walus A, Andrews JM, Rampton D, Goodhand J, van der Woude CJ, Bernstein CN. Depression, anxiety, and self-harm in inflammatory bowel disease: a systematic review. J Psychosom Res. 2020;134:110132.

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