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## PSYCHOLOGICAL ASPECTS OF LIVING WITH INFLAMMATORY BOWEL DISEASES

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## ABSTRACT

Inflammatory bowel diseases (IBD), encompassing Crohn's disease and ulcerative colitis, are chronic, relapsing conditions that significantly impact not only patients' physical health but also their psychological well-being. The disease course, characterized by alternating periods of remission and exacerbation, is associated with pain, diarrhea, fatigue, and the need for constant adaptation to fluctuating health status. Patients frequently experience depression, anxiety disorders, chronic stress, reduced self-esteem, and body image disturbances, particularly following surgical interventions. The disease exerts a profound influence on social, occupational, and family life, often resulting in isolation and stigmatization.

This work underscores the importance of psychological support, including cognitive-behavioral therapy (CBT), acceptance and commitment therapy (ACT), and mindfulness-based interventions, all of which facilitate patients' adaptation to living with a chronic illness. The integration of psychological care with medical treatment, the development of psychoeducational programs, and stigma-reduction initiatives are strongly recommended.

A comprehensive approach that addresses both somatic and psychological dimensions is essential to improve the quality of life in patients with IBD. Further research is warranted to better understand the most effective psychological support strategies and their impact on disease outcomes.

**Keywords:** inflammatory bowel disease (ibd), crohn's disease, ulcerative colitis, depression, anxiety, mental health, quality of life, psychological support

## INTRODUCTION

Inflammatory bowel diseases (IBD), comprising Crohn's disease and ulcerative colitis, are chronic, relapsing conditions of incompletely understood etiology that predominantly affect young and middle-aged adults [1]. The disease course, characterized by alternating periods of remission and exacerbation, together with symptoms that significantly impair quality of life - such as abdominal pain, diarrhea, fatigue, and urgency -exerts a substantial impact on both the physical and psychological functioning of patients.

The literature highlights that individuals with IBD are at a significantly increased risk for mood disorders, including depression and anxiety, as well as chronic stress [2,3]. The severity of somatic symptoms may lead to social withdrawal, feelings of shame, diminished self-esteem, and, consequently, social isolation and difficulties in interpersonal relationships [4]. Conversely, there is evidence suggesting that a patient's psychological state can influence the disease course itself-stress and negative emotions may contribute to more frequent exacerbations and deterioration of overall health status [5].

Despite the growing body of literature on IBD, relatively little attention has been paid to the psychological aspects of patients' lives, particularly regarding their daily functioning, coping strategies, and need for psychological and social support. The aim of this study is to analyze the impact of IBD on mental health and quality of life and to discuss potential forms of psychological support that may improve well-being and facilitate adaptation to living with a chronic illness.

## **CHARACTERISTICS OF INFLAMMATORY BOWEL DISEASES (IBD)**

Inflammatory bowel diseases (IBD) represent a group of chronic, immune-mediated inflammatory disorders of the gastrointestinal tract, primarily including Crohn's disease (CD) and ulcerative colitis (UC). Both conditions are characterized by a chronic course with periods of remission and exacerbation; however, they differ in terms of localization and the nature of inflammatory changes.

In CD, inflammation may involve any part of the gastrointestinal tract - from the oral cavity to the anus - with a predilection for the terminal ileum and proximal colon. The inflammatory process is transmural, which predisposes patients to the development of fistulas and strictures [6]. In contrast, UC is limited to the mucosa and submucosa of the colon, beginning in the rectum and extending proximally [7].

The main somatic symptoms of IBD include abdominal pain, chronic diarrhea (often bloody), urgency, weight loss, weakness, and fever [8]. These symptoms can be particularly burdensome during disease flares, significantly impacting patients' daily activities and overall functioning.

The chronic course of IBD is also associated with extraintestinal manifestations, including dermatologic lesions (erythema nodosum, pyoderma gangrenosum), arthritis, episcleritis or uveitis, and hepatobiliary disorders such as primary sclerosing cholangitis [9].

A characteristic feature of IBD is its relapsing nature, which necessitates continuous adaptation to fluctuating health status. Recurrent exacerbations limit occupational, social, and family activities, resulting in decreased quality of life and an increased risk of social isolation [10]. Patients frequently struggle with the unpredictability of symptoms, which may be a source of chronic stress and a perceived loss of control over one's own body [11].

The primary goals of IBD treatment are to induce and maintain remission and to prevent complications. Pharmacologic therapy includes aminosalicylates, corticosteroids, immunosuppressants (e.g., azathioprine, methotrexate), and biologic agents such as monoclonal antibodies targeting inflammatory mediators (e.g., infliximab, adalimumab) [12]. While corticosteroids are effective for induction of remission, their long-term use is associated with numerous adverse effects, including osteoporosis, diabetes mellitus, and hypertension. Surgical treatment - including intestinal resections, ileostomy, or colectomy - becomes necessary in cases of complications, failure to respond to medical therapy, or severe strictures and fistulas [13].

Diet also plays an important supportive role. Although it cannot cure the disease, it may help alleviate symptoms and support medical treatment. Some patients may require temporary elimination diets or enteral nutrition [14].

The complexity of treatment and the chronic, unpredictable nature of IBD require patients to continuously monitor their health status and adjust their daily lifestyle. This impacts not only physical health but also psychological and social functioning.

## **PSYCHOLOGICAL CONSEQUENCES OF LIVING WITH IBD**

Living with inflammatory bowel disease (IBD) involves not only somatic challenges but also numerous psychological and social burdens that significantly affect patients' quality of life. The literature emphasizes that individuals with IBD are particularly susceptible to mood disorders, including depression, anxiety, and chronic stress [2,3]. Epidemiological studies have shown that the prevalence of depressive symptoms among IBD patients is approximately 20%, while anxiety symptoms affect about 40% [2]. Importantly, the presence of psychological disorders not only worsens the subjective perception of health but may also negatively influence the disease course, leading to more frequent relapses and more difficult-to-achieve remission [15].

The chronic nature of IBD and the unpredictability of symptoms significantly impact self-image and self-esteem. Many patients experience feelings of shame and embarrassment associated

with frequent bathroom visits, abdominal pain, or sudden urgency. There is often a sense of being inferior or limited compared to healthy individuals. Some patients develop avoidance behaviors regarding social situations, leading to isolation and reduced professional and social activity [16]. Patients who have undergone surgical complications, such as stoma formation, often struggle profoundly with body image acceptance. These changes can evoke a sense of loss of control over one's body and feelings of being "abnormal," which fosters depressive and anxiety symptoms [17].

Although stoma creation can be life-saving and improve physical functioning, it can also be a source of significant identity crisis. Studies indicate that patients after stoma surgery more frequently report sexual difficulties and fear of partner rejection [18]. High levels of anxiety and poor body image acceptance may hinder the establishment of intimate relationships and lead to avoidance of sexual intimacy.

The limitations associated with IBD also include difficulties in professional and educational spheres. Chronic fatigue, the need for frequent breaks, medical absences, or sudden symptom exacerbations may restrict professional development opportunities and deteriorate relationships with employers and colleagues [19]. Some patients are forced to change jobs or leave employment altogether, further reinforcing feelings of disability and social isolation. These challenges also impact participation in social activities - patients often avoid public places out of fear of sudden urgency and the need for immediate access to a bathroom [19]. Fear of sudden urgency is one of the main factors limiting spontaneity, freedom to travel, and willingness to engage in new activities.

A particularly significant issue among IBD patients is fear of relapse and loss of symptom control. Recurrent flares contribute to disease-related fatigue, unpredictability in daily life, and the constant need to adjust life plans [20,21]. The feeling of "living in the shadow of the disease" reduces quality of life and may cause depressive symptoms, especially in patients with multiple hospitalizations or surgical interventions. Prolonged psychological tension often leads to chronic stress, which further weakens the body and may promote disease relapses [5].

The literature also describes the phenomenon of psychosomatic feedback loops, in which psychological stress and negative emotions exacerbate the course of IBD [5]. Conversely, severe somatic symptoms deteriorate mental health, creating a vicious cycle of mutually reinforcing symptoms. An example is when chronic stress related to bathroom access anxiety

leads to worsening diarrhea, further increasing stress and deepening social isolation [22]. Studies have also shown that patients with high stress levels exhibit elevated inflammatory markers, such as C-reactive protein (CRP) and interleukin-6 (IL-6), suggesting the role of psychological factors in activating inflammatory responses [23].

In addition to depression and anxiety, IBD patients may also experience adjustment disorders, manifested as frustration, anger, emotional outbursts, or even passive suicidal ideation [2]. These disorders are particularly pronounced in individuals who have recently experienced severe health deterioration or major surgical complications. Qualitative studies often reveal that the greatest challenge is not the physical symptoms themselves but rather the loss of control and predictability in life [24].

Attention should also be paid to the impact of IBD on intimate and family relationships. The disease may limit spontaneity with partners, reduce libido, and provoke feelings of shame and fear of judgment [25]. In many cases, open communication with partners and psychological support are essential to prevent emotional and sexual distancing.

In summary, the psychological consequences of IBD are complex and encompass many areas of patients' lives, from mood and self-esteem to social and occupational functioning. Understanding these aspects is crucial in the treatment and support of individuals living with IBD. Interdisciplinary collaboration involving gastroenterologists, psychologists, and dietitians can significantly improve patients' quality of life by supporting their adaptation to chronic illness.

## **SOCIAL FUNCTIONING AND QUALITY OF LIFE**

Inflammatory bowel diseases (IBD), due to their chronic and unpredictable nature, significantly impact patients' social functioning and quality of life. The literature emphasizes that these diseases pose numerous challenges in family, social, and professional relationships [26]. Symptoms such as sudden diarrhea, abdominal pain, and fatigue limit social activity, and patients often experience a sense of misunderstanding from their surroundings. Family members and close ones may not fully grasp the difficulties related to planning daily activities around toilet access or sudden disease exacerbations [19]. Consequently, patients frequently withdraw from social life, leading to isolation and loneliness [16].

One of the key psychosocial issues is the stigma associated with intestinal diseases. In society, topics related to bowel movements and gastrointestinal problems remain taboo, which reinforces feelings of shame and the tendency to hide the disease [27]. Many patients avoid discussing their condition even with close friends or colleagues due to fear of rejection or judgment. This phenomenon deepens anxiety about participating in social events and limits opportunities for building new relationships. Stigma also affects intimate relationships - concerns about partner acceptance, particularly in patients after surgical procedures, further hinder spontaneity and intimacy [25,27].

The quality of life in IBD patients has been the subject of numerous studies using instruments such as the SF-36 (Short Form Health Survey), IBDQ (Inflammatory Bowel Disease Questionnaire), and WHOQOL-BREF [28,29]. Results indicate that IBD patients score lower across all domains of quality of life, including physical, psychological, social, and environmental aspects. Large cohort studies have shown that quality of life strongly correlates with disease activity - the more severe the symptoms and the more frequent the flares, the greater the limitations in daily functioning. Additionally, psychological factors such as depression and anxiety worsen subjective well-being and result in lower quality of life scores [30].

Several factors influence the professional and educational activity of IBD patients. Chronic fatigue, the need for frequent bathroom visits, and the unpredictability of flares force many individuals to reduce working hours, change jobs, or completely withdraw from professional activity [31,32]. Some patients are reluctant to disclose their condition at work due to fear of discrimination or reduced professional status. Studies show that individuals with IBD have higher rates of sick leave and are more likely to use rehabilitation allowances or disability benefits [32]. Among younger patients who are still in education, the disease may affect academic performance, class attendance, and peer relationships [31].

Patients often report a need for adjustments in work and school environments, such as flexible schedules, unrestricted access to bathrooms, and opportunities for remote work [33]. However, a lack of adequate institutional and social support often limits the effective implementation of such accommodations. Therefore, educating employers and teachers about the specifics of IBD is crucial to enable patients to participate more fully in professional and educational life.



The impact of IBD on recreational activities and travel is also significant. Fear of lacking access to a bathroom, concerns about unpredictable flares, and fatigue make many patients limit travel and participation in cultural or sporting events [34]. Over time, this may lead to giving up hobbies, further reducing quality of life and contributing to the development of depressive symptoms.

In summary, IBD profoundly affects patients' social functioning and quality of life. Limitations resulting from disease symptoms, stigma, and lack of understanding from the environment lead to isolation, deterioration of interpersonal and professional relationships, and restricted life activity. A comprehensive approach, including not only pharmacological treatment but also psychological support and social education, is essential for improving the quality of life of individuals living with IBD.

## **THE ROLE OF PSYCHOLOGICAL SUPPORT AND COPING STRATEGIES**

A contemporary approach to the treatment of inflammatory bowel diseases (IBD) increasingly incorporates not only medical but also psychological aspects, which play a crucial role in adapting to life with a chronic illness. Psychological support and appropriately tailored coping strategies can significantly improve patients' functioning, reduce psychological burden, and enhance quality of life [11].

Emotional support from family, friends, and support groups plays a significant role. The presence of individuals who offer understanding, acceptance, and assistance with daily challenges has a protective effect on patients' mental health and reduces feelings of isolation [4]. Studies have shown that individuals with strong social support cope better with the disease, experience fewer depressive episodes, and report higher quality of life. Group-based support, such as patient associations or online discussion groups, facilitates sharing experiences, obtaining practical advice, and fostering a sense of community with others facing similar difficulties [30].

Psychotherapy is one of the most effective forms of psychological support for individuals with IBD. Particularly effective are cognitive-behavioral therapies (CBT), which help patients identify and modify negative thought patterns and maladaptive behaviors [35,36,37]. Research has demonstrated that CBT can reduce anxiety and depressive symptoms and improve overall psychological and social functioning [36,37]. Another increasingly used approach is acceptance and commitment therapy (ACT), which aims to enhance psychological flexibility and help

patients accept difficult emotions and disease-related symptoms rather than avoiding them [38]. Mindfulness-based techniques (mindfulness CBT) are also gaining popularity; mindfulness training helps reduce stress symptoms, improve emotion regulation, and decrease relapse rates [39,41].

Individual self-regulation techniques and stress reduction strategies also play an important role in coping with IBD. Patients who have knowledge about their disease and can identify triggers for exacerbations are more capable of controlling disease progression and reducing stress related to symptoms [40]. Health education and emotional self-regulation training enable patients to better understand their own emotional and physiological responses, supporting disease remission and improving quality of life. It is important to emphasize that proper health education reduces fear of the unknown and strengthens the sense of agency, which is particularly crucial in chronic diseases [41].

Psychoeducation plays a supportive role both in the patient–physician relationship and in social functioning. It enables understanding the nature of the disease, available treatment options, and symptom management techniques. Moreover, it supports building realistic expectations about treatment outcomes and improves patient cooperation with the medical team [33]. Interdisciplinary collaboration, involving a gastroenterologist, psychologist, dietitian, and, if necessary, a social worker, allows for comprehensive patient care and better adaptation of therapy to individual needs [42]. The goal of such an integrated approach is to reduce hospitalizations, improve treatment adherence, and decrease psychological burden.

Equally important is the need for destigmatization and social education regarding IBD. Bowel diseases still remain largely taboo topics, which exacerbates patients' isolation and reinforces their sense of being different [43]. Public awareness campaigns and educational initiatives can change how IBD is perceived by society, increase empathy toward patients, and facilitate their functioning in various life areas. Promoting openness about health problems may also increase patients' willingness to seek support and actively engage in treatment [44].

In summary, psychological support and effective coping strategies play a key role in the treatment process of IBD patients. Combining medical therapy with psychological, educational, and social interventions promotes better adaptation to living with the disease, reduces psychological symptoms, and improves overall well-being. Supporting patients in building

support networks and developing self-regulation skills should be an integral part of care for individuals with IBD.

## **SUMMARY**

Inflammatory bowel diseases (IBD) represent a significant challenge both medically and psychologically. The chronic and relapsing nature of the disease, the somatic symptoms, and the necessity for continuous adaptation to fluctuating health status profoundly impact patients' functioning across many areas of life. This study demonstrates that the psychological consequences of IBD are as significant as the physical symptoms and require a comprehensive approach in treatment and patient care.

The most important finding is that individuals with IBD are particularly vulnerable to mood disorders such as depression, anxiety, and chronic stress, which may further influence disease course and increase the frequency of relapses. Moreover, the disease significantly disturbs self-image and self-esteem, especially in patients who have undergone surgical interventions, such as stoma formation. IBD also leads to social isolation, reduced occupational and educational activity, and deterioration of family and intimate relationships.

The main psychological challenges faced by individuals with IBD include coping with the unpredictability of symptoms, fear of disease relapse, and loss of control over their own body. An additional problem is social stigma and a lack of understanding from the environment, which exacerbate feelings of loneliness and may discourage patients from seeking psychological support.

Based on the presented analyses, it is recommended that psychological practice and healthcare for IBD patients be more integrated. Systematic psychoeducation, targeting both patients and their families, is essential to increase awareness and reduce fear of the disease. Psychological support in the form of psychotherapy (CBT, ACT, mindfulness-based CBT) should be an integral part of treatment, alongside the development of support groups, which facilitate sharing experiences and reduce feelings of isolation. Equally important are social education and destigmatization efforts, which can improve societal acceptance of the disease and foster greater openness in discussions about IBD.

In the context of future research, there is a need for long-term, multicenter studies to better understand the psychological mechanisms accompanying IBD and their impact on clinical

outcomes. It is also essential to deepen knowledge about the effectiveness of specific psychological interventions, including psychotherapy and online support programs, which may serve as valuable complements to traditional forms of treatment.

In conclusion, a comprehensive approach to IBD patients—considering both somatic and psychological aspects—is fundamental to effective therapy and improving patients' quality of life.

## **Disclosure**

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## **REFERENCES**

[1] Podolsky DK. Inflammatory bowel disease. *N Engl J Med.* 2002;347(6):417–29.

[2] Mikocka-Walus A, Pittet V, Rossel JB, von Känel R. Symptoms of depression and anxiety are independently associated with clinical recurrence of inflammatory bowel disease. *Clin Gastroenterol Hepatol.* 2016;14(6):829-835.

- [3] Gracie DJ, Guthrie EA, Hamlin PJ, Ford AC. Bi-directionality of Brain-Gut Interactions in Patients With Inflammatory Bowel Disease. *Gastroenterology*. 2018 May;154(6):1635-1646.e3.
- [4] Graff LA, Walker JR, Bernstein CN. Depression and anxiety in inflammatory bowel disease: a review of comorbidity and management. *Inflamm Bowel Dis*. 2009 Jul;15(7):1105-18.
- [5] Mawdsley JE, Rampton DS. Psychological stress in IBD: new insights into pathogenic and therapeutic implications. *Gut*. 2005 Oct;54(10):1481-91.
- [6] Baumgart DC, Sandborn WJ. Crohn's disease. *Lancet*. 2012;380(9853):1590–605.
- [7] Ungaro R, Mehandru S, Allen PB, Peyrin-Biroulet L, Colombel JF. Ulcerative colitis. *Lancet*. 2017 Apr 29;389(10080):1756-1770.
- [8] Gajendran M, Loganathan P, Catinella AP, Hashash JG. A comprehensive review and update on Crohn's disease. *Dis Mon*. 2018;64(2):20–57.
- [9] Vavricka SR, Schoepfer A, Scharl M, Lakatos PL, Navarini A, Rogler G. Extraintestinal Manifestations of Inflammatory Bowel Disease. *Inflamm Bowel Dis*. 2015 Aug;21(8):1982-92.
- [10] Casellas F, López-Vivancos J, Casado A, Malagelada JR. Impact of inflammatory bowel disease on health-related quality of life. *Dig Dis*. 1999;17(4):208–18.
- [11] Mikocka-Walus A, Knowles SR, Keefer L, Graff L. Controversies revisited: a systematic review of the comorbidity of depression and anxiety with inflammatory bowel diseases. *Inflamm Bowel Dis*. 2016;22(3):752–62.
- [12] Harbord M, Eliakim R, Bettenworth D, Karmiris K, Katsanos K, Kopylov U, Kucharzik T, Molnár T, Raine T, Sebastian S, de Sousa HT, Dignass A, Carbonnel F; European Crohn's and Colitis Organisation [ECCO]. Third European Evidence-based Consensus on Diagnosis and Management of Ulcerative Colitis. Part 2: Current Management. *J Crohns Colitis*. 2017 Jul 1;11(7):769-784.
- [13] Adamina M, Minozzi S, Warusavitarne J, Buskens CJ, Chaparro M, Verstockt B, Kopylov U, Yanai H, Vavricka SR, Sigall-Boneh R, Sica GS, Reenaers C, Peros G, Papamichael K, Noor N, Moran GW, Maaser C, Luglio G, Kotze PG, Kobayashi T, Karmiris K, Kapizioni C, Iqbal N, Iacucci M, Holubar S, Hanzel J, Sabino JG, Gisbert JP, Fiorino G, Fidalgo C, Ellu P, El-Hussuna A, de Groof J, Czuber-Dochan W, Casanova MJ, Burisch J, Brown SR, Bislenghi G,

Bettenworth D, Battat R, Atreya R, Allocca M, Agrawal M, Raine T, Gordon H, Myrelid P. ECCO Guidelines on Therapeutics in Crohn's Disease: Surgical Treatment. *J Crohns Colitis*. 2024 Oct 15;18(10):1556-1582.

[14] Forbes A, Escher J, Hébuterne X, Kłęk S, Krznaric Z, Schneider S, Shamir R, Stadelova K, Wierdsma N, Wiskin AE, Bischoff SC. ESPEN guideline: Clinical nutrition in inflammatory bowel disease. *Clin Nutr*. 2017 Apr;36(2):321-347.

[15] Walker JR, Ediger JP, Graff LA, et al. The Manitoba IBD cohort study: incidence of lifetime and 12-month anxiety and mood disorders. *Am J Gastroenterol*. 2008;103(8):1989–97.

[16] Zhang CK, Hewett J, Hemming J, Grant T, Zhao H, Abraham C, Oikonomou I, Kanakia M, Cho JH, Proctor DD. The influence of depression on quality of life in patients with inflammatory bowel disease. *Inflamm Bowel Dis*. 2013 Jul;19(8):1732-9.

[17] Farahani MA, Sargolzaei MS, Shariatpanahi S, Dehkordi AH, Dalvand P, Heidari-Beni F. The prevalence of anxiety and depression in patients with ostomy: A systematic review and meta-analysis. *Psychooncology*. 2022 Dec;31(12):2020-2035.

[18] Petersén C, Carlsson E. Life with a stoma-coping with daily life: Experiences from focus group interviews. *J Clin Nurs*. 2021 Aug;30(15-16):2309-2319.

[19] Kemp K, Griffiths J, Lovell K. Understanding the health and social care needs of people living with IBD: a meta-synthesis of the evidence. *World J Gastroenterol*. 2012 Nov 21;18(43):6240-9.

[20] Van Langenberg DR, Gibson PR. Systematic review: fatigue in inflammatory bowel disease. *Aliment Pharmacol Ther*. 2010;32(2):131–43.

[21] Graff LA, Vincent N, Walker JR, et al. A population-based study of fatigue and sleep difficulties in inflammatory bowel disease. *Inflamm Bowel Dis*. 2011;17(9):1882–9.

[22] Bernstein CN, Singh S, Graff LA, Walker JR, Miller N, Cheang M. A prospective population-based study of triggers of symptomatic flares in IBD. *Am J Gastroenterol*. 2010 Sep;105(9):1994-2002.

- [23] Steptoe A, Hamer M, Chida Y. The effects of acute psychological stress on circulating inflammatory factors in humans: a review and meta-analysis. *Brain Behav Immun*. 2007 Oct;21(7):901-12.
- [24] Devlen J, Beusterien K, Yen L, Ahmed A, Cheifetz AS, Moss AC. The burden of inflammatory bowel disease: a patient-reported qualitative analysis and development of a conceptual model. *Inflamm Bowel Dis*. 2014 Mar;20(3):545-52.
- [25] Roseira J, Magro F, Fernandes S, Simões C, Portela F, Vieira AI, Patita M, Leal C, Lago P, Caldeira P, Gago T, Currais P, Dias CC, Santiago M, Dias S, Tavares de Sousa H. Sexual Quality of Life in Inflammatory Bowel Disease: A Multicenter, National-Level Study. *Inflamm Bowel Dis*. 2020 Apr 11;26(5):746-755.
- [26] Casellas F, López-Vivancos J, Badia X, Vilaseca J, Malagelada JR. Influence of inflammatory bowel disease on different dimensions of quality of life. *Eur J Gastroenterol Hepatol*. 2001 May;13(5):567-72.
- [27] Guo L, Rohde J, Farraye FA. Stigma and Disclosure in Patients With Inflammatory Bowel Disease. *Inflamm Bowel Dis*. 2020 Jun 18;26(7):1010-1016.
- [28] 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 I. *Inflamm Bowel Dis*. 2018 Mar 19;24(4):742-751.
- [29] Jäghult S, Saboonchi F, Johansson UB, Wredling R, Kapraali M. Identifying predictors of low health-related quality of life among patients with inflammatory bowel disease: comparison between Crohn's disease and ulcerative colitis with disease duration. *J Clin Nurs*. 2011 Jun;20(11-12):1578-87.
- [30] Fu H, Kaminga AC, Peng Y, Feng T, Wang T, Wu X, Yang T. Associations between disease activity, social support and health-related quality of life in patients with inflammatory bowel diseases: the mediating role of psychological symptoms. *BMC Gastroenterol*. 2020 Jan 14;20(1):11.
- [31] van Gennep S, de Boer NKH, Gielen ME, Rietdijk ST, Geerse KB, Ponsioen CY, Duijvestein M, D'Haens GR, Löwenberg M, de Boer AGEM. Impaired Quality of Working Life in Inflammatory Bowel Disease Patients. *Dig Dis Sci*. 2021 Sep;66(9):2916-2924.

- [32] Youssef M, Hossein-Javaheri N, Hoxha T, Mallouk C, Tandon P. Work Productivity Impairment in Persons with Inflammatory Bowel Diseases: A Systematic Review and Meta-analysis. *J Crohns Colitis*. 2024 Sep 3;18(9):1486-1504.
- [33] Kapasi R, Glatte J, Lamb CA, Acheson AG, Andrews C, Arnott ID, Barrett KJ, Bell G, Bhatnagar G, Bloom S, Brookes MJ, Brown SR, Burch N, Burman A, Crook K, Cummings JF, Davies J, Demick A, Epstein J, Faiz O, Feakins R, Fletcher M, Garrick V, Jaffray B, Johnson M, Keetarut K, Limdi J, Meade U, Muhammed R, Murdock A, Posford N, Rowse G, Shaw I, St Clair Jones A, Taylor S, Weaver S, Younge L, Hawthorne AB. Consensus standards of healthcare for adults and children with inflammatory bowel disease in the UK. *Frontline Gastroenterol*. 2019 Jul 24;11(3):178-187.
- [34] Philip V, Soubieres A, Poullis A. Health concerns associated with travelling with inflammatory bowel disease (IBD): a questionnaire survey. *Clin Med (Lond)*. 2018 Aug;18(4):288-292.
- [35] Wang C, Sheng Y, Yu L, Tian F, Xue Y, Zhai Q. Effects of cognitive behavioral therapy on mental health and quality of life in inflammatory bowel disease patients: A meta-analysis of randomized controlled trials. *Behav Brain Res*. 2023 Oct 2;454:114653.
- [36] Mikocka-Walus A, Bampton P, Hetzel D, Hughes P, Esterman A, Andrews JM. Cognitive-behavioural therapy has no effect on disease activity but improves quality of life in subgroups of patients with inflammatory bowel disease: a pilot randomised controlled trial. *BMC Gastroenterol*. 2015 May 2;15:54.
- [37] Hunt MG, Loftus P, Accardo M, Keenan M, Cohen L, Osterman MT. Self-help Cognitive Behavioral Therapy Improves Health-Related Quality of Life for Inflammatory Bowel Disease Patients: A Randomized Controlled Effectiveness Trial. *J Clin Psychol Med Settings*. 2020 Sep;27(3):467-479.
- [38] Wynne B, McHugh L, Gao W, Keegan D, Byrne K, Rowan C, Hartery K, Kirschbaum C, Doherty G, Cullen G, Dooley B, Mulcahy HE. Acceptance and Commitment Therapy Reduces Psychological Stress in Patients With Inflammatory Bowel Diseases. *Gastroenterology*. 2019 Mar;156(4):935-945.e1.



- [39] Schoultz M, Atherton I, Watson A. Mindfulness-based cognitive therapy for inflammatory bowel disease patients: findings from an exploratory pilot randomised controlled trial. *Trials*. 2015 Aug 25;16:379.
- [40] Popa SL, Fadgyas Stanculete M, Grad S, Brata VD, Duse TA, Badulescu AV, Dragan RV, Bottalico P, Pop C, Ismaiel A, Turtoi DC, Dumitrascu DI, Pojoga C, Gherman C, David L. Coping Strategies and Inflammatory Bowel Disease: A Narrative Review. *J Clin Med*. 2024 Mar 12;13(6):1630.
- [41] Xi WZ, Xu CW, Wang LL. The Effect of Empowering Education Combined With Mindfulness Meditation Training on Negative Emotion and Quality of Life in Patients With Inflammatory Bowel Disease. *Front Behav Neurosci*. 2022 Jun 2;16:901696.
- [42] Tanaka M, Kawakami A, Sakagami K, Terai T, Ito H. Influence of multidisciplinary team care with abundant nurse staffing on patient-reported outcomes among patients with inflammatory bowel disease in clinical remission. *Health Qual Life Outcomes*. 2024 Jun 5;22(1):44.
- [43] Dibley L, Norton C, Whitehead E. The experience of stigma in inflammatory bowel disease: An interpretive (hermeneutic) phenomenological study. *J Adv Nurs*. 2018 Apr;74(4):838-851.
- [44] Vernon-Roberts A, Gearry RB, Day AS. The Level of Public Knowledge about Inflammatory Bowel Disease in Christchurch, New Zealand. *Inflamm Intest Dis*. 2020 Nov;5(4):205-211.