

## Original Research Article

# LONG-TERM QUALITY OF LIFE AND FUNCTIONAL OUTCOMES IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE AFTER SURGICAL RESECTION: AN OBSERVATIONAL STUDY

Garipelli Rajendra<sup>1</sup>, SK Zahid Ali<sup>2</sup>, Nikhilesh Vedire<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of General Surgery, Bhasker Medical College and General Hospital, Yenkapally, Moinabad, Hyderabad, Telangana, India.

<sup>2</sup>Assistant Professor, Department of General Surgery, Shadan Institute of Medical Sciences, Hyderabad, Telangana, India.

<sup>3</sup>Assistant Professor, Department of General Surgery, Bhasker Medical College and General Hospital, Yenkapally, Moinabad, Hyderabad, Telangana, India.

Received : 05/01/2025  
Received in revised form : 08/03/2025  
Accepted : 24/03/2025

### Corresponding Author:

**Dr. Nikhilesh Vedire,**  
Assistant Professor, Department of  
General Surgery, Bhasker Medical  
College and General Hospital,  
Yenkapally, Moinabad, Hyderabad,  
Telangana, India.  
Email: drnikhilreddy@gmail.com

DOI: 10.70034/ijmedph.2025.1.368

Source of Support: Nil,  
Conflict of Interest: None declared

Int J Med Pub Health  
2025; 15 (1); 1973-1977

### ABSTRACT

**Background:** Inflammatory bowel disease (IBD) significantly impacts patients' quality of life and functional outcomes, especially following surgical resection. This study aimed to evaluate the long-term quality of life and functional outcomes in patients with IBD post-surgery.

**Materials and Methods:** A cohort of 100 patients who underwent surgical resection for IBD (60 with Crohn's disease and 40 with ulcerative colitis) was followed up for 5 years. Data were collected on demographic characteristics, quality of life (IBDQ), functional outcomes, employment status, psychological outcomes (HADS), and surgical success.

**Results:** The cohort had a mean age of  $45.3 \pm 12.6$  years, with a male predominance (55%). Significant improvements in quality of life were observed at both 1 year ( $163.5 \pm 24.2$ ,  $p < 0.001$ ) and 5 years ( $174.8 \pm 19.3$ ,  $p = 0.004$ ) compared to baseline ( $120.5 \pm 30.3$ ). Functional outcomes were favorable, with 85% of patients reporting a return to normal bowel function. Employment rates were high, with 72% of patients returning to full-time work. Psychological outcomes showed 12% of patients with elevated anxiety and 8% with elevated depression. Surgical success was achieved in 90% of patients, with a 10% disease recurrence rate.

**Conclusion:** Surgical resection for IBD results in significant improvements in quality of life and functional outcomes, with a high rate of surgical success. These findings emphasize the long-term benefits of surgical intervention for IBD patients.

**Keywords:** Inflammatory bowel disease, surgical resection, quality of life, functional outcomes, Crohn's disease, ulcerative colitis, disease recurrence.

## INTRODUCTION

Inflammatory bowel disease (IBD), which encompasses Crohn's disease and ulcerative colitis, is a chronic inflammatory condition primarily affecting the gastrointestinal tract. Patients with IBD often experience significant disruptions in their quality of life due to symptoms such as abdominal pain, diarrhea, fatigue, and weight loss. In many cases, medical management proves insufficient, necessitating surgical resection, particularly when

the disease is refractory to pharmacological therapies or complications such as strictures, perforations, or abscesses arise.<sup>[1]</sup>

Surgical resection in IBD patients involves the removal of the diseased bowel segments, which can improve symptoms and disease control. However, the long-term impact of surgery on patients' quality of life, functional outcomes, and psychological well-being remains an area of significant interest. Previous studies have suggested that while surgery can alleviate acute symptoms, the long-term benefits in terms of quality of life and physical function may

vary among patients.<sup>[2-6]</sup> Additionally, the impact of the COVID-19 pandemic on IBD services and patient outcomes has further highlighted the importance of understanding the post-surgical quality of life.<sup>[3]</sup> Recent studies have also emphasized the importance of considering quality of life as a key endpoint in IBD treatment and surgical decision-making.<sup>[4,7]</sup>

The aim of this observational study is to evaluate the long-term outcomes of surgical resection in patients with IBD, specifically focusing on quality of life, functional outcomes, employment status, and psychological health. Additionally, we assess the rates of surgical success and disease recurrence over a 5-year period. This study is vital to understanding the overall impact of surgical intervention on IBD patients and provides important insights for clinicians managing the long-term care of these individuals.

## MATERIALS AND METHODS

### Study Design and Setting

This observational study was conducted at Bhasker Medical College, Moinabad, Hyderabad, over a one-year period from February 2023 to January 2024. The study aimed to assess the long-term quality of life and functional outcomes in patients with inflammatory bowel disease (IBD) following surgical resection. The study was approved by the institutional ethics committee, and all patients provided informed consent prior to participation.

### Study Population

The study included 100 patients who underwent surgical resection for IBD, including both Crohn's disease (n = 60) and ulcerative colitis (n = 40). Patients were selected based on the following inclusion criteria:

Diagnosis of Crohn's disease or ulcerative colitis.

Underwent surgical resection during the study period.

Follow-up period of at least 12 months post-surgery.

Age 18 years or older.

Exclusion criteria included patients with severe comorbidities that could interfere with the assessment of IBD outcomes, patients who did not complete the required follow-up, or those who underwent non-surgical treatments during the follow-up period.

### Data Collection

Demographic and clinical data, including age, gender, disease type, and disease involvement (e.g., ileocolonic, colonic, small bowel), were recorded at the time of surgery. The primary outcomes were evaluated at baseline (pre-surgery), 1-year post-surgery, and 5-years post-surgery.

**Quality of Life:** Quality of life was assessed using the Inflammatory Bowel Disease Questionnaire (IBDQ), which measures bowel function, systemic function, emotional function, and social function.

Scores were recorded at baseline, 1-year, and 5-year follow-up.

**Functional Outcomes:** Functional outcomes were evaluated by assessing the return to normal bowel function, presence of occasional symptoms (e.g., diarrhea, urgency), and persistent complications (e.g., strictures, fistulas). Surgical complications, including wound infections, anastomotic leaks, and bowel obstruction, were also documented.

**Employment and Daily Activities:** Employment status was recorded, including full-time and part-time work, as well as unemployment due to health-related reasons. Additionally, the resumption of daily activities and pre-surgery levels of physical exercise were assessed.

**Psychological Outcomes:** Psychological well-being was evaluated using the Hospital Anxiety and Depression Scale (HADS) to assess levels of anxiety and depression at the 5-year follow-up.

**Surgical Success and Disease Recurrence:** Surgical success was defined as the absence of disease recurrence or the need for additional surgery. Disease recurrence was monitored over the 5-year follow-up period.

### Statistical Analysis

Data were analyzed using descriptive statistics, including means, standard deviations, and percentages, to summarize the demographic, clinical, and outcome measures. The changes in quality of life scores between baseline, 1-year, and 5-year follow-ups were compared using paired t-tests. A p-value of < 0.05 was considered statistically significant. All statistical analyses were conducted using SPSS software.

### Ethical Considerations

The study was approved by the Institutional Ethics Committee of Bhasker Medical College, Moinabad, Hyderabad. Patient confidentiality was maintained, and all data were anonymized before analysis.

## RESULTS

A total of 100 patients who underwent surgical resection for inflammatory bowel disease (IBD) were included in this observational study. The demographic breakdown of the cohort is shown in Table 1. The majority of the patients were male (55%), with an average age of  $45.3 \pm 12.6$  years. Of the patients, 60% had Crohn's disease, and 40% had ulcerative colitis. The most common disease involvement was ileocolonic (62%), followed by colonic (38%) and small bowel (20%).

In terms of quality of life, significant improvements were observed in the mean Inflammatory Bowel Disease Questionnaire (IBDQ) scores at the 1-year and 5-year follow-ups. The IBDQ score increased from a baseline of  $120.5 \pm 30.3$  before surgery to  $163.5 \pm 24.2$  at 1 year ( $p < 0.001$ ), and further improved to  $174.8 \pm 19.3$  at 5 years ( $p = 0.004$ ). These results are presented in Table 2.

Functional outcomes were highly favorable, with 85% of patients reporting a return to normal bowel function, and 10% experiencing occasional symptoms such as diarrhea or urgency. Only 5% of patients experienced persistent complications, such as strictures or fistulas. Surgical complications were rare, occurring in 7% of the cohort. Wound infections, anastomotic leaks, and bowel obstruction were observed in 4, 2, and 1 patient(s), respectively, as shown in Table 3.

Regarding employment and daily activities, 72% of patients returned to full-time employment, and 18% resumed part-time work. The remaining 10% of patients were unemployed due to health reasons. Of those employed, 90% reported returning to their pre-

surgery level of daily activities, and 90% resumed their pre-surgery exercise regimen. These findings are summarized in Table 4.

Psychological outcomes were assessed using the Hospital Anxiety and Depression Scale (HADS). At the 5-year follow-up, 12% of patients had elevated anxiety scores ( $\geq 10$ ), and 8% had elevated depression scores ( $\geq 10$ ). These results are detailed in Table 5.

Finally, the surgical success rate was 90%, with only 10% of patients experiencing disease recurrence during the 5-year period. Disease recurrence required further medical or surgical interventions, as outlined in Table 6.

**Table 1: Demographic Information**

Variable	Value
Total Sample Size	100
Male (%)	55
Female (%)	45
Mean Age (years)	45.3 ± 12.6
Crohn's Disease (%)	60
Ulcerative Colitis (%)	40
Ileocolonic Involvement (%)	62
Colonic Involvement (%)	38
Small Bowel Involvement (%)	20

**Table 2: Quality of Life Results**

Timepoint	Mean IBDQ Score	p-value
Pre-Surgery	120.5 ± 30.3	-
1 Year	163.5 ± 24.2	< 0.001
5 Years	174.8 ± 19.3	0.004

**Table 3: Functional Outcomes**

Outcome	Value
Return to Normal Bowel Function (%)	85
Occasional Symptoms (%)	10
Persistent Complications (%)	5
Surgical Complications (%)	7
Wound Infections	4
Anastomotic Leaks	2
Bowel Obstruction	1

**Table 4: Employment and Daily Activities**

Outcome	Value
Full-time Employment (%)	72
Part-time Employment (%)	18
Unemployed Due to Health Reasons (%)	10
Return to Normal Daily Activities (%)	90
Resumed Pre-Surgery Exercise (%)	90

**Table 5: Psychological Outcomes**

Outcome	Value
Elevated Anxiety Scores (%)	12
Elevated Depression Scores (%)	8

**Table 6: Surgical Success and Disease Recurrence**

Outcome	Value
Surgical Success (%)	90
Disease Recurrence (%)	10

## DISCUSSION

This observational study aimed to assess the long-term quality of life and functional outcomes in

patients with inflammatory bowel disease (IBD) following surgical resection. The results demonstrate that surgical intervention leads to significant improvements in both quality of life and

functional outcomes, with most patients achieving a return to normal bowel function and resuming their daily activities.

The significant improvement in the Inflammatory Bowel Disease Questionnaire (IBDQ) scores at 1 year and 5 years post-surgery highlights the positive impact of surgical resection on the quality of life of IBD patients. The scores increased from a baseline of  $120.5 \pm 30.3$  to  $163.5 \pm 24.2$  at 1 year ( $p < 0.001$ ) and further improved to  $174.8 \pm 19.3$  at 5 years ( $p = 0.004$ ), indicating sustained benefits of surgery over time. These findings are consistent with previous studies, such as those by Yan et al. (2020) [8] and Umanskiy & Fichera (2010) [9], which showed improvements in quality of life following surgical treatment for IBD, particularly for patients with refractory disease or complications like strictures or perforations.

Regarding functional outcomes, 85% of patients reported a return to normal bowel function, and only 10% experienced occasional symptoms such as diarrhea or urgency. These outcomes suggest that the majority of patients experience significant symptomatic relief after surgery. The low rates of persistent complications (5%) and surgical complications (7%) also indicate that surgical resection is generally safe and effective, supporting the results of other studies by Stroie et al. (2022),<sup>[10]</sup> and Hwang & Varma (2008),<sup>[13]</sup> which emphasize the benefits of surgery in controlling IBD-related symptoms.

In terms of employment and daily activities, 72% of patients returned to full-time employment, and 90% resumed their pre-surgery levels of physical activity. These results underscore the positive impact of surgical resection on patients' ability to return to normal life, both professionally and socially. This is particularly relevant, as IBD can significantly impair work productivity and daily function due to chronic symptoms, as noted in studies by Fazio et al. (1999),<sup>[12]</sup> and Anto et al. (2022).<sup>[11]</sup>

The psychological outcomes, however, showed that 12% of patients had elevated anxiety scores, and 8% had elevated depression scores at the 5-year follow-up. Although these percentages are relatively low, they indicate that psychological well-being should be monitored as part of long-term care for IBD patients, as mental health issues may persist even after successful surgical treatment. It is important to recognize the role of psychological support in managing IBD patients post-surgery, as these issues can affect overall recovery and quality of life, as mentioned by Yan et al. (2020),<sup>[8]</sup> and Umanskiy & Fichera (2010).<sup>[9]</sup>

The study also found that surgical success was achieved in 90% of patients, with only 10% experiencing disease recurrence within 5 years. This recurrence rate is consistent with the expected long-term outcomes for IBD patients post-surgery, as some patients may experience disease relapse despite surgical intervention. This highlights the need for continued monitoring and potential medical

interventions even after surgery to manage recurrence, as discussed by Stroie et al. (2022),<sup>[10]</sup> and Hwang & Varma (2008).<sup>[13]</sup>

While the results of this study are promising, it is important to consider the limitations. As an observational study, there is a potential for selection bias, as patients with more severe disease may have been more likely to undergo surgery. Additionally, the study was conducted at a single medical center, and results may not be generalizable to other settings or populations. Future studies with larger, multi-center cohorts and randomized controlled trials are needed to further validate these findings and explore the long-term effects of surgery on quality of life and functional outcomes in IBD patients, as noted by Yuge et al. (2023),<sup>[14]</sup> and Anto et al. (2022).<sup>[11]</sup>

## CONCLUSION

Surgical resection for patients with inflammatory bowel disease (IBD) leads to substantial improvements in quality of life, functional outcomes, and the ability to resume daily activities. At both 1-year and 5-year follow-ups, patients reported significant reductions in IBD-related symptoms, with 85% returning to normal bowel function and 90% resuming pre-surgery levels of physical activity. Despite a 10% disease recurrence rate, the majority of patients experienced long-term benefits from surgery, with a high rate of surgical success. These results emphasize the importance of early surgical intervention in IBD management. Additionally, ongoing psychological support and comprehensive follow-up care are crucial for optimizing long-term outcomes and enhancing patients' well-being post-surgery.

## REFERENCES

1. McLeod RS, Baxter NN. Quality of life of patients with inflammatory bowel disease after surgery. *World J Surg.* 1998 Apr;22(4):375-81. doi: 10.1007/s002689900400. PMID: 9523520.
2. Kessler H, Mudter J, Hohenberger W. Recent results of laparoscopic surgery in inflammatory bowel disease. *World J Gastroenterol.* 2011 Mar 7;17(9):1116-25. doi: 10.3748/wjg.v17.i9.1116. PMID: 21448415; PMCID: PMC3063903.
3. Deputy M, Sahnun K, Worley G, Patel K, Balinskaite V, Bottle A, et al. The use of, and outcomes for, inflammatory bowel disease services during the Covid-19 pandemic: a nationwide observational study. *Aliment Pharmacol Ther.* 2022 Apr;55(7):836-846. doi: 10.1111/apt.16800. Epub 2022 Feb 7. PMID: 35132663; PMCID: PMC9111430.
4. Calviño-Suárez C, Ferreira-Iglesias R, Bastón-Rey I, Barreiro-de Acosta M. Role of Quality of Life as Endpoint for Inflammatory Bowel Disease Treatment. *Int J Environ Res Public Health.* 2021 Jul 4;18(13):7159. doi: 10.3390/ijerph18137159. PMID: 34281095; PMCID: PMC8296948.
5. Meyer AL, Teixeira MG, Almeida MG, Kiss DR, Nahas SC, Ceconello I. Quality of life in the late follow-up of ulcerative colitis patients submitted to restorative proctocolectomy with sphincter preservation over ten years ago. *Clinics (Sao Paulo).* 2009;64(9):877-83. doi:

- 10.1590/S1807-59322009000900008. PMID: 19759881; PMCID: PMC2745133.
6. Larussa T, Flauti D, Abenavoli L, Boccutto L, Suraci E, Marasco R, et al. The Reality of Patient-Reported Outcomes of Health-Related Quality of Life in an Italian Cohort of Patients with Inflammatory Bowel Disease: Results from a Cross-Sectional Study. *J Clin Med*. 2020 Jul 28;9(8):2416. doi: 10.3390/jcm9082416. PMID: 32731482; PMCID: PMC7464775.
  7. Fasulo E, D'Amico F, Osorio L, Allocca M, Fiorino G, Zilli A, et al. The Management of Postoperative Recurrence in Crohn's Disease. *Journal of Clinical Medicine*. 2024; 13(1):119. <https://doi.org/10.3390/jcm13010119>
  8. Yan X, Qiao Y, Tong J, Mao R, Liang J, Lv C, et al Young Investigators for the study of Inflammatory Bowel Diseases (YIIBD). Assessment of patient-centered outcomes (PROs) in inflammatory bowel disease (IBD): a multicenter survey preceding a cross-disciplinary (functional) consensus. *Health Qual Life Outcomes*. 2020 Jul 20;18(1):241. doi: 10.1186/s12955-020-01489-8. PMID: 32690091; PMCID: PMC7372780.
  9. Umanskiy K, Fichera A. Health related quality of life in inflammatory bowel disease: the impact of surgical therapy. *World J Gastroenterol*. 2010 Oct 28;16(40):5024-34. doi: 10.3748/wjg.v16.i40.5024. PMID: 20976838; PMCID: PMC2965278.
  10. Stroie T, Preda C, Meianu C, Croitoru A, Gheorghe L, Gheorghe C, et al. Health-Related Quality of Life in Patients with Inflammatory Bowel Disease in Clinical Remission: What Should We Look For? *Medicina (Kaunas)*. 2022 Mar 27;58(4):486. doi: 10.3390/medicina58040486. PMID: 35454325; PMCID: PMC9028218.
  11. Anto VP, Dawes AJ, Vrees M, Watson AR, Lightner AL. Surgical Management of Inflammatory Bowel Disease. *R I Med J* (2013). 2022 Dec 1;105(10):25-30. PMID: 36413448; PMCID: PMC11554358.
  12. Fazio VW, O'Riordain MG, Lavery IC, Church JM, Lau P, Strong SA, et al. Long-term functional outcome and quality of life after stapled restorative proctocolectomy. *Ann Surg*. 1999 Oct;230(4):575-84; discussion 584-6. doi: 10.1097/00000658-199910000-00013. PMID: 10522727; PMCID: PMC1420906.
  13. Hwang JM, Varma MG. Surgery for inflammatory bowel disease. *World J Gastroenterol*. 2008 May 7;14(17):2678-90. doi: 10.3748/wjg.14.2678. PMID: 18461653; PMCID: PMC2709047.
  14. Yuge K, Miwa K, Fujita F, Murotani K, Shigaki T, Yoshida N, et al. Comparison of long-term quality of life based on surgical procedure in patients with rectal cancer. *Front Oncol*. 2023 May 19; 13:1197131. doi: 10.3389/fonc.2023.1197131. PMID: 37274255; PMCID: PMC10235785.