RESEARCH PAPER

EFFECT OF PHARMACIST-LED EDUCATIONAL INTERVENTION ON DISEASE KNOWLEDGE AND HEALTH-RELATED QUALITY OF LIFE AMONG PATIENTS WITH INFLAMMATORY BOWEL DISEASE: A PROSPECTIVE OBSERVATIONAL STUDY FROM SOUTH INDIA

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ABSTRACT

Background: Inflammatory bowel disease (IBD), comprising ulcerative colitis (UC) and Crohn's disease (CD), is a chronic, relapsing, immune-mediated gastrointestinal disorder that imposes a substantial physical, psychological, and socioeconomic burden on affected individuals. The recurrent nature of the disease, coupled with prolonged treatment requirements and frequent disease exacerbations, significantly compromises patients' health-related quality of life (HRQoL). Adequate disease-related knowledge is considered a critical component of successful disease management, as informed patients are more likely to adhere to prescribed therapies, participate actively in self-care practices, and achieve improved clinical outcomes. Despite the growing prevalence of IBD, patient awareness regarding disease pathology, treatment strategies, lifestyle modifications, and long-term complications remains inadequate, particularly in developing countries. Therefore, educational interventions may play an important role in improving patient knowledge and quality of life.

Objective: The present study aimed to evaluate the impact of a structured clinical pharmacist-led educational intervention on disease-related knowledge and health-related quality of life among patients diagnosed with inflammatory bowel disease. Additionally, the study sought to identify demographic and disease-related factors associated with patient knowledge and quality-of-life outcomes.

Methods: A prospective observational study was conducted among 74 patients with confirmed diagnoses of inflammatory bowel disease attending gastroenterology departments of selected tertiary care hospitals in Andhra Pradesh, India, between October 2025 and January 2026. Disease-related knowledge was assessed using the validated Crohn's and Colitis Knowledge Score (CCKNOW), while health-related quality of life was evaluated using the Short Inflammatory Bowel Disease Questionnaire (SIBDQ). Baseline assessments were performed during the initial hospital visit. Subsequently, individualized patient counselling and educational leaflets were provided to improve disease understanding and self-management practices. Follow-up assessments were conducted after 4–5 weeks using the same validated instruments. Statistical analyses were performed using SPSS version 16.0. Paired t-tests, chi-square tests, and one-way analysis of variance (ANOVA) were applied to determine differences between pre- and post-intervention outcomes, with statistical significance established at $p < 0.05$.

Results: Among the 74 enrolled participants, 38 (51.4%) were diagnosed with Crohn's disease and 36 (48.6%) with ulcerative colitis. The largest proportion of patients belonged to the 20–40-year age group (45.9%), and equal gender representation was observed. Following educational intervention, a significant improvement in disease-related knowledge was observed across the study population. Educational status demonstrated a significant association with post-intervention knowledge scores ($p = 0.01$), while disease subtype was also significantly associated with knowledge outcomes ($p = 0.04$). Significant improvements were observed in the systemic (9.59 ± 2.01 vs. 12.34 ± 0.82, $p < 0.001$), social (9.35 ± 2.34 vs. 12.19 ± 0.87, $p < 0.001$), and bowel function domains (14.39 ± 3.05 vs. 18.50 ± 1.31, $p < 0.001$) of the SIBDQ following intervention. However, improvement in the emotional domain did not reach statistical significance (14.49 ± 3.06 vs. 15.21 ± 1.09, $p = 0.068$). Overall quality-of-life scores improved significantly after patient education, indicating a positive influence of pharmacist-led counselling on disease management and patient well-being.

Conclusion: The findings of the present study demonstrate that structured educational interventions delivered by clinical pharmacists can significantly enhance disease-related knowledge and improve multiple domains of health-related quality of life among patients with inflammatory bowel disease. Patient education was particularly effective in improving systemic, social, and bowel-related outcomes, emphasizing the importance of incorporating educational and counselling services into routine IBD management programs. These findings support the expanding role of clinical pharmacists within multidisciplinary healthcare teams and highlight the value of patient-centred educational strategies in optimizing long-term disease outcomes. Further multicentre studies involving larger patient populations and longer follow-up periods are warranted to validate these findings and assess their long-term clinical impact.

Keywords: Inflammatory bowel disease; Crohn's disease; Ulcerative colitis; Health-related quality of life; Patient education; Clinical pharmacist intervention; CCKNOW; SIBDQ; Disease knowledge; Gastroenterology.

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GASTROINTESTINAL TRACT (GIT)

The gastrointestinal tract (GI tract, digestive tract, alimentary canal) is the tract or passageway of the digestive system that leads from the mouth to the anus. The GI tract contains all the major organs of the digestive system, in humans and other animals, including the esophagus, stomach, and intestines. Food taken in through the mouth is digested to extract nutrients and absorb energy, and the waste expelled at the anus as feces. Gastrointestinal is an adjective meaning of pertaining to the stomach and intestines.

Gastrointestinal Disorders

There are two types of gastrointestinal diseases: functional and structural. Let's see each one in detail and understand the major differences between the two. Functional gastrointestinal diseases

- **Functional diseases** are those in which the GI tract appears normal but does not move properly. They are the most common gastrointestinal issues (including the colon and rectum). Common examples are constipation, irritable bowel syndrome (IBS), nausea, food poisoning, gas, bloating, GERD and diarrhea.
- **Structural gastrointestinal diseases** Structural diseases are those in which your bowel appears abnormal and does not function properly. hemorrhoids, diverticular disease, colon polyps, colon cancer and inflammatory bowel disease.

INFLAMMATORY BOWELS DISEASE

Inflammatory Bowel Disease (IBD) causes chronic inflammation of the intestines not due to infections or other identifiable causes. There are two main types of IBD: ulcerative colitis and Crohn’s disease.

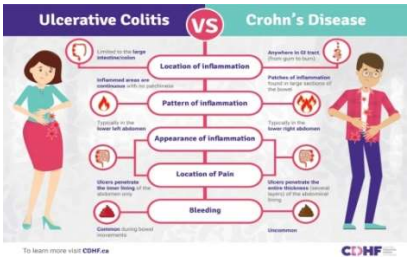


Fig. 1.2 Information about IBD

Types of IBD include:

1. **Ulcerative colitis**. This condition involves inflammation and sores (ulcers) along the lining of your large intestine (colon) and rectum.

2. **Crohn's disease.** This type of IBD is characterized by inflammation of the lining of your digestive tract, which often can involve the deeper layers of the digestive tract. Crohn's disease most commonly affects the small intestine. However, it can also affect the large intestine and uncommonly, the upper gastrointestinal tract.

What is the difference between Crohn's disease and ulcerative colitis?

The major difference between Crohn's and UC is the area where the inflammation takes place within a person's digestive system as well as the degree to which the deeper layers of the gut are involved in the inflammatory process.

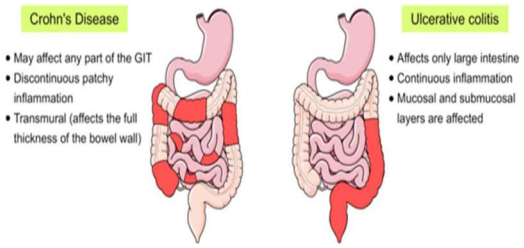


Fig. 1, 4 Difference between crohn`s and colitis disease

ULCERATIVE COLITIS

Ulcerative colitis is an inflammatory bowel disease (IBD) that causes inflammation and ulcers (sores) in your digestive tract. Ulcerative colitis affects the innermost lining of your large intestine, also called the colon, and rectum. In most people, symptoms usually develop over time, rather than suddenly. Health care providers often classify ulcerative colitis according to its location. Symptoms of each type often overlap.

Types of ulcerative colitis include:

- **Ulcerative proctitis**. Inflammation is confined to the area closest to the anus, also called the rectum. Rectal bleeding may be the only sign of the disease.
- **Proctosigmoiditis**. Inflammation involves the rectum and sigmoid colon — the lower end of the colon. Symptoms include bloody diarrhea, abdominal cramps and pain, and an inability to move the bowels despite the urge to do so. This is called tenesmus.
- **Left-sided colitis.** Inflammation extends from the rectum up through the sigmoid and descending portions of the colon. Symptoms include bloody diarrhea, abdominal cramping and pain on the left side, and urgency to defecate.
- **Pancolitis.** This type often affects the entire colon and causes bouts of bloody diarrhea that may be severe, abdominal cramps and pain, fatigue, and significant weight loss.

LITERATURE REVIEW

Chouliaras G et al.,(2017) conducted a cross sectional study to assess the impact of disease characteristics on the quality of life (QOL) in children with inflammatory bowel diseases (IBD). The results of this study indicated that the disease activity is the major factor associated with low QOL in children with IBD. This study demonstrated that disease activity is the main correlation of quality of life (QOL) in children. Several factors, that increased risks for impaired QOL for children with IBD, were identified. So the children of younger age, the early years after the diagnosis and the presence of extra-intestinal manifestations were inversely related to IMPACTIII scores. Therefore, in children with these specific features, physicians should be more vigilant in order to recognize and address issues related to their QOL promptly[17]

Soobraty A et al.,(2017) conducted a survey on current practice of clinicians regarding medication non-adherence in patients with Inflammatory Bowel Disease.Respondents stated forgetfulness, beliefs about necessity of medication and not immediately apparent benefits as the main reasons for non-adherence. Patient counselling on benefits and risks of medication was a commonly

used intervention. They concluded that urgent need for further clinician education on no adherence and robustly tested interventions that are capable of improving adherence.[19]

Reghu et al.,(2017) conducted a prospective, interventional follow up study to evaluate clinical pharmacist's interventions have any impact on medication adherence of patients having inflammatory bowel disease and to assess the awareness of patients about their disease and the significance of medications they use. They concluded that proper education program has a good effect on patients to improve their knowledge level on ibd[20].

Chen et al .,(2017) done a study to identify the environmental risk factors that are associated with IBD. Several environmental factors, such as smoking, appendicitis, OCPs, diet, breastfeeding, infections/ vaccinations, antibiotics, helminths, and childhood hygiene, have been implicated in the increased worldwide incidence of IBD. But the most consistently demonstrated environmental risk factor, smoking, contributes only partially to disease pathogenesis (ie, most smokers do not have CD and most CD patients do not smoke). Thus, further studies are necessary to better understand the environmental determinants of IBD[21].

Velonias et al (2017) done a study to analyse health related quality of life in older age. They resulted that older age patients was associated with modestly higher SIBDQ and mental HRQoL but lower physical HRQoL. Comprehensive care of the older IBD patient should include assessment of factors impairing physical quality of life to ensure appropriate interventions[22].

L.Dibley et al., (2017) done a study to identify the research priorities for the nursing of inflammatory bowel disease patients. And they concluded that these research priorities have a good impact on the nursing of IBD patients[23].

Anna catarena., et al (2017) conducted a study to observe a relation between appendectomy and IBD, crohns disease. And found out that transient increased risk of Crohn's disease after an appendectomy was probably explained by diagnostic bias.[24]

Wheat C. L. et al., (2016) conducted a study to identify educational needs, and barriers and factors associated with non-adherence among inflammatory bowel disease (IBD) patients. Eighteen IBD patients and ten IBD providers were recruited. Semi-structured interviews were conducted and a qualitative framework approach used to identify patient educational needs, barriers to obtaining information, and factors associated with non-adherence with medical therapy. They concluded that there are several deficits in knowledge in IBD patients and they identified factors associated with IBD patient comprehension, decision making, and non-adherence to therapy. These results can be used to develop targetededucational resources to improve adherence among IBD patients and they propose that patient self-management programs are potentially effective educational interventions that warrant further study in IBD[25].

A. A. El. Mahalli, H.M. Ali Alharthi et al., (2016) done a study to assess the health related quality of life of patients with inflammatory bowel disease. They concluded as relapse, long duration of disease (<5yrs), low education and young age at disease onset may entail increased risk for decreased HRQOL.[26]

Sasha Taleban et al., (2016) conducted a study to examine the correlation between QOL and clinical activity indices and endoscopic disease activity according to disease characteristics. data suggest good correlation between SCCAI and endoscopic disease activity in UC, particularly in left-sided disease. Poor correlations between HBI or SIBDQ and SES-CD appear to be consistent across different disease phenotypes.[27]

Hou JK et al.,(2015) conducted a prospective study to evaluate the association between patient disease knowledge of inflammatory bowel disease (IBD) and health related quality of life (HRQoL) and identify patient and disease related predictors of patient knowledge of IBD. IBD diagnosis at a younger age in addition to Caucasian race and higher education were significantly associated with higher knowledge about IBD. However, patient knowledge of IBD was not correlated with HRQoL. Further studies are required to study the effect of patient knowledge of IBD on other clinical outcomes.[28]

Zhang YZ et al., (2014) done a study about

the pathogenesis and the risk factors about the disease. They found out that the key factors responsible for IBD include genetic components, environmental elements, microbial flora and immune responses. It is hard to dispute the popular belief that IBD arises from an extremely complex interaction among genetic and environmental elements, dysregulated immune responses and alterations of the micro biome, and that none of these factors alone is likely to cause the disease. The growing number and diversity of genetic loci associated with IBD provide major challenges to the investigation of how they impact immunity and inflammation in susceptible individuals. Future research needs to further clarify and integrate the effects of the micro biome and environment on the immune response, and it shall be essential to gain further insights into the mechanisms and pathways of how bacteria, viruses or even fungi can modulate innate and adaptive immune responses.[29]

Huppertz-Hauss et al., (2015) conducted a study to evaluate the HRQoL in European patients with ulcerative colitis and Crohn's disease, 10 years after diagnosis (European Collaborative study group of Inflammatory Bowel Disease) compared with the national background population in each country and to assess possible country specific differences. Patients with IBD from 7 European countries were included in the study and done a follow-up visit 10 years after their diagnosis of IBD. They assessed their clinical and demographic data, including the generic HRQoL questionnaire short form health survey-36.They concluded that the HRQoL was not reduced in the IBD cohort compared with the background populations and old age, female gender, current symptoms at follow-up, disablement pension, and sick leave during the previous year were significantly associated with a reduced HRQoL in patients with IBD[30].

S. Lonnfors et al.,(2014) done a survey on patients with IBD to analyse the impact of IBD in their health related quality of life and btaining a better understanding of the quality of care,

assess to care. The result of this survey present a large up to date, high quality data set and this data can be used for the furthermore unmet needs of IBD patients for their awareness.[31]

Ananthakrishnan et al., (2014) done a study to find out the various trigger factors for the development of IBD. This study shows that Lower plasma vitamin D is associated with an increased risk of Crohn's disease, and vitamin D supplementation may prevent relapse of disease. There is continuing evidence that depression and psychosocial stress may play a rolein the pathogenesis of both CD and UC, while at the same time also increasing risk for diseaseflares. There is also a growing understanding of the role of diet on IBD, in particular through its effect on the micro biome. There is need for routine measurement of a spectrum ofenvironmental exposures in prospective studies to further our understanding. [32]

Joana Magalhaese et al., (2014) done a study to analyze the relationship between clinical and sociodemographic factors and quality of life in inflammatory bowel disease patient. They found out that the decrease in HRQL was significantly related with personal perception of a lower disease impact in success and social relations. These factors deserve a special attention, so timely measures can be implemented to improve the quality of life of patients.[32]

J. Burisch et al (2014): in a population based study to assess and validate the pattern of HRQoL in an unselected, population-based inception cohort of IBD patients from Eastern and Western Europe. Medical and surgical treatment improved HRQoL during the first yearof disease. They concluded that the majority of IBD patients in both Eastern and Western Europe reported a positive perception of disease-specific but not generic HRQoL. Biological therapy improved HRQoL in CD patients, while UC patients in need of surgery or biological therapy experienced lower perceptions of HRQoL than the rest.

Irina Blumenstein et al., (2013) conducted a study to assess sources of information and patient knowledge in Irish and German inflammatory bowel disease patients. they found out that German patients obtained knowledge from a wider range of sources than Irish patients and few differences between German and Irish IBD patients, despite cultural and linguistic differences, with regard to disease related knowledge of IBD[33].

AIM AND OBJECTIVES

Aim:

To better understand the IBD patients' knowledge gaps regarding their condition and to enhance their quality of life in terms of health.

Objectives:

- To examine the disease-related factors connected to knowledge of IBD...
- To determine the patient's knowledge gaps and offer interventional patient education.
- To compare the variations in IBD patients' knowledge.
- To determine if knowledge about IBD and health-related quality of life are related (HRQoL).

METHODOLOGY

A prospective observational study on knowledge assessment and quality of life of IBD patients. Assessment of knowledge and quality of life was done in their pre visit and PILS were provided in order to make them better understanding. On their post visit knowledge and quality of life were re assessed and the difference were analyzed. The study was conducted in the department of Gastroenterology in various super specialty hospitals of South India. The study was conducted during October 2025 to January 2026.

Inclusion criteria

- Patients aged 20-80
- Both genders
- Confirmed diagnosis of IBD
- At least 1 visit to gastroenterology department

Exclusion Criteria

- Patients who are not willing
- Patients who are critically ill to participate
- Pregnant women
- Pediatrics

Source of data

A specially designed data collection form will be utilized to collect patient's demographic details, past and present medical conditions, psychological factors, clinical features, intestinal manifestation and all other details required for the study.

Study protocol

74 patients were included in the study. The essential data were collected using data collection form. All the patients were counselled and provided with patient information leaflet regarding the disease After 4-5 weeks these patients were interviewed again with these questionnaires. Knowledge assessment was done by Crohn's and Colitis Knowledge Assessment Score (CCKNOW) and Short Inflammatory Bowel Disease Questionnaire (SIBDQ). Patients were interviewed with CCKNOW and SIBDQ questionnaire.

Assessment of Knowledge

As CCKNOW offers a reliable indication of high internal consistency, the CCKNOW score was chosen. It also measures the disease-related knowledge of IBD patients in four particular knowledge areas with relevance to the treatment of IBD, and it has a high reliability. There are 12 basic questions about the condition, two about food, five about therapy, and five about consequences (5 questions). A maximum score of 24 was allowed for all questions, with one point given for each right response and no deductions for unsatisfactory responses. In the pre-and post-visit phases of my research, I assigned a knowledge score to each patient participating in it.

Assessment of QOL

The SIBDQ is a 10-question questionnaire that was created by deriving 10 items from the original 32-item complete Inflammatory Bowel Disease Questionnaire. Bowel symptoms, systemic symptoms, emotional

function, and social function are the four areas that the SIBDQ looks at. Each question is given a score between 0 and 7, and the overall score may range from 10 (Lowest Health) to 70. (Best Health).

Statistical Analysis

SPSS (statistical program for the social sciences) version 16 was used for the statistical analysis. The chi square test was used to examine sociodemographic factors between the knowledge scores before and after the intervention. By using a paired t test, the mean scores before and after the intervention and QoL were calculated. ANOVA was used to evaluate the average scores for each of the SIBDQ's sociodemographic dimensions.

Results

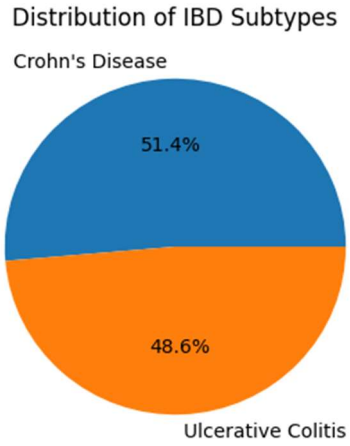
Study Population Characteristics

A total of 74 patients diagnosed with inflammatory bowel disease (IBD) were included in the study. Among them, 38 (51.4%) patients had Crohn's disease (CD) and 36 (48.6%) had ulcerative colitis (UC). The majority of participants belonged to the 20–40-year age group (45.9%), followed by the 41–60-year age group (37.8%). Equal gender representation was observed, with males and females each accounting for 50% of the study population.

Table 1. Demographic Characteristics of Study Participants

Variable	n (%)
Total patients	74
Ulcerative colitis	36 (48.6)
Crohn's disease	38 (51.4)
Male	37 (50.0)
Female	37 (50.0)
Age 20–40 years	34 (45.9)
Age 41–60 years	28 (37.8)
Age 61–80 years	12 (16.2)

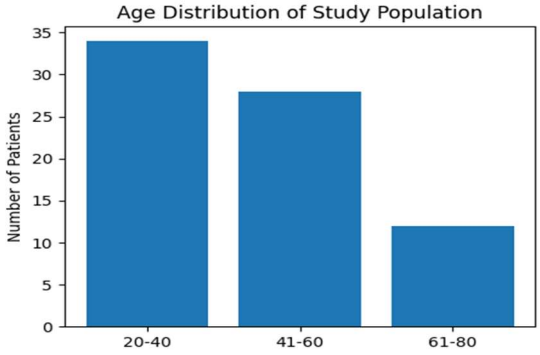
IBD Subtype Distribution



Clinical Characteristics

A previous history of gastrointestinal disorders and inflammatory bowel disease was more frequently observed among Crohn's disease patients. Surgical intervention had been performed in 35.1% of the study population, with a higher proportion among patients with Crohn's disease. Arthralgia represented the most frequently reported extraintestinal manifestation. Ileocolonic involvement was the predominant disease location among Crohn's disease patients, whereas pancolitis was the most common pattern observed among ulcerative colitis patients.

Age Distribution of Study Population



Impact of Educational Intervention on Disease Knowledge

Assessment using the Crohn's and Colitis Knowledge Score (CCKNOW) demonstrated a marked improvement in disease-related knowledge following educational intervention. Patients showed better understanding of disease pathology, medication use, dietary modifications, and disease complications during follow-up assessment compared with baseline evaluation. Educational status was significantly associated with post-intervention knowledge scores ($p = 0.01$), indicating that literacy level influenced knowledge acquisition. Additionally, disease subtype

was significantly associated with CCKNOW scores, with ulcerative colitis patients demonstrating slightly higher knowledge scores than Crohn's disease patients ($p = 0.04$).

SIBDQ Domain Scores Before and After Educational Intervention

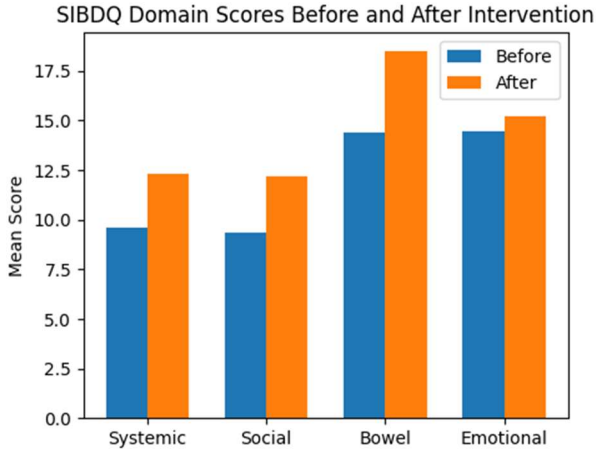


Table 2. Factors Associated with Post-Intervention Knowledge Scores

Variable	Mean CCKNOW Score ± SD	p-value
Ulcerative colitis	16.63 ± 1.64	0.04
Crohn's disease	15.73 ± 2.50	
Primary education	16.79 ± 1.70	0.01
Secondary education	16.11 ± 2.58	
Higher education	15.06 ± 1.56	

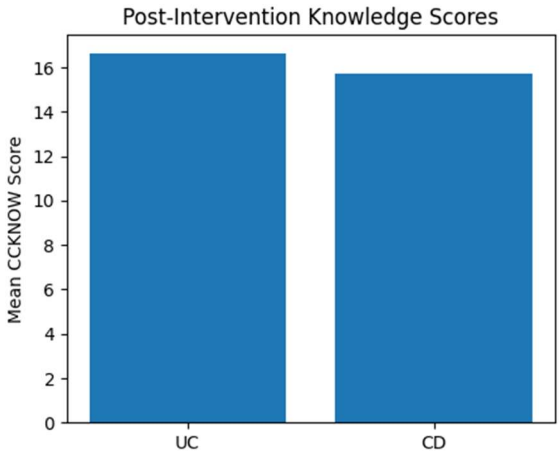
Impact of Educational Intervention on Health-Related Quality of Life

Comparison of SIBDQ scores before and after intervention revealed statistically significant improvements in multiple domains of health-related quality of life. Systemic, social, and bowel function domains showed significant enhancement following patient counselling and educational support ($p < 0.001$). However, the emotional domain demonstrated only modest improvement and did not achieve statistical significance ($p = 0.068$).

Table 3. Comparison of SIBDQ Domain Scores Before and After Intervention

Domain	Baseline Mean ± SD	Follow-up Mean ± SD	p-value
Systemic	9.59 ± 2.01	12.34 ± 0.82	<0.001
Social	9.35 ± 2.34	12.19 ± 0.87	<0.001
Bowel	14.39 ± 3.05	18.50 ± 1.31	<0.001
Emotional	14.49 ± 3.06	15.21 ± 1.09	0.068

Post-Intervention CCKNOW Knowledge Scores (UC vs CD)



Overall Quality of Life Improvement

The overall SIBDQ score increased significantly following intervention, demonstrating that structured educational counselling positively influenced patient-perceived health status. Improvements were particularly evident in bowel symptoms, social functioning, and systemic well-being. These findings suggest that pharmacist-led educational interventions may contribute to improved disease self-management and patient outcomes.

SCUSSION AND SUMMARY

The term "inflammatory bowel disease" refers to a group of chronic diseases with no recognized cause. Knowledge about the condition is essential for helping patients accept their diagnosis and comply with their active treatment regimens for inflammatory bowel disease (IBD). This prospective observational research sought to assess participants' level of knowledge and quality of life.

Patient Demographic details

A total of 74 patients were enrolled in the study. There were equal number of males and females, 37 patients. The mean age of this study participants was

1.7027±.73521.

Of the 74 patients 36 were UC patients (48.6%) and 38 (51.4%) were CD patients. Therewere 34 patients, or 45.9%, of whom were in the 20–40 age range. In this age range, the distribution of UC and CD is equal at 17 (22.97%). And 28 patients (37.8%) are in the age range of 41 to 60. For this age group, the kind of UC and CD distribution is 14 (18.92%). There were 12 patients in the 61–80 age range, and the respective rates were 6.76% and 9.46%. In this research, there were 37 male and 37 female patients, distributed evenly by gender. Among the 37 male patients, 16 (21.62%) had CD and 21 (28.38%) had UC. In the female group, there were 15 (20.27%) and 22 (29.73%) UC and CD distributions, respectively. 39 people in the 74-person research sample did not have any co-morbid conditions. The distributions of UC (20) and CD (19), 27.03% and 25.68%, respectively.There were 9 patients with IBD, including 2 with UC and 7 with CD, 2.70% and 9.46%, respectively. Only three (4.1%) of the 35 UC patients had HT, whereas 11 (14.9%) had DM. Only 12 patients (16.2%) in this research had appendicitis, and both UC and CD were equally prevalent. However, other research indicates that having an appendectomy increases the chance of IBD. However, 62 of the individuals did not have appendicitis. There is strong evidence from epidemiological research that genetic factors play a role in the development of IBD. First-degree relatives of IBD patients have a 3–20 times higher risk of having thedisease than the general population. Therefore, 23 individuals in our study—or 29% of the population overall—had relatives who had IBD. families of CD patients in our research had more than those of UC patients. Patients with stress were more prevalent than those with emotion when psychological aspects like stress and emotion were included for IBD patients. In 33 UC patients, the distribution of stress factors was 44.59% and 48.65%. Based on the lifestyle of the patients, Most of them were taking coffee (68.9%) and 29% of patients were taking tea and most of the patients 62(83.8%) were non vegetarians and only 12(16.2%) were vegetarians.

Nature of Disease

Extra intestinal symptoms were divided into 5 groups for this investigation. There were 16 individuals who had arthralgia, of which 9 (or 9.46%) had UC, 7 had back pain, and only one had a hepatobiliary and skin lesion. There are three levels of illness severity: mild, moderate, and severe. 11 patients and 21 CD patients, respectively, had patients who were identified as having a minor disease. In UC, 15 patients (20.27%) and 19 patients (25.68%) had intermediate conditions, respectively. Only 8 of the patients had serious conditions. Both in UC and CD, the localization of the illness was divided into 4 groups. Proctitis, left colon, pan colitis, and small intestine alone were the four groups in UC, whereas proximal, ileal, ileocolonic, and colonic were the categories in CD. In addition, 6 (8.11) of the 12 UC patients(16.22%) who had proctitis also had left colonic inflammation. Pancolitis was seen in 8 (11.5%) of the 16 CD patients, with 12 (16.22%) ileal and 27.88% ileocolonic inflammation. Some people have a higher risk of developing the condition again. Some research support this. Only one of the 11 individuals in this research had a recurrence. (15.6%).

Response to CCKNOW Questionnaire

During the baseline visit and the return interval, the mean CCKNOW scores were 6.563.26 and 16.172.16, respectively. When the mean CCKNOW scores were revisited after the first appointment, they were statistically significant (p value .000). The proportion of IBD knowledge at the baseline visit ranges from 0% to 86%, and only fewer than 50% with accurate responses for 18 out of 24 questions, according to the questions. The knowledge level was re-evaluated over the revisiting period and varied from 5% to 97%; only 9 questions received less than 50% of the correct answers overall. The elemental diet question had the highest rate of correctly answered questions (86% at the baseline visit and 95% at the follow-

up). The extra intestinal manifestation question has a greater proportion of accurate responses. In the baseline visit, the question about villages had the lowest proportion of right responses, and in the follow-up visit, it had just 5%. In this research, we compared the CCKNOW score to demographic characteristics. The findings indicated that male patients' mean CCKNOW scores were 1.72 and those of female patients were 1.67. This indicates that there was a statistically significant difference between the mean CCKNOW scores of male and female patients (p=0.039). Higher mean CCKNOW scores were linked to earlier

diagnostic ages. With a statistical analysis of (p0.28), the age groups 20–40 years had a higher mean CCKNOW score (16.79) than the age groups 41–60 years (15.5) and 61–80 years (16.0).

Patients with secondary education had mean scores that were statistically significantly higher (16.11) than patients with higher education (15.06) and primary (16.01). (p>0.01). Patients who were employed had a higher mean score (15.76) than jobless people (14.76) and students (14.23), respectively (p>0.06). In comparison to patients with crohn's disease (15.73), patients with ulcerative colitis (UC) had a higher CCKNOW score (16.63) (p>0.004). IBD duration was divided into 4 subgroups, with the period lasting more than 1 year having the highest mean score (16.25). However, the CCKNOW score was not substantially influenced by extra intestinal manifestation, family history, or hospitalization linked to IBD.

Response to SIBDQ

The SIBDQ is a 10-question assessment that looks at four areas: gastrointestinal symptoms, systemic, emotional, and social functioning. The quality of life was compared before and after the patients' interventions. Each element displayed the variance in the mean value. The components showed a substantial difference in the intestinal, social, and systemic domains. (p<0.05). In our research, it was shown that girls had higher mean scores than men in every area. Due to its implications for patients' psychological wellbeing and social adjustment tothe illness, HRQOL has become more important in chronic illnesses. Important information may be obtained by measuring HRQoL to evaluate the effect of the condition on patients' everyday lives. Analysis of the relationships between the SIBDQ's several domains and demographic characteristics revealed that age and prior experience significantly influenced the bowel domain (p 0.05). Furthermore, individuals with coexisting conditions reported higher QoL in the gastrointestinal domain (p 0.05). Relapse, long duration (>5 years), poor education, and early age at illness initiation were all shown to increase the probability of patients having worse HRQOL, according to a research by Azza A. E. et al. In this research, knowledge scores and QoL scores were evaluated before and after the patient's intervention. It is discovered that the mean knowledge score rose from the first visit. From the baseline visit, the QoL mean score has also grown. But interestingly, there is no connection between CCKNOW and SIBDQ.

The difference in significance between knowledge and quality of life ratings before and after intervention is determined to be (0.09) and (0.324), respectively. JK et al. conducted a similar

research on this subject and discovered there was no relationship between IBD patients' quality of life and their level of patient awareness. In order to gather feedback from patients about the PSQ-18, patients were given a satisfaction form upon their return. Each question was graded on a 5-point likert scale. The average score was 2.94, which indicates that the patients are neither happy nor dissatisfied with their care.

LIMITATIONS OF THE STUDY

- This study's primary limitations are its length and patient follow-up.
- In order to have medication adherence, long-term follow-up of the research isrequired since IBD

incidence and prevalence are low and there is little publicknowledge of the condition.

- Clinical pharmacists have just a few times studied this illness.
- In the future, we intended to thoroughly examine the patient from the time of enrolment until the time of discharge and to close any gaps found in the patient byovercoming IBD knowledge gaps.

CONCLUSION

Knowledge about the condition is essential for helping patients accept their diagnosis and comply with their active treatment regimen for inflammatory bowel disease (IBD). In this research, it was shown that patient understanding of their condition was lower at the baseline visit when there was no ongoing patient follow-up. With the post-test results and thorough patient follow-up with patient information leaflets in the follow-up appointment, there was a modest improvement in the patient's knowledge. The research demonstrates the importance of patient education programmes for improving illness comprehension and quality of life management. This research found that among IBD patients, there is no longer a connection between knowledge appraisal.

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