

Effect of Self-care Teach Back Nursing Education on knowledge, Self-Efficacy and Treatment Adherence among Ulcerative Colitis Patients

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Abstract

Background: Ulcerative colitis requires effective self-care to maintain remission and prevent relapse. Teach-back education improve patients' understanding, confidence, and treatment adherence. **Aim:** Evaluate effect of self-care teach back nursing education on knowledge, self-efficacy and treatment adherence among ulcerative colitis patients. **Research design:** Quasi-experimental research design. **Sample:** Purposive sample of 60 patients with ulcerative colitis assigned to study and control groups (30 each). **Setting:** Gastroenterology Department and Inflammatory Bowel Disease Outpatient Clinic, Al-Rajhi University Liver Hospital, Assiut University Hospitals. **Tools:** Structured interview questionnaire, knowledge assessment questionnaire, Inflammatory Bowel Disease Self-Efficacy Scale, and Morisky Medication Adherence Scale. **Results:** At baseline, unsatisfactory knowledge reported by 96.7% and 83.3% of the study and control groups, respectively ($p = 0.085$). At one-month, satisfactory knowledge increased to 83.3% versus 40.0% ($p = 0.001$), remaining higher at three months (80.0% vs. 50.0%, $p = 0.015$). **Self-efficacy:** At baseline, 90.0% of both groups were fairly confident ($p = 0.100$). At one-month, high confidence was reported in 63.3% versus 30.0% ($p = 0.05$), increasing at three months to 60.0% versus 36.7% ($p = 0.04$). **Medication adherence:** At baseline, low adherence was reported in 96.7% of both groups ($p = 0.368$). High adherence increased to 30.0% versus 13.3% at one month ($p = 0.003$) and 36.7% versus 16.7% at three months ($p = 0.045$), respectively. **Conclusion:** Teach-back self-care nursing education improved knowledge, self-efficacy, and medication adherence among patients with ulcerative colitis. **Recommendations:** Integrating teach-back self-care education into standard care for patients with ulcerative colitis across inpatient and outpatient settings.

Keywords: Self-care Teach-back, Nursing education, Self-efficacy, Treatment adherence & Ulcerative colitis

Introduction

Ulcerative colitis (UC) and Crohn's disease (CD) are the two types of inflammatory bowel disease (IBD). In Crohn's disease, the pathogenesis is complex and affects any region of the gastrointestinal tract; in ulcerative colitis, the inflammation is restricted to the colon. Abdominal pain, diarrhea, constipation, and gastrointestinal discomfort are among the main symptoms of this terminal illness that have a detrimental impact on patients' quality of life. (Moran et al., 2025).

Ulcerative colitis is an idiopathic, long-term inflammatory condition affecting the intestinal mucosa. Rectal bleeding, diarrhea, and abdominal pain are its primary symptoms. If all or most of the colon is affected, systemic symptoms such as fever, exhaustion, and weight loss are typical. UC typically has a chronic intermittent course, with weeks or months of recurrence interspersed with periods of remission. It has been reported by UC patients that their symptoms worsen before going into remission. It can be claimed that a mix of genetic, immunological, and environmental variables are at work even if the

precise cause of UC has not been determined. (Yang et al., 2026).

In clinical practice, ulcerative colitis is the most prevalent chronic inflammatory illness of the digestive tract. Prolonged chronic inflammation causes the colonic mucosa to be repeatedly damaged and repaired, which can lead to atypical hyperplasia and malignancy (Jia et al., 2026). It has a prevalence of 156 to 291 instances per 100,000 people annually and an incidence of 9 to 20. Although the prevalence is rising in developing nations, it is highest in northern Europe and northern America. Colorectal cancer affects about 8% of UC patients (Le Berre et al., 2023).

Self-care refers to actions by which individuals actively attend to their health, including disease management and recovery behaviors, while flexibly adapting to their own life circumstances. It also includes health-promoting and disease-preventing activities such as self-monitoring and self-management. Daily monitoring of diet and physical condition enables patients to objectively recognize symptoms and changes, thereby facilitating early

intervention. Moreover, self-care enhances patients' sense of self-efficacy and encourages active engagement in their own treatment **(Hashino & Hara, 2026)**.

There are various ways to educate people about self-care. The teach-back (TB) interactive educational approach is one of these strategies that have increased people's desire and interest in learning as well as their adherence to treatment. During discharge, TB is an effective way to enhance patients' learning and quick comprehension of the instructional material. This approach makes it simple for patients to get the information they need regarding their conditions. Among the benefits of this approach are the efficacy of TB in a variety of demographics and the assurance that patients fully comprehend the material. TB has been able to perform well in spite of the constraints, which include the requirement for a big number of employees, physical space, and a significant amount of time for training. TB has demonstrated great outcomes for patients and has been able to effectively treat chronic conditions. **(Manzari et al., 2025)**.

In order to gauge understanding in this method, the instructor first presents the health-related material before asking the patients to rephrase it in their own terms. Re-explanation or necessary modifications to the teaching approach are used to rectify any mistakes or misunderstandings. In order to make sure that crucial information has been correctly received; open-ended questions are used to reevaluate the patient's comprehension in the last stage. This method enhances patients' capacity to independently control their medical treatment by encouraging interactive and efficient learning. According to empirical research, this approach helps patients with complicated chronic diseases retain knowledge better, follow to treatment plans more closely, and have better health results. **(Trisnaningtyas et al., 2026)**.

The teach-back approach to self-care education improves UC patients' knowledge and comprehension, which results in better clinical outcomes, more self-efficacy, and greater treatment adherence. Patients can have a better understanding of prescribed drugs and health outcomes by using evidence-based instructional portals. **(Lovén & Ågren, 2025)**.

Self-efficacy is defined as the belief in one's ability to carry out a behavior or activity, including starting a behavior, mastering it, and maintaining it in the face of difficulties. It is essential to the development of IBD self-management abilities. Successful self-management and better health outcomes have been associated with high self-efficacy. Cognitive behavioral and motivational interviewing strategies can effectively increase self-efficacy, which is changeable. Additionally, research shows that

interventions for IBD self-management may be most beneficial when they promote self-efficacy. **(Sheehan et al., 2023)**, **(Warner & Schwarzer., 2024)**, **(Garrido., 2025)**

Medication adherence, or taking prescribed drugs as directed, is crucial for managing UC patients because noncompliance is associated with worse disease outcomes (like flare-ups) and complications, which in turn require therapy escalation, as well as higher health costs, morbidity, disability, and mortality. Relapse risk is reportedly much higher in non-adherent patients than in adherent ones. Similarly, compared to non-adherent patients, adherent individuals are said to have a higher chance of being in clinical remission. **(Sayed & Ainsworth., 2025)**.

Nurses play an effective role in providing guidance, support, and education in order to help patients and their families comprehend the pathophysiology and available treatments for ulcerative colitis **(Riffat, 2023)**. When treating ulcerative colitis, patient education is essential. It contributes significantly to the patient's and family's capacity to manage the illness, improve knowledge of the illness and treatment, adjust to lifestyle changes, support overall physical, social, and psychological well-being, improve compliance with medication and dietary guidelines, encourage routine health examinations, prolong the duration of the disease's remission, and avoid complications. **(Uran, 2020)**.

Significant of the study

According to estimates, there were 5 million instances of ulcerative colitis worldwide in 2023, and this number is rising **(Le Berre et al, 2023)**. In Egypt, few data regarding the epidemiology of inflammatory bowel disease (IBD) are available. The incidence and prevalence of ulcerative colitis appear to be increasing in the African population and in Egypt **(El-Atrebi et al., 2023)**. Adopting the most effective teaching strategy for UC patients is essential since patient education is crucial to enhancing their knowledge, self-efficacy, and adherence. The role of nurses in educating patients with UC is critical. To ensure effective nursing education, it is vital to integrate new strategies. The teach-back method offers a novel way to interact with patients, successfully get beyond communication obstacles, and improve long-term learning outcomes. The need for more research is highlighted by a lack of empirical evidence on the Teach-Back method's use in gastrointestinal settings. Our obtained outcomes are expected to serve as a reference for developing structured and culturally sensitive educational strategies in practice. Therefore, the current study was carried out with the aim of evaluating the effect of self-care teach back nursing education on knowledge,

self-efficacy and treatment adherence among ulcerative colitis patients.

Aim of the study:

The aim of the current study was to evaluate the effect of self-care teach back nursing education on knowledge, self-efficacy and treatment adherence among ulcerative colitis patients.

Research Hypothesis

To fulfill the aim of the study the following research hypothesis was formulated:

- H1:** Self-care Education of ulcerative colitis patients in the study group via the teach-back method will improve knowledge in comparison with the control group.
- H2:** Self-care Education of ulcerative colitis patients in the study group via the teach-back method will improve self-efficacy in comparison with the control group.
- H3:** Self-care Education of ulcerative colitis patients in the study group via the teach-back method will improve treatment adherence in comparison with the control group.
- H4:** There could be a significant correlation between patients' knowledge, self-efficacy and treatment adherence after implementation of teach back education.

Subjects and Method:**Research Design:**

This study conducted a quasi-experimental (Study/control) research design which is a type of evaluation aims to determine if a program or intervention has an intended effect on a study's participants. In such a type of research design, an intervention is observed, and a control group who did not take part in the initiative under study is frequently used in order to compare data from people who did participate in the initiative (Miller et al., 2020).

Setting:

The study was carried out at the gastroenterology Department and Inflammatory bowel disease outpatient clinic at Al-Rajhi University Liver Hospital, Assiut University Hospitals which is specializing in Gastroenterology and Hepatology in Assiut City, Egypt. This hospital is considered the main tertiary referral center for gastrointestinal diseases in the region and provides comprehensive diagnostic, therapeutic, and follow-up services for patients with IBDs, including UC.

Sample:

A purposive sample of 60 adult patients between the ages of 20 and 65 of both sexes and diagnosed with ulcerative colitis were split equally into two groups (the study group and the control group), each consisting of 30 patient.

Group I (study group): received self-care teach back education with hospital care.

Group II (control group): received the routine hospital care only.

Sample size:

Based on the findings of a previous studies (Manzari et al., 2024) & (Abd Elkhalek et al., 2025) the sample size was calculated using G*Power software. Assuming a 95% confidence level, a significance level (α) of 0.05, a statistical power of 80% ($1 - \beta = 0.80$), a Type II error (β) of 0.20, and allowing for a 10% dropout rate, the required sample size was determined to be 60 patients, with 30 patients allocated to each group.

Inclusion criteria of the patients were adult males and females aged 20 to 65 years old diagnosed with ulcerative colitis by a specialist or based on medical records, willing to participate and able to communicate with others, no participation in a similar study simultaneously and no confirmed mental or psychological diseases was eligible to participate in this study.

Exclusion criteria patients who were mentally or physically disabled, confused or unconscious were not allowed to participate.

Tools of the study:

Four tools were used to achieve the aim of the study.

Tool (I):. Structured interview questionnaire:

It was developed by the researchers based on current national and international literatures (Ahmed et al., 2022 & Shahrezai et al., 2025). It included two parts:

Part (I): Demographic and Clinical Characteristics for the patient as (age, gender, employment status, marital status, residence, level of education, body mass index, smoking history).

Part (II): Medical data as: It included questions as (presence of chronic diseases, duration of disease, previous hospitalization and therapeutic regimen).

Tool (II): Patients' knowledge assessment questionnaire

This tool was developed by the researchers based on an extensive review of the current literature, evidence-based guidelines, validated scientific resources, and recommendations from reputable professional organizations (Segal et al., 2021), (Buerkle et al., (2022) and European Crohn's and Colitis Organisation. (2023). The preliminary version was further refined through consultation with subject experts to ensure content validity and clinical relevance (It was designed to assess patients' knowledge regarding ulcerative colitis and consisted of 30 items covering disease overview and pathophysiology, signs, symptoms, and complications, disease triggers and flare management, treatment and medication adherence, nutrition and hydration, symptom monitoring and healthcare-

seeking behaviors, and lifestyle modifications and self-management. The questionnaire included multiple-choice and true/false questions, with an additional "I don't know" option where appropriate to minimize guessing.

Scoring system

Each correct response was assigned one point, while incorrect or "I don't know" responses received zero. The total score was converted into a percentage and categorized as satisfactory knowledge ($\geq 60\%$) and unsatisfactory knowledge ($< 60\%$).

Tool (III): Inflammatory Bowel Disease Self-efficacy Scale (IBD-SES).

It was adopted from **Keefer et al., (2011)**. It is a 29-item questionnaire assessing patients' confidence to manage 4 IBD-related domains as the following; Managing stress and emotions (9) questions; managing medical care (8) questions; managing symptoms and disease (7) questions; and maintaining remission (5) questions.

Scoring system

The patients' responses were specified on a 10-point Likert scale, as 10 represent "Totally Sure," 5 represent "Somewhat Sure," and 1 represent "Not Sure at All". The Total score of the IBD-SES ranges from 29 on the way to 290, with higher scores representing higher self-efficacy with high internal reliability. Self-Efficacy levels was distributed as $< 20\%$ means not confident, $20\% - 40\%$ means slightly confident, $41\% - 60\%$ means fairly confident, $61\% - 80\%$ means high confident, and $> 80\%$ means extremely confident (**Ahmed et al., 2022**).

Tool (IV): Morisky Medication Adherence Scale-8 items (MMAS-8)

It was adopted by researchers from **Morisky et al., (2008)** to assess treatment adherence. (MMAS-8) is a widely used, validated self-report instrument designed to assess patient adherence to prescribed pharmacological therapies. The scale consists of eight items: the first seven are dichotomous (yes/no) questions addressing common barriers to adherence, such as forgetfulness, carelessness, and stopping medication when feeling better or worse, while the eighth item uses a 5-point Likert scale to evaluate the frequency of medication-taking behavior.

Scoring system

Each response is scored according to a standardised algorithm, yielding a total score ranging from 0 to 8. Based on established cut-off points, adherence is classified into three levels: high adherence (score = 8), medium adherence (score 6–7), and low adherence (score < 6).

Self-care Teach Back Nursing Education booklet:

The booklet was developed by the researchers based on a comprehensive review of current Egyptian and international literature (**Singh et al., 2024 & Crohn's**

& Colitis Foundation, 2025), evidence-based clinical guidelines, and patient education resources. Previous Egyptian studies addressing educational booklets, educational instructions, and lifestyle modification among patients with ulcerative colitis and inflammatory bowel disease were also **considered (Ahmed et al., 2019; Ahmed et al., 2022; Ibrahim et al., 2024)**. The content was organized according to the self-care needs of patients with ulcerative colitis and included basic knowledge about the disease, including the anatomy and physiology of the colon, definition, causes, signs and symptoms; treatment and medication management; possible complications and warning signs; the importance of regular follow-up and monitoring; nutrition and dietary management; physical activity and exercise; sleep; immunizations and infection prevention; smoking; social and personal relationships; sexual health; and treatment adherence.

Methodology:

Administrative approval:

An official permission was acquired from Dean of the faculty of nursing at Assiut University to the hospital director and official approval and administration permission were obtained from gastroenterology Department and Inflammatory bowel disease outpatient clinic at Al-Rajhi University Liver Hospital, Assiut University Hospitals to collect the required data following an explanation of the study's aim.

Tools development:

Tools were developed after extensive national and international literature review (nursing & medical text book, journal, internet resources).

Content validity and reliability:

The study tools was reviewed and approved by five experts (two in the field of gastroenterology at Faculty of Medicine Assiut University and three in medical-surgical nursing staff from the Faculty of Nursing at Assiut University) to ensure the content validity of the tools, their clarity, comprehensiveness, appropriateness, and relevance. The appropriate adjustments were then made. The Cronbach's α test was used to assess the reliability of the questions relating to knowledge, which yielded a value of 0.869, Tool III: The IBD-SE is a valid and reliable measure of self-efficacy in IBD patients. The IBDSES has high internal consistency ($r = 0.96$), high test-retest reliability ($r = 0.90$), and demonstration of strong paradigm and synchronized validity with reputable measures. Tool IV: Morisky Medication Adherence Scale-8 items (MMAS-8) sensitivity and specificity are 93% and 53%, respectively and Cronbach's alpha value is 0.83

Ethical considerations:

With ethical approval code of: 1120251174, this study closely followed the ethical standards and guidelines established by the Assiut University Faculty of Nursing to protect the patients' rights and welfare throughout the research process. All participants gave their informed consent to participate after being fully informed about the goals of the study. They voluntarily agreed to participate, and it was stressed that they might withdraw at any point without having their medical care affected. Personal identifiers were removed from the datasets, and all obtained data was coded and safely kept to guarantee confidentiality and anonymity. Participants' privacy and dignity were always respected. During the application of the study, there was no risk to the study subject.

Pilot study:

Patients with ulcerative colitis, who made up 10% of the patient population (6 patients), participated in a pilot study. These patients' data were not incorporated into the current study. The purpose of the pilot study was to assess the instruments' applicability and clarity, estimate the time required for data collection, and determine whether the research method was feasible. The required changes were implemented.

Data collection procedure:**Field work:**

Data collection was conducted from October 2025 to June 2026. The data were collected by the researchers twice a week on morning shifts by interviewing patients individually. A preliminary exploratory visit to the outpatient clinic was undertaken to assess the patient flow and estimate the time required for data collection. Prior to data collection, meetings were held with the physicians and nursing staff to explain the study objectives, procedures and to obtain their cooperation. Patients who fulfilled the eligibility criteria were then informed about the purpose of the study, and those who provided informed consent were enrolled.

The educational content was initially created by thoroughly examining scientific literature, evidence-based websites, scientific databases, and respectable scientific associations, as well as consulting with specialists and experts. Experts then verified it.

Assessment Phase:

At the beginning of the interview, the researchers introduced themselves to the patient and explained the purpose of the study. Informed consent was obtained for participation. In the initial visit the researchers started to fill the structured interview questionnaire to assess the patient's demographic and clinical characteristics, and medical data by using **Tool I**. Also researchers assessed knowledge using **Tool II**, self-efficacy using **Tool III** and adherence to

treatment using tool **IV (Pretest)**.

Implementation phase:

Self-care nursing education booklet was explained by the researchers to study group patients. Two individual self-care teaching sessions using the teach-back method were provided to each patient in two sessions on the same day. The first session included (knowledge about ulcerative colitis such as the anatomy and physiology of the colon, definition, causes, signs, symptoms, treatment plan (which includes drug therapy, complications, and follow-up importance). The second session included details regarding nutrition, social and personal relationships, medications, sleep, exercise, immunizations, smoking, sexual relationships, follow-ups, and regular monitoring). A break was provided between the two sessions, after which the teaching was resumed. The maximum duration of each session was 20 minutes. The phases of the TB technique were applied in every session. At the conclusion of each session, questions about the material were asked, and if the patient did not grasp a particular area, it was explained again. The patients were given the booklet at the conclusion of each of the two sessions. From the start of the sessions, the researcher followed up with the patients and kept in touch with them for three months. Additionally, they were given the most recent information about UC throughout the trial. Patients who visited outpatient clinics were guaranteed a coordinated follow-up. They received phone follow-ups as well.

Control group: Patients in this group only got the routine education (face-to-face education) given at the time of diagnosis or visits by medical professional s; no education was given to them by the study team during the intervention.

The evaluation phase:

The effect of the self-care nursing education was evaluated on knowledge, self-efficacy, and treatment adherence after one month (post) and after three months (follow-up) using tool II, III, and IV.

Statistical analysis:

Prior to additional statistical analysis, the data were tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by number and percent (N, %), where continuous variables described by mean and standard deviation (Mean, SD). Chi-square test and Fisher exact test used to compare between categorical variables where compare between continuous variables by t-test. We are used person correlation to appear the association between scores, A two-tailed $p < 0.05$ was considered statistically significant All analyses were performed with the IBM SPSS 20.0 software.

Results:**Table (1): Frequency and Percentage Distribution of Demographic and Clinical Characteristics among Study and Control patients (n=60)**

	Study (n=30)		Control (n=30)		X2/T	P. Value
	No	%	No	%		
Age						
18< 30	4	13.3	6	20.0	1.93	0.747
30<40	14	46.7	11	36.7		
40<50	7	23.3	8	26.7		
50<60	4	13.3	5	16.7		
60- 65	1	3.3	0	0.0		
Mean±SD	38.00±10.36		40.33±10.55		-0.86	0.391
Gender						
Male	2	6.7	6	20.0	2.31	0.129
Female	28	93.3	24	80.0		
Marital Status						
Single	1	3.3	2	6.7	0.35	0.554
Married	29	96.7	28	93.3		
Residence						
Urban	5	16.7	7	23.3	0.42	0.519
Rural	25	83.3	23	76.7		
Level of education						
Illiterate	1	3.3	4	13.3	6.48	0.090
Primary school	5	16.7	8	26.7		
Secondary school	23	76.7	14	46.7		
University & higher education	1	3.3	4	13.3		
Occupational status						
Employer	3	10.0	8	26.7	2.78	0.095
House wife	27	90.0	22	73.3		
Smoking						
Yes	1	3.3	1	3.3	0.00	1.000
No	29	96.7	29	96.7		
BMI						
Underweight	2	6.7	8	26.7	6.13	0.105
Normal Weight	24	80.0	21	70.0		
Overweight	2	6.7	1	3.3		
Obese class I	2	6.7	0	0.0		
Mean±SD (Min-Max)	22.53±3.81		21.00±2.62		1.80	0.076

Chi square test for qualitative data between the two groups

- Independent T-test quantitative data between the two groups

*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (2): Frequency and Percentage Distribution of Medical data among Study and Control patients (n=60)

	Study (n=30)		Control (n=30)		X2	P. Value
	No	%	No	%		
Presence of comorbid disease						
Yes	3	10.0	3	10.0	0.00	1.000
No	27	90.0	27	90.0		
Duration of disease						
Less than one year	8	26.7	10	33.3	0.64	0.726
1-5 years	14	46.7	11	36.7		
More than 5 years	8	26.7	9	30.0		

	Study (n=30)		Control (n=30)		X2	P. Value
	No	%	No	%		
Previous hospitalization						
Yes	18	60.0	17	56.7	0.07	0.793
No	12	40.0	13	43.3		
Type of treatment						
Medications	5	16.7	10	33.3	2.22	0.136
Medications &Biologics	25	83.3	20	66.7		
Family history of disease						
Yes	8	26.7	8	26.7	0.00	1.000
No	22	73.3	22	73.3		

Chi square test for qualitative data between the two groups

*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (3): Comparison between Study and Control group patients related to knowledge During Three assessment Phases (Pre, 1 months and 3 months of teach back nursing education) (n=60)

Patients' knowledge among ulcerative colitis patients	Study (n=30)		Control (n=30)		X2/T	P. Value
	No	%	No	%		
Pre teach back nursing education						
Unsatisfactory	29	96.7	25	83.3	2.96	0.085
Satisfactory	1	3.3	5	16.7		
Mean±SD(Min- Max)	8.37±3.72 (4-24)		11.17±5.86 (5-23)		-2.21	0.031*
1 months after teach back nursing education						
Unsatisfactory	5	16.7	18	60.0	11.92	0.001**
Satisfactory	25	83.3	12	40.0		
Mean±SD(Min- Max)	24.5±6.21(8-29)		15.87±7.46 (8-28)		4.87	0.000**
3 months after teach back nursing education						
Unsatisfactory	6	20.0	15	50.0	5.93	0.015*
Satisfactory	24	80.0	15	50.0		
Mean±SD(Min- Max)	23.87±6.25 (10-28)		20±5.97(12-28)		2.45	0.017*

Chi square test for qualitative data between the two groups

- Independent T-test quantitative data between the two groups

*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (4): Comparison between Mean score of self-efficacy in Study and Control group patients during Three assessment Phases (Pre, 1 months and 3 months of teach back nursing education)

	Study	Control	Mean DF	T	P.Value
	Mean±SD	Mean±SD			
Pre teach back nursing education					
Managing stress and emotions	39.8±4.93	40.1±4.78	-0.239	-0.300	0.812
Managing medical care	38.93±3.69	44.07±3.22	-5.740	-5.133	0.000**
Managing symptoms and disease	29.97±3.93	30±5.17	-0.028	-0.033	0.978
Maintaining remission	19.13±2.39	18.63±2.59	0.777	0.500	0.440
Total IBD Self-Efficacy Scale	127.83±10.95	132.8±11.84	-1.686	-4.967	0.097
1 month of teach back nursing education					
Managing stress and emotions	58.4±9.2	50.07±7.8	3.784	8.333	0.000**
Managing medical care	54.6±6.32	52.43±4.27	1.556	2.167	0.125
Managing symptoms and disease	44.9±9.4	37.23±7.01	3.582	7.667	0.001**
Maintaining remission	30.7±5.71	24.93±5.09	4.130	5.767	0.000**
Total IBD Self-Efficacy Scale	188.6±28.8	164.67±22.14	3.609	23.933	0.001**

	Study Mean±SD	Control Mean±SD	Mean DF	T	P.Value
3 months of teach back nursing education					
Managing stress and emotions	65.77±9.72	59.67±10.23	2.367	6.100	0.021*
Managing medical care	60.27±6.62	59.17±4.68	0.743	1.100	0.461
Managing symptoms and disease	51.17±7.31	45.4±8.58	2.803	5.767	0.007**
Maintaining remission	35.67±5.79	31.2±6.7	2.764	4.467	0.008**
Total IBD Self-Efficacy Scale	212.87±28.39	195.43±28.99	2.353	17.433	0.022*

- Independent T-test quantitative data between the two groups

*Significant level at P value < 0.05, **Significant level at P value < 0.01

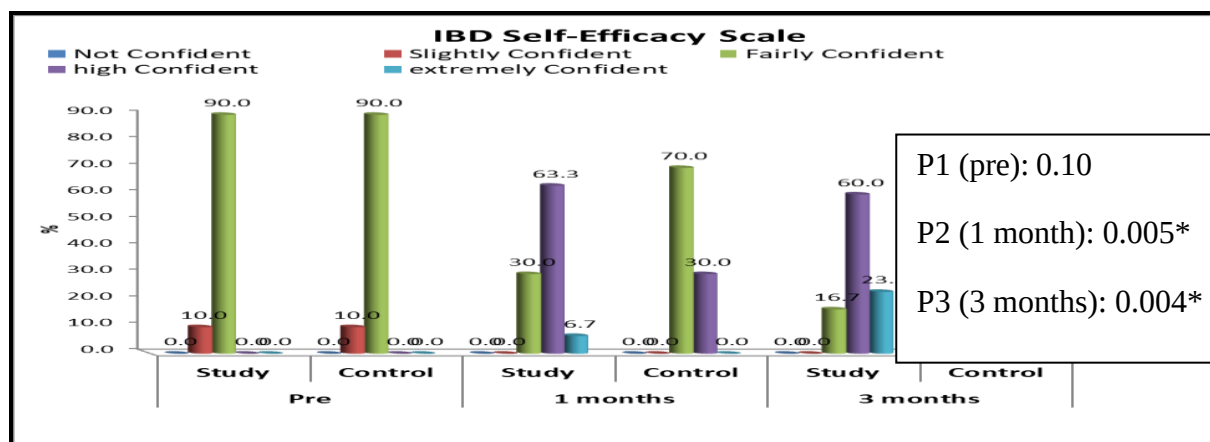


Figure (1): Percentage distribution of responses among study and control group patients regarding self-efficacy levels during three assessment phases (Pre, 1 months and 3 months of teach back nursing education) (n= 60)

Table (5): Comparison between study and control group patients concerned to Medication adherence during Three assessment Phases (Pre, 1 months and 3 months of teach back nursing education) (n=60)

Morisky Medication adherence scale	Study (n=30)		Control (n=30)		X2/T	P.Value
	No	%	No	%		
Pre teach back nursing education						
Low	29	96.7	29	96.7	2.00	0.368
Moderate	0	0.0	1	3.3		
High	1	3.3	0	0.0		
Mean±SD(Min- Max)	2.38±1.38 (0.25-8)		2.89±0.97 (1.5-7)		-1.68	0.098
1 month of teach back nursing education						
Low	6	20.0	19	63.3	11.59	0.003**
Moderate	15	50.0	7	23.3		
High	9	30.0	4	13.3		
Mean±SD (Min- Max)	6.69±1.69 (1.5-8)		4.8±2.3 (1.25-8)		3.63	0.001**
3 month of teach back nursing education						
Low	7	23.3	16	53.3	6.20	0.045*
Moderate	12	40.0	9	30.0		
High	11	36.7	5	16.7		
Mean±SD(Min- Max)	6.32±2.02 (2.25-8)		4.95±2.37 (0.25-8)		2.40	0.020*

Chi square test for qualitative data between the two groups

- Independent T-test quantitative data between the two groups

*Significant level at P value < 0.05, **Significant level at P value < 0.01

Table (6): Correlation Co-efficient between Patients' Knowledge, Self-Efficacy and Medication adherence for Study and Control group During Three assessment Phases(Pre, 1 months and 3 months)

Correlations		Study								
		Pre			1 months			3 months		
		A1	A2	A3	A1	A2	A3	A1	A2	A3
Patients' knowledge	r	1			1			1		
	P									
Self-Efficacy	r	0.824**	1		0.782**	1		0.903**	1	
	P	0.000			0.000			0.000		
Medication adherence	r	.595**	0.553**	1	.697**	0.585**	1	.889**	0.816**	1
	P	0.001	0.002		0.000	0.001		0.000	0.000	
Correlations		Control								
		Pre			1 months			3 months		
		A1	A2	A3	A1	A2	A3	A1	A2	A3
Patients' knowledge	r	1			1			1		
	P									
Self-Efficacy	r	0.728**	1		0.864**	1		0.897**	1	
	P	0.000			0.000			0.000		
Medication adherence	r	0.206	0.093	1	.762**	0.744**	1	.837**	0.834**	1
	P	0.275	0.625		0.000	0.000		0.000	0.000	

*Statistically Significant Correlation at P. value <0.05

**Statistically Significant Correlation at P. value <0.01

Table (1): Demonstrates that about half (46.7%) of patients in the study and more than one third (36.7%) of them in the control groups were aged 30<40 years. Females constituted the majority of patients in both groups (93.3% and 80.0%, respectively). Most patients were married (96.7% in the study group and 93.3% in the control group), resided in rural areas (83.3% and 76.7%, respectively), and were non-smokers (96.7% in both groups). Secondary education was the most common category in both groups, while the majority of participants were housewives. Additionally, most patients in both groups had a normal BMI. There were no statistically significant differences between the two groups regarding demographic and clinical variables.

Table (2): Illustrates that the majority of patients in both groups had no comorbid diseases (90.0%). Nearly half of the study group (46.7%) and more than one-third of the control group (36.7%) had been diagnosed with ulcerative colitis for 1–5 years. More than half of the patients had experienced previous hospitalization due to ulcerative colitis (60.0% in the study group and 56.7% in the control group). Concerning treatment, the majority of patients in both groups were receiving a combination of medications and biologic therapy (83.3% of the study group and 66.7% of the control group), whereas nearly three-quarter of participants in both groups reported a negative family history of ulcerative colitis (26.7%).

There were no statistically significant differences between the two groups regarding medical data.

Table (3): Shows that at baseline, the majority of patients in both groups had unsatisfactory knowledge, accounting for (96.7%) of the study group compared to (83.3%) of the control group, with no statistically significant difference in the categorical knowledge levels ($p = 0.085$). However, the control group demonstrated a significantly higher mean knowledge score than the study group (11.17 ± 5.86 vs. 8.37 ± 3.72 , $p = 0.031$), indicating that the control group had a better baseline level of knowledge. One month after teach back nursing education, satisfactory knowledge increased to (83.3%) in the study group compared to only (40.0%) in the control group, representing a highly statistically significant difference ($p = 0.001$). Similarly, the study group achieved a significantly higher mean knowledge score than the control group (24.50 ± 6.21 vs. 15.87 ± 7.46 , $p < 0.001$). At the three-month follow-up, the majority of the study group (80.0%) continued to demonstrate satisfactory knowledge compared with (50.0%) of the control group, with the difference remaining statistically significant ($p = 0.015$). In addition, the study group maintained a significantly higher mean knowledge score than the control group (23.87 ± 6.25 vs. 20.00 ± 5.97 , $p = 0.017$).

Table (4): Demonstrates that at baseline, there were no statistically significant differences between the study and control groups in the overall domains of

IBD Self-Efficacy Scale score ($p = 0.097$). However, the control group demonstrated a significantly higher score in the managing medical care domain (44.07 ± 3.22 vs. 38.93 ± 3.69 ; $p < 0.001$), indicating better baseline confidence in managing medical care than the study group. At one month follow-up, statistically significant higher scores were observed in the study group overall domains of IBD Self-Efficacy Scale (188.60 ± 28.80 vs. 164.67 ± 22.14 ; $p = 0.001$). In contrast, no statistically significant difference was found in the managing medical care domain ($p = 0.125$). At the three-month follow-up, the improvements in self-efficacy were sustained. The study group continued to achieve significantly higher scores than the control group in the overall domains of IBD Self-Efficacy Scale (212.87 ± 28.39 vs. 195.43 ± 28.99 ; $p = 0.022$). But, the difference in the managing medical care domain remained statistically non-significant ($p = 0.461$).

Figure (1): Clarify that at baseline, the majority of patients in both groups demonstrated fairly confident, representing 90.0% of the study group and 90.0% of the control group with no statistically significant difference p value (0.10). One month after the self-care teach-back education, a significant improvement in self-efficacy was observed among patients in the study group, the proportion of patients with high confident increased to 63.3%, while 6.7% demonstrated extremely confident. In contrast, none of the control group participants achieved extremely confident, with most patients remaining at the fairly confident (70.0%), while (30%) demonstrated high confident. This difference in self-efficacy distribution was statistically significant ($p = 0.05$). At the three-month follow-up, further improvement was evident in the study group. Two-thirds of the study participants (60.0%) achieved high confident and (23%) achieved extremely confident. Although participants in either group remained in the fairly confident category, a significantly greater proportion of patients in the study group achieved high confident compared with the control group (60.0% vs. 36.7%), whereas more than half in the control participants remained at the fairly confident (56.7%). This difference was statistically significant ($p = 0.04$).

Table (5): Show that the majority of patients (96.7%) in both groups demonstrated low medication adherence at baseline. There was no statistically significant difference in adherence categories between the two groups ($p = 0.368$). Similarly, the mean medication adherence scores did not differ significantly between the study group (2.38 ± 1.38) and the control group (2.89 ± 0.97) ($p = 0.098$), indicating comparable baseline adherence. One month after the intervention, half of the study patients (50.0%) achieved moderate adherence, while 30.0%

reached high adherence, and only 20.0% remained in the low adherence category. In contrast, most patients in the control group (63.3%) continued to exhibit low adherence, 23.3% moderate adherence with only 13.3% achieving high adherence. These differences were statistically significant ($p = 0.003$). Likewise, the study group attained a significantly higher mean adherence score than the control group (6.69 ± 1.69 vs. 4.80 ± 2.30 , $p = 0.001$). At the three-month follow-up, more than one-third of participants (36.7%) demonstrated high adherence, 40.0% had moderate adherence and only 23.3% remained in the low adherence category. In comparison, over half of the control group (53.3%) continued to have low adherence, 30.0% moderate adherence, whereas only 16.7% achieved high adherence. The distribution of adherence levels remained significantly different between the two groups ($p = 0.045$). Additionally, the study group maintained a significantly higher mean adherence score than the control group (6.32 ± 2.02 vs. 4.95 ± 2.37 , $p = 0.020$).

Table (6) Illustrate that for study group at baseline, patients' knowledge demonstrated positive correlation with IBD self-efficacy ($r = 0.824$, $p < 0.001$). Knowledge was also positively correlated with medication adherence ($r = 0.595$, $p = 0.001$), self-efficacy showed positive correlation with medication adherence ($r = 0.553$, $p = 0.002$). One-month post implementation of the teach-back educational intervention, knowledge remained strongly associated with self-efficacy ($r = 0.782$, $p < 0.001$), while significant positive correlations were observed between knowledge and medication adherence ($r = 0.697$, $p < 0.001$) and between self-efficacy and medication adherence ($r = 0.585$, $p = 0.001$). At the three-month follow-up, the relationships became even stronger. Knowledge exhibited positive correlation with self-efficacy ($r = 0.903$, $p < 0.001$) and with medication adherence ($r = 0.889$, $p < 0.001$). Likewise, self-efficacy was strongly associated with medication adherence ($r = 0.816$, $p < 0.001$).

For control group, knowledge was consistently positively correlated with self-efficacy throughout the study period, with correlation coefficients ranging from $r = 0.728$ at baseline to $r = 0.897$ at the three-month follow-up (all $p < 0.001$). At baseline, however, no statistically significant correlations were found between knowledge and medication adherence ($r = 0.206$, $p = 0.275$) or between self-efficacy and medication adherence ($r = 0.093$, $p = 0.625$). Following routine care, significant positive correlations emerged at one month between knowledge and medication adherence ($r = 0.762$, $p < 0.001$) and between self-efficacy and medication adherence ($r = 0.744$, $p < 0.001$). These positive associations remained at the three-month assessment,

where knowledge was highly correlated with medication adherence ($r = 0.837$, $p < 0.001$) and self-efficacy was similarly associated with medication adherence ($r = 0.834$, $p < 0.001$).

Discussion

Ulcerative colitis is a chronic and recurrent inflammatory bowel disease that negatively impacted patients' quality of life. Nurse-led educational interventions may enhance patients' knowledge, lifestyle habits, and self-management abilities. Similar research has shown that structured educational strategies are linked to better medication adherence and improved clinical outcomes in patients with UC (**Sadiq & Aziz, 2026**). During discharge, TB is an effective way to enhance patients' learning and quick comprehension of the educational content. This approach makes it simple for patients to get the information they need regarding their conditions. Among the benefits of this approach are the efficacy of TB in a variety of demographics and the assurance that patients fully comprehend the material. (**Mahmoodi, 2025**).

The analysis of the ulcerative colitis patients' data in this study showed that mean age was 38.73 ± 10.32 for study group and 40.33 ± 10.55 for control group with the vast majority of cases clustering in thirty to less than forty years). This was consistent with an Egyptian study conducted by **Seddik et al., (2026)** who demonstrated that the mean age of naïve ulcerative colitis patients was 39.533 ± 11.026 years. These findings also supported by Egyptian nationwide multicenter data by **Elbadry et al., (2022)**, across a massive cohort of Egyptian IBD patients which documented a mean age of onset of 35.1 years. Likewise **Manzari et al. (2024)** stated that mean age of patients was 38.00 ± 10.36 . Also **Jo et al., (2021)** clarified that the mean age of the patients was 38.4 years.

Regarding gender, the current study's findings showed that most of the patients were female. Secondary education was the most common category in both groups. These finding were in consistent with an Egyptian study conducted by **Abd Elkhalek et al., (2025)** who found that majority of the studied patients were females and secondary educated. Similarly, a study carried out in the same region by and clarified that nearly half of patients in the control group and more than two-thirds of patients in the study group were females and more than one third in both study and control groups had obtained a secondary school. But these results were incongruent with **Jayasooriya et al., (2023)** who reported more than half of studied patients were males.

From the perspective of the researchers, this result may be due to females may be more likely to seek

medical care and adhere to follow-up visits, contributing to their higher representation in hospital-based studies. In Egypt, secondary education represents one of the most common levels of educational achievement among adults, making it expected that this category would predominate in a hospital-based sample.

Regarding working status, the current study found that most patients were housewives and that they lived in rural areas. This was in line with the findings of **Elwakil et al. (2025)**, who reported that the majority of patients resided in rural regions.

From researcher point of view, this finding is consistent with the predominance of female participants in the study and reflects the sociodemographic characteristics of the population served by the study setting. In many rural communities in Upper Egypt, women are more likely to be engaged in household responsibilities than formal employment. Occupation itself has not been identified as an independent risk factor for ulcerative colitis.

In terms of marital status, the majority of the patients from both groups were married and regarding smoking habit the current study illustrated that most patients were nonsmokers which corresponds to results reported in other studies as **Sadiq & Aziz, (2026)**. Likewise **Elwakil et al., (2025)** reported that most of the patients have no special habits as smoking.

The present study found that most patients had a normal body mass index (BMI). This finding is supported by the IBD study conducted by **Mancone et al. (2025)**, which reported that normal BMI was the predominant nutritional category among patients with inflammatory bowel disease, including those with ulcerative colitis. This suggests that many patients with chronic inflammatory bowel disease maintain a normal BMI, particularly with appropriate medical treatment and nutritional care. Nevertheless, BMI alone may not adequately reflect nutritional status because patients with ulcerative colitis can experience or micronutrient deficiencies despite having a normal BMI. In the same line this outcome is in accordance with the population-based study conducted by **Singh et al. (2021)**, which found that although overweight and obesity were more common overall, nearly half of ulcerative colitis patients had a normal BMI.

Concerning clinical data in the present study, most participants had no comorbid diseases. This finding is comparable to the baseline characteristics reported by **Shabaan et al., (2022)** who clarified that only around twenty-five percent of the participants under study had long-term medical conditions. In agreement with

the same finding **Shehata, et al., (2023)** reported that more than half hadn't any other chronic disease.

The current study illustrated that nearly half of the study group and more than one-third of the control group had been diagnosed with ulcerative colitis for one to five years, while approximately one-quarter of patients in each group had the disease for more than five years. Nearly three-quarter of participants reported a negative family history of ulcerative colitis. Although family history is an established risk factor for developing ulcerative colitis, most patients do not have affected relatives and minority of patients with ulcerative colitis report a positive family history, supporting the multifactorial etiology of the disease. This was in accordance with previous study by **Mohamed et al., (2022)** who illustrated that the majority of research participants did not have a family history of the disorder, and over half of the patients' illnesses lasted between one and five years.

The present study showed that more than half of the participants had experienced previous hospitalization and that most were receiving biologic therapy in combination with conventional medications. Similar findings were reported by **Cross et al., (2022)** who stated that patients receiving advanced therapies had a high prevalence of previous UC-related hospitalization, reflecting the chronic and relapsing nature of moderate-to-severe ulcerative colitis.

At the start of the study, the Chi-square test findings revealed no statistically significant difference between the groups in terms of qualitative demographic or medical factors ($P > 0.05$) which confirms the homogeneity of the study and control groups prior to the intervention. This baseline equivalence minimizes the potential influence of confounding demographic factors and strengthens the internal validity of the study by supporting the conclusion that post-intervention differences are likely due to the implemented intervention rather than baseline group disparities.

Regarding knowledge, the current study revealed that there was no statistically significant difference in the categorical knowledge levels at baseline, with the majority of patients in both groups having unsatisfactory knowledge. This finding highlights the limited baseline understanding of disease pathology, medication management, dietary recommendations, symptom monitoring, and self-care practices among patients with ulcerative colitis. This inadequate knowledge before educational interventions may be attributed to insufficient patient education, limited access to reliable health information, and the complexity of disease management.

However, the control group demonstrated a significantly higher mean knowledge score than the study group indicating that the control group had a

better baseline level of knowledge. This difference may reflect variations in previous exposure to health education, disease duration, previous hospitalization, or interactions with healthcare professionals. However, both groups generally demonstrated inadequate knowledge before the intervention, emphasizing the need for structured patient education. One month after the educational intervention, satisfactory knowledge increased in the study group with higher mean knowledge score compared to the control group, representing a highly statistically significant difference. At the three-month follow-up, the majority of the study group continued to demonstrate satisfactory knowledge compared with of the control group, with the difference remaining statistically significant. In addition, the study group maintained a significantly higher mean knowledge score than the control group.

These were consistent with previous Egyptian studies of **Mohamed et al., (2022)** & **Shabaan et al., (2022)** and Likewise, **Sadiq & Aziz, (2026)** who conducted a recent quasi-experimental study evaluating a nurse-led educational program for patients with ulcerative colitis reported significant gains in patients' knowledge after the intervention, highlighting the value of structured nursing education in improving disease comprehension and self-management. They noted that both groups had little prior knowledge of UC pathophysiology, symptoms, complications, and dietary management. The intervention group demonstrated significant improvements in every knowledge area after the nurse-led educational program was put into place, with increases of more than fifty percent in each knowledge item. The control group, however, did not see any significant changes. These findings corroborate global research showing the value of structured education in enhancing UC patients' comprehension of their condition and ability to manage it.

From researchers explanation this improvement can be explained by the interactive nature of the Teach-Back method, which encourages patients to repeat health information in their own words, enabling researchers to identify misunderstandings immediately and reinforce key concepts. This active learning strategy enhances comprehension, recall, and patient engagement, resulting in greater acquisition of disease-related knowledge.

The sustained improvement observed at the three-month follow-up indicates that the Teach-Back method promotes long-term knowledge retention rather than short-term memorization. Reinforcement through repetition and confirmation of understanding likely contributed to maintaining higher knowledge scores over time. Improved knowledge is essential for effective self-management because it enables patients

to recognize symptoms promptly, adhere to prescribed medications, follow dietary recommendations, and participate actively in treatment decisions.

As regarding effect of teach back self-care nursing education the current study results demonstrated that there was no significant differences between the study and control groups in overall self-efficacy before the intervention, indicating comparable baseline characteristics, however the control group scored significantly higher in the managing medical care domain. Following the teach-back self-care nursing education, the study group demonstrated significantly higher overall IBD Self-Efficacy Scale scores than the control group at both one- and three-month follow-ups, with improvements sustained over time.

These findings are supported by **Manzari et al. (2024)**, who reported that teach-back self-care education significantly improved self-efficacy among patients with inflammatory bowel disease by enhancing patients' confidence in managing stress, symptoms, medical care, and disease remission compared with usual care.

In the same line another study conducted by **Magharei et al., (2019)** to study "Effects of Self-Management Education on Self-Efficacy and Quality of Life in Patients with Ulcerative Colitis: A Randomized Controlled Clinical Trial" and stated that self-management education had positive effects on the scores for SE and all its dimensions in patients with UC.

From researchers point of views the higher baseline score of the control group in the managing medical care domain may reflect individual differences in previous disease experience, routine follow-up attendance, medication use, or an explanation in this regard that could be the control group had received information related to positive attitude from other sources, which resulted in their high scores for this dimension. Following implementation of the teach-back self-care nursing education, the study group demonstrated significantly greater improvements in overall self-efficacy at both one- and three-month follow-up, suggesting that the intervention effectively enhanced patients' confidence in managing their condition beyond the benefits of usual care. The improvement in self-efficacy observed in the current study is clinically important because self-efficacy is a fundamental determinant of effective self-management in patients with inflammatory bowel disease. Teach-back education enhances patients' understanding of disease-related information through active participation and repeated confirmation of comprehension, thereby increasing their confidence in managing symptoms, medications, and daily self-care.

The current study demonstrated comparable baseline self-efficacy levels between the study and control groups. Following implementation of the teach-back self-care education, the study group exhibited a significant shift from fairly to high and extremely high confidence level at both one- and three-month follow-ups, whereas the control group showed more limited improvement, with most participants remaining at the fairly to limit high confident level. These findings suggest that teach-back education effectively enhances patients' confidence in their ability to manage ulcerative colitis by reinforcing understanding, promoting active participation, and strengthening self-management skills. Repeated opportunities to successfully demonstrate knowledge and receive individualized feedback foster mastery experiences, thereby increasing confidence in performing disease-related self-care behaviors.

As regarding treatment adherence, the findings of the present study demonstrated that no significant difference was documented in medication adherence between the study and control groups before the intervention, indicating comparable baseline adherence. Following the teach-back self-care education, the patients in the study group showed marked transitions from predominantly low adherence before the intervention to predominantly moderate and high adherence after one month, with these gains largely sustained at the three-month follow-up. While adherence improved markedly in the study group, the control group exhibited only limited improvement and continued to have lower adherence levels.

These findings are consistent with **Manzari et al. (2024)**, who reported that teach-back self-care education significantly enhanced treatment adherence among patients with inflammatory bowel disease compared with routine care.

In the same line these results also in accordance with **Abd Elkhalek et al., (2025)** who stated that there was significant improvement regarding the total adherence to treatment regimen for ulcerative colitis one and three months a post educational guidelines, where more than two thirds of studied patients became high adherence to treatment regimen compared to more than two thirds of studied patients were low adherence pre guidelines.

Additionally, the current study results were in consistent with **Amiesimaka et al., (2024)** study about "improving medication adherence levels in inflammatory bowel disease (IBD) patients in New Zealand" and reported a comparison of pre- and three month post-intervention results using the Morisky Medication Adherence Scale (MMAS-8) reported that both groups had comparable medication adherence before the intervention. And they stated that, the

intervention group demonstrated a significant and sustained improvement in medication adherence, whereas the control group showed only limited improvement.

Also, the current study results were in the same line with **Feig et al., (2024)** study about "designing for medication adherence in inflammatory bowel disease" and reported that interventions that give patients the information, resources, and encouragement they need to take current biotherapies as directed can increase adherence. These interventions fall into four categories: multidimensional, behavioral, educational, and cognitive behavioral.

From the researcher's perspective according to the study results, the teach-back method's interactive nature, which turns patients from passive information recipients into active participants, may be responsible for the increase in medication adherence. Teach-back confirms understanding, detects and clarifies misunderstandings, and offers prompt, personalized feedback by asking patients to describe pharmaceutical instructions in their own words. This procedure improves patients' comprehension of their treatment plan, boosts their self-assurance in handling their prescriptions, and emphasizes the significance of regular medication use. Additionally, active participation and regular reinforcement help patients with ulcerative colitis remember prescription instructions, collaborate on decision-making, and develop a stronger feeling of accountability for self-management, all of which support long-term treatment adherence.

As regarding correlation between study variables, the current study showed that in the study group, patients' knowledge demonstrated positive correlation with self-efficacy at baseline, one month, and three months after the intervention. Knowledge was also positively correlated with medication adherence throughout the study period. Furthermore, self-efficacy showed a significant positive correlation with medication adherence at all assessment points. In the control group, knowledge was significantly correlated with self-efficacy throughout the study period. However, knowledge and medication adherence were not significantly correlated at baseline but became significantly positively correlated at one- and three-month follow-ups. Similarly, self-efficacy was not significantly associated with medication adherence before the intervention but showed significant positive correlations during follow-up.

This was consistent with the findings of **Entabet et al. (2026)**, who noted a significant correlation between therapeutic adherence and knowledge level. Only thirty-three percent of patients with inadequate knowledge were adherent, compared to eighty-five percent of patients with good knowledge. This

significant difference emphasizes how patient education may affect treatment compliance. Furthermore, patients who had a clear understanding of the goals of their treatment showed almost perfect adherence, emphasizing the usefulness of tailored educational interventions. They highlighted the critical role that patient education plays as a significant factor of therapy adherence in inflammatory bowel disease (IBD), a chronic condition requiring long-term care and active patient involvement. The clinical significance of patient education in maximizing treatment results was highlighted by their findings.

These results were in the same line with **King et al., (2025)** study about " medication non-adherence in inflammatory bowel disease: a systematic review identifying risk factors and opportunities for intervention" and reported that The most common modifiable predictors of non-adherence were knowledge and comprehension of IBD and its therapy.

Similar findings were reported by **Manzari et al., (2024)**, who found that educational interventions designed to improve self-care significantly enhanced self-efficacy among patients with inflammatory bowel disease.

Likewise, **Sheehan et al. (2024)**, found that knowledge was positively correlated with self-efficacy ($r = 0.27$, $p = 0.01$) and concluded that self-efficacy is a key target for improving IBD self-management.

Additionally, a recent multicenter study by **Martella et al. (2026)** showed that self-care maintenance and medication adherence had a strong positive Pearson correlation ($r = 0.120$; $p = 0.011$). They emphasized that one important way that educational interventions enhance self-management outcomes is through self-efficacy. Additionally, they said that because self-efficacy plays a mediating role, patient confidence-boosting interventions such motivational interviewing, psychoeducational programs, or nurse-led therapy with a dedicated IBD nurse may enhance adherence and self-care maintenance.

From the researcher's perspective, the interactive nature of the teach-back method may have strengthened these relationships by reinforcing patients' understanding, correcting misconceptions, and encouraging active participation in disease management so patients with adequate disease-related knowledge are better able to recognize symptoms, understand treatment recommendations, and make informed self-management decisions, thereby strengthening their confidence in performing self-care behaviors. Patients are more likely to follow treatment regimens if they have confidence in their capacity to control UC. Therefore, focusing on self-

efficacy through customized treatments may enhance drug adherence and self-care maintenance in this population.

The positive correlations observed in the control group during follow-up may be explained by patients' continued exposure to routine medical care, including regular physician consultations, standard nursing instructions, and accumulated experience in living with ulcerative colitis. These factors may have gradually improved patients' disease knowledge and confidence in managing their condition, leading to modest improvements in self-efficacy and medication adherence. However, the weaker correlations observed at baseline and the less pronounced improvements compared with the study group suggest that routine care alone may be insufficient to produce substantial and sustained changes in self-management behaviors. This finding highlights the added value of structured teach-back education, which actively engages patients in the learning process, verifies understanding, and reinforces the application of self-care knowledge in daily practice.

Conclusion:

The present study concluded that teach-back self-care nursing education was effective in improving disease-related knowledge, self-efficacy, and medication adherence among patients with ulcerative colitis. Patients who received the intervention demonstrated significantly greater improvements than those receiving routine care, and these improvements were sustained throughout the follow-up period. Furthermore, positive correlations among knowledge, self-efficacy, and medication adherence indicate that enhancing patients' understanding of their disease contributes to greater confidence in self-management and better adherence to prescribed treatment. Therefore, teach-back represents an effective patient-centered educational strategy for promoting self-management and optimizing outcomes in patients with ulcerative colitis.

Recommendations

Recommendations for Patients

- Encourage patients with ulcerative colitis to actively participate in structured self-care education programs based on the teach-back method.
- Reinforce adherence to prescribed medications, symptom monitoring, healthy lifestyle practices, and regular follow-up visits to improve disease control and prevent relapse.

Recommendations for Nurses

- Integrate the teach-back method into routine nursing education for patients with ulcerative colitis in both inpatient and outpatient settings.

- Provide individualized education using simple language and verify patients' understanding through teach-back to strengthen knowledge, self-efficacy, and treatment adherence.
- Periodically reassess patients' educational needs and reinforce self-care instructions during follow-up visits.

Recommendations for Healthcare Administration

- Develop and implement standardized teach-back educational protocols and evidence-based educational materials for patients with UC.
- Provide continuing education and training programs to enhance nurses' competence in teach-back communication and patient-centered education.
- Allocate sufficient resources and time for structured patient education as part of routine ulcerative colitis care.

Recommendations for Future Research

- Conduct a study on a large sample from different geographical distribution and longer follow-up periods to generalize the findings and evaluate the long-term effectiveness of teach-back education.
- Investigate the impact of teach-back education on additional outcomes, including disease activity, relapse rates, quality of life, healthcare utilization, and hospitalization.
- Compare teach-back with other educational approaches, such as digital health interventions, mobile applications, and telehealth-based education, to determine the most effective strategies for improving self-management in patients with ulcerative colitis.

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