International Journal of Advance Research in Nursing

Ulcerative colitis: Effect of a nursing educational booklet on the severity of the disease and patients quality of life

[1] Wafaa Ramadan Ahmed, [2] Amna Abdullah Desouky and [3] Zain Al-Abdeen Ahmed Sayed

[1, 2] Lecturer of Medical-Surgical Nursing, Faculty of Nursing, Assiut University, Egypt
[3] Assistant professor of Internal Medicine, Faculty of Medicine, Assiut University, Egypt

Abstract

Background: Quality of life (QoL) is the most critical issue for chronic illnesses patients with ulcerative colitis (UC). The aim of this study was to evaluate the effect of a nursing educational booklet on the severity of disease and quality of life for patients with ulcerative colitis in El Rajhi liver Hospital at Assiut University.

Methods: Research design; a quiz experimental research design was utilized to carry out this study. Setting: The study was conducted in Tropical Medicine and Gastroenterology department and outpatient clinic at El Rajhi liver Hospital at Assiut University. Patients: Random sample of adult patients (60), male and female, their age ranging from 18 – 65 years old. The sample was categorized into two equal groups, 30 patients for study group who have received a nursing educational booklet in addition to the routine care and 30 patients for a control group who were received a routine hospital care.

Tools: Tool I: An Interview Questionnaire Sheet which included three parts (patient assessment, Short Quality of Life Questionnaire scale for Inflammatory Bowel Disease, and partial Mayo scoring index assessment scale for ulcerative colitis activity) and tool II: A nursing educational booklet.

Results: There was a great increase in the mean score of the Quality of Life Questionnaire in the study group (47.6±2.43) than those patients in the control group (27.87±5.78) with a statistically significant difference (<0.001**). One quarter of patients in the study group were complaining from severe disease stage compared to half of the patients in the control group, and there was a negative correlation between Quality of Life Questionnaire scores and the severity of disease between study and control groups of patients which means as the severity of the disease decreased the quality of patients' life score increased.

Conclusion: This study proved that; Patient education is a valuable means for decreasing ulcerative colitis severity which affect positively on the patients' quality of life.

Recommendations: Education for chronic diseases should be a part hospital policy, Distribution of the educational booklet for all ulcerative colitis patients, and ffurther studies on larger sample from different geographical areas in Egypt to generalize the results.

Keywords: Ulcerative colitis, nursing, educational booklet, severity of the disease & quality of life

1. Introduction

Inflammatory bowel disease (IBD) is defined as an idiopathic disorder resulting from a dysregulation of the immune reaction to microflora in the gut. IBD involves two forms which are ulcerative colitis (UC), that's constrained to the colonic mucosa, and Crohn's disease (CD), that has an effect on any section of the intestine from the mouth to the anus, not limited to mucosa but involves all layers of the intestinal wall; mucosa, Submucosa, Muscular layer, and Serosa [1].

Ulcerative colitis (UC) is a persistent idiopathic inflammatory bowel disorder marked by continual inflammation of the intestinal mucosa that starts inside the rectum and extends proximally. Common symptoms include bloody diarrhea, abdominal pain, urgency, and tenesmus. Rarely, extraintestinal manifestations may be present properly that could typically have an effect on the skin, joints, eyes, and liver. Erythema nodosum and

pyoderma gangrenosum are the two most common immunologic pores and skin lesions [2]. The medical path is marked by means of exacerbations and remissions, which may occur spontaneously or in reaction to changing in the treatment or occurring during the progress of another disease [3].

A variety of tests are used to diagnose and monitor ulcerative colitis. Procedures range from simple blood tests to barium x-rays and colonoscopy, which require preparation the day before the tests. A proper diagnosis of UC involves determining the extent and severity of disease, and any related complications [4].

Globally, UC is considered as the commonest as Crohn's disease. Both diseases occur commonly in the industrialized communities, particularly North America and Western Europe; however, the incidence is increasing in Asia. The overall incidence is reported as 1.2 to 20 cases per hundred thousand persons per year, with a prevalence of 7.6 to 245

cases per hundred thousand per year [5].

The aims of UC treatment are to induce and keep maintaining the remission of the disease. Effective management includes drug therapy, focusing on nutrition in severe or chronically active disease, and surgical procedure. Management should involve a multidisciplinary team (MDT), including specialist physicians and surgeons skilled in the management of UC, expert IBD nurses, pharmacists and nutritionists [6].

Patient education programs are applied across various chronic diseases to help patients cope with the disease burden [7]. Good nutrition is important in the management of ulcerative colitis. Dietary changes can help reduce symptoms. A health care provider may recommend dietary changes such as avoiding carbonated drinks, avoiding popcorn, vegetable skins, nuts, and other high-fiber foods while a person has symptoms, drinking more liquids, eating smaller meals more often, and keeping a food diary to help identify troublesome foods. Health care providers may recommend nutritional supplements and vitamins for people who do not absorb enough nutrients. To help ensure coordinated and safe care, people should discuss their use of complementary and alternative medical practices, including their use of dietary supplements and probiotics, with their health care provider [8].

Health-related quality of life (HR-QOL) in ulcerative colitis patients is lower compared with normal populations. Important factors can influence the HR-QOL in patients with ulcerative colitis include disease course which consists of the (disease severity, extent of disease, and frequency of relapses). Prescribed treatments, psychosocial factors, and socioeconomic effects [9].

The aim of the study was to evaluate the effect of a nursing educational booklet on the severity of disease and quality of life for patients with ulcerative colitis in El Rajhi liver Hospital at Assiut University.

1.1 Research hypotheses
To fulfill the aim of the study the following research hypotheses were formulated:

- The disease severity in patients who will receive a nursing educational booklet in addition to the routine hospital care will be significantly decreased than those patients who will receive routine hospital care only.
- The quality of life of ulcerative colitis patients who will receive a nursing educational booklet in addition to the routine hospital care will be significantly improved than those patients who will receive routine hospital care only.

1.2 Significance of the study
The researchers observed that many young adult patients diagnosed with ulcerative colitis complaining from physical and psychosocial consequences which have a heavy burden on affected person populations, ensuing in decreased quality of life, reduced capacity for work and probably increasing disability. So, it was very important to design such a nursing educational booklet to guide those groups of patients to cope with this chronic disease, decrease the severity of the disease during the active stage, maintain the remission stage of their disease, and so, improve their quality of life.

2. Methods
2.1 Research design
A quiz experimental research design was used to carry out this study.

2.2 Study variables
The independent variable in this study was the nursing educational booklet. While the dependent variables were the severity of ulcerative colitis and patients' quality of life.

2.3 Setting
The research study has been conducted in Tropical Medicine and Gastroenterology department and outpatient clinic at El Rajhi liver Hospital at Assiut University.

2.4 Patients
A purposive sample of adult patients (60), male and female, their age ranged from eighteen to sixty-five years old. The sample was categorized into two equal groups, 30 patients for study group who have received a nursing educational booklet in addition to the routine hospital care and 30 patients for a control group who have received a routine hospital care only.

2.5 Tools of data collection
2.5.1 Tool I: An Interview Questionnaire Sheet
It was designed by the researchers to assess the patients' sociodemographic data, health history, and their quality of life, it included three parts:

Part 1: Patient assessment: This included (demographic data, past and present health history which included associated chronic diseases, nutritional habits, previous family member history of the disease, and the disease duration).

Part 2: Short Quality of Life Questionnaire for Inflammatory Bowel Disease scale (SIBDQ): This tool was developed by (Irvine, 1996) [10]; to assess how IBD patients had been feeling over the past two weeks. It is a disease-specific, established and dependable scale for measuring health-related quality of life in patients with IBD which consists of ten questions. The patient was asked about the signs and symptoms they have been having as a result of the inflammatory bowel disease as fatigue, tiredness, abdominal pain, and weight loss. Also asked about social engagement, the difficulty of doing leisure or sports activities, the way the patient has been feeling in general, and how the patient's mood has been. It was categorized to four domains; bowel domain (Q four, six, and nine), social domain (Q two, and three), emotional domain (Q five, eight, and ten), and systemic domain (Q one, and seven).

Scoring system
For every question, there are graded responses on a seven-point Likert scale ranging from one (representing the ''worst'' aspect) to seven (representing the ''best'' aspect). Total IBD questionnaire (IBDQ) rankings range from ten to seventy, with higher rankings reflecting higher well-being.

Part 3: Partial Mayo scoring index assessment scale for ulcerative colitis activity

The clinical Mayo Score or partial Mayo Score (PMS) developed by (Rutgers, *et al.*, 2005) [11]. It consists of three clinical parameters (stool frequency, rectal bleeding, and physician's global assessment). The first and second parameters asked for patient to answer and the third parameter for physician to answer. The numerical results provide a score that represents an estimate of ulcerative colitis disease severity.

Scoring system

Each clinical parameter is assigned a score from 0 to 3 according to the clinical evaluation. Calculation formula: sum the scores of the three parameters. Clinical response is defined as a decrease of at least two points of the Mayo Clinical Score. The total score can be categorized to Remission = zero to one, Mild Disease = two to four, Moderate Disease = five to six, and Severe Disease =seven to nine.

2.5.2 Tool II: A nursing educational booklet

The nursing educational booklet was designed by the researchers according to the literature review, researchers' experience, and the opinions of medical and nursing expertise. It becomes formulated and brought to the patients in sessions. It has been written in an easy Arabic language with clear illustrations and diagrams. The nursing educational booklet included information about: (colon anatomy and function in brief, definition of ulcerative colitis, causes, risk factors, signs and symptoms, complications, diagnosis, investigations, and management which includes (medications, nutritional guidelines such as, allowable foods for the patient with ulcerative colitis, foods that should be reduced, foods that avoided or refrained from eating by ulcerative colitis patients, exercises that allowed for practicing, and general nursing instructions as the food that can causes symptoms of diarrhea, pain, and abdominal gases should be reduced, meals should be divided into five or six small meals**,** drinking plenty of fluids and water, consult the doctor when taking vitamins in tablet form, because ulcerative colitis reduces the absorption of certain minerals and vitamins, and stay away from any tension or stressful situations).

2.6 Content validity and reliability

a) For validity assurance purpose, the tools had been submitted to a panel of 5 experts in fields of medicine and nursing who reviewed the tools for clarity, relevance, comprehensiveness, understanding, applicability, and the ability for application, minor modifications had been done.

b) Reliability of the tool I (part 2 and part 3) was performed and calculated statistically. The Cronbach's values were measured for part 2 (Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale) was (0.992), and part 3 (partial Mayo scoring index assessment for ulcerative colitis) was (0.956).

2.7 Administrative and Ethical Considerations

An official letter has been acquired from the head of Tropical Medicine and Gastroenterology department and outpatient clinic at El Rajhi liver Hospital at Assiut University in order to get permission to conduct the study. Oral consents have been acquired from patients who were agreeing to take a part in the study after reassuring them about the confidentiality and the information will be used for the purposeful research. The researchers gave clear and simple rationalization of the study nature, the study was voluntary and harmless. The patient had the full right to refuse to participate or withdraw at any point of the study.

2.8 Pilot study

The pilot study executed on ten percent of patients (six patients) to test the study tools for clarity, applicability and time consumed. Some items have been changed in keeping with patients' responses during the pilot study and excluded from the study subject.

2.9 Fieldwork

The field work was performed over a period of eight months from February to October 2017.

2.9.1 Assessment Phase

Tools have been designed by the researchers after a reviewing of past and current, local and international literature using books, articles, periodicals and magazines to identify the different aspects of the research problem. At the first meeting, the researchers identify themselves to provoke the line of verbal communication, gave an explanation for the nature and aim of the study.

2.9.2 Implementation Phase

a. Patients are randomly categorized into two groups (1st group& 2nd group) 30 patients for each.

b. Each patient in the 1st & 2nd groups was interviewed individually by the researchers.

c. Each patient in the1st group was assessed by using tool I while the 2nd group assessed for sociodemographic data, past and current health history by using tool one (part one only). The average time taken for filling the sheet was around 15 – 20 minutes depending on the response of patients.

d. The 1st group (30 patients) received a routine hospital care, (there is no any participation from the researchers for teaching them and they considered as a control group).

e. The 2nd group of patients received the nursing educational booklet (Tool II) in addition to the routine hospital car and they considered as a study group; each patient received the information in two sessions. Each session consumed fifteen to thirty minutes. After each session, there were five to ten minutes for discussion and gave feedback. Reinforcement of teaching has been accomplished according to the patient's needs to ensure their understanding. Each patient in the group received a hard copy of the teaching booklet; the researcher used pictures for illustration, diagram to teach the patients.

f. The researchers answered any questions and gave feedback. Communication channel was kept open between the researchers and the patients.

2.9.3 Evaluation Phase

Evaluation has been done for the second group only by

using tool I(part 2&3) 8 weeks following completing the implementation of the educational sessions by interviewing the patients in Tropical Medicine and Gastroenterology outpatient clinics at El Rajhi liver Hospital at Assiut University, and by contacting patients by telephone.

2.10 Statistical Design

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 the 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 and ANOVA test. A two-tailed $p < 0.05$ was considered statistically significant. We are used Pearson correlation to appear the association between scores. All analyses were performed with the IBM SPSS 20.0 software.

3. Results

Table (1): showed that more than half of patients in the control group were males, while more than two-thirds of patients in the study group were females, the majority of patients in both control and study groups were married with a mean age (40.23±12.11, and 37.30±10.57) respectively. More than one third in both study and control groups had obtained a secondary school education, Meanwhile, one-third of patients in the control group were employed and skilled workers in the study group. Finally, there were no statistically significant differences between two groups regarding socio-demographic data.

Table 1: Frequency distribution of sociodemographic data of the studied sample (control and study groups of patients) (n = 60).

Sociodemographic data	Control (n = 30)		Study (n = 30)		P.value
	N	%	N	%	
Age	40.23±12.11		37.30±10.57		0.322 [n.s]
Sex					
▪ Male	16	53.3	9	30.0	0.067 [n.s]
▪ Female	14	46.7	21	70.0	
Marital status					
▪ Single	4	13.3	7	23.3	0.317 [n.s]
▪ Married	26	86.7	23	76.7	
Educational level					
▪ Illiterate	10	33.3	7	23.3	0.365 [n.s]
▪ Reading and writing	0	0.0	1	3.3	
▪ Primary school	1	3.3	5	16.7	
▪ Secondary school	12	40.0	11	36.7	
▪ University	7	23.3	6	20.0	
Occupation					
▪ Non working	8	26.7	7	23.3	0.574 [n.s]
▪ Farmer	5	16.7	3	10.0	
▪ Employed	10	33.3	6	20.0	
▪ Skilled worker	5	16.7	10	33.3	
▪ Student	2	6.7	4	13.3	

- Independent T- test. Chi-square test n.s=not significant

Table (2): illustrated that, most of patients in the control and study groups were complaining from bloody diarrhea and abdominal pain (100.0%, 96.7%, 96.7%, 83.3% resp.). Also, more than half of patients in both control and study groups were suffering from fatigue (60.0% and 50.0%) respectively and weight loss (53.3% and 53.3%) respectively. Additionally, more than one-third of patients in study and control groups were smokers (40 and 36.7%) respectively and (43.3 and 36.7%) respectively were hypertensive, more than half of patients in both groups have diagnosed with ulcerative colitis since one to less than three years. More than half of the patients in the control group (56.7%) like fatty foods, while the study group like spicy foods with (53.3%). Finally, there were no statistically significant differences between the study and control groups regarding past and current health history.

Table 2: Frequency distribution of past and current health history of studied patients (n= 60).

past and current health history	Control (n=30)		Study (n = 30)		P.value
	N	%	N	%	
Signs and symptoms					
▪ Rectal bleeding	12	40.0	6	20.0	0.091 [n.s]
▪ Bloody diarrhea	30	100.0	29	96.7	0.313 [n.s]
▪ Abdominal pain	29	96.7	25	83.3	0.085 [n.s]
▪ Urgency	1	3.3	2	6.7	0.554 [n.s]
▪ Tenesmus	10	33.3	7	23.3	0.390 [n.s]
▪ Weight loss	16	53.3	16	53.3	1.000 [n.s]
▪ Fatigue	18	60.0	15	50.0	0.436 [n.s]
▪ Tiredness	10	33.3	7	23.3	0.390 [n.s]
▪ Fever	3	10.0	1	3.3	0.301 [n.s]

▪ Anemia	9	30.0	5	16.7	0.222 [n.s]
Chronic diseases					
▪ Hypertension	13	43.3	11	36.7	0.071 [n.s]
▪ Diabetes mellitus	3	10.0	8	26.7	0.095 [n.s]
Smoking					
▪ Yes	12	40.0	11	36.7	0.301 [n.s]
▪ No	18	60.0	19	63.3	
Dietary habits					
▪ Spicy	9	30.0	16	53.3	
▪ Fatty	17	56.7	9	30.0	0.104 [n.s]
▪ Fried	4	13.3	5	16.7	
Use of tea and coffee:	30	100.0	30	100.0	-
Disease duration in years					
▪ from 1 to less than 3 years	16	53.3	16	53.3	
▪ from 3 to 5 years	7	23.3	9	30.0	0.747 [n.s]
▪ more than 5 years	7	23.3	5	16.7	
F. Previous family member history of the disease					
▪ Yes	11	36.7	15	50.0	0.080 [n.s]
▪ No	19	63.3	15	50.0	

- Independent T-test. Chi-square test, n.s=not significant

Table (3): clarified that, there were a statistically significant differences between study and control groups of patients regarding quality of life domains scores as measured by Short Quality of Life Questionnaire scale for Inflammatory Bowel Disease, which means that; there was an obivious progress in the quality of life scores after two months from nursing booklet implementation for study group of patients than control group patients.

Table (4): illustrated that, there was a statistically significant difference between study and control groups of patients regarding partial Mayo scoring index assessment for ulcerative colitis. After two months from nursing booklet implementation; it was found that half of the patients (50.0%) in the control group were categorized as having severe stage of disease, this percentage was decreased to reach nearly one quarter of patients in the study group with (26.7%), Also only ten percent of patients in the control group was categorized as having a mild stage of disease, while, this percentage increased to became forty at the study group of patient, which was considered as a great results in decreasing the disease activity.

Table 3: Comparison between study and control groups of patients according to the quality of life domains scores of Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale (IBDQ).

IBDQ scale	Control (n= 30) (Admission time)	Study (n= 30) (Two months follow up)	P.value
Bowel domain	8.4±2.22	14.2±1.16	<0.001**
Social domain	5.5±1.48	9.6±0.89	<0.001**
Emotional domain	8.07±1.48	14.73±0.58	<0.001**
Systemic domain	5.9±1.3	9.07±0.74	<0.001**
IBDQ total score	27.87±5.78	47.6±2.43	<0.001**

- Chi-square test, ** Significant difference at p. value<0.01

Table 4: Comparison between study and control groups of patients according to the partial Mayo scoring index assessment for ulcerative colitis activity

Disease activity	Control (n = 30) (Admission time)		Study (n = 30) (Two months follow up)		P.value
	N	%	N	%	
Mild Disease	3	10.0	12	40.0	
Moderate Disease	12	40.0	10	33.3	<0.001**
Severe Disease	15	50.0	8	26.7	
Mean±SD	6.43±1.36		2.50±0.73		<0.001**

- Chi-square test, ** Significant difference at p. value<0.01

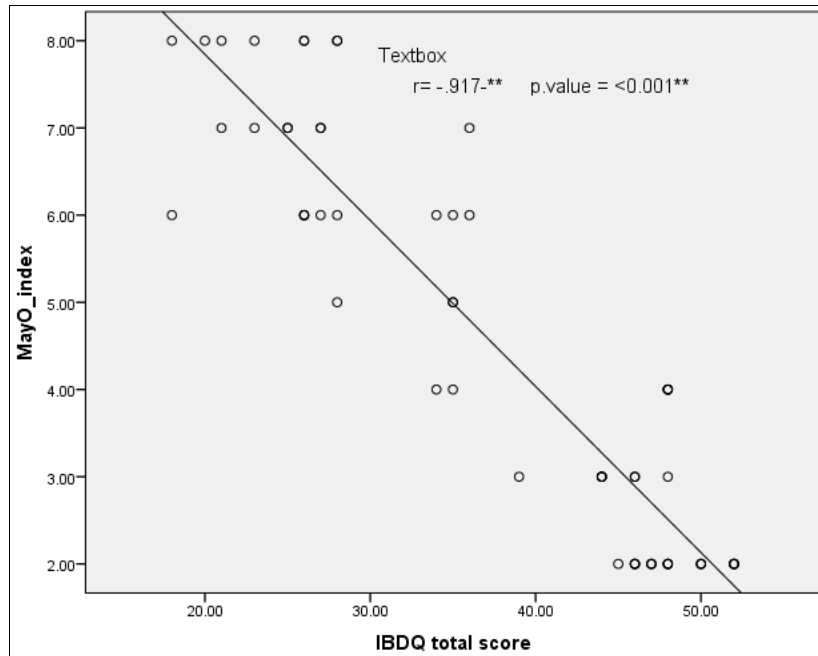**Table (5):** Showed that there was a negative correlation between Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale scores and partial Mayo scoring index assessment for ulcerative colitis in study and control groups of patients, which means as the severity of the disease decreased the quality of life increased (see figure 1).

Table 5: Correlation between Partial Mayo Index and (IBDQ) scores for ulcerative colitis patents.

Correlations	IBDQ total score	
	R	P.value
Mayo index	-.917-**	<0.001**

** Significant correlation at p. value<0.01

Fig 1: Correlation between Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale scores and partial Mayo scoring index assessment for ulcerative colitis in study and control groups of patients.

4. Discussion

Ulcerative colitis (UC) is a persistent disease of the colon marked by inflammation and ulceration of the intestinal mucosa, bleeding per rectum, diarrhea and abdominal pain. UC Patients experience enormous deterioration in their life quality in comparison to the other healthy people Feagan *et al*. (2007) [12]. The current study aimed to evaluate the effect of a nursing educational booklet on the disease severity for patients with ulcerative colitis & their quality of life in El Rajhi liver Hospital at Assiut University.

The current study results revealed that nearly half of patients in the control group and more than two-thirds of patients in the study group were females, the majority of patients in both study and control groups were married with a mean age (40.23±12.11, and 37.30±10.57) for the control and study group respectively. Meijs *et al*. (2014) [13] were agreeing with our study results as they revealed that" sixty ulcerative colitis patients were divided into two groups (surgery and medical) thirty patients for each group, twenty nine patients in the surgery group (mean age was 42 years.; nearly half of them were females) and twenty nine patients in the medical group (mean age was 45 yrs.; more than half of them were females too)". Additionally, depending on the researchers' opinions, being a female is considered as one of the greatest risk factors for developing ulcerative colitis especially at our community as women are more stressful, and nervous because of everyday family demanding, and responsibilities required from them.

According to the presented signs & symptoms, the majority of patients in the control and study groups were complaining from bloody diarrhea and abdominal pain. Also, more than half of patients in both study and control groups were suffering from fatigue and weight loss. Feuerstein, and Cheifetz (2014) [14] were agreeing with our study results as they reported that" Typically, UC marked with diarrhea with blood, pain in the abdomen, urgency, and tenesmus. Hardly, patients may additionally present with a loss in their weight

or other systemic symptoms, such as a low- grade fever. The disorder classically begins gradually and continues for many weeks", and this explained why the majority of patients complained from bloody diarrhea and abdominal pain in our opinion.

According to the nutritional habits; the results of the present study showed that; all patients in both groups drink tea and coffee. In our community tea and coffee are the most popular drinks that explain why all patients drink tea and coffee. More than half of the patients in the control group like fatty foods, while the study group prefers spicy foods. Ananthakrishnan *et al*. (2014) [15] were agreeing with our study results as they reported that "women who ate a diet high in trans fats, such as the hydrogenated oils found in processed foods, had a higher risk of ulcerative colitis". Additionally, Owczarek *et al*. (2016) [16] confirmed our study results as they reported in a research published in the World Journal of Gastroenterology that" A red-hot spicy meal can send anyone to the bathroom for emergency relief, especially people with ulcerative colitis. Medical doctors approved using mild spices to avoid irritating the digestive tract".

Recently the importance of HRQOL in chronic diseases has been increasingly recognized because of its implications for patients' psychological well-being, social adjustment to the illness, and use of health resources. Measuring HRQL provides important data to quantify the impact of disease on the daily life of patients. Patient education has been accepted widely over the past years as a valid component of disease management in patients with chronic diseases. Participation in a patient education program should increase the patient's disease-related knowledge and positively influence the patient's quality of life as mentioned by Moradkhani *et al*. (2013) [17].

There was an obvious increase in the mean score of the quality of life for patients in the study group than those patients in the control group according to the Short Quality

of Life Questionnaire for Inflammatory Bowel Disease Scale scores of (Bowel, Social, Emotional, and Systemic) domains. Mahalli, and Alharthi (2017) [18] were agreeing with our study results as they mentioned that "patients diagnosed with inflammatory bowel disease have been experienced a decline in the quality of life with physical, social and emotional dysfunction". Also, Blumenstein *et al*. (2013) [19] were agreeing with our study as they concluded that patients' education led to fewer in-patients care, fewer visits to primary care physicians, improved treatment adherence, decreased anxiety and enhanced quality of life".

Berding, *et al*. (2016) [20] who performed a study to assess the beneficial effects of education on emotional distress, self-management, and coping in patients with inflammatory bowel disease were disagreeing with our study results as they mentioned that" we found significant large effects of our education program on skill and technique acquisition, knowledge, and managing IBD, but we did not find any consequences on perceived disease activity, health-related quality of life, positive and active engagement in life activities, or symptoms of anxiety and depression". Also Larsson *et al*. (2009) [21] were disagreeing with our study results as mentioned that" IBD patients with a high anxiety level reported improved satisfaction with information about disease-related items, but did not indicate any benefits in terms of reduced anxiety or improved health-related quality of life after participating in the education programme".

Regarding the severity of the disease; there was a surprisingly significant difference among study and control groups of patients regarding partial Mayo scoring index assessment for ulcerative colitis after two months from implementation of nursing educational booklet as one-quarter of patients in the study group were complaining from severe disease stage compared to half of the patients in the control group. Also, only ten percent of patients in the control group was categorized as having a mild stage of disease, while, this percentage increased to became forty in the study group of patient, which was considered as great results in decreasing the disease activity. According to the researchers' opinion, it was strongly expected as the patients' knowledge increase about the importance of commitment to medications intake especially corticosteroids, avoiding or minimizing specific foods that can trigger or increase the severity of the disease, and encouraging patients about eating special foods that can decrease or minimize the disease symptoms, all of these measures can decrease the severity of the disease.

There was a negative correlation between Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale scores and partial Mayo scoring index assessment for ulcerative colitis in study and control groups of patients, which means as the severity of the disease decreased, the quality of life score increased. These study results are inconsistent with Gibson *et al*. (2014) [22] who revealed that "More severe UC disease was associated with poorer QoL, substantial health care utilization, costs, and work productivity impairments were found in this sample of patients with UC. Moreover, greater disease activity was associated with greater health care costs and impairment in work productivity and daily activities". Also, Kalafateli *et al*. (2013) [22] were agreeing with the current study results as they mentioned that" We confirmed a strong effect of

disease activity on HRQoL in IBD patients, regardless of the type of disease. Patients with active disease experience a lower emotional and social dysfunction compared to patients in remission stage who have a greater life perception".

5. Conclusion
There was an obvious progress in the quality of life domains for patients in the study group than those patients in the control group which clarify the importance of patients education on the patients' ability to manage their disease that has a positive effect on their quality of life, There was a negative correlation between Short Quality of Life Questionnaire for Inflammatory Bowel Disease Scale scores and partial Mayo scoring index assessment for ulcerative colitis in study and control groups of patients, which means as the severity of the disease decreased, the quality of life increased.

6. Recommendations
- Education for chronic diseases patients should be a part of hospital policy.
- Distribution of the nursing educational booklet for all patients diagnosed with ulcerative colitis.
- Further studies on larger samples from different geographical areas in Egypt to generalize the results.

7. Acknowledgements

8. References
1. Rowe W. Inflammatory Bowel Disease, Medscape, 2015. https://emedicine.medscape.com/article/179037-overview.
2. Feuerstein JD, Cheifetz AS. Ulcerative Colitis: Epidemiology, Diagnosis, and Management, Mayo Foundation for Medical Education and Research, Mayo Clin Proc. 2014; 89(11):1553-1563.
3. Kornbluth A, Sachar DB. The Practice Parameters Committee of the American College of Gastroenterology Erratum: Ulcerative Colitis Practice Guidelines in Adults: American College of Gastroenterology, American Journal of Gastroenterology. 2010; 105:501-523.
4. Crohn's, Colitis Foundation. Diagnosing Crohn's Disease and Ulcerative Colitis, 2018. Available at: http://www.crohnscolitisfoundation.org/resources/diagnosing-crohns-uc.html.
5. Danese S, Fiocchi C. Ulcerative Colitis, New England Medical Journal. 2011; 365(18):1713-1725.
6. Dignass A, Lindsay JO. Second European evidence-based consensus on the diagnosis and management of ulcerative colitis part 2: Current management. Journal of Crohn's Colitis. 2012; 6:991-1030.
7. Baars JE, Siegel CA, van't Spijker A, Markus T, Kuipers EJ, van der Woude CJ. Inflammatory bowel

disease-patients are insufficiently educated about the basic characteristics of their disease and the associated risk of colorectal cancer. Dig Liver Dis. 2010; 42:777-784.

8. Hou JK, Abraham B, El-Serag H. Dietary intake and risk of developing inflammatory bowel disease: a systematic review of the literature. American Journal of Gastroenterology. 2011; 106(4):563-573.

9. Hoivik ML, Moum B, Solberg IC, Cvancarova M, Hoie O, Vatn MH *et al*. Health-related quality of life in patients with ulcerative colitis after a 10-year disease course: results from the IBSEN study, Inflamm Bowel Dis. 2012; 18(8):1540-9. doi: 10.1002/ibd.21863.

10. Irvine EJ. The short inflammatory bowel disease questionnaire: A quality of life instrument for community physicians managing inflammatory bowel disease. American Journal of Gastroenterology. 1996; 91(8):1571-8.

11. Rutgers P, Sandborn WJ, Feagan BG, Reinisch W. Infliximab for induction and maintenance therapy for ulcerative colitis. N Engl J Med. 2005; 353(23):2462-76.

12. Feagan BG, Reinisch W, Rutgeerts P, Sandborn WJ, Yan S, Eisenberg D. The effects of infliximab therapy on health-related quality of life in ulcerative colitis patients. Am J Gastroenterol. 2007; 102:794-802.

13. Meijs S, Gardenbroek TJ, Sprangers MA, Bemelmans WA, Buskens CA, D'Haens GR *et al*. Health-related quality of life and disability in patients with ulcerative colitis and proctocolectomy with ileoanal pouch versus treatment with anti-TNF agents. Journal of Crohn's and Colitis. 2014; 8:686-692.

14. Feuerstein JD, Cheifetz AS. Ulcerative Colitis: Epidemiology, Diagnosis, and Management, Mayo Foundation for Medical Education and Research, Mayo Clinic Proceeding Journal. 2014; 89(11):1553-1563.

15. Ananthakrishnan AN, Khalili H, Konijeti GG, Higuchi LM, de Silva P, Fuchs CS *et al*. Long-term intake of dietary fat and risk of ulcerative colitis and Crohn's disease. An international journal of Gastroenterology. 2014; 63(5):776-84.

16. Owczarek D, Rodacki T, Domagała-Rodacka R, Cibor D, Mach T. Diet and nutritional factors in inflammatory bowel diseases, World J Gastroenterology. 2016; 22(3):895-905. Published online 2016 Jan 21. doi: 10.3748/wjg.v22.i3.895.

17. Moradkhani A, Beckman LJ, Tabibian JH. Health-related quality of life in inflammatory bowel disease: psychosocial, clinical, socioeconomic, and demographic predictors. Journal of Crohn's Colitis. 2013; 7:467-473.

18. Mahalli AA, Alharthi HA. Assessment of health-related quality of life of patients with inflammatory bowel diseases in Eastern Province, Saudi Arabia, Health, 2017, 93-101.

19. Blumenstein I, McDermott E, Keegan D, Byrne K, Ellison M, Doherty G. Sources of information and factual knowledge in Europeans with inflammatory bowel diseases: a cross-cultural comparison between German and Irish patients. J Crohn's Colitis. 2013; 7:331-6.

20. Berding A, Witte C, Gottschald M, Kaltz B, Weiland R, Gerlich C *et al*. Beneficial Effects of Education on Emotional Distress, Self-Management, and Coping in Patients with Inflammatory Bowel Disease: A Prospective Randomized Controlled Study, Inflammatory Intestinal Disease. 2016; 1:182-190. https://doi.org/10.1159/000452989.

21. Larsson K, Sundberg Hjelm M, Karlbom U, Nordin K, Anderberg UM, Lööf L. A Group-based Patient Education Programme for High-Anxiety Patients with Crohn Disease or Ulcerative Colitis, Scandinavian Journal of Gastroenterology. 2009; 38(7):763-769.

22. Gibsona PR, Vaizeyc C, Black CM, Nicholls R, Weston AR, Bamptong P *et al*. Relationship between disease severity and quality of life and assessment of health care utilization and cost for ulcerative colitis in Australia: A cross-sectional, observational study, Journal of Crohn's and Colitis. 2014; 8:598-606.

23. Kalafateli M, Triantos C, Theocharis G, Giannakopoulou D, Koutroumpakis E, Chronis A *et al*. Health-related quality of life in patients with inflammatory bowel disease: a single-center experience Ann Gastroenterology. 2013; 26(3):243-248.