Effect of educational program on improving psychological status and quality of life among patients with ulcerative colitis

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Abstract:

Background: Anxiety and depression rates among inflammatory bowel disease (IBD) patients are higher than in the general population even in remission (when symptoms are settled. Previous studies have suggested that the prolonged effect of pain, anxiety, distress and depression have detrimental effects on quality of life (QoL). **Aim of the study**: was to evaluate the effect of educational program on improving psychological status and quality of life and to determine the relation between psychological status and quality of life among patients with ulcerative colitis. **Subjects & Methods: Research design:** A quasi-experimental research design was used. **Setting** the study was conducted at medical department in Menoufia University hospital and Shebin El-kom teaching hospital**. Sample** a purposive sample of 50 diagnosed patients were included. **Tools of data collection:** socio demographic characteristic structured interview schedule, Quality of life scale, Hospital anxiety and depression scale and Pre-post knowledge questionnaire. **Results:** The results revealed that, 56% were in age group 40-60 years, the majority of studied patients (76%) were male. 60% had secondary education. There was highly statistically significant difference between pre and post intervention program regarding depression and anxiety score levels. Also there were highly statistically significant difference between pre and post intervention program regarding all dimensions of quality of life .there was highly statically significant negative relationship between quality of life, depression and anxiety (.000) i.e., when depression and anxiety increased, quality of life deteriorated **Conclusion:** Implementation of educational program have a positive effect on increasing knowledge and improving psychological status and quality of life level of patients with ulcerative colitis. Also, a negative relation was found between quality of life and psychological status. **Recommendations:** educational program to increasing knowledge and improving psychological status and quality of life level of patients with ulcerative colitis should be conducted in all health service.

Keywords: ulcerative colitis, quality of life, anxiety, depression

Introduction:

Ulcerative colitis (UC) is a chronic disease characterized by diffuse mucosal inflammation limited to the colon. It involves the rectum in about 95% of cases and may extend proximally in a symmetrical, circumferential, and uninterrupted pattern to involve parts or all of the large intestine. The hallmark clinical symptom is bloody diarrhea often with prominent symptoms of rectal urgency. The clinical course is marked by exacerbations and remissions, which may occur spontaneously or in response to treatment changes.[(1)]

The Incidence rate of UC ranges from 3 to 15 per 100.000 in habitants in northern Europe and North America.[(2-4)] The prevalence rate of UC is 150 to 250 per 100.000 inhabitants in northern Europe and North America,

and about 225 per 100.000 inhabitants in Sweden.[(2,4)] In the Middle East, as well as in most of the African countries, data on inflammatory bowel disease (IBD) patients are lacking, and there are no solid databases or registries to follow up the pattern of the disease. We noticed a marked increase in the frequency of UC and CD diagnoses over the past 10 years, which indicates an increasing incidence of inflammatory bowel disease IBD in Egypt.[(5)]

There is no general consensus as to the definition of quality of life (QoL), but the World Health Organization (WHO) defines QoL as the "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations,

standard and concerns". Quality of life (QoL) is a broad concept which consists of dimensions of physical health, psychological state, personal beliefs and social relationships. Thus, a perception of being satisfied with life - including aspects of daily life like family, work, social activities and friends - is included in quality of life. During the last decades, the concepts of quality of life (QoL) and health related quality of life (HRQoL) have grown in importance in the research of chronic disease. Studies of quality of life (QoL) and HRQoL in patients with chronic diseases can improve the knowledge and understanding of the patients' perception of the impact of their disease, the outcome of a medical intervention, or the need for support. [6]

Because inflammatory bowel disease (IBD) is a disease that is characterized by unpredictable, often debilitating, fluctuations in disease severity, progression, body control, and pain, it can have a significant negative impact on a person's quality of. Simply treating the physical aspects of inflammatory bowel disease IBD ignores the devastating effect that IBD can have on a person's mental health and overall life circumstances. Practitioners treating people with IBD need to take into consideration the overall impact of the disease on a person's quality of life. [7]

Anxiety and depression are such common problems for people with IBD that these two mental disorders were originally considered to cause IBD.[8,9] Depression and anxiety are common in inflammatory bowel disease IBD patients.[10] The prevalence of anxiety and/or depression has been estimated to be as high as 29–35% during remission [11] and 80% for anxiety and 60% for depression during relapse.[12] It is believed that anxiety and depression typically result, in part, from a combination of high levels of pain, knowing there is no cure, fearing the loss of bowel control, coping with the loss of the colon, dealing with the life altering aspects of the disease, facing the unknown progression of the disease, and never knowing when or where the disease is going to become active. [13]

Elevated anxiety and depression levels have a negative impact on overall quality of life.[13] Additionally, people with IBD, physicians, and the medical community at large have long been aware that high levels of anxiety and depression frequently exacerbate the physical symptoms of inflammatory bowel disease IBD. This often leads to a spiraling situation in which inflammatory bowel disease IBD creates anxiety and depression, and in turn, this anxiety and depression exacerbate physical IBD symptoms.[12]Therefore reducing depression and anxiety in patients with physical illnesses may improve physical outcomes.[14]

Nursing care for the patient with ulcerative colitis includes keeping the patient hydrated, and comfortable. It is important for the nurse to attend to the patient's level of coping, since nervousness can cause flare ups of symptoms. Engage the patient in open ended conversation and attempt to explore how the patient sees them. Try to understand what the patient is going through and let the patient know that you care and are there for whatever needs that they may have. Help to educate the patient on nutrition and how to handle the stress in their life. Restricting the physical activity of the individual will also help in healing the bowel. This may be hard for the patient who is still youthful and engages in much physical activity and sports. The entire person must be treated. When making a nursing care plan the nurse must take into consideration what the needs of the person are as a whole. Educating patients has been found to increase treatment compliance, decrease anxiety level, improve quality of life and reduce the number of physician visits and patient cost. [15] Therefore, the original aim of the study was to evaluate the effect of educational program on improving

psychological status and quality of life among patients with ulcerative colitis.

Significance of the study:

Although the occurrence of IBD is low, ranging from 2 to 15 per 100,000 for ulcerative colitis, the economic cost to patients and society is high, and patient quality of life is significantly impaired. [16] Mental health problems such as depression and anxiety are common in physical illness and are associated with adverse outcomes including: poorer quality of life; more physical symptoms; reduced adherence to medication; increased mortality, and increased service use. Therefore reducing depression and anxiety in patients with physical illnesses may improve physical outcomes. [17]

Because inflammatory bowel disease IBD is a disease that is characterized by unpredictable, often debilitating, fluctuations in disease severity, progression, body control, and pain, it can have a significant negative impact on a person's quality of life. Simply treating the physical aspects of inflammatory bowel disease ignores the devastating effect that IBD can have on a person's mental health and overall life circumstances. Practitioners treating people with IBD need to take into consideration the overall impact of the disease on a person's quality of life. [13]

The aim of the study:

The aim of the current study was to:

- Evaluate the effect of educational program on improving psychological status and quality of life and knowledge among patients with ulcerative colitis.
- Determine relation between psychological status and quality of life among patients with ulcerative colitis

Research Hypotheses:

- Educational program have a significant effect on improving psychological status and quality of life and knowledge among patients with ulcerative colitis.

- Psychological status will affect quality of life and vice versa

Subjects and methods

Research design:

A quasi-experimental design (one group pre test post test design) was used.

Study setting:

The present study was conducted at medical clinics in Menoufiya University Hospital and Shebin El-kom teaching hospital, Menoufia Governorate

Subjects:

A convenience sample of 50 patients with ulcerative colitis who was available during the time of data collection and diagnosed in medical department by the specialized physician. They were selected according to the following criteria:

- Age between 20 to 60

- Patients are free from severe complication (Severe bleeding, perforated colon or Liver disease)

Tools of data collection:

Three tools were used in this study:

Tool (1): It comprised two parts:

- **Part (1): Socio- demographic characteristic structured interview schedule:** which include socio-demographic characteristics including: age, sex, education, occupation and income.

- **Part (2): Quality of life scale*:* It was developed by Sturm et al. [18] and El Amrosy. [19] It consists of 15 items, covers five subscales, these subscales are: Illness, Independent living, Social relationship, Physical senses and Psychological well-being.

The response of the Patient is in the form of four likert scales from one to four to assess level of quality of life. The final level for quality of life was determined by stratifying Patients into specified categories: very poor quality

of life (15-25), poor quality of life (26-36), good quality of life (37-47) and very good quality of life (48-60).

Tool (2): Hospital anxiety and depression scale (HAD Scale): It was developed by Zigmond and Snaith. [20] It contains 14 items and consists of two subscales: 7 items for depression and 7 items for anxiety. Each item is rated on four likert scale (0-3) giving maximum scores of 21 for anxiety and depression. Score from 0-7 on either subscale considered normal, 8-10 represents mild, 11-14 represents moderate and 15-21 represents severe.

Tool (3): Pre-post knowledge questionnaire: The questionnaire was developed by the researcher to determine patients' information about: definition of ulcerative colitis, risk factors and signs and symptoms …etc). The responses of the patients were scored from one to three scores to assess level of general knowledge. Score one was given for wrong answer score two for incomplete answer and score three for right answer.

Content validity and reliability:

Quality of life scale retested for its content validity after translation by group of five experts in the psychiatric and community medicine and nursing. The required modification was carried out accordingly. Then test-retest reliability was applied. The tool proved to be strongly reliable (r = 0.7222). Pre-post knowledge questionnaire was tested for its content validity by group of five experts in the psychiatric and community medicine and nursing. Then test-retest reliability was applied. The tool proved to be strongly reliable (r = 0.8222).

Field Work:

Data was collected during three Months started from April to July; 2014. Evaluation of ulcerative colitis cases and application of the Educational program intervention took 2 months. The post test was started immediately after finishing baseline assessment for all subjects took one month. Implementation of the study passed

into three phases (pre assessment phase, implementation phase and post assessment phase).

- **Assessment phase**: Subjects were asked to fill questionnaire individually at suitable place where pre-assessment was done using. Hospital anxiety and depression scale (HAD Scale), quality of life scale and Pre-post knowledge questionnaire.

- **Implementation Phase**: include six sessions giving information about: Definition of disease, Disease process, Etiology of disease and risk factors, Symptoms and Symptom triggers, Medication management/compliance, Dietary habits and Ways to be involved in their own care. The patients were receiving educational program at outpatient medical clinics.

- **Evaluation phase:** Evaluation was done using Hospital anxiety and depression scale (HAD Scale), quality of life scale and Pre-post knowledge questionnaire. It was done after conducting the teaching sessions.

Pilot study:

A pilot study was conducted on 10% of study sample (5 patients) to evaluate the constructed tools for clarity and applicability then necessary modification carried out for example rephrasing of some question. The results of the pilot study were excluded from the study.

Administrative and ethical considerations:

An official approval was obtained from the Dean of Faculty of Nursing forwarded to the director of Menofia University Hospital and Shebin El kom Teaching Hospital. The aim of the study was explained to the patients, encouraged to participate and motivated to express their experiences. The patients were asked to give an informed verbal consent to participate. It was emphasized that all data collected was strictly confidential and

the data would be used for scientific purposes only.

Statistical analysis:

Analysis was performed using SPSS, version 16.0. Parametric tests were one a way ANOVA (F test), Paired t test. Non parametric tests were Mann-Whitney test, Kruskal - Wallis test and Wilcoxon signed rank test.

Results:

Regarding to basic data among studied group , as shown in **(table 1)**, it was found that, (56%) were in age group(40-60) years, the majority of studied patients (76%) were male, 60% had secondary education , The highest frequency (82%) were married , regarding occupation 46% of them were had administrative work and only 14% were housewife.

As shown in the **figure (1),** there was highly statistically significant difference between pre and post intervention program regarding depression and anxiety score levels

Figure (2): Illustrated that there were highly statistically significant difference between pre and post intervention program regarding all dimensions of quality of life (Illness, Independent living, Social relationship, Physical senses and Psychological well-being) and total quality of life score levels.

Table (2): Demonstrates that there were no statistically significant difference between age and anxiety, depression, dimensions of quality of life and quality of life pre and post intervention

Table (3): Shows that there were no statistically significant difference between sex and anxiety, depression, dimensions of quality of life and quality of life pre and post intervention expect between sex and disease dimension and total quality of life post intervention.

Table (4): Clarifies that there were no statistically significant difference between sex and anxiety, depression, dimensions of quality of

life and quality of life pre and post intervention expect between education and psychological dimension post intervention.

Table (5): Shows that. There were no statistically significant difference between sex and anxiety, depression, dimensions of quality of life and quality of life pre and post intervention expect between occupation and living dimension pre intervention

Table (6): Illustrated that there were highly statistically significant difference between pre and post intervention program regarding all items of knowledge score levels.

Table (7): Clarifies that there was highly statically significant negative relationship between quality of life, depression and anxiety i.e., when depression and anxiety increased, quality of life deteriorated.

Discussion:

Ulcerative colitis adversely affects the quality of life of many patients with symptoms that include frequent diarrhea, urgent bowel movements, rectal bleeding, and fatigue. Patients' quality of life and economic productivity are significantly impaired by chronic ulcerative colitis.[21,22] Mental health problems such as depression and anxiety are common in physical illness (Ulcerative colitis) [23,24] and are associated with adverse outcomes including: poorer quality of life [25] ; more physical symptoms;[26] reduced adherence to medication; [27] increased mortality; and increased service use. [28] Therefore reducing depression and anxiety in patients with physical illnesses may improve physical outcomes.[14] so, the aim of the study was To evaluate the effect of educational program on improving psychological status and quality of life among patients with ulcerative colitis.

Our study showed that above half of the studied patients were in age group group (20-60) years. This result was congruent with Maria et al.[29] who found that median range of age is 17-77.The results of the present study

revealed that more than three quarter were male. This result incongruent with Serag et al., [5] who found that regarding the gender distribution, the male: female ratio was 1:1.15 for UC. On the other hand; Angel and Rhodes [13] found that about two third were male. Also the results of the present study revealed that more than three quarter of them were married. This is in agreement with Angel and Rhodes [13] who reported that about two third were married. This may be due to the married exposed to more stressful situation which considered risk for ulcerative colitis. Also about two third had secondary education. On the contrary; Maria et al.[29] reported that only about one fifth had secondary education.

QOL measures the effect of a chronic disease and its treatments on the patient from his or her own viewpoint. The QOL in ulcerative colitis patients is lower than that of the general population, especially in terms of general health perception. [30] The current result agreed with this statement where the result revealed that more than half of the subjects had poor quality of life. This is congruent with Larsson [6] who found that Patients with ulcerative colitis (UC) reported lower Health-related quality of life scores compared to a general. This may be due to failure to maintain or reestablish social ties which is important determinant of poor quality of life in long term survivors of ulcerative colitis. On the other hand; population-based studies in Sweden and Norway have shown that patients with ulcerative colitis have a significantly poorer QOL compared with the general population as measured by SF-36. [31,32]

The present study showed that there was significant relation between gender and quality of life; On the contrary; Maria et al. [29] reported that no significant difference on HRQoL regarding sex. Also the present study showed that there was significant relation between age and quality of life.

Conversely Maria et al. [29] found that age was not significantly associated with HRQoL. The current study showed that there was no significant relation between quality of life and level of education, and occupation. This is congruent with Maria et al. [29] who found that No significant difference was found between educational level and total score and the correlation between employment status and HRQoL was not significant.

Anxiety and depression are such common problems for people with IBD that these two mental disorders were originally considered to cause IBD.[8] The result of this study was in agreement with this statement as the result of the present study found that the majority of the studied sample had anxiety and depression. This is congruent with Goldacre and Yeates [33] who found that both depression and anxiety preceded UC significantly more often than would be predicted from the control population's experience. On the other hand, Winfried et al., [34] reported that most available studies demonstrated high levels of anxiety/depression in IBD patients with active disease.

The current study has shown that there was highly significant negative correlation between depression, anxiety and quality of life, i.e. when anxiety and depression increased, quality of life will decreased; This is congruent with Fruhwald et al.,[35] who reported that there was highly significant negative relation between depression, anxiety and quality of life.

For age as a factor in depression after ulcerative colitis, the result of the present study showed that age difference had no significant effect. This may be due to the lowest sample size. In one Canadian population survey depression in IBD was associated with female gender, marital status (living alone), and low education level.[36] This result disagrees with the result of the present study who found that gender, marital status, and education level did not play any

significant role in depression among ulcerative colitis patients. Concerning occupation and marital status as a factor in depression, result of the present study showed that occupation and marital status difference had no significant effect. This result agreed with the finding of Walker et al.,[37] in The Canadian Manitoba IBD cohort study found that no association between depressive disorder with employment or marital status.

Concerning age, gender, marital status, occupation and education as a factor in anxiety, the result of the present study showed that entire variables had no significant difference. This result agreed with the finding of Walker et al., [37] who reported that no association between anxiety disorder with employment or marital status while the same finding found an association between anxiety disorders with female gender.

The results illustrated that there were highly statistically significant difference between pre and post intervention program regarding all items of knowledge score levels. This result agreed with the finding of Hude, Jane and Lioyd [16] who found that the workshop increased their knowledge significantly, and the knowledge acquired was retained at least for 3 months. In other hand Larsson et al., [38] reported that IBD patients with a high anxiety level reported improved satisfaction with information about disease-related items.

As the results of the present study indicated, educational program had positive reductive effect on psychological status and quality of life level of patients with ulcerative colitis. This indicated that the sessions had a positive effect in increasing their knowledge so, the patients learning how to deal with disease and new alternatives to coping with any problem related disease. Moreover the educational program might helped them to become more aware of the symptoms of disease , diet, complication and treatment

compliance; this result supported by the study of Hude et al., [16] indicated that Educating patients has been found to increase treatment compliance, decrease anxiety level , and reduce the number of physician visits and patient cost; while Larsson et al., [38] reported 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 HRQOL after participating in the education programmed, not at least in the short-term perspective. In this selected group of patients, psychosocial problems other than disease-related concerns were found that warrant other approaches.

Conclusion:

Implementation of educational program have a positive effect on increasing knowledge and improving psychological status and quality of life level of patients with ulcerative colitis. Also, a negative relation was found between quality of life and psychological status.

Recommendation:

Based on the results of this study we recommend use of educational program to increasing knowledge and improving psychological status and quality of life level of patients with ulcerative colitis. Early detection and treatment for depression and anxiety to increase psychological well-being of patients with ulcerative colitis.

Table (1): Socio-demographic characteristics of the studied patients

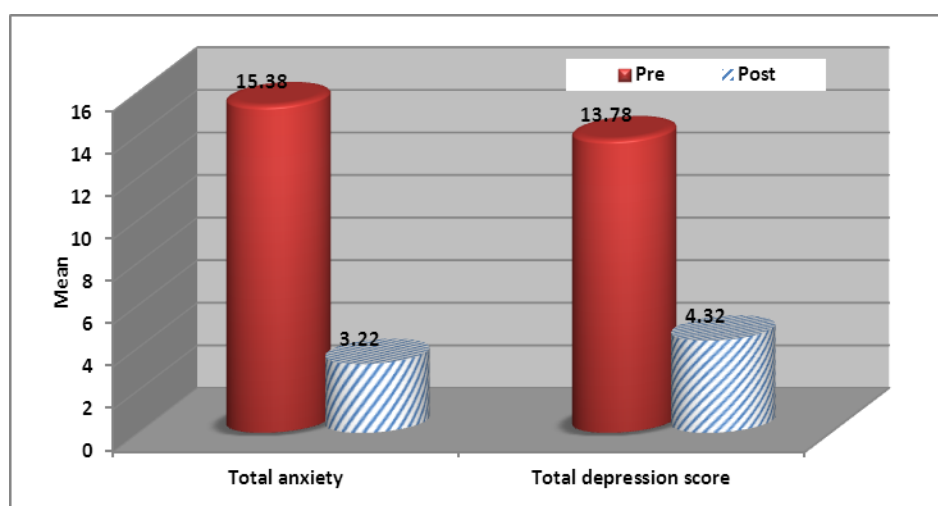| Item	Participants (N=50)	
	No	**%**
Age (Y)		
▪ 20-40	22	44.0
▪ 40-60	28	56.0
Sex		
▪ Male	38	76.0
▪ Female	12	24.0
Marital status		
▪ Married	41	41
▪ Single	9	9
Education		
▪ Basic	11	22.0
▪ Secondary	30	60.0
▪ University	9	18.0
Occupation		
▪ Manual work	20	40.0
▪ Administrative	30	46.0
▪ Housewife	7	14.0

Figure (1): anxiety and depression pre and post intervention
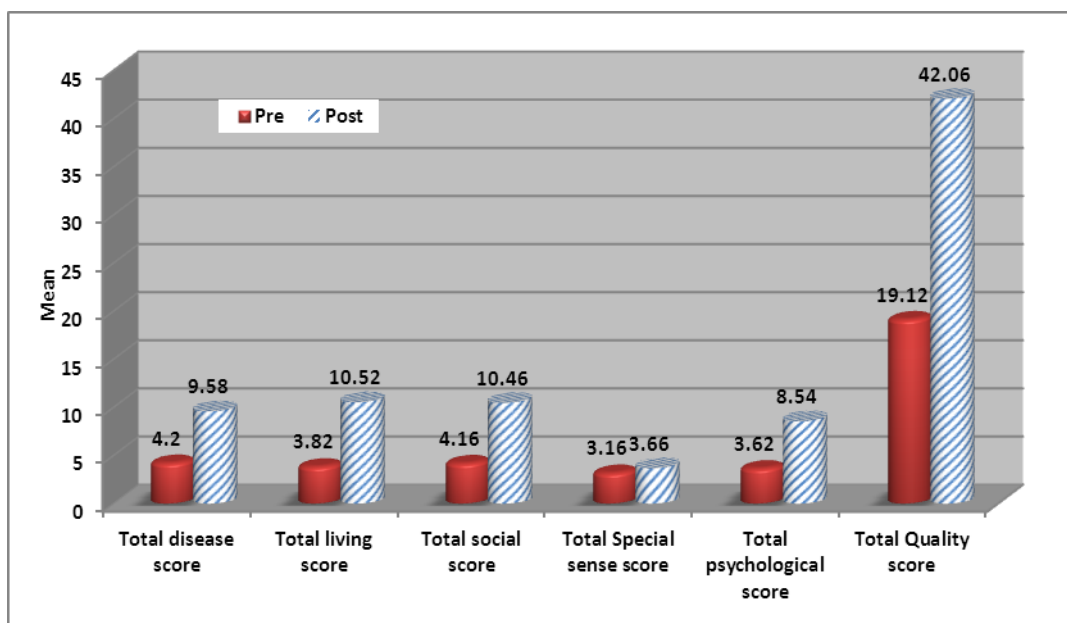
Figure (2): quality of life and its dimension post intervention

Table (2): Correlation between age and anxiety, depression, dimensions of quality of life and quality of life

Item	Age		Test	P value
	20-40 (N=22)	**>40-60 (N=28)**		
	Mean±SD	**Mean±SD**		
Anxiety score				
▪ Pre	15.0±3.36	15.67 ±3.45	0.69	0.489
▪ Post	3.81±2.57	2.75±1.95	*0.64	0.517
Wilcoxon test P value	4.11 <0.001	4.63 <0.001		
Depression score				
▪ Pre	13.81±3.69	13.66 ±3.42	12	0.902
▪ Post	4.60±2.60	3.41±2.64	*0.75	0.452
Paired t Test P value	4.12 <0.001	4.62 <0.001		
Disease score				
▪ Pre	4.04 ±1.21	4.32 ±0.90	0.92	0.361
▪ Post	9.0±1.11	10.03±1.57	2.61	0.012
Paired t Test P value	16.24 <0.001	16.58 <0.001		
Living score				
▪ Pre	4.0 ±0.87	3.67 ±0.77	1.87	0.174
▪ Post	10.59±0.79	10.46±1.03	0.47	0.638
Paired t Test P value	30.68 <0.001	25.69 <0.001		
Social score				
▪ Pre	4.13 ±1.16	4.17 ±1.46	*0.25	0.797
▪ Post	10.72±0.88	10.25±1.83	1.20	0.234
Paired t Test P value	25.31 <0.001	**4.60 <0.001		
Sensation score				
▪ Pre	3.22 ±0.42	3.10 ±0.31	1.10	0.278
▪ Post	3.81±1.22	3.53±0.88	0.95	0.347
Paired t Test P value	2.13 0.045	2.27 0.031		
Psychological score				
▪ Pre	3.72 ±0.76	3.53 ±0.74	0.89	0.377
▪ Post	8.54±1.33	8.53±1.03	0.02	0.977
Paired t Test P value	13.45 <0.001	21.21 <0.001		
Quality score				
▪ Pre	19.13 ±3.34	19.10 ±2.69	0.03	0.973
▪ Post	42.31±3.51	41.85±4.50	0.38	0.699
Paired t Test P value	22.80 <0.001	21.31 <0.001		

*Mann-Whitney** Wilcoxon Test*

Table (3): Relation between sex and anxiety, depression, dimensions of quality of life and quality of life

Item	Sex		Mann-Whitney	P value
	Male(N=38) Mean ±SD	Female (N=12) Mean ±SD		
Anxiety score				
▪ Pre	15.23±3.40	15.83 ±3.48	0.79	0.550
▪ Post	2.97±2.19	4.0±2.48	1.41	0.156
Wilcoxon Test	5.37	3.06		
P value	<0.001	0.002		
Depression score				
▪ Pre	13.81±3.69	13.66 ±3.42	0.09	0.927
▪ Post	4.60±2.60	3.41±2.64	1.60	0.110
Wilcoxon Test	5.38	3.06		
P value	<0.001	<0.001		
Disease score				
▪ Pre	3.92 ±0.88	5.08 ±1.08	3.07	0.002
▪ Post	9.26±1.38	10.58±1.31	2.67	0.007
Paired t Test	18.71	12.63		
P value	<0.001	<0.001		
Living score				
▪ Pre	3.97 ±0.82	3.33 ±0.65	2.39	0.016
▪ Post	10.50±0.83	10.58±1.16	0.45	0.650
Paired t Test	34.79	18.51		
P value	<0.001	<0.001		
Social score				
▪ Pre	4.21 ±1.41	4.0 ±1.04	17	0.858
▪ Post	10.42±1.60	10.58±1.16	0.01	0.991
Paired t Test	**5.37	13.60		
P value	<0.001	<0.001		
Sensation score				
▪ Pre	3.13 ±0.34	3.25 ±0.45	.96	0.334
▪ Post	3.65±1.04	3.66±1.07	0.18	0.851
Paired t Test	2.80	1.33		
P value	0.008	0.210		
Psychological score				
▪ Pre	3.52 ±0.68	3.91 ±0.90	1.46	0.144
▪ Post	8.34±1.21	9.16±0.71	2.23	0.025
Paired t Test	19.06	18.84		
P value	<0.001	<0.001		
Quality score				
▪ Pre	18.97 ±2.95	19.58 ±3.08	0.54	0.587
▪ Post	41.26±4.29	44.58±2.15	2.65	0.008
Paired t Test	24.37	29.01		
P value	<0.001	<0.001		

*** Wilcoxon Test*

Table (4): Relation between education and anxiety, depression, dimensions of quality of life and quality of life

Items	Education			F test	Post hoc
	University (N = 9) Mean ± SD	Secondary (N = 30) Mean ± SD	Basic (N = 11) Mean ± SD		
Anxiety score					
• Pre	14.18±2.85	16.10 ±3.17	14.44±4.36	1.75	0.185
• Post	3.81±2.22	3.16±2.50	2.66±1.50	**1.51	0.469
Wilcoxon Test	2.93	4.78	2.68		
P value	0.003	<0.001	<0.001		
Depression score					
• Pre	12.0±1.41	13.83 ±3.92	15.77±3.49	2.95	0.062
• Post	4.72±2.90	4.26±2.40	4.0±3.27	**0.70	0.702
Wilcoxon Test	2.94	4.79	266		
P value	0.003	<0.001	0.008		
Disease score					
• Pre	3.90±1.22	4.26 ±1.08	4.33±0.70	0.54	0.583
• Post	9.27±1.01	9.56±1.47	10.0±1.93	0.59	0.554
Paired t Test	17.23	15.16	10.25		
P value	<0.001	<0.001	<0.001		
Living score					
• Pre	3.81±0.98	3.90 ±0.80	3.55±0.72	0.59	0.557
• Post	10.90±0.53	10.50±0.93	10.11±1.16	1.09	0.160
Paired t Test	19.26	28.33	17.39		
P value	<0.001	<0.001	<0.001		
Social score					
• Pre	3.81±0.75	4.43±1.54	3.66±0.86	**1.99	0.369
• Post	10.36±1.20	10.43±1.59	10.66±1.65	0.10	0.897
Paired t Test	15.07	*4.76	10.18		
P value	<0.001	<0.001	<0.001		
Sensation score					
• Pre	3.36±0.50	3.13 ±0.34	3.0±0.0	2.76	0.073
• Post	3.63±1.20	3.63±1.06	3.77±0.83	0.06	0.935
Paired t Test	0.76	2.28	2.80		
P value	0.465	0.030	0.023		
Psychological score					
• Pre	3.54±0.68	3.66 ±0.80	3.55±0.72	0.13	0.870
• Post	9.36±0.67	8.23±1.27	8.55±0.72	4.30	0.019
Paired t Test	22.08	15.72	15.0		
P value	<0.001	<0.001	<0.001		
Quality score					
• Pre	18.45±2.91	19.66 ±3.29	18.11±1.05	1.32	0.276
• Post	43.63±1.74	41.13±4.63	43.22±3.76	1.99	0.147
Paired t Test	32.60	20.52	16.79		
P value	<0.001	<0.001	<0.001		

*Wilcoxon Test ** Kruskal-Wallis

Table (5): Relation between occupation and anxiety, depression, dimensions of quality of life and quality of life

Item	Occupation			F test	Post hoc
	Manual [1] (N =20) Mean ± SD	Administrative [2] (N = 30) Mean ± SD	Housewife [3] (N = 7) Mean ± SD		
Anxiety score					
▪ Pre	15.54±2.94	14.78 ±3.88	17.14±2.54	1.31	0.277
▪ Post	2.85±2.25	3.52±2.39	3.28±2.21	**1.48	0.475
Wilcoxon Test P value	3.93 <0.001	4.20 <0.001	2.37 0.018		
Depression score	13.85±3.11	13.82 ±4.10	13.42±3.59	0.03	0.963
Pre	4.15±2.77	4.86±2.39	3.0±2.82	**4.09	0.129
Wilcoxon Test P value	3.93 <0.001	4.20 <0.001	2.37 0.018		
Disease score					
▪ Pre	3.95±0.82	4.21 ±1.24	4.85±0.69	2.02	0.144
▪ Post	9.35±1.53	9.56±1.44	10.28±1.38	1.05	0.357
Paired t Test P value	11.71 <0.001	18.73 <0.001	8.35 <0.001		
Living score					
▪ Pre	3.95±0.88	3.96 ±0.76	3.0±0.0	4.60	0.015
▪ Post	10.55±0.82	10.65±0.93	10.0±1.15	1.35	0.268
Paired t Test P value	23.18 <0.001	25.50 <0.001	16.03 <0.001		
Social score					
▪ Pre	4.30±1.75	4.13±0.96	3.85±1.06	**0.52	0.769
▪ Post	10.50±1.67	10.34±1.43	10.71±1.38	0.16	0.848
Paired t Test P value	*3.89 <0.001	19.04 <0.001	9.73 <0.001		
Sensation score					
▪ Pre	3.10±0.30	3.21±0.42	3.14±0.37	0.53	0.589
▪ Post	3.65±0.98	3.73±1.17	3.42±0.78	0.23	0.794
Paired t Test P value	2.23 0.037	2.02 0.056	0.79 0.457		
Psychological score					
▪ Pre	3.65±0.67	3.60 ±0.89	3.57±0.53	0.03	0.969
▪ Post	8.70±1.17	8.26±1.21	9.0±0.81	1.42	0.252
Paired t Test P value	13.36 <0.001	14.91 <0.001	26.87 <0.001		
Quality score					
▪ Pre	19.35±3.19	19.13 ±3.22	18.42±0.78	0.24	0.786
▪ Post	42.30±3.85	41.43±4.82	43.42±1.61	0.67	0.514
Paired t Test P value	16.26 <0.001	21.98 <0.001	33.07 <0.001		

*Wilcoxon Test ** Kruskal-Walli

Table (6): Comparison between knowledge of the studied subject pre and post intervention

Item	Pre(n=50)		Post (n=50)		χ^2	P value
	no	%	no	%		
Meaning of ulcerative colitis						
▪ Right	5	10.0	48	96.0	75.49	<0.001
▪ Wrong	8	16.0	2	4.0		
▪ Don't know	37	74.0	0	0.0		
Risk factors						
▪ Right	2	4.0	49	98.0	88.62	<0.001
▪ Wrong	12	24.0	1	2.0		
▪ Don't know	36	72.0	0	0.0		
Signs & symptoms						
▪ Right	1	2.0	50	100.00.	96.08	<0.001
▪ Wrong	7	14.0	0	0		
▪ Don't know	42	84.0	0	0.0		
Diagnosis						
▪ Right	1	2.0	46	92.0	85.31	<0.001
▪ Wrong	4	8.0	3	6.0		
▪ Don't know	45	90.0	1	2.0		
Stages						
▪ Right	1	2.0	46	92.0		
▪ Wrong	2	4.0	3	6.0	87.37	<0.001
▪ Don't know	47	94.0	1	2.0		
Treatment						
▪ Right	1	2.0	47	94.0	89.50	<0.001
▪ Wrong	1	2.0	2	4.0		
▪ Don't know	48	96.0	1	2.0		
Complications						
▪ Right	1	2.0	50	100.00.	96.08	<0.001
▪ Wrong	7	14.0	0	0		
▪ Don't know	42	84.0	0	0.0		
Food increases pain						
▪ Right	2	4.0	47	94.0	82.02	<0.001
▪ Wrong	8	16.0	2	4.0		
▪ Don't know	40	80.0	1	2.0		
Pain increases with anxiety						
▪ Right	8	16.0	48	96.0	64.94	<0.001
▪ Wrong	1	2.0	0	0.0		
▪ Don't know	41	82.0	2	4.0		
Suitable food for health						
▪ Right	2	4.0	46	92.0	92.33	<0.001
▪ Wrong	0	0.0	4	8.0		
▪ Don't know	48	96.0	0	0.0		
Forbidden food						
▪ Right	1	2.0	47	94.0		
▪ Wrong	45	90.0	1	2.0	86.84	<0.001
▪ Don't know	4	8.0	2	4.0		
Allowed food						
▪ Right	4	8.0	46	92.0	85.28	<0.001
▪ Wrong	0	0.0	4	8.0		
▪ Don't know	46	100.0	0	0.0		
Abdominal pain						
▪ Yes	40	80.0	4	8.0	McNemar	<0.001
▪ No	10	20.0	46	92.0	test	
Pain after eating						
▪ Yes	44	88.0	3	6.0	McNemar	<0.001
▪ No	6	12.0	47	94.0	Test	

Table (7): Correlation between quality of life, depression, anxiety of the studied subjects

Variables	Quality Of Life	
	R	P
▪ *Depression*	-.832	0.000
▪ *Anxiety*	-.861	0.000

Significant at p > 0.05

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