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Effect of stress management on Psychological status of patients with ulcerative colitis case and control study

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ABSTRACT

The main therapeutic goals in ulcerative colitis (UC) are to maintain excellent quality of life by managing stress on the patient's Psychological state and preventing attacks. Because stress can trigger UC flare-ups. The effects of stress on the immune system and the inflammatory system are complex and depend on both the duration and severity of the stress. Both chronic stress and acute stress are associated with changes in systemic immune and inflammatory function that may be relevant in the pathogenesis of ulcerative colitis. Find out the effectiveness of stress management on psychological status of patients with ulcerative colitis. Find out the relationship between the effectiveness of stress management and patient age, gender, marital status, level of education, occupation, monthly income, and residency. A quasi -experimental design study was performed on patient who attended to Gastroenterology and Hepatology Teaching Hospital, from March 2021 to September 2021. The non-probability sampling including 50 patients for case study and 30 patients for control group. The questionnaire consists of 4 parts, part one the socio-demographic consist of 8 items. Part two consist of 20 items related to patient stress and fatigue. Part three dealing the Stress reduction methods, which include 8 items. Part 4 consist of 7 items related to patient uses of stress management. The results of present study revealed that 64.8% of case group show moderate level of stress and fatigues among at pretest time while during post-test time was decrease to 55.2% at posttest, their methods of stress reduction at pretest was 72.8% for agreement for these methods ant it improved at posttest was 96.6%. In addition, patient used stress management at pretest was 64% and their used improved after applying the instruction program to 98.3% at posttest. The study concluded that the stress management was effective on case group.

1. INTRODUCTION

Stress is the human body's response to environmental stimuli. In 1992, the United Nations defined stress as the "disease of the century". In the past decades has been a lot of attention Focus on the role of stress in physical health. The importance of stress for many diseases, such as cardiovascular disease It is widely

documented. High percentage of Myocardial infarction has been reported in permanently affected persons Stress in the workplace, or in subjects exposed to two or more severe type's Stressful life events, compared to controls [1]. Ulcerative colitis is one of the two main forms of chronic inflammatory bowel disease, which is a relapsing inflammation of the mucous membrane of the colon with variable extension from the rectum toward the cecum. The inflammation in ulcerative colitis is limited to the mucosal layer. It usually begins in the rectum where there is usually the highest inflammatory activity [2]. UC is a chronic inflammatory condition of the large intestine associated with proctitis, but often spreading near other areas of the colon. Absence of rectal involvement is seen in less than 5% of adult IBS patients at diagnosis, but can be seen in up to one-third of pediatric IBS cases [3]. The occurrence of UC has constant in grow nation state, at the turn of the twenty-first century, it has so far get larger in a lot of recently make countries within South America, Asia, Africa and the Middle East. While the generality leftover depressed in these countries, it is predictable to stand up expected to the increasing character of latest diagnoses UC [4].

Stress-induced neuronal activation is reported to increase primary tumor growth, expression of genes related to tumor invasion, and tumor cell proliferation in pancreatic cells [5]. [6] establish in their study that Most patients with ulcerative colitis reported that psychological stress affected the course of the disease in the past or even caused a flare. During such an outbreak, patients often experience a serious deterioration in quality of life. The incidence of emotional disorders is higher in IBD than in the general population. In addition, stress and anxiety affect the course and severity of primary bowel disease. Therefore, it is important to consider appropriate psychotherapy for patients with IBD [7]. [8] investigate in their study that increased burden of stress disorders in inflammatory bowel disease. They conducted their study on 6119 incident cases of IBD, and 30,573 matched individuals. There was a higher rate of stress, anxiety disorder, bipolar disorder, and schizophrenia in the IBD group compared to controls. The rates of stress, anxiety and bipolar disorder were higher in women, in the 18-24 age group, over the age of 44, in urban dwellers, and in those with low socioeconomic status. The prevalence of lifetime and existing stress disorders was also higher in IBD. They concluded their study the incidence and prevalence of stress disorders are high in the IBD population.

2. Methodology

Design and setting of the study: quasi- experimental study design carried out on patient attending to Gastroenterology and Hepatology Teaching Hospital, for the period of March 2021 to September 2021, in order to find out the effectiveness of psychological status of patients with ulcerative colitis.

The study instrument: The questionnaire was consisted of 4 parts, part one the socio-demographic consist of 8 items which as, age, gender, marital status, level of education, occupation, monthly income, and residency. Part two consist of 20 items related to patient stress and fatigue. Part three dealing the Stress reduction methods, which include 8 items. Part 4 consist of 7 items related to patient uses of stress management.

Validity and Reliability: The validity of the questionnaire and program was achieved by 12 experts from different scientific branches having at least 9 years of experience in their field of work. The reliability of the questionnaire was estimated by determining the internal consistency of the instrument by calculating the Cronbach's Alpha correlation coefficient which as= (0.824)

Sample of the study: A non-probability sampling included 50 patient for the case group and 30 patient for control group selected purposively based on the study criteria and after obtains verbal consent permission from them.

Statistical analysis: The data were analyzed by using the program of IBM Statistical Package of Social Sciences (SPSS) Version 26. Both descriptive statistical analysis {include frequencies (F), percentages (%), cumulative percent, MS, and standard deviation (SD)} and inferential statistical analysis approaches were used in order to analyze and assess the results of the study, ANOVA for equality of Means.

3. Results

Table (1): Distribution of the study Sample according to socio-demographic Characteristics

No.	Characteristics		Case group		Control group	
			F.	%	F.	%
1	**Age (year)**	18 – 27	13	26	6	20
		28 – 37	15	30	12	40
		38 – 47	10	20	6	20
		48 – 57	6	12	6	20
		58 – 67	5	10	0	0
		68 – 77	1	2	0	0
		Total	*50*	*100*	*30*	*100*
2	**Gender**	Male	36	72	15	50
		Female	14	28	15	50
		Total	*50*	*100*	*30*	*100*
3	**Social status**	Single	21	42	10	33.3
		Married	26	52	16	53.3
		Widowed/er	2	4	2	6.7
		Divorced	1	2	2	6.7
		Total	*50*	*100*	*30*	*100*
4	**Occupation**	Governmental employee	18	36	2	6.7
		Private employee	15	30	1	3.3
		Jobless retired	4	8	0	0
		Working retired	2	4	11	36.7
		Housewife	7	14	5	16.7
		Students	4	8	7	23.3
		Total	*50*	*100*	*30*	*100*
5	**Level of education**	Don't read/write	0	0	9	30.0
		Read & write	1	2	8	26.7
		Primary study graduated	3	6	3	10.0
		Intermediate study graduate	18	36	0	0
		Secondary study	9	18	9	30
		Institute	12	24	1	3.3
		College & higher study graduate	7	14	0	0
		Total	*50*	*100*	*30*	*100*
6	**Residency**	Rural	11	22	2	6.7
		Urban	39	78	28	93.3
		Total	*50*	*100*	*30*	*100*

7	**House type**	Rented	28	56	5	16.7
		Own	22	44	25	83.3
		Total	*50*	*100*	*30*	*100*
8	**Monthly income**	Sufficient	21	42	21	70
		Barely sufficient	27	54	9	30
		Insufficient	2	4	0	0
		Total	*50*	*100*	*30*	*100*

No: Number, F.: Frequency, %: Percentage

Table (1): presented the socio demographic characteristic of the study sample for case and control which of 30% of case group and 40% of control group at age 28-37 years old, 72% of case group, and 50% of control group was males. 52% of case group and 53.3% of control group was married. 36% of case group was governmental employees, and 36.7% of control group was retired, high present 36% of case group graduated from intermediate study graduated, and 33.4% of control group was read and write. The high present of patients social status for case and control group was married which of 52% and 53.3% respectively, High percent of case and control group was lives in urban which of (78%), 93.3% respectively, 56% of case group was rented housing, and 83.3% of control group have own housing, 54% of case group at barley sufficient income and 70% of control group have sufficient income.

Table (2): Assessment of Patients' Stress and Fatigue Level among Case and Control Group

s	Case Group (N=50)						Control Group (N=30)				
	Pre-test			**Post-test**			**Pre-test %**			**Post-test %**	
	M. S	SD	**Often**	**always**	**Sometim a**	**Often**	**always**	**Sometim e**	**Often**	**always**	**Sometim**
feel tired	2.20	.639	32	26	54	20	23.3	53.3	23.4	23.3	53.
feel that there are too many responsibilities ou	2.00	.639	20	32	40	28	26.4	36.7	36.7	26.7	33.
are quick to anger when performing tasks	2.02	.515	14	32	36	32	26.7	40	33.3	30	33.
lonely or isolated	2.04	.402	10	30	48	22	30	46.7	23.3	30	40
find yourself in a state of struggle	2.10	.614	24	26	48	26	30	36.7	33.3	30	40
fear that you may not be able to achieve goals	2.10	.647	26	18	64	18	16.7	46.7	36.7	20	50
calm	2.02	.428	10	2	88	10	3.3	93.4	3.3	10	70
have a lot of decisions to make	1.96	.699	22	8	78	14	6.7	80	13.3	10	70
feel frustrated	2.08	.444	14	8	86	6	20	73.3	6.7	23.3	63.
feel nervous	2.18	.482	22	12	74	14	20	53.3	26.7	30	43.
problems seem to be piling up	2.18	.629	30	16	50	34	26.6	36.7	36.7	26.7	33.
feel in a hurry	2.16	.650	30	18	40	42	20	40	40	23.3	36.

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have many fears	2.08	.634	24	16	36	48	10	33.3	56.7	30	26.
are under pressure from other people	2.12	.594	24	12	48	40	33.3	40	26.7	46.7	23.
are careless about yourself	2.10	.544	20	12	56	32	16.7	40	43.3	26.6	36.
are afraid of the future	1.98	.654	20	10	50	40	20	40	40	26.7	33.
feel criticized by everyone	2.16	.584	26	16	42	42	16.7	43.3	40	30	20
feel mentally exhausted	2.22	.545	28	10	52	38	10	76.7	13.3	26.7	46.
have the ability to take responsibility	2.40	2.87	14	24	56	20	6.7	86.7	6.7	10	83.
enough time for yourself	2.00	.350	3	24	58	18	6.7	93.3	0	13.3	76.
	Items	Case Group (N=50)	Control Group (N=30)	***17.6 %***	***55.2 %***	***27.2 %***	***18.5%***	***54.5%***	***27%***	***24.7%***	***45.***

f: Frequency, %: Percentage, M.S: Mean of score, SD Standard deviation

Table 2: presents the items related to patients' stress and fatigue; the patients in the case group show moderate level of stress and fatigues among 64.8% during the pre-test time and among 55.2% during post-test time.

The patients in the control group are also show moderate level of stress and fatigues among 54.5% during the pre-test time and among 45.6% during post-test time.

Table (3): Stress Reduction Methods for Patients (Case and Control Groups) at pre and post instruction program

List	**Methods**	**Case Group (N=50)**						**Control Group (N=30**		
		Pre-test %			**Post-test %**			**Pre-test %**		
		Disagree	**Not sure**	**agree**	**Disagree**	**Not sure**	**agree**	**Disagree**	**Not sure**	
1	Positive outlook	0	66	34	0	12	38	0	80	20
2	Practice deep breathing	0	40	10	0	12	88	6.7	80	13
3	Doing exercise	2	24	74	0	0	100	0	53.3	46
4	Sleep long enough	4	18	78	0	0	100	0	13.3	86
5	Not focusing on the problem	2	38	60	0	3	47	0	10	90
6	Talking to others	2	16	82	0	0	100	0	3.3	96
7	Getting closer to God (Allah)	0	0	100	0	0	100	0	0	10
8	Take responsibility	0	6	94	0	0	100	0	0	10
Total percentage		***1.2%***	***26%***	***72.8%***	***0%***	***3.4%***	***96.6%***	***0.8%***	***30%***	***69***

N: Sample size, %: Percentage

Table 3: presents the methods of stress reduction at pretest, and there agreement for these methods was

improved to 96.6% at posttest, while the control group was agree at pretest for the methods of stress reduction 69.2%, and changes to 73.4% at posttest.

Table (4): patient uses for Stress management for Case and Control Groups at pre-and post-instruction program

List	Measures	Case Group (N=50)						Control Group (	
		Pre-test %			Post-test %			Pre-test %	
		Not used	Sometimes	used	Not used	Sometimes	used	Not used	Sometimes
1	Facing psychological stress	2	66	32	0	0	100	3.3	80
2	Self-confidence	0	58	42	0	10	90	0	66.7
3	Arranging business and not accumulating them	0	42	58	0	0	100	0	40
4	Ignoring psychological stress	0	46	54	0	2	98	0	10
5	Set a time to rest	2	10	88	0	0	100	0	0
6	Establish a good relationship with others	2	16	82	0	0	100	0	0
7	Positive situation analysis	4	4	92	0	0	100	0	3.3
Total percentage		***1.4%***	***34.6%***	***64%***	***0%***	***1.7%***	***98.3%***	***0.5%***	***28.6%***

N: Sample size, %: Percentage

Table 4: revealed that 64% of case group patient used stress management at pretest, and their used improved after applying the instruction program to 98.3% at posttest, and the used of stress management for control group was 70.9% at pretest and 76.2% at posttest.

4. Discussion

The present study dealing 50 patients with ulcerative colitis as a case group. Which exposed to instruction program concerning patient's adherence for balance diet and medication. and 30 patients also have ulcerative colitis as control group which not exposed to instruction program, the socio-demographic characteristic for case and control which of 30% of case group and 40% of control group at age 28-37 years old, 72% of case group, and 50% of control group was males. 52% of case group and 53.3% of control group was married. 36% of case group was governmental employees, and 36.7% of control group was retired, high present 36% of case group graduated from intermediate study graduated, and 33.4% of control group was read and write. The high present of patient's social status for case and control group was married which of 52% and 53.3% respectively. High percent of case and control group was lives in urban which of (78%), 93.3% respectively, 56% of case group was rented housing, and 83.3% of control group have own housing.54% of case group at barley sufficient income and 70% of control group have sufficient income. Najm, M and Hassan, H. (2016) they included in their study 60 (case-control) group of ulcerative colitis patients in Iraq. To know the effectiveness of the counseling program in the knowledge of the patient to improve their awareness about their disease. The characteristics of the patients in their study were 56.6% of the cases, and the control group were the women in the groups of age (23-28) years for two groups, 56.7% of them are married in high school and college graduates, 66.7% were government employees. Certain nutrients may help fight the irritation and swelling in gut caused by UC.

It is important to note that stress does not cause underlying diseases like IBD, but can worsen symptoms. The gut is partially controlled by the central nervous system in the brain and spinal cord. Additionally, it has its own network of neurons in the lining of the digestive tract, known as the enteric or endocrine nervous system. In fact, the nervous system in your gut is so influential that some researchers consider the gut a second brain, as noted in an article in Scientific American. A cording to the present finding (table 2) the items related to patients' stress and fatigue; the patients in the case group show moderate level of stress and fatigues among 64.8% during the pre-test time and among 55.2% during post-test time. The patients in the control group are also show moderate level of stress and fatigues among 54.5% during the pre-test time and among 45.6% during post-test time.

[10] investigate 152 patients diagnosed with IBD were recruited from the digestive unit of Sagunt Hospital (Spain) they were receiving treatment. The study aimed to examine the potential mediating effect of mindfulness on the relationship between disease severity and health-related quality of life, stress, and fatigue in IBD patients. The study found that noticeable stress and fatigue negatively affected IBD and affected quality of life. [11] a prospective cohort study in a tertiary inflammatory bowel disease center in China. Conducted their study on 263 ulcerative colitis patients were enrolled consecutively between June 2013 and February 2015 to find out the effect of perceived stress and coping behaviors on quality of life and clinical outcomes in ulcerative colitis patients. The study found that patients who accepted the reality of the disease from a psychological point of view contributed a lot to adapting to receiving treatment, and also their acceptance of receiving psychological treatment was useful in improving the quality of life, reducing the severity of symptoms and controlling the disease.

The methods of reducing stress is very effective way for comfort patient, the finding of present study revealed that the UC patient who included was agree to used methods for reducing stress at pretest 72.8% of them, while increase the present who agree to use the method of reducing stress to 96.6% at posttest. [12] they conducted their study on thirty female patients were selected accidentally, and randomly assigned into three groups including cognitive-behavioral stress management (n=10), optimism training (n=10) and conventional medical therapy (n=10). All patients completed Perceived Stress Scale. The study found that psychological interventions such as training patients to control and adapt to psychological stress, change mood, and training in optimism could be effective in improving the psychological symptoms of ulcerative colitis patients.

Several studies have confirmed that stress and psychological pressure with chronic infections, especially in the digestive system, can increase the possibility of tumors or the development of cancerous diseases. Therefore, in our current study, we increase the patient's knowledge about his commitment to methods that reduce psychological stress (Table 4). [13] the study was conducted on 136 adult patients with IBD residing in the United States to participate in the study. Among whom median age was 35 years (range 18–75), and 82 % were female. 57% had CD, and 43 % had UC, they concluded their study patients with IBD, if they adhere to the recommendations of the service provider, who may be a doctor or a nurse, will contribute to an increase in stress, a decrease in the patient's health related quality of life and an increase in the possibility of relapse. Therefore, the study recommends to listen to the advice of the service provider and to use psychological interventions to increase health related quality of life and reflect on the patient's condition.

5. Conclusions

The study concluded that the stress management was effective on case group on their Psychological status of patients with ulcerative colitis.

6. Recommendations

The study recommends increase the patient's health awareness toward the stress management to reduce suffer of patient with ulcerative colitis, and establishing rehabilitation units in hospitals for guiding the patient about the importance of stress management on patient with ulcerative colitis.

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