



## Effect of Counseling Program on Coping Strategies of Patients with Irritable Bowel Syndrome

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### ABSTRACT

**Background:** Irritable bowel syndrome is a common functional gastrointestinal disorder characterized by a constellation of symptoms, including abdominal pain, bloating, and altered bowel habits. Coping strategies are the behavioral and cognitive techniques used to deal with the demands and essential needs to patients for preserving wellbeing of health. **Aim:** This study aimed to evaluate the effect of counseling program on coping strategies of patients with irritable bowel syndrome. **Research Design:** A quasi-experimental research design was used. **Setting:** The study was conducted at medicine out-patients clinic in Helwan General Hospital Cairo, Egypt. **Sample:** A purposive sample included 80 patients with irritable bowel syndrome were used in this study. **Tools:** Two tools were used in this study: **Tool I:** An interview questionnaire which consisted of: **Part I:** a) Demographic characteristics of studied patients b) Past and present medical history of studied patients. **Part II:** Patients' knowledge about irritable bowel syndrome. **Part III:** Patients' attitude about irritable bowel syndrome. **Tool II:** Patients' coping strategies. **Results:** The present study showed that 68.7% of studied patients had poor knowledge, 58.2% of them had a negative attitude and 70% of them had a low coping strategies about irritable bowel syndrome at pre counseling program, which improved to 82.0% of them had good knowledge, 85% of them had positive attitude and 80.5% of them had good coping strategies at post counseling program. **Conclusion:** The counseling program improved the studied patients' knowledge, positive attitude and attitude about irritable bowel syndrome. **Recommendation:** Continues counseling program about coping strategies of patients with irritable bowel syndrome.

**Key words:** Counseling Program, Coping Strategies Patients& Irritable Bowel Syndrome

### Introduction

Irritable bowel syndrome (IBS) is a common condition that effects on stomach and intestines, also called the gastrointestinal tract. IBS is a chronic functional disease that affects the patient's normal life and work. It mainly affects young and

female individuals, and it tends to overlap with other Functional Gastrointestinal Diseases (FGIDs) and causes a huge burden on life and society's economy (Chey et al., 2021).

Patients with IBS may describe abdominal discomfort in different ways, as sharp pain,

cramping, bloating, distention, fullness or even burning. The pain may be triggered by eating specific foods, following a meal, emotional stress, constipation or diarrhea. Other symptoms may include presence of blood, pus or mucus in stool, rectal bleeding, nausea, vomiting, poor appetite and weight loss. IBD is typically episodic in nature, with persons experiencing exacerbations and remissions of the disorder. IBS is an ongoing condition that requests long-term management (Feldman et al., 2021).

Irritable bowel syndrome complications contain psychological comorbidities such as anxiety, depression, and somatization, which can exacerbate the severity of gastrointestinal symptoms and vice versa. Furthermore, IBS has been implicated in altered gut microbiota composition, which may contribute to dysbiosis and further gastrointestinal dysfunction. Chronic IBS is also associated with increased healthcare utilization, with frequent visits to healthcare providers and increased use of diagnostic procedures. Moreover, IBS has been linked to disruptions in the gut-brain axis, which could contribute to the perpetuation of symptoms and the development of chronicity (Frere et al., 2024).

Coping strategies refer to the cognitive, emotional, and behavioral responses individuals use to manage stressors, challenges, and adversity. Effective coping strategies for patients with IBS often involve a combination of lifestyle modifications and psychological interventions. Patients benefit significantly from implementing dietary changes, which helps to reduce symptoms

by identifying and avoiding specific food triggers (Staudacher et al., 2023). In addition, self-management techniques including relaxation exercises, mindfulness, and stress reduction practices can mitigate the impact of IBS by addressing the disorder's stress-related components (Koloski et al., 2021). Patients' education is crucial in empowering to manage their symptoms proactively and adopt a positive outlook towards their condition (Zhu et al., 2022).

Counseling patients with IBS is essential in managing the condition, as it involves both physical and psychological components. Effective counseling includes educating patients about the chronic nature of IBS, identifying dietary triggers, and implementing stress management strategies. Patients are often advised to follow dietary modifications and to engage in regular physical activity to help alleviate symptoms. Cognitive-Behavioral Therapy (CBT) is also recommended for managing the anxiety and stress that can exacerbate IBS symptoms. This holistic approach can significantly improve the quality of life for IBS patients, emphasizing the importance of lifestyle adjustments and psychological support in managing the disorder (Zhao et al., 2023).

Nurses play a critical role in helping patients with IBS by offering specialized therapies that enhance symptom management and coping. They support patients in making lifestyle changes, like implementing stress-reduction strategies and identifying triggers that make symptoms worse. Through comprehensive evaluations and customized treatment programs, nurses can inform

patients about useful tactics such as stress reduction, dietary changes, and the value of consistent exercise (**Kumar, 2021**). Nurses should also promote and make it easier for patients to receive multidisciplinary care, such as that of psychologists and nutritionists, to address the psychological as well as the physical components of IBS. Their continuous assistance and patient-focused methodology not only improve symptom control but also encourage patient empowerment and treatment plan compliance (**Lackner, 2024**).

### Significance of the study

Irritable Bowel Syndrome remains a prevalent functional gastrointestinal disorder affecting most of the population. Global prevalence of IBS ranges from 10%–25%, with significant variations and a prevalence of 8.9%–79.7% in Arab countries, IBS significantly diminishes the quality of life of individuals who have it. In Egypt, it found that the recurrence rate of IBS was 31.7% with a higher prevalence among women and among clients who had family history of IBS (**Elhosseiny et al., 2023**).

Irritable Bowel Syndrome is a chronic gastrointestinal disorder that presents a significant challenge to both patients and healthcare providers. Its heterogeneous nature requires a personalized approach to treatment that combines dietary management, pharmacological therapies, psychological support, and complementary treatments. Coping strategies for IBS are crucial for improving patient outcomes, as they help manage not only the physical symptoms but also

the psychological distress associated with the condition (**Everitt et al., 2023**).

Counseling program can provide insights into how counseling interventions may improve patients' ability to manage their symptoms and reduce the burden of the disease. Effective counseling can enhance coping strategies, helping patients' better handle stress and emotional triggers that often worsen IBS symptoms. Furthermore, this research can contribute to a more holistic treatment approach, integrating psychological support with traditional medical treatments, ultimately leading to more comprehensive care for IBS patients. Understanding the effectiveness of counseling can guide healthcare providers in developing tailored interventions that address the specific needs of IBS patients, potentially leading to improved patient outcomes and quality of life (**Choung, 2024**). So, this study was conducted to evaluate the effect of counseling program on coping strategies of patients with irritable bowel syndrome

### Aim of the study

The present study aimed to evaluate the effect of counseling program on coping strategies of patients with irritable bowel syndrome

### Research hypotheses:

**H<sub>1</sub>:** Counseling program will improve studied patients' knowledge and attitude about irritable bowel syndrome in post program than pre-program.

**H<sub>2</sub>:** Counseling program will improve coping strategies of studied patients about irritable bowel syndrome in post program than preprogram.

**H3:** There will be significant correlations between knowledge, attitude, and coping strategies of studied patient regarding irritable bowel syndrome in post program than pre-program.

## Subjects and Methods

### Research design:

A quasi-experimental research design was used in the current study

### Research setting:

The study was conducted at medicine out-patients clinic in Helwan General Hospital Cairo, Egypt, which it located in first floor at Helwan General Hospital and included one room for checkup, the working in this clinic all day per week from 9 am to 1 pm except Friday.

### Sample

A purposive sample composed of 80 patients diagnosed with irritable bowel syndrome, attending the previously mentioned setting during a period of data collection.

### Inclusion criteria

- Male and female patients diagnosed by irritable bowel syndrome
- Patients are willing to participate in the study and have the ability to complete the questionnaire.

**Sample size:** the sample size can be calculated using the following formula:

$$n = [(Z_{\alpha/2} + Z_{\beta})^2 \times \{2(SD)^2\}] / (\text{mean difference between the two groups})^2$$

Were

SD = standard deviation

$Z_{\alpha/2}$ : This depends on the level of significance, for 5% this is 1.96

$Z_{\beta}$ : This depends on power, for 80% this is 0.84

Therefore,

$$n = [1.96 + 0.84]^2 \times \{2(16.92)^2\} / (7.2)^2 = 80.$$

Based on the above formula, the sample size required is 80.

### Tools for Data Collection:

**Data was gathered by using two tools as the following:**

#### 1<sup>st</sup> tool: A structured interview questionnaire

The researchers designed it after analyzing relevant literature, **Mohamed,(2020) & (Iwaloye),2025**. Written in basic Arabic and contains the following three parts:

**Part I: A: Demographic characteristics of studied patients** included age, sex, educational level, occupation, place of residence and monthly income.

**B: Medical history of studied patients:** included family history of irritable bowel syndrome, types of irritable bowel, current symptoms and follow up with doctor.

**Part II: Patients' knowledge regarding irritable bowel syndrome** as meaning of IBS, causes, signs and symptoms, types, high risk group for IBS, diagnostic test, complications, preventive measures for IBS, method of treatment of IBS and health precautions for dealing with IBS.

### Scoring system:

Complete answers was given two grades, incomplete answers received one grade, and don't

know or incorrect was scored zero. The total scores were 20 grades for 10 questions. The knowledge items were divided into three categories: good knowledge ( $\geq 75\%$ , equal to  $\geq 15$  scores), fair knowledge ( $50 - < 75\%$ , equal to  $10 - < 15$  scores), and poor knowledge ( $< 50\%$  equal to  $< 10$ ).

**Pat III: Patients' attitude regarding irritable bowel syndrome:** According to Kotsifas, (2021), twelve items were included in order to gauge the study patients' attitudes toward irritable bowel syndrome. For instance, think that maintaining a healthy diet and lifestyle is very important to manage IBS symptoms, IBS affects psychological and mood disorders, genetic factors, bacterial and viral infections are the most common causes of IBS, IBS has an impact on the quality of life and I can deal with my condition effectively and positively. The attitude Likert scale was assessed from 1 to 3, as follows agree = 3, neutral = 2 and disagree=1.

#### **Scoring system:**

The total attitudes scores were ranged from 12-36 for 12 items with total score equal 36 scores and classified as:

- Positive attitude  $\geq 60\% = 22-36$  grades.
- Negative attitude  $< 60\%$  means  $12 - < 22$  grades.

**2<sup>nd</sup> tool: Patients' coping strategies regarding irritable bowel syndrome scale:** It was adapted from Lacy and Weiser (2018). Encompassed 44 items presented through five dimensions; dietary change included 8 items, increased physical activity contained 9 items,

stress management contained 10 items, adherence to medication involved 10 items and follow up contains 7 items.

#### **Scoring system**

The coping strategies scale has three ratings; never (1), sometimes (2), and always (3). Forty-four items totaling 132 points were categorized as follows:

- Good coping strategies  $\geq 75\%$   
equals  $\geq 99$  scores.
- Moderate coping strategies  $50\% - < 75\%$   
equals  $66 - < 99$  scores.
- Low coping strategies  $< 50\%$   
equals  $< 66$  scores

#### **Data collection procedures:**

**Study Period:** Data was gathered over the course of six months start from May 2024 to the end of October 2024.

**Approval:** A formal letter was sent to Helwan General Hospital's director. The study's goals and advantages were described by the researchers. Data collection date, time, and study purpose were communicated to the director.

**Ethical considerations:** Formal approval to carry out this study was obtained from Scientific Research Ethics Committee at Faculty of Nursing, Helwan University number (39) at 13/2/2024. The study is voluntary, and before completing an informed consent form, participants were fully told about the study and their role in it. Among the ethical issues were outlining the purpose and nature of the study, stating the possibility of withdrawal at any time, and ensuring data

confidentiality to prevent unauthorized access without participants' approval. Morals, culture, ethics, and beliefs were respected.

### **Tool development:**

#### **Validity**

Three panel experts from community health nursing and 2 experts of medical surgical nursing departments assessed the study's validity. To ensure completeness and relevance, the required modifications were made appropriately.

#### **Reliability**

Testing the reliability of the tools through Alpha Cronbach Reliability analysis to determine the extent to which the questionnaire items related to each other.

<b>Tool</b>	<b>No. of items</b>	<b>Cronbach's Alpha</b>
Knowledge	10	0.887
Attitude	12	0.891
Coping strategies	44	0.923

#### **Pilot study**

A pilot study included 10% equal 8 patients under research was carried out to assess the tools' clarity and applicability and to gauge how long it would take to complete them. Following an analysis of the data from the pilot study, the appropriate adjustments were made to the research tools. Participants in the pilot study were included from study sample.

**Field work:** The researchers were present in the study sitting for two days a week. Before enrolling researchers gave them an introduction and described the purpose of study. Each patient

was questioned separately using the previously described research tool, and each interview lasted around 15 to 20 minutes. After introducing the questionnaire to the patients, the researchers graded the responses of participants in the study and obtaining their consent.

**Counseling program;** researchers created it to meet the real needs of the patients under study in order to improve their knowledge, attitudes and coping strategies regarding irritable bowel syndrome. Four stages were involved in the construction of the counseling program included the following

**Assessment phase:** The assessment tools were used to complete the preliminary stage. After being updated and tested for general information about irritable bowel syndrome, pretest results were used to determine the needs of the patients under research, and the study sheets took 15 to 20 minutes to complete. The gathered pretest data was then analyzed to aid in the counseling program's design.

**Planning phase:** Based on the results obtained from the assessment phase, a program about irritable bowel syndrome was created. Following a review of relevant literature, the educational sessions' goals and objectives were developed by identifying gaps, requirements, and shortcomings.

**Implementation phase** patients under study were 80, they were divided into 4 groups and each group consisted of 20 patients. The counseling program was implemented in the form of four

sessions: two sessions for theory and two sessions for practices. The length of every session was distinctive according to studied patients' response and time accessible. At the beginning of each session, the researchers started by a summary about what was given through the previous session and objectives of the new one, taking into consideration using simple and clear Arabic language to suit the educational level of the studied patients.

Parts covered in the theoretical sessions include meaning of IBS, causes, signs and symptoms, types, high risk group, diagnostic test, complications, IBS prevention, treatment method, and health precautions for IBS. The practical sessions cover practices regarding physical activity, dietary habits and stress management.

Interviews with the patients under study took place in a private room at outpatient clinic. Small group discussions, lectures, brainstorming sessions, handouts, role-playing, demonstration, and re-demonstration as necessary were among the several educational techniques that were employed. Brochures and colorful posters served as instructional tools. The subjects of the study were notified at the conclusion of each session about the next session's date and time. The researchers created an illustrated booklet that served as a reference for the counseling program, providing the patients under study with the information they needed to understand irritable bowel syndrome and coping strategies.

**Evaluation phase:** The same pretest and posttest tools were used to compare the changes in the knowledge, attitudes, and coping strategies of the patients under study in sessions conducted after the program.

### Statistical Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS), version 29. The first part of data was descriptive data, which were coded, revised, tabulated and statistically analyzed using numbers, percentages, mean, standard deviations; variables were compared using paired t-test. The second part of data dealt with correlations between different variables, Spearman's correlation analysis was used for the assessment of the interrelationships among scored and ranked variables. Degrees of significance of the results were non-significant (NS) if  $P > 0.05$ , significant (S) if  $P \leq 0.05$  and highly significant (HS) if  $p \leq 0.001$ .

### Results

**Table (1):** Shows that, 56.25% of studied patients were 30-<50 years with mean  $\pm$ SD 35.5  $\pm$ 8.2. Regarding sex, 62.5% of them were female, 78.75% of them were married. Concerning level of education, 47.5% of them had secondary education and 53.75% of them were employed, while, 47.5% of them had not enough monthly income.

**Table (2):** Reveals that, 66.25% of studied patients not have family history of irritable bowel syndrome. Regarding type of irritable bowel, 43.75% of them had constipation, 67.5% of them

had changes in the number of times of defecation. While, 487.5% of them had Irregular follow up.

**Table (3):** Indicates that, highly statistically significant improvement between all items of knowledge of studied patients at pre/post counseling program about irritable bowel syndrome as  $p < 0.001$ .

**Figure (1):** Clarifies that, 68.7% of studied patients had poor knowledge level about irritable bowel syndrome at pre counseling program while improved to 82.0% of them had good knowledge at post counseling program as  $p < 0.001$ .

**Table (4):** Demonstrates that, highly statistically significant improvement between all items of attitude of studied patients at pre/post Counseling program about irritable bowel syndrome as  $p < 0.001$

**Figure (2):** Illustrates that, 58.2% of studied patients had negative attitude level about irritable bowel syndrome at pre counseling Program while improved to 85.0% of them had positive attitude level at post counseling program as  $p < 0.001$

**Table (5):** Reveals that, statistically significant differences between coping strategies domains of studied patients at pre/post counseling program as regard improvement in the following: dietary changes, increased physical activity, stress management, adherence of medication and follow up at  $p < 0.001$ .

**Figure (3):** Illustrates that, there are statistically significant differences between total coping strategies level at pre and post counseling program, which at pre 70% and 12.5% % of studied patients had low and good coping strategies level respectively. While at post 80.5% and only 7.0 % of them had good and low coping strategies level respectively.

**Table (6):** Displays that, there was high statistically significant positive correlation between the total studied patient's knowledge, attitude and coping strategies at pre and post counseling program at ( $P=0.000$ ).

**Table (1): Demographic characteristics of studied patients (n=80)**

<b>Variables</b>	<b>No.</b>	<b>%</b>
<b>Age (years)</b>		
<30	20	25
30 – < 50	45	<b>56.25</b>
≥ 50	15	18.75
<b>Mean ±SD</b>		<b>35.5 ±8.2</b>
<b>Sex</b>		
Female	50	<b>62.5</b>
Male	30	37.5
<b>Marital status</b>		
Single	7	8.75
Married	63	<b>78.75</b>
Divorced	6	7.5
Widow	4	5
<b>Level of education</b>		
Can't read and write	3	3.75
Read/write	9	11.25
Basic education	6	7.5
Secondary education	38	<b>47.5</b>
University	24	30
<b>Occupation</b>		
Employed	43	<b>53.75</b>
Housewife	23	28.75
Dealer	5	6.25
Handicraftsman	9	11.25
<b>Place of Residence</b>		
Rural	31	38.75
Urban	49	<b>61.25</b>
<b>Monthly income</b>		
Not enough	38	<b>47.5</b>
Enough	25	31.25
Enough and save	17	21.25

**Table (2): Medical History of studied patients (n=80)**

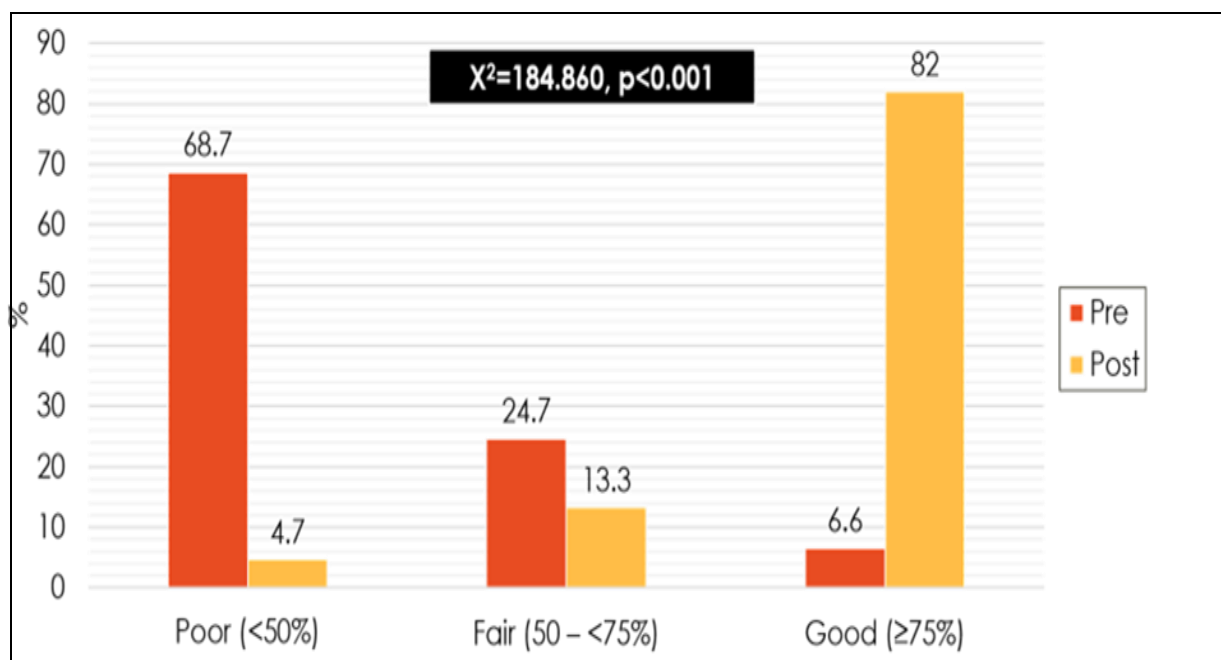
<b>Items</b>	<b>No.</b>	<b>%</b>
<b>Family history of irritable bowel syndrome</b>		
Yes	27	33.75
No	<b>53</b>	<b>66.25</b>
<b>Types of Irritable Bowel</b>		
Diarrhea	25	31.25
Constipation	<b>35</b>	<b>43.75</b>
Mixed	20	25.0
<b>*Current Symptoms</b>		
Abdominal pain	30	37.5
Changes in the shape of stool	42	52.5
Changes in the number of times of defecation	<b>54</b>	<b>67.5</b>
Decrease in weight	28	35.0
Diarrhea at night	37	46.25
Rectal bleeding	5	6.25
Vomiting of unknown cause	12	15.0
Feeling of general weakness	23	28.75
<b>Follow up with doctor</b>		
Every month	21	26.25
Every 3 months	13	16.25
Every 6 months	7	8.75
Irregular follow up	<b>39</b>	<b>48.75</b>

**\*Mutual exclusion**

**Table (3): Comparison between Studied Patients' Knowledge about Irritable Bowel Syndrome at Pre and Post Counseling Program (n= 80)**

Knowledge items	Pre- Counseling program						Post-Counseling program						X <sup>2</sup>	p
	Complete correct		Incomplete correct		Don't know or Incorrect		Complete correct		Incomplete correct		Don't know or Incorrect			
	No.	%	No.	%	No	%	No	%	No.	%	No.	%		
Meaning of IBS	15	18.75	45	56.25	20	25	62	77.5	10	12.5	8	10	18.842	<0.001**
Causes of IBS	18	22.5	29	36.25	33	41.25	67	83.75	8	10	5	6.25	23.951	<0.001**
Symptoms of IBS	19	23.75	33	41.25	28	35	54	67.5	19	23.75	7	8.75	19.130	<0.001**
Types of IBS	26	32.5	31	38.75	23	28.75	54	67.5	22	27.5	4	5	35.960	<0.001**
High risk group for IBS	38	47.5	26	32.5	16	20	59	73.75	18	22.5	3	3.75	30.687	<0.001**
Diagnostic test of IBS	33	41.25	23	28.75	24	30	58	72.5	13	16.25	9	11.25	23.847	<0.001**
Complications of IBS	20	25	31	38.75	29	36.25	64	80	11	13.75	5	6.25	24.992	<0.001**
Preventive measures for IBS	19	23.75	33	41.25	28	35	63	78.75	9	11.25	8	10	40.166	<0.001**
Method of treatment of IBS	26	32.5	35	43.75	19	23.75	60	75	16	20	4	5	38.677	<0.001**
Health precautions for dealing with IBS	38	47.5	19	23.75	23	28.75	64	80	10	12.5	6	7.5	18.842	<0.001**

\*\* Highly statistically significant at  $p < 0.001$



**Figure (1): Total Knowledge Level of Studied Patients about Irritable Bowel Syndrome at Pre and Post Counseling Program (n=80).**

Table (4): Comparison between Studied Patients' Attitude about Irritable Bowel Syndrome at Pre / Post Counseling Program (n= 80)

Attitude items	Pre- Counseling program						Post-Counseling program						X <sup>2</sup>	p
	Agree		Neutral		Disagree		Agree		Neutral		Disagree			
Think that	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Maintaining a healthy diet and lifestyle is very important to manage IBS symptoms	37	46.25	12	15.0	31	38.75	63	78.75	4	5.0	13	16.25	21.28	<0.001**
IBS affects psychological and mood disorders	42	52.5	8	10.0	30	37.5	69	86.25	2	2.5	9	11.25	18.63	<0.001**
Genetic factors, bacterial and viral infections are the most common causes of IBS	29	36.25	18	22.5	33	41.25	58	72.5	7	8.75	15	18.75	17.04	<0.001**
IBS has an impact on the quality of life	46	57.5	20	25.0	14	17.5	71	88.75	3	3.75	6	7.5	24.44	<0.001**
I can deal with my condition effectively and positively	36	45.0	23	28.75	21	26.25	62	77.5	11	13.75	7	8.75	21.70	<0.001**
Increasing awareness about IBS is useful to live with it	34	42.5	29	36.25	17	21.25	59	73.75	12	15.0	9	11.25	20.08	<0.001**
I will lose weight throughout my life due to IBS	24	30.0	33	41.25	23	28.75	53	66.25	11	13.75	16	20.0	13.11	<0.001**
Early diagnosis of IBS reduces the occurrence of complications	35	3.75	18	22.5	27	33.75	67	83.75	5	6.25	8	10.0	20.62	<0.001**
Exercising and maintaining a healthy diet makes my condition stable	31	38.75	21	26.25	28	35.0	64	80.0	6	7.5	10	12.5	21.97	<0.001**
Complications can be avoided if I maintain regular follow-up	43	53.75	13	16.25	24	30.0	66	82.5	5	6.25	9	11.25	33.63	<0.001**
Medications should be taken in consultation with doctors to treat IBS	37	46.25	16	20.0	27	33.75	71	88.75	3	3.75	6	7.5	21.86	<0.001**
Continuous follow-up makes my condition stable	39	48.75	15	18.75	26	32.5	73	91.25	2	2.5	5	6.25	19.11	<0.001**

\*\* Highly statistically significant at p&lt;0.001

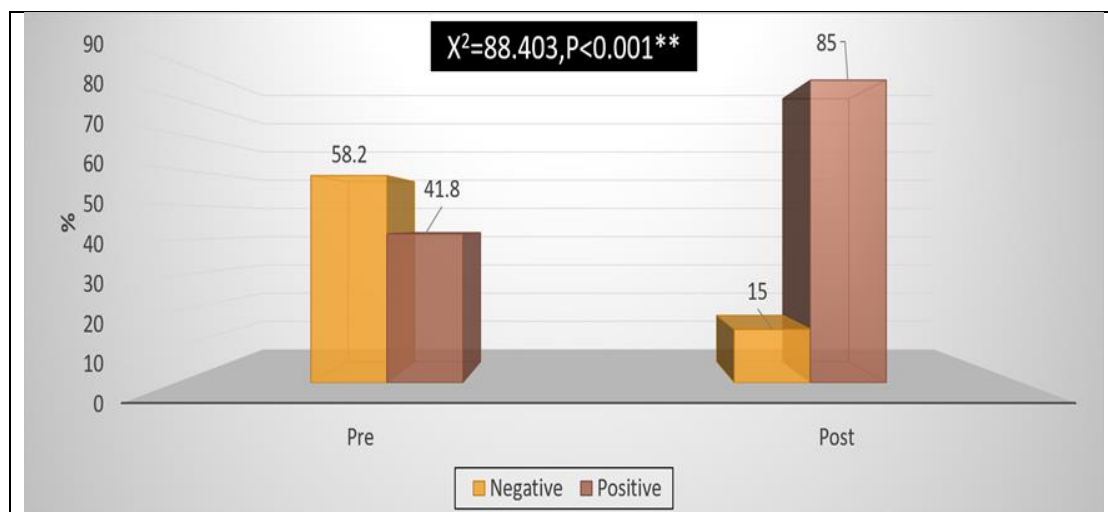


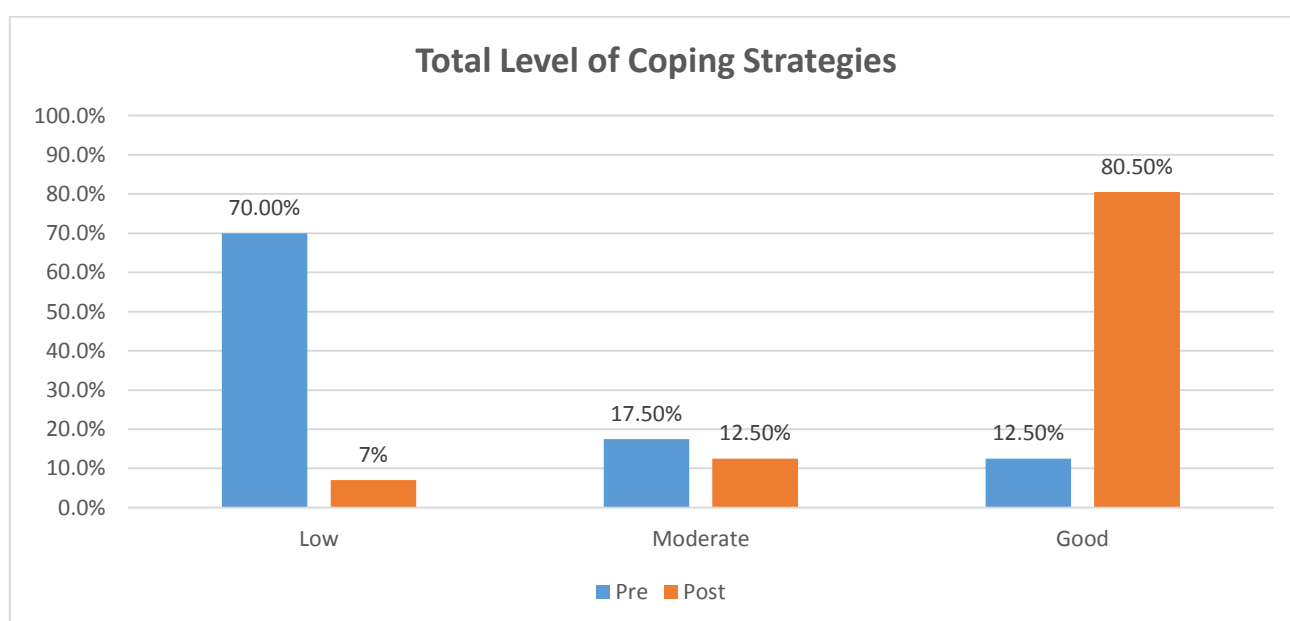
Figure (2): Total Attitude Level of Studied patients about Irritable bowel syndrome at Pre and Post Counseling Program (n=80).

Table (5): Mean Scores of Coping Strategies for Studied Patients' Regarding Irritable Bowel Syndrome at Pre / Post Counseling Program (n=80).

Total domains of Coping Strategies	Pre-Counseling Program	Post-Counseling Program	Mean - difference	t-test	p-value
	Mean ±SD	Mean ±SD			
Coping Strategies by dietary changes	12.9 ±1.4	22.1 ±1.9	9.7	18.153	<0.001**
Coping Strategies by increased physical activity	18.7 ±3.3	32.4 ±3.3	13.7	13.978	0.004*
Coping Strategies by Stress management	16.5 ±5.5	26.6 ±6.2	10.8	20.636	<0.001**
Coping Strategies through Adherence to medication	15.8±6.2	23.2 ±6.4	7.6	7.642	0.002*
Coping Strategies through follow up	6.3±2.1	10.7±1.3	3.6	13.839	0.003*
<b>Total</b>	<b>88.7</b>	<b>134.1</b>	<b>45.4</b>	<b>24.760</b>	<b>&lt;0.001**</b>

\*\*Highly statistically significant at  $p < 0.001$

\*Statistically significant at  $p < 0.05$



$X^2=64.444$   $P<0.001$

Figure (3): Total Coping Strategies Level of Studied patients about Irritable Bowel Syndrome at Pre and Post Counseling Program (n=80).

**Table (6): Correlation between Studied patients' Total knowledge, Total Attitude and Total Coping Strategies regarding Irritable Bowel Syndrome at Post Counseling Program (n=80)**

Study variables	Total Knowledge		Total Attitude		Total Coping Strategies	
	r	P	r	p	R	P
<b>Total Knowledge</b>	-	-	.915	.000**	.614	.000**
<b>Total Attitude</b>	.915	.000**	-	-	.896	.000**
<b>Total Coping Strategies</b>	.614	.000**	.896	.000**	-	-

## Discussion

Management of IBS necessitates a comprehensive, individualized approach encompassing dietary modifications, pharmacological interventions, and psychological therapies. Coping strategies for patients with irritable bowel syndrome are critical in managing the chronic nature of the disorder, which is characterized by recurrent abdominal pain and altered bowel habits. Psychological and behavioral interventions play a central role in IBS management, as they help reduce the psychological distress often associated with the condition. Furthermore, patients often engage in self-management practices, such as maintaining a symptom diary, which allows for the identification of potential triggers and helps in adjusting lifestyle habits. Coping strategies offers a multifaceted approach to managing patients with IBS to improve physical and emotional well-being (Staudacher et al., 2023).

Regarding demographic characteristics of studied patients, the present study findings revealed that more than half of studied patients were from 30-< 50 years with a mean  $\pm$ SD 35.5  $\pm$ 8.2. Also, the current study showed that more than three quarters of them were married and more than half of them were employed. This finding was

supported by Abd Elrasol et al., (2023) in an Egyptian study (n=70) entitled “Effect of Implementing Nursing Care Protocol on Daily Life Burden among Patients with Inflammatory Bowel Diseases” and stated that 54.6 % of the study sample were between the ages of 20 and 40 years while 79.2% of them were married. On other hand, these results disagree with Lamers et al., (2021) in Netherlands (n=37) in a study entitled “Repeated prolonged moderate-intensity walking exercise does not appear to have harmful effects on inflammatory markers in patients with inflammatory bowel disease” who reported that majority of age group affected was between 40- 60 years.

Concerning to sex, the present study showed that less than two thirds of them were female. This result comes in the same line with Kaplan et al., (2019) in a study conducted in Canada entitled “The Impact of Inflammatory Bowel Disease “which verified that, women compromised most of the study and he rationalized that, females had lifestyles as the use of the over counter medications such as analgesics and antibiotics. This could be interpreted as females have greater risk to develop IBS than males as females at higher risk for environmental changes that amend the gut microbiome that thought to be an important trigger

of the disease. Therefore, exposures like altering by breastfeeding patterns, hormone exposure during childhood, puberty, and menopause and post menopause, and dietary changes throughout life might play a role in IBS pathogenesis and disease course. On the contrary, these results disagree with **Mitchell et al., (2019)**, in Australia (n=60) studied titled about “Implementation of a diet low in FODMAPs for patients with irritable bowel syndrome directions for future research “ and reported that the incidence of IBD among males was greater than females, they suggested that these results may be due to a raised percentage of smoking aggravating IBD.

Regarding place of residence the present study finding revealed that less than two-thirds of studied patients were from urban areas .This results supported by **Peña-sánchez et al., (2023)** in Canada ( n=160) who studied “Inequities in Rural and Urban Health Care Utilization Among Individuals Diagnosed With Inflammatory Bowel Disease: A Retrospective Population-Based Cohort Study” and found that 61.9% of the study sample were from urban areas.

Concerning level of education, more than two fifths of studied patients had secondary education. The results agree with **Bosman et al., (2023)** in England who conducted a cross-sectional study on 419 patients entitled “The Socioeconomic Impact of Irritable Bowel Syndrome: An Analysis of Direct and Indirect Health Care Costs” and stated that 48.4% of study participants had secondary education. Plus, these results similar with **Sierzantowicz et al., (2020)** in Poland who

study “The impact of an individual educational program on the quality of life and severity of symptoms of patients with irritable bowel syndrome.” The study involved 150 IBS patients and reported that nearly half of participants had secondary education.

The findings of the present study show that more than half of studied patients were employed; additionally, approximately more than two fifths had not enough monthly income according to their opinion. The study finding come in the same line with **Alrifaie & Al-Mayahi (2022)** in Iraq (n=240) who study “Association Between Demographic Characteristics and Coping Strategies in Irritable Bowel Syndrome Patients” and illustrated that half of studied samples were employees while the same study was inconsistent with the present study regarding monthly income which stated that more than half of the sample had sufficient income level.

Concerning family history of studied patients, the present study indicated that two thirds of studied patients have no family history of irritable bowel syndrome. This results agreement with **Hafez et al., (2023)** in Egypt who applied research on 60 patients and studied “Effect of Self-Management Instruction on Quality of Life and Pain among Adult Patients with Irritable Bowel Syndrome” and stated that 67% of participants hasn't family history. In addition, these the results was consistence with **Mohamed et al., (2020)** in Egypt (n= 50 adult subjects) in a study “Effect of an educational module on knowledge, symptoms severity and quality of life in patients with irritable

bowel syndrome” who reported that more than half hadn't family history related to IBS.

These finding opposes with study done by **Amr et al., (2021)** in Egypt (n=75 adults) in a study entitled “Lifestyle Modification on Symptoms Reduction and Quality of Life Improvement among Adults with Irritable Bowel Syndrome, they reported that nearly two thirds of studied adults reported family history for IBS. Also, disagrees with **Abd Elaziz et al., (2019)** in Egypt (n=100) who studied “Psychosocial aspects and personality dimensions among a sample of patients with irritable bowel syndrome” reported that half of studied patient had a family history of IBS.

The present study findings revealed that, more than two fifths of studied patients had constipation and reported that irregular follow up with doctors respectively. These results were disagreement with **Bosman et al., (2023)** and reported that two fifths of studied patients had diarrhea and done regular follow-up with doctors. Also, disagree with **Thong et al., (2021)** (n=273) who study “Effectiveness of educational intervention carried out by clinical pharmacists for the quality of life of patients with irritable bowel syndrome: A randomized controlled trial” and clarified that more than two-thirds of patients with IBS had symptoms of loose stools, frequent bowel movements, bloating and farting.

Concerning knowledge of studied patients, the present study indicated that minority of them had complete correct answers about meaning,

causes and preventive measures of IBS at pre counselling program which improved to more than three quarters of them had complete correct answer about these items at post counselling program. This results in agreement with **Colwell et al., (2023)** who applied research in Iran (n= 88) and studied title “Effects of an irritable bowel syndrome educational class on health-promoting behaviors and symptoms” and stated that more than three quarters of studied sample had correct and complete answer about meaning, causes and preventive measures about IBS at post counselling program. Also, these results were consistence with **Gordon et al., (2023)** who conduct study in Australia (n= 270) in a study title “Patient education interventions for the management of inflammatory bowel disease” who reported that, most of patients had correct complete answer about meaning and preventive measures about IBS at post interventions program. **From researchers' points of view**, the improvement may reflect the effectiveness of consistent communication and reinforcement during the counseling sessions. Also, patients are given the opportunity to ask questions, receive feedback, and engage in repeated learning sessions that lead to enhancing comprehension.

The current study clarifies that more than two thirds of studied patients had poor knowledge about irritable bowel syndrome at pre counseling program. This agrees with **Hafez et al., (2023)** who reported that there was a significant improvement in patient's knowledge of study group than control group after implementing

educational sessions compared with pre intervention. According to researchers' point of view, the lack of knowledge can be due to the lack of educational services and the inaccessibility of sources of information on this disease and its effects. So, majority of studied patients had good knowledge post counseling program. Also, these results come in the same line with **Amr et al., (2021)** and found a statistical change into total knowledge scores of patients after implementing educational sessions. These may be due to the effectiveness of counseling program in improving patients' knowledge

Concerning attitude of studied patients, the present study indicated that majority of studied patients agree with IBS affects psychological and mood disorders post counselling program. These current results was agreement with **Hakim et al., (2023)** who applied research on South Africa (155 patients) and studied title “Evaluating Awareness and Associated Risk Elements of Irritable Bowel Syndrome” and stated that majority of studied patients agree with IBS affects psychological and mood disorders. Also, these results was consistence with **Iwaloye et al., (2025)** who conduct study in Egypt (n=70 patients) in a study title “Effect of Instructional Guidelines on Severity of Symptoms for Patients with Irritable Bowel Syndrome” who reported that, mostly of patients agree with IBS affects psychological and mood disorders. **From researchers' points of view,** these may be due to the brain and gut are closely linked. When the gut is upset, it sends stress signals to the brain, which can affect mood. Also,

IBS symptoms can disturb sleep which poor sleep can worsen mood and make it harder to cope emotionally. In addition, living with constant stomach pain, bloating, or irregular bowel habits can make a person feel anxious, stressed, or even depressed over time.

The present study results revealed that there was a highly statistically significant improvement between all items of attitude of studied patients at pre/post counseling program about irritable bowel syndrome, with significant improvement was seen in patients' perception of IBS's impact on quality of life, the belief that medications should be taken under medical supervision and Continuous follow-up makes condition stable. The present study findings was consistent with research conducted by **Björkman et al. (2019)**, in Indonesia (n=50) in study titled “An Intervention for Person-Centered Support in Irritable Bowel Syndrome: Development and Pilot Study” and demonstrated that patients' perceptions of participating in the intervention were positive and their ability to self-manage improved. Similarly, these present study results congruent with **Anderson and Taylor, (2022)** in England (n=120) in study titled “Cognitive-behavioral therapy and patient attitudes in IBS” who, found that IBS patients who participated in Cognitive-Behavioral Therapy (CBT)-based sessions exhibited significant improvements in attitude, leading to better coping mechanisms and symptom control.

The present study results revealed that, there were statistically significant differences between coping strategies domains of studied patients at

pre/post counseling program as regards improvement in dietary changes, increased physical activity, stress management, adherence of medication and follow up. The study results was consistent with **Barandouzi et al., (2024)** in Atlanta(n=80) in a study entitled “Nurse-led self-management support to improve symptom management and self-reported outcomes in people with irritable bowel syndrome” and showed the effectiveness of self-management and nurse-led support, including diet modifications, lifestyle behaviors, cognitive behavioral therapy, and relaxation techniques, in decreasing GI symptoms and increasing QOL.

Also, these results congruent with **Kamp et al., (2019)** in China (n=243) whose study about “Effects of a comprehensive self-management intervention on extra intestinal symptoms among patients with IBS” and found that individual sessions containing education, dietary counseling, relaxation training, and cognitive behavioral strategies reduced symptoms in patients with IBS. The researchers could explain this result regarding dietary change as, fiber can act as a bulking agent to improve intestinal transit and decrease constipation in a subgroup of IBS patients.

In addition, **Black and Ford (2021)** in Ukraine (n=150) in a study entitled “Best management of irritable bowel syndrome” clarified that physical exercise plays an important role in maintaining good physical and mental health, and that benefit is derived from even small increases in physical activity, with respect to gastrointestinal symptoms. According to researchers’ point of view

exercise can accelerate gastrointestinal transit and improve intestinal gas clearance in patients with bloating.

**Mohammadi, et al., (2021)** in a study aimed to investigate the effect of integrating cognitive behavioral therapy and mindfulness therapy on the lifestyle of patients with IBS in Tehran, Iran. They revealed that the lifestyle scores in the pre-test, post-test, and follow-up stages were significantly different.

The present study results displayed that, there was high statistically significant positive correlation between the total studied patients’ knowledge, attitude and coping strategies at post counseling program. The present study results come in the same line with **Hafez et al., (2023)** who reported that there was a significant improvement in patients' knowledge, attitude and coping strategies at post instructions. As well, these current findings were agreement with **Torkzadeh et al., (2020)** in Tanzina (n=95) in study entitled “Relations between Coping Skills, Symptom Severity, knowledge, and Quality of Life in Patients with Irritable Bowel Syndrome.” revealed that statistically significant positive correlation between coping skills, knowledge and quality of life of patients with irritable bowel syndrome. **From researchers’ point of view**, the relationship between knowledge, attitude, and coping strategies is dynamic. Patients with a positive attitude and adequate knowledge are more likely to employ adaptive coping strategies, which can enhance their quality of life. Conversely, a lack of knowledge and negative attitudes may lead

to maladaptive coping, exacerbating symptoms and reducing quality of life. So, a comprehensive understanding of IBS empowers patients to adopt positive attitudes and effective coping mechanisms, creating a synergistic effect that improves health outcomes

## Conclusion

Considering the current study findings, there were statistically significant improvements at post counseling program regarding patients' knowledge, attitude and coping strategies about irritable bowel syndrome. More than two thirds of studied patients had poor knowledge and low coping strategies at precounseling program. Also, more than half of them had negative attitude at precounseling program. While, majority of studied patients had good knowledge, positive attitude and good coping strategies about irritable bowel syndrome at post counseling program. Additionally, there was a statistically significant positive correlation between the studied patients' total knowledge, total attitude and total coping strategies.

## Recommendations:

Based on the findings of the study, the following recommendations are suggested:

- Continues counseling program to enhance coping strategies of patients with irritable bowel syndrome.
- Simple pamphlets and posters about IBS should be provided for all patients in outpatient clinics.

- Regular follow-up should be conducted to reduce or prevent complications among patients with irritable bowel syndrome.
- Further research on a larger sample and other settings is needed using a multidisciplinary approach.

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