



Factors Affecting Health Promoting Behaviors and Self-Efficacy in Patients with Inflammatory Bowel Diseases

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ABSTRACT

Currently, the majority of health problems result from personal behaviors. Most diseases, such as inflammatory bowel diseases, can be prevented or managed through applying health-promoting behaviors, to improve self-efficacy. This study **aimed** to assess factors affecting health-promoting behaviors and self-efficacy in patients with inflammatory bowel disease; using a descriptive and cross-sectional design at the general medical outpatient clinics of Suez-Canal University Hospitals, side-by-side with Ain Shams University Hospitals, from the beginning of November, 2021, to the end of January, 2022, on a purposive sample of 60 adult patients. **Three tools** were operated: A Structured Interview Questionnaire to assess clinical and socio-demographic information of the patients, in addition to exploring factors affecting the health-promoting behaviors and self-efficacy; the Inflammatory Bowel Disease Self-efficacy Scale, to assess confidence in managing disease-related responsibilities and current health-promoting behaviors; and the Health Promoting Lifestyle Profile-II. **Results** showed that around half of patients suffering from Crohn's disease, the most common factor affecting health-promoting behaviors and self-efficacy is stress management, and 83% of patients have low self-efficacy levels. **Conclusion:** Health Promoting Lifestyle Profile scores in patients with IBD are more than 2.00 and some are closer to 4.00, which denote a healthy lifestyle and a good general level of self-efficacy. **Recommendations:** Patients should encouraged to take due note of their health behaviors and learn from their own and other patients' experiences, with professional advice and support strategies to promote health and optimize self-efficacy.

Keywords: IBD, Self-Efficacy, Health Promoting Behaviors, and Lifestyle.

Introduction

The recurrent and chronic inflammations of the gastrointestinal tract are caused by a group of gastrointestinal disorders called idiopathic Inflammatory Bowel Diseases (IBDs). Crohn's Disease (CD) and Ulcerative Colitis (UC) are the types of IBDs sharing the same characteristics with regard to motor and sensory physiology. The foremost symptoms include abdominal pain that is concomitant with diarrhea, rectal bleeding, and change in the character of stools which is filled with mucus (Roda et al., 2020). Patients also could have extra-intestinal manifestations correlated to eyes, joints, and skin. Less frequently; the vascular system, lungs, biliary tract, and pancreas may perhaps involve (Ribaldone et al., 2019).

The IBD is a major health problem globally, as it is the more popular digestive disorder. after the common flu., it epitomizes the second leading cause of work absenteeism (Defrees & Bailey, 2017). The prevalence is extensively vary all the way through countries, although using the analogous diagnostic criteria (Oka et al., 2020). The IBDs prevalence diverse from 5.7 to 34% through the world. In female; the incidence is greater with a ratio of 2:1 comparing to male, with an early beginning of the disease at adulthood as age and gender influence the occurrence of the disease (Lovell & Ford, 2012; Elhosseiny et al., 2019).

IBD genes impact its pathogenesis as well as family history, hypersensitivity, GI bacteria changes, food intolerance, stimulation of intestinal

immunity, increased bowel permeability, in addition to alteration in the bowel neuroendocrine system (Imperatore et al., 2016). The onset and progression of IBDs are influenced by psychological concerns, exercise level, and dietary habits (Elhosseiny et al., 2019).

The morbidity is integral to the disease itself, associated with the therapeutic management including surgeries and treatments prescribed, professional and school productivity, personal growth, socialization, and family interactions. The IBD has high mortality as it is associated with increased risk of enhancing cancer (Knowles et al., 2018). About 25% of the patients may be complicated by abscesses, fistulas, and stenosis (Allen et al., 2017).

The IBD has an impulsive course, with rapid-onset and flare-ups symptom. The exacerbations of symptoms can be very solemn or life-threatening; necessitating urgent care and/or hospitalization. the patient with IBD is a complicated patient who requires multidisciplinary treatment, that is from the clinical point of view including both clinical and psychological treatments (Carels et al., 2021). The current IBD treatment is aimed at relieving symptoms, preventing complications, improving patients' self-efficacy, promoting health, and enhancing quality of life (Aggarwal et al., 2017).

The important elements of patients' care include quick access to healthcare, in addition to provide adequate time for discussion and counseling. Patients place a very high value on empathy, compassion, and interest. The main

concerns of people with IBD include loss of energy, loss of control, low body image, isolation and fear, failure to reach full potential, and lack of information (**Rubin et al., 2021**).

The IBD patients experience a deficiency in self-efficacy; reduced health-related quality of life, anxiety, depression, fatigue, increased disability, and change in health life style and health behaviors (**Allen et al., 2017**). Self-efficacy is the patients' beliefs in their proficiencies to control their functioning, and overcome measures that affect their lives. The personal beliefs in efficacy affect all life choices, motivation, functioning quality, adversity resilience, and susceptibility to stress and depression. The patients' beliefs in their efficacy are industrialized by four main influence sources: mastery experiences, seeing patients similar to oneself manage task demands successfully, social persuasion that one has the capabilities to succeed in given activities, and inferences from somatic and emotional states indicative of personal strengths and vulnerabilities (**Luszczynska et al., 2016**).

For IBDs patients; the personal and environmental factors hinder the health promotion behaviors, making it difficult for them to participate in these behaviors. However, if patients can distinguish these factors they can control them. A great purpose of health care is to motivate patients to execute health-promoting behaviors to sustain life (Hong, 2018). Nurses must be empathic and active listeners while providing

professional advice to patients about their disease, with plentiful expertise to guide patients practically on crucial areas of concern (**Belling et al., 2018**).

Significance of the study:

With regard to racial distribution of IBDs; there is no recorded data, but the incidence is enlarged in Asian and African countries. The decreased incidence in low income countries is attributed to discrepancy in access to healthcare (**Mowatt et al., 2011**). Europe has high incidence rates of IBDs with UC cases account for 505:100 000 population, and CD account for 322 :100 000. Then, the North America has incidence of 249:100000 UC, and 319:100 000 with CD. Asia and the Middle East reported incidence of 5:100000 CD, and 6:100000 UC (**Molodecky et al., 2012**).

For the reason of increasing prevalence of IBDs and known physiological, psychological, and social burdens; it is crucial to recognize the complex interchange between fatigue and covariates of anxiety, sleep disturbances, pain, physical activity and depression (**Artom et al., 2017**). The incidence of IBD is concomitant with low self-efficacy, emotional distress, disturbed lifestyle behaviors, and high cost of medical care (**Gracie et al., 2019; Parra et al., 2019**). Nurses are the most important person suited to help and support the IBDs patients with their complications, and provide a wide-ranging care platform (**Spagnuolo, et al., 2021**).

While numerous publics with IBD are able to live relatively ordinary lives; the majority of

patients believe that the diagnosis and chronic nature of the disease has a negative impact on their lives and health. There are a few studies on different aspects related to IBD, but the current study is the primary one that discusses health promoting behaviors and self-efficacy in patients with inflammatory bowel diseases, as they are targeted in the new trends, vision and goals of Egypt healthcare 2030; to enhance life sustainability especially in patients with chronic diseases, as prevention is better than treatment.

Aim of the study:

This study aimed to assess factors affecting health promoting behaviors and self-efficacy in patients with inflammatory bowel diseases.

Research questions:

1. What are health promoting behaviors in patients with inflammatory bowel diseases?
2. What is self-efficacy level in patients with inflammatory bowel diseases?
3. What are factors affect health promoting behaviors and self-efficacy in patients with inflammatory bowel diseases?

Subjects and Methods:

Design:

This study used a descriptive and cross sectional design.

Setting and sampling:

The study was implemented at the general medical outpatient clinics of Suez-Canal

University Hospitals, side by side with Ain Shams University Hospitals, from the beginning of November, 2021, to the end of January, 2022; on a purposive sample of 60 adult patients of both genders whom aged from 18 to 50 years old. For sample size estimation; **Yamane, (1967, p.886)** formula was used.

$$n = \frac{N}{1 + N(e)^2}$$

Where: **n**, means the corrected sample size, **N**, means the population size, and **e**, means precision level. Based on the research condition, **e = 0.05**.

The inclusion criteria of the sample was stated according to **(Lacy & Patel, 2017)**, which included patients who had symptoms 6 months at least preceding the diagnosis, patients who had frequent abdominal pain at least once a week which relieved next to elimination, and change in criteria of stool (frequency and form) during the past three months. The exclusion criteria included patients who have diverticulitis, diverticulosis, peptic ulcers, and colon cancer, in addition to patients with chronic diseases.

Tools of data collection:

Three tools were operated to accomplish the aim of this study.

Tool I: A Structured Interview Questionnaire, which was developed by the examiners in Arabic language after go through recent interrelated literatures and research studies. It included two parts, and needed (10-15) minutes to be completed.

Part One: Sociodemographic and Clinical Data.

It encompassed eleven (11) multiple-choice questions; for which the included patients were requested to itemize demographic and clinical information about: age, gender, marital status, educational level, residence, occupation, source of information about the disease, disease type, disease activity or flare-up, duration of disease by years, and family history of the disease .

Part two: Influencing Factors on Health-Promoting Behaviors and Self-Efficacy.

It consisted of thirteen closed-ended questions about the home environment, individual culture, peer influence, relationships with others, personal health problems, nutrition style, physical or recreational activities, sleep acuity, stress management, general health practices, sense of purpose, self-actualization, and access to the health care society. The questions developed by the researchers with guidance of (Graham, 2011; Gutiérrez-Doa et al., 2009; Schwarzer, 2008).

Scoring:

The patients' responses were recorded as numbers and percentages. There is no right or wrong answers for questions as patients chose all applied factors related to their conditions. So, no grades were given for each item, but only all responses were recorded as numbers and percentages.

Tool II: The Inflammatory Bowel Disease Self-efficacy Scale (IBD-SES): that is composed of 29-item primarily developed by Keefer et al.,

(2011) to assess level of confidence in handling disease-associated responsibilities. Items were clustered theoretically into 4 domains recognized by the IBD patients, including: managing stress and emotions (9) questions; managing medical care (8) questions; managing symptoms and disease (7) questions; and maintaining remission (5) questions. The questionnaire needs 10–15 minutes to be completed.

Scoring:

The patients' responses were specified on a 10-point Likert scale, as 10 represent “Totally Sure,” 5 represent “Somewhat Sure,” and 1 represent “Not Sure at All”. The complete score of the IBD-SES ranges from 29 on the way to 290, as the minor score signifying lower SE. Self-Efficacy levels was distributed as <20% means not confident, 20% - 40% means slightly confident, 41%-60% means fairly confident, 61%-80% means high confident, and > 80% means extremely confident (Tobeek et al., 2016).

Tool III: Health Promoting Lifestyle Profile-II (HPLP II) Scale: The scale processes the current health-promoting behaviors, conferring the Health-Promotion Model guided by the major health lifestyle domains (Walker et al., 1988). The HPLP II embraces a 52-item, with a 4-point Likert scale, entailing six subscales that convene into: Spiritual growth include questions number (6, 12, 18, 24, 30, 36, 42, 48, 52), health responsibility include questions number (3, 9, 15, 21, 27, 33, 39, 45, 51) , nutrition include questions number (2, 8, 14, 20, 26, 32, 38, 44, 50), physical activity include questions number (4, 10, 16, 22, 28, 34, 40, 46), stress management include questions number (5, 11, 17, 23, 29, 35, 41, 47), and interpersonal relations include questions number (1, 7, 13, 19, 25, 31, 37, 43, 49)

Scoring:

Respondents were asked to respond to questions by answering 1 = never, 2 = sometimes, 3 = often, or 4 = routinely. Means were subtracted for the 52 items as a total mean score and for each of the six subscale scores, by summing values for each item and distributing them by the number of items in the total instrument or for subscales. Using means instead of sums for scale items is endorsed to preserve the 1 to 4 metric item replies, and to permit evocative appraisals of scores through subscales. The overall and sub-scale scores range from 1.00 to 4.00; with the mean scores nearer to 1.00 reflecting an unhealthy lifestyle, while those nearer to 4.00 reflect a healthy lifestyle.

Validity and Reliability:

The tools were checked and revised by a jury of five experts in the medical-surgical nursing field to go over the applicability, simplicity, and relevancy of the tools to the desired study objectives. No modifications were made as the tools were valid and reliable. The tools were translated into Arabic as they were filled out by the patients through a structured interview, and then the reliability of the translated forms of the tools was checked.

The IBD-SE is a valid and reliable measure of self-efficacy in IBD patients. The IBD-SES has high internal consistency ($r = 0.96$), high test-retest reliability ($r = 0.90$), and demonstration of strong paradigm and synchronized validity with reputable measures. For the HPLP-II reliability coefficient, the total score is 0.943; for spiritual growth = 0.864; health responsibility = 0.861; nutrition = 0.800; stress management = 0.793; and interpersonal relations = 0.872.

Pilot study:

The pilot study was performed on 10% of the desired sample number of patients (6) to check the simplicity and applicability of the used tools, in addition to exploring the time needed to justify the tools. These patients were excluded from the study sample. The pilot was performed in October, 2021.

Ethical considerations:

After illuminating the aim and cons of the study; patients' oral consent was acquired. The investigators made it clear to all participants that they could withdraw from the study without any responsibility. The identities of the participants remained anonymous. An appreciation was obtained from the ethical committee affiliated with the Faculty of Nursing, Ain Shams University.

Procedure

- Data was collected over a period of three months from November, 2021, to the end of January, 2022.
- An exploratory visit was performed to the predetermined study settings to estimate the patients' frequency rate, required sample number, and appropriate time to gather the data.
- Official endorsement was attained from the in-charge systems of Suez-Canal and Ain-Shams University Hospitals to conduct the study.
- A personal announcement was made to the nursing staff, supervisors, and physicians to clarify the aim and mother nature of the study, and to advance the superlative potential collaboration.

- Patients who encountered the study inclusion norms were offered the opportunity to be encompassed in the study, after obtaining their oral consent.
- Data was collected using the prelisted study tools through face-to-face structured interviews, with the follow-up of isolation precautions to protect patients, the healthcare team, and the researchers.
- All tools of this study were accomplished by or with the support of the researchers to certify that they were completed fittingly.
- The researchers were available four days a week (2 days at outpatients of Suez Canal University Hospitals, and 2 days at outpatients of Ain-Shams University Hospitals), from 9.00 am to 2:00 pm to collect data, until the desired sample size was completed.
- The participants were assured that their data would not be available to anyone, as it would be used for research purposes only, to protect their human rights according to the code of ethics.

Statistical analysis:

The attained data were coded, entered, and charted by (SPSS. 25). Frequencies, percentages, means, and standard deviations represented the descriptive data. Using a chi-square is used to compare qualitative variables. A Pearson correlation was determined at a P-value of ≤ 0.05 to express the inter-relationships between variables.

Results:

According to **Table 1**, 61.7% of the patients studied were female, 75% were married, and 76.7% lived in cities, aged between 35 and 50 years old, with Mean \pm SD (33.8 \pm 5.1). 31.7% of the patients had higher education, followed by 25% had secondary school education. 65% of the patients were working. 53.3% of the patients suffer from Crohn's disease, followed by 46.7% suffering from ulcerative colitis. 35% of the patients had the disease ≤ 5 years, followed by 33.3% diseased for 6–10 years, and 31.7% diseased for ≤ 11 years. 68.3% of the patients had disease activity in remission. information about the disease was social media in 85%, television in 73.3%, doctors in 36.7%, and nurses in 25% of the patients. 53.3% of the patients have a family history of the disease.

Table 2, shows that factors affecting health promoting behaviors and self-efficacy are arranged by the studied patients' views as follows: stress management by 100%, nutrition style by 95%, personal health problems by 85%, sleep acuity by 81.7%, physical/recreational activity by 60%, home environment by 55%, access to the health care system by 45%, general health practices by 43.3%, relationships with others by 33.3%, self-actualization and sense of purpose by 31.7%, peer influence by 21.7%, and finally, individual culture by 13.3% of the patients.

Table 3 shows the health promoting lifestyle profile in patients with IBD, as it shows that the overall and sub-scale scores were more than 2.00 and some were nearer to 4.00, which

indicates an optimal healthy lifestyle, as the mean total lifestyle score was 2.6768 ± 0.57935 . The mean lifestyle subscale scores were arranged as reported by the studied patients to be interpersonal relations, health responsibility, nutrition, stress management, spiritual growth, and physical activity, with means (3.169 ± 0.5457 , 3.153 ± 0.54367 , 2.577 ± 0.58407 , 2.497 ± 0.69881 , 2.477 ± 0.5063 , and 2.188 ± 0.59756) respectively.

Table 4 shows the inflammatory bowel disease self-efficacy mean scores, and represents that the mean total IBD-SES is 236.6 ± 15.93 , which means that patients have good self-efficacy mean scores in general.

According to **Figure 1**, 30% of the IBD patients in the study were fairly confident, 28.33% were slightly confident, 25% were not confident, 11.66% were highly confident, and 5% were extremely confident. It also shows that 83% of the studied IBD patients have low self-efficacy and 17% have high self-efficacy.

Table 1. Socio-demographic and clinical information of the studied patients (n= 60)

Variables	No	%
Gender		
• Female	37	61.7
• Male	23	38.3
Age by years		
• 18– 34	27	45
• 35 – 50	33	55
Mean±SD	33.8±5.1	
Marital status		
• Married	45	75
• Single	11	18.3
• Widow	4	6.7
Educational Level		
• Higher education	19	31.7
• Secondary schools	15	25
• Basic education	14	23.3
• Reads and writes	9	15
• Illiterate	3	5
Residence		
• Rural	14	23.3
• Urban	46	76.7
Occupation		
• Working	39	65
• Non-working	21	35
Disease type		
• ulcerative colitis (UC)	28	46.7
• Crohn's disease (CD)	32	53.3
Disease duration by years		
• ≤5	21	35
• 6–10	20	33.3
• ≥11	19	31.7
Disease activity		
• Remission	41	68.3
• Transitional stage	12	20
• Relapse	7	11.7
Source of information about the disease (Choose all applicable)		
• Doctors	22	36.7
• Nurses	15	25
• Television	44	73.3
• Social Media	51	85
Family history of the disease		
• Yes	32	53.3
• No	28	46.7

Table 2, Factors affect the health promoting behaviors and self-efficacy the studied patients (n=60)

Affecting Factors	No	%
Home environment	33	55
Individual culture	8	13.3
Personal health problems	51	85
Peer influence	13	21.7
General health practices	26	43.3
Nutrition style	57	95
Physical/recreational activity,	36	60
Sleep acuity	49	81.7
Stress management	60	100
Self-actualization	19	31.7
Sense of purpose	19	31.7
Relationships with others	20	33.3
Access to the health care system	27	45

Table 3, Health promoting lifestyle profile and subscale scores in the studied patients (n=60)

Lifestyle Subscale Scores	M ± SD
Interpersonal Relations	3.169 ± 0.5457
Health Responsibility	3.153±0.54367
Nutrition	2.577± 0.58407
Stress Management	2.497 ± 0.69881
Spiritual Growth	2.477 ±0.5063
Physical Activity	2.188 ±.59756
Total Lifestyle Score	2.6768± 0.57935

Table 4, The Inflammatory Bowel Disease Self-efficacy (IBD-SES) Mean Scores in 60 participants

Self-efficacy Items	M ± SD
Managing Stress and Emotions	67.53± 22.51
Managing Medical Care	78.79± 14.98
Managing Symptoms and Disease	53.51± 12.71
Maintaining Remission	36.81± 13.53
Total IBD-SES Mean Scores	236.6 ± 15.93

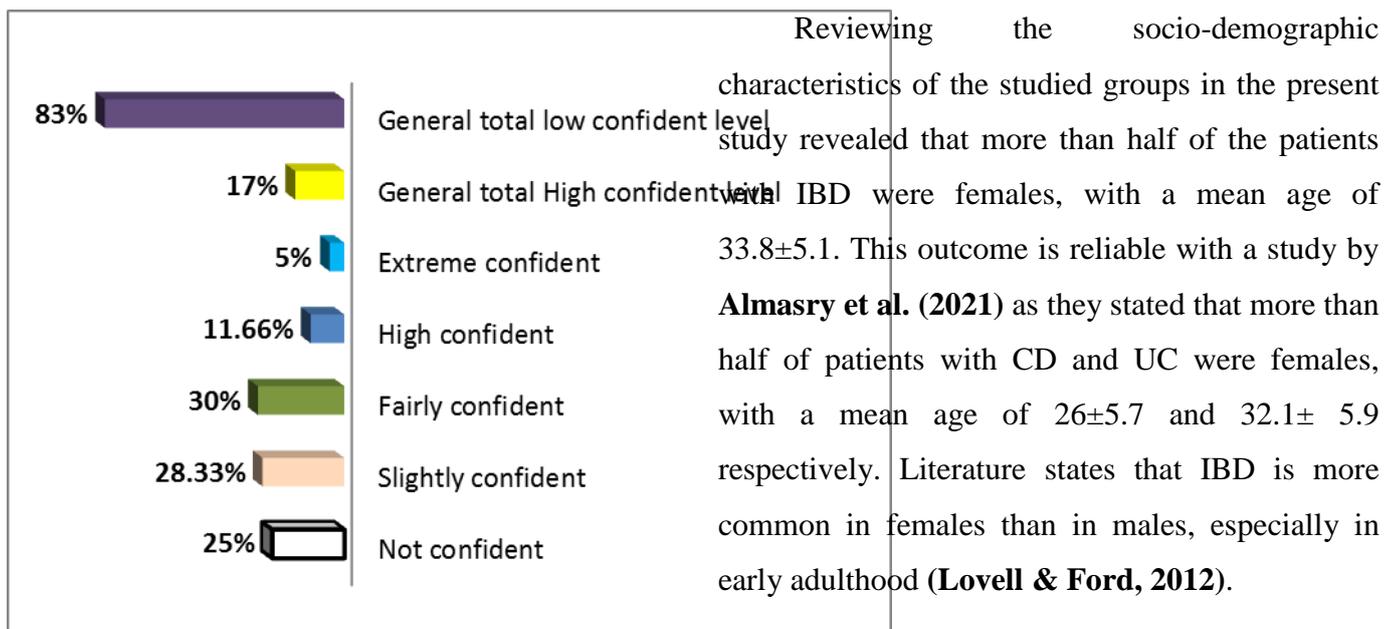


Figure 1, Total score of self-efficacy in the studied patients (n=60)

Discussion:

Self-efficacy pronounces the person's assurance in their capability to accomplish difficulties, and is prognostic of health upshots in chronic diseases such as hospitalization and health status (Keefer et al., 2011). Health promotion is concerned with helping other people change their standard of living to transfer toward optimal health, and the health-promoting behaviors are inspired by the personal wish to intensify well-being. Health-promoting behaviors talk about the wide-ranging actions followed to improve self-realization and a sense of well-being, as well as entertainment, which support individuals in conserving and promoting a healthy standard of living (Pender, 2006). Health-promoting behaviors are affected by some factors such as family history, household environment, peer encouragement, individual culture, personal health problems, and/or other factors (Graham, 2011).

Reviewing the socio-demographic characteristics of the studied groups in the present study revealed that more than half of the patients with IBD were females, with a mean age of 33.8 ± 5.1 . This outcome is reliable with a study by Almasry et al. (2021) as they stated that more than half of patients with CD and UC were females, with a mean age of 26 ± 5.7 and 32.1 ± 5.9 respectively. Literature states that IBD is more common in females than in males, especially in early adulthood (Lovell & Ford, 2012).

Regarding family history, this study showed that more than half of the patients had a family history of IBD. This finding is in line with Abd Elaziz et al. (2019), as they specified that around half of IBD patients had a family history of IBD. This is supported by the hypothesis that genetic factors contribute to the pathogenesis of the disease.

In the existing study, more than one-third of the studied patients complained of the disease for 5 years or less, and the other two-thirds had the disease for more than five years. This finding could be related to the chronic nature of the disease. This is in covenant with Padhy et al. (2016), as they reported that two-thirds of patients were diagnosed in less than 5 years, and one-third of patients were diagnosed for more than 5 years. In addition, Mohamed et al. (2020) stated that the majority of the studied patients have complained of the IBDs for less than 5 years, and more than one-quarter complain of the IBDs for 5 years or more.

Concerning the source of information about the disease, it was recently found that web based education exaggerated patients' biological, behavioral, and psychological traits such as self-efficacy and social support, as well as positive diet adaptation, in addition to turning out to be active in handling individual healthiness (**Uran et al., 2018**). This coincides with the present study, in which the consultation assimilated from social media to protect health was appraised, as the majority of patients weigh the consulting services they acquired from the internet and social media. This could be related to the wide coverage of the internet with the availability of trusted webpages like the ministry of health electronic page that makes all health information available to customers without restrictions.

Concerning educational level and occupation status, the current study originate that nearly one-third of patients had a higher education level, and more than two-thirds were working. This could be related to the effect of stress from work and studies. It is supported by **Fortes et al. (2012)**, as they itemized that low schooling level and stumpy family income are factors that potentiate the shortage of disease prevention due to a lack of information. In the same line, **Mohamed et al. (2020)** found that half of the studied patients were working, and around one-third had higher education.

The strict mechanism of pathology is vague, but it is supposed that somatic and psychological stressors are great factors contributing to IBD

development, as they cause changes in the central nervous system (CNS), lead to colonic spasms, and result in the exhibition of IBD symptoms (**Lovell and Ford 2012**). With regard to factors affecting health-promoting behaviors and self-efficacy, it was noticed in this study that all patients had symptoms related to stress management. The findings of the current study were harmonious with **Ibrahim et al. (2013)**, who showed that very nearly two-thirds of participants with IBDs had emotional stress throughout the past 6 months, one-third was anxious and one-quarter was depressed; borderline anxious and borderline depressed.

The severity of IBD-related symptoms as well as the disease progression are affected greatly by dietary habits and balance, as patients could be less watchful of their diet (**Elhosseiny et al., 2019**). Regarding factors that affect health-promoting behaviors, the existing study showed that nearly the highest percentage of the studied patients reported that nutrition style affects their health-promoting behaviors and self-efficacy. Antagonistic to our results, a study executed at King Saud University, in Saudi Arabia, established that a minority of IBD symptoms are related to alimentary issues (**Al-Turki et al. 2011**).

This study showed that the mean of the total lifestyle and subscale scores for physical activity was the lowest among health-promoting behaviors; however, interpersonal relations were the highest. This conclusion is parallel to **Hwang & Oh, (2020)** conclusion that physical activity was

the lowest among health-promoting behaviors, while interpersonal support was the utmost one. This verdict shows that there is a shortage of decent strategies for leisure while individuals are side by side with authorities' thoughtfulness about the prominence of physical activity (Hosseini et al., 2014). Ever since physical activity is the most frustrating health-promoting behavior, it is rumored that devotion should be remunerated for involvement in enriching physical activity.

Regarding the inflammatory bowel disease self-efficacy, around one-third of the studied patients were fairly confident, with the majority of the patients having low self-efficacy, although patients have good self-efficacy mean scores in general, according to their report. According to Bandura, self-efficacy is a furthestmost imperative factor in the progress of fine-fettled collective communication, making life amusing, and enabling the general public to handle long-term burdens. Moreover, Bandura theorized that high self-efficacy serves to construct a common sense of relaxation while facing challenging problems. But, people with squat self-efficacy agonize over anxiety, stress, and depression in problematic states of affairs, and that declines their thoughtfulness and performance capabilities (Stajkovic et al., 2018).

Conclusion:

A Health-Promoting Lifestyle Patients with IBD had profile scores of more than 2.00 and some were nearer to 4.00, demonstrating a healthy lifestyle; physical activity was the lowest among health-promoting behaviors; however,

interpersonal relations were the highest. The majority of IBD patients have stumpy self-efficacy, and less than one-fifth have high self-efficacy, and all patients have good self-efficacy in general.

Recommendations:

- Educational media on how to promote health and enhance self-efficacy, including booklets, handouts, videos, posters, and CDs, should be available for all patients at all times, especially for diseases managed in outpatients.
- Intensification of patients' awareness regarding risk factors of the IBDs and symptoms associated with them through planning regular and continuous patient education to overcome symptoms and control their unwelcome consequences on quality of life.
- Patients should be encouraged to take due note of their health behaviors and learn from their own and other patients' experiences, with professional advice and support strategies to promote health and self-efficacy.

References:

- Abd Elaziz, H., Ismail, R., Mohammed, H., and Abd Elaziz, S. Y. (2019).** Psychosocial aspects and personality dimensions among a sample of patients with irritable bowel syndrome. *Egyptian Journal of Psychiatry*; 40(3): 147.

- Aggarwal, T., Sabol, and Vaziri, H. (2017).** Update on the use of biologic therapy in ulcerative colitis, *Current Treatment Options in Gastroenterology*; 15(1):155–167.
- Allen, C. Gower-Rousseau, S. Danese, and L. Peyrin-Biroulet. (2017).** Preventing disability in inflammatory bowel disease. *Therapeutic Advances in Gastroenterology*, vol. 10, no. 11, pp. 865–876.
- Almasry, M., Ali, N., Hassan ., M. and Ahmed, A.M. (2019).** Effect of Educational Program about Biological Therapy on Nurses Performance in Caring of Patient with Inflammatory Bowel Disease and its Activity Grade. *Assiut Scientific Nursing Journal*; 9(26) : 19-28
- Al-Turki, Y.A., Aljulii, M.Z., Al Murayshid, A., Al Omaish, H.R., Al Daghiri, K.S., and Al Seleemi, A.Y. (2011).** Prevalence of irritable bowel syndrome among students in King Saud University, Riyadh, Saudi Arabia. *World J Fam Med*; 9:17–20.
- Artom, M., Czuber-Dochan, W., Sturt, J., Murrells, T., Norton, C. (2017).** The contribution of clinical and psychosocial factors to fatigue in 182 patients with inflammatory bowel disease: A cross-sectional study. *Alimentary Pharmacology & Therapeutics*; 45, 403–446.
- Belling, R., Woods, L., and McLaren, S. (2018).** Stakeholder perceptions of specialist inflammatory bowel disease nurses' role and personal attributes. *Int. J. Nurs. Pract.*; 14, 67–73.
- Carels, C., Wauters, L., Outtier, A., Baert, F., Bossuyt, P., Colard, A., De Looze, D., Ferrante, M., Goegebuer, A., Hauser, B. (2021).** Health Literacy and Quality of Life in Young Adults From The Belgian Crohn's Disease Registry Compared to Type 1 Diabetes Mellitus. *Front. Pediatr*; 9, 9
- Defrees, D., & Bailey, J. (2017).** Irritable Bowel Syndrome: Epidemiology, Pathophysiology, Diagnosis, and Treatment. *Primary care*; 44(4):655-671
- Elhosseiny, D., Mahmoud, N., and Manzour, A. (2019).** Factors associated with irritable bowel syndrome among medical students at Ain Shams University. *Journal of the Egyptian Public Health Association*; 94(1): 1-9.
- Fortes, C., Monteiro, T, and Kimura, C. (2012).** Quality of life from oncological patients with definite and temporary colostomy. *J Colorectal*; 32(3): 253-259
- Gracie, D.J., Hamlin, P.J., and Ford, A.C. (2019).** The influence of the brain-gut axis in inflammatory bowel disease and possible implications for treatment. *Lancet Gastroenterol Hepatol*; 4(8): 632-642.
- Graham, S. (2011).** Self-efficacy and academic listening. *Journal of English for Academic Purposes*; 10 (2): 113–117.

- Gutiérrez-Doña, B., Lippke, S., Renner, B., Kwon, S. and Schwarzer, R., (2009).** How self-efficacy and planning predict dietary behaviors in Costa Rican and South Korean women: A moderated mediation analysis. *Applied Psychology: Health & Well-Being*; 1: 91–104.
- Hong, S.H. (2018).** Convergence study of health promoting behaviors between nursing students and general college students. *J. Korea Converg. Soc*; 9:339–346.
- Hosseini, M., Ashktorab, T., Taghdisi, M.H., Vardanjani, A.E., Rafiei, H. (2014).** Health-promoting behaviors and their association with certain demographic characteristics of nursing students of Tehran City in 2013. *Glob. J. Health Sci*; 7:264–272.
- Hwang, Y., and Oh, J. (2020).** Factors Affecting Health-Promoting Behaviors among Nursing Students. *Int J Environ Res Public Health*; 17(17): 6291.
- Ibrahim, N.K., Battarjee, W.F., and Almeahadi, S.A. (2013).** Prevalence and predictors of irritable bowel syndrome among medical students and interns in King Abdulaziz University, Jeddah. *Libyan J Med*; 8:212–87.
- Imperatore, N., Tortora, R., Morisco, F., & Caporaso, N. (2016).** Gut microbiota and functional diseases of the gastrointestinal tract. *Minerva gastroenterologica edietologica*; 63(4): 355-372.
- Keefe, L., Kiebles, J.L., Taft, T.H. (2011).** The role of self-efficacy in inflammatory bowel disease management: Preliminary validation of a disease-specific measure. *Inflam Bowel Dis*; 17(2): 614-620.
- Knowles, SR., Graff, LA., Wilding, H., Hewitt, C., Keefe, L., and Mikocka-Walus, A. (2018).** Quality of Life in Inflammatory Bowel Disease: A Systematic Review and Meta-analyses-Part I. *Inflam Bowel Dis.*; 24(4): 742-751.
- Lacy, B., and Patel, N. (2017).** Rome criteria and a diagnostic approach to irritable bowel syndrome. *Journal of clinical medicine*; 6(11): 99.
- Lovell, R., and Ford, A. (2012).** Global prevalence of and risk factors for irritable bowel syndrome: a meta-analysis. *Clinical gastroenterology and hepatology*; 10(7): 712-721
- Luszczynska, A. Schwarzer, R. Lippke, S. & Mazurkiewicz, M. (2016).** Self-efficacy as a moderator of the planning- behavior relationship in interventions designed to promote physical activity. *Psychology & Health*; 26, 151-166
- Mohamed, A.G., Abouelala, F.M., and Elesawy, F.M. (2020).** Effect of an Educational Module on Knowledge, Symptoms Severity and Quality of Life in

- Patients with Irritable Bowel Syndrome. *Assiut Scientific Nursing Journal*; 8(23): 166- 175
- Molodecky, N. A., Soon, I. S., Rabi, D. M., Ghali, W. A., Ferris, M., Chernoff, and G., and Kaplan, G. G. (2012).** Increasing Incidence and Prevalence of the Inflammatory Bowel Diseases With Time, Based on Systematic Review. *Gastroenterology*; 142(1): 46-54
- Mowat, C., Cole, A., Windsor, A., Ahmad, T., Arnott, I., Driscoll, I., et al. (2011).** Guidelines for the management of inflammatory bowel disease in adults. *Gut*; 60(5): 571–607.
- Oka, P., Parr, H., Barberio, B., Black, C., Savarino, E., and Ford, A. (2020).** Global prevalence of irritable bowel syndrome according to Rome III or IV criteria: a systematic review and meta-analysis. *The Lancet Gastroenterology & Hepatology*; 5(10): 908-917
- Padhy, S., Mishra, S., Sarkar, S., Bang, L., and Panigrahi, M. (2016).** Comparison of psychiatric morbidity in patients with irritable bowel syndrome and non-ulcer dyspepsia. *Industrial psychiatry journal*; 25(1): 29.
- Parra, R.S., Chebli, J.M.F., Amarante, H.M.B.S., Flores, C., Parente, J.M.L., Ramos, O., Fernandes, M., Rocha, J.J.R., Feitosa, M.R., Feres, O., Scotton, A.S., and Ferrari, M.L.A.(2019).** Quality of life, work productivity impairment and healthcare resources in inflammatory bowel diseases in Brazil. *World J Gastroenterol.*; 25(38): 5862-5882.
- Pender, N., Murdaugh, C., and Parsons M. (2006).** “Health Promotion in Nursing Practice”, (5th ed), Pearson Prentice Hall, Upper Saddle River.
- Ribaldone, D.G., Pellicano, R., and Actis, G.C. (2019).** The gut and the inflammatory bowel diseases inside-out: Extra-intestinal manifestations. *Minerva Gastroenterol. Dietol.*; 65.
- Roda, G., Chien, N.g. S., Kotze, P.G., Argollo, M., Panaccione, R., Spinelli, A., Kaser, A., Peyrin-Biroulet, L., Danese, S. (2020).** Crohn's disease. *Nat Rev Dis Primers*; 6(1):22.
- Rubin, D.T., Sninsky, C., Siegmund, B., Sans, M., Hart, A., Bressler, B., Bouhnik, Y., Armuzzi, A., and Afzali, A. (2021).** International Perspectives on Management of Inflammatory Bowel Disease: Opinion Differences and Similarities Between Patients and Physicians From the IBD GAPPS Survey. *Inflamm. Bowel Dis.*; 27(12): 1942-1953
- Schwarzer, R., (2008).** Modeling health behavior change: How to predict and modify the adoption and maintenance of health

behaviors. *Applied Psychology: An International Review*; 57 (1): 1–29.

Spagnuolo, R., Corea, A., Napolitano, D., Nisticò, E., Pagnotta, R., Pagliuso, C., Schiavoni, E., Turchini, L., Fiorino, G., and Radice, S. (2021). Nursing-sensitive outcomes in adult inflammatory bowel disease: A systematic review. *J. Adv. Nurs.*; 77(5): 2248-2266

Stajkovic, A.D., Bandura, A., Locke, E.A., Lee, D., and Sergent, K. (2018). Test of three conceptual models of influence of the big five personality traits and self-efficacy on academic performance: A meta-analytic path-analysis. *Personality and Individual Differences*; 120: 238-45.

Tobeek, O.SH., ALmezaïen, M.M., Hegazy, S.M., and Qalawa, S.A. (2016). Assessment of Health Needs and Self-Efficacy for Patients with Colostomy. *Port Said Scientific Journal of Nursing*; 3(2): 131-147.

Uran, B.N., Yıldırım, Y., Aykar, F.S., and Unsal, B. (2018). Importance of Web-Based Education in the Management of Inflammatory Bowel Disease, *J Nurs Pract.*; 2(1): 54-61.

Walker, S. N., Volkan, D., Sechrist, K. R., & Pender, N. J. (1988). Health-promoting life styles of older adults: comparisons with young and middle-aged adults, correlates and patterns. *Advances in Nursing Science*; 11(1): 76-90.

Yamane, T. (1967). Statistics: An introductory analysis. 2nd edition. New York: Harper & Row. P.886. Available at: https://www.google.com/search?q=solving+equation+for+sample+size+calculation+pdf&safe=strict&sxsrf=ALeKk03YjfliTdfRDvCd_QhObyz-