



Quality of Life in Dysmenorrhea Women Associated with Irritable Bowel Syndrome

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Abstract

Irritable bowel syndrome (IBS) is a gastrointestinal disorder that manifests as abdominal pain or discomfort, changes in bowel habits, and abnormalities in stool movements. It often occurs with defecation or changes in bowel habits. To determine if there is a connection between dysmenorrhea and IBS in women; and to evaluate the Quality of life (QoL) of women who suffered from both conditions. One hundred women with IBS who were between the ages of 25 and 45 and who attended the Obstetrics & Gynaecology outpatient clinic at Beni-Suef University Hospital were included in the cross-sectional investigation. A thorough evaluation of each patient's medical history was conducted. During the first interview, we asked the women to fill out a questionnaire and check for dysmenorrhea. To collect basic information, a self-administered questionnaire was used. We used the IBS Quality of Life Questionnaire and the Bowel Disorder Questionnaire. Twenty-seven patients (27%) were within the normal range for anxiety scores, fifty-two patients (52%), were on the borderline, and twenty-one patients (21%), were significantly higher than the normal range. Within the normal range, 48 patients (48%) had depression scores; 39 patients (39%) were on the borderline; and 13 patients (13%) had scores that were higher than normal. Eleven patients, or 11% of the total, had experienced some kind of childhood trauma. IBS is a chronic disorder that disrupts regular bowel movements. There is an increased incidence of IBS among patients who also suffer from dysmenorrhea. Dysmenorrhea has a negative impact on quality of life. It is advised to consider the likelihood of dysmenorrhea while providing counselling and similar services to women. In order to improve their quality of life, reduce the frequency of IBS episodes, and relieve symptoms, this is crucial.

Keywords: Irritable bowel syndrome, Quality of life, Dysmenorrhea, Anxiety, Depression.

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1. Introduction

A large percentage of women, anywhere from half a million to ninety percent, suffer from dysmenorrhea. Dysmenorrhea is a common problem that many women experience. The occurrence of discomfort during menstruation is a defining feature of menstruation-associated spasmodic pain in the abdomen [1]. During their reproductive years, many women report, experiencing irregular periods, abdominal pain, dyspareunia, dysmenorrhea, and irritable bowel syndrome. About a quarter to half of women with irritable bowel syndrome also suffer from dysmenorrhea, which is shorthand for unpleasant uterine cramps. Twenty to fifty percent of women with IBS may also suffer from premenstrual distress syndrome (PMS), which is defined by emotional and physical changes just before menstruation [2-3]. During the luteal and early menstrual periods, symptoms

of dysmenorrhea, premenstrual syndrome, and irritable bowel syndrome tend to worsen. Perimenopause is associated with physical discomfort for many women. This won't need much thought or attention from most people and won't interfere with their regular activities. Periods are a natural part of a woman's life, but for others, they are unbearable, disruptive, and even crippling. Because of the pain and difficulties, it causes, it could seriously impact their lives [4]. Several studies have shown that dysmenorrhea sufferers are more sensitive to discomfort, particularly during menstruation, than those without the condition. In addition, rectal distention, particularly during menstruation, is more noticeable in women with IBS compared to non-IBS women [5-6]. The lack or reduction of ovarian hormones is linked to an increase in gastrointestinal symptoms during menstruation and early menopause, according to current studies. This

suggests that the symptoms may be caused, indirectly or directly, by the removal of estrogen and progesterone [7-8]. Female sex hormones are associated with more severe irritable bowel syndrome symptoms, according to the research [9-10]. New data suggests that low or declining ovarian hormone levels are associated with an increase in gastrointestinal symptoms during menstruation and early menopause. This suggests that these symptoms may be caused, indirectly or directly, by the removal of estrogen and progesterone [11]. The association between dysmenorrhea and IBS in women was the subject of a 10-year longitudinal study. The research found that dysmenorrhea was more common in women with IBS compared to individuals without the condition [12]. In addition, the person's QOL is greatly affected, and there is evidence that a lower QOL increases the likelihood of IBS [13-14]. The link between dysmenorrhea and irritable bowel syndrome has been the subject of very little study [2]. Finding out how often dysmenorrhea occurs and how it affects women with IBS was the driving force behind our study.

2. Patients and Methods

The participants in this cross-sectional study were 100 women (ranging in age from 25 to 45) who sought treatment for IBS at Beni-Suef University's Obstetrics & Gynaecology outpatient clinic. Informed written consent was obtained from patients before their participation. Following approval from Beni-Suef University's Faculty Ethical Committee, the study took place from October to December 2023. People who underwent gastrointestinal operations, were unable to self-administer the questionnaire, or had organic gastrointestinal diseases (such as tumors, ulcers, inflammation of the intestines, or rectal bleeding) were not included. Age, marital status, education level, ethnic origin, occupation, and medication history were among the many specific pieces of information gathered from each patient throughout the full examination. As part of the first interview, we asked the female participants to fill out some paperwork. Interview questions were designed to assess dysmenorrhea symptoms, such as "Do you experience more intense pain during your menstrual periods compared to the majority of women you are acquainted with?" By posing the question, "Do you experience PMS?" it was possible to include or exclude PMS. In the seven days prior to menstruation, this condition is characterized by dramatic changes in mood or irritability. In that case, a scale from "mild" to "severe" was used to evaluate the response to the question, "How much of a problem is this for you?" For the purposes of this study, a PMS diagnosis was defined as "moderate" or "severe," and any other score was deemed non-PMS. A self-administered questionnaire was used to gather the baseline data. Details such as socio-demographics, academic performance, a history of irritable bowel syndrome in the family, a prior medical diagnosis of irritable bowel syndrome, co-occurring chronic diseases, smoking, exercise, and daily routines were all part of the package. Further details were collected on Traveller's diarrhoea and if it was a trigger for the first beginning of IBS. Additionally, details regarding adverse childhood experiences, such as a close relative's death, parental divorce, or a severe illness, were also recorded. Participating in 30 minutes of physical activity, three times weekly, was considered regular exercise. Current smokers are defined as

those who have smoked at least one cigarette in the last 28 days and have smoked a total of 100 cigarettes throughout their lives. This study aimed to identify individuals displaying clinically significant symptoms of anxiety and depression by administering the Hospital Anxiety and Depression Scale (HADS) in Arabic. One reliable and valid standardized instrument is the self-report rating scale. Anxiety and sadness are each given their own set of seven questions out of a total of fourteen on the exam. A four-point Likert scale is used to quantify the replies, with 0 representing no symptoms and 3 representing severe symptoms. In addition, we first compute the anxiety and melancholy ratings separately, and then we combine them. For each subscale, we may classify values between 0 and 7 as normal, 8 to 10 as borderline, and 11 and above as cases [15].

2.1. The IBS-QOL survey

People who suffer from irritable bowel syndrome may gauge their quality of life with the use of the IBS-QOL, a disease-specific questionnaire. Some 34 objects are included in [16]. A normalized scale, from 0 (the worst possible QOL) to 100 (the best possible QOL), was used to measure quality of life scores. Body mass index (BMI) is determined by survey respondents' height and weight.

2.2. Statistical analysis

Statistical analysis was done by SPSS v26 (IBM Inc., Armonk, NY, USA). Quantitative variables were presented as mean and standard deviation (SD). Qualitative variables were presented as frequency and percentage (%).

3. Results

In Table 1, 100 females, their mean age was 27.23 ± 4.25 years, the mean weight was 72.06 ± 7.62 Kg, the mean height was 1.6 ± 0.06 m, and the mean BMI was 28.18 ± 3.4 Kg/m². Regarding the residence, 45 (45%) patients were from rural areas and 55 (55%) patients were from urban areas. Among the studied patients; 25 (25%) patients were single, 40 (40%) patients were married, and 35 (35%) patients were widow. The socioeconomic status was high in 19 (19%) patients, middle in 51 (51%) patients and low in 30 (30%) patients. 19 (19%) patients had a family history of IBS. 60 (60%) of women had dysmenorrhea. Table 2 represents the clinical signs among the studied patients where 26 (26%) patients had dyspepsia, 40 (40%) patients had stomach pain, 20 (20%) patients had urgency for defecation and 83 (83%) patients had flatulence. Table 3 shows the lifestyle characteristics of the studied patients where 40 (40%) patients had regular exercise, 28 (28%) patients were smokers, 33 (33%) patients had sufficient water drinking and 66 (66%) patients consuming fast food. Regarding the number of meals per day, 26 (26%) patients have been receiving just one meal, 25 (25%) patients have been receiving two meals, 20 (20%) patients have been receiving three meals and 29 (29%) patients have been receiving four meals.

As shown in Table 4 regarding the health problems among the studied patients, 65 (65%) patients were receiving regular medications, 35 (35%) patients had chronic health problem, 16 (16%) patients had food allergy, 66 (66%) patients had emotional stress and 33 (33%) patients had traveler's diarrhea. The anxiety score was normal in 27 (27%) patients, borderline in 52 (52%) patients and abnormal in 21

(21%) patients. The depression score was normal in 48 (48%) patients, borderline in 39 (39%) patients and abnormal in 13 (13%) patients. Among the studied patients, 11 (11%) patients had traumatic events during childhood. Regarding the impact on quality of life, the mean physical health status was 11.99 ± 2.07 , the mean psychological health was 13.94 ± 1.35 and the mean social relationships was 10.59 ± 1.03 as shown in Table 6. In Table (7), regarding dysmenorrhea, IBS-QOL score, physical health status, psychological health and social relationships were significantly lower in females with dysmenorrhea compared to females with no dysmenorrhea ($P < 0.001$). Anxiety and depression were significantly higher in females with dysmenorrhea compared to females with no dysmenorrhea ($P = 0.001, 0.014$). Traumatic events during childhood were insignificantly different between both groups.

4. Discussion

Our study's objectives were to determine how common dysmenorrhea is and to evaluate IBS sufferers' quality of life. Our results show that dysmenorrhea affected 60% of the patients. Most women with IBS also suffer from PMS, and over half of those women also report dysmenorrhea. While PMS and dysmenorrhea had a less noticeable impact on other types of pain, they did have a substantial impact on the severity of uterine cramping during menstruation [17]. During the luteal and menstrual phases, PMS was associated with increased levels of depression, irritability, and cognitive dysfunction. With the exception of uterine pains, there was no statistically significant correlation between premenstrual syndrome and a more severe worsening of symptoms during the transition from the luteal to menstrual phases [18]. Period cramps are a common symptom of dysmenorrhea in women, and they may be as painful as renal colic and even incapacitating at times [19-20]. Consistent with previous findings, menstrual pain has a negative impact on many areas of women's and girls' daily lives, according to a number of large-scale cross-sectional studies performed worldwide. Among them are interactions within and between families, friendships, academic and occupational success, and leisure pursuits [21-24]. In a Swedish population of 4 million people, primary dysmenorrhea was shown to be the cause of 230,000 working days lost. About half of the women suffered from dysmenorrhea and had been absent from work or school at least once. Dysmenorrhea has a major impact on productivity, which might lead to serious global economic consequences in the long run [25]. These numbers could be much lower than the true prevalence if we include the fact that most women don't seek medical attention when they're in pain and that many cases go unreported because people mistake menstrual cramps for a normal part of a woman's period. There is a marked decline in quality of life due to chronic pain [26-27].

Based on our research, dysmenorrhea lowers QoL and is linked to an increased risk of irritable bowel syndrome (IBS). We found that the average psychological health was 13.94 ± 1.35 , the average social contacts were 10.59 ± 1.03 , and the average physical health status was 11.99 ± 2.07 . When

comparing females with and without dysmenorrhea, IBS-QOL, physical health status, psychological health, and social connections were significantly worse in the former group ($P < 0.001$). When compared to women who did not have dysmenorrhea, those who did reported significantly higher levels of anxiety and depression ($P = 0.001, 0.014$). In both groups, the prevalence of traumatic events throughout childhood was rather similar. According to a study by Chen et al., (2021) female university students with IBS scored significantly lower in all four domains of QOL than those without the condition [13]. People with irritable bowel syndrome had a quality of life comparable to that of those with depression and end-stage renal illness, but much worse than that of people with chronic diseases such as hypertension, diabetes, and asthma [28-29]. Because of this, assessing QOL has long been thought of as the principal way to gauge the effects of various chronic diseases. Yet Siegrist's (1987) study found that QOL may potentially function as a risk factor for cardiovascular disease. Many subsequent studies have shown findings that are consistent with theirs [30-31]. IBS was the reason given by Gralnek et al., (2000) [32]. Those who suffer from IBS may not only blame the illness for their worse quality of life. Half of the instances of reduced quality of life in irritable bowel syndrome patients were due to factors unrelated to the disease, according to a study [33]. A different study found that the risk of having IBS increased in correlation with a decline in both physical and mental QOL. Compared to men, women were more affected by the physical quality of life's effect on the probability of getting IBS [34]. Researchers Bajaj et al., (2002) looked at the difference in pain sensitivity between dysmenorrhea sufferers and those who did not. Inflammatory compounds such as prostaglandins stimulate afferent nerve fibers, which they hypothesized, might explain why dysmenorrhea patients report an increase in sensory experience during menstruation [35]. A possible explanation for the unpleasant sensation of uterine cramps is the reawakening of dormant sensory nerves that feed the abdominal organs and the skin. Backache and stomach discomfort could be the results of this activation. When subjected to sensitizing situations like ischemia or inflammation, sensory fibers known as silent afferents may be activated, even though they do not normally respond to sensory inputs. According to the study by Altman et al., (2006) women who suffer from both dysmenorrhea and IBS are more likely to have backache and stomach pain during menstruation [36]. The small sample size of women with IBS who reported solely dysmenorrhea (7% of the total) may explain why the observed increases were not statistically significant. Dysmenorrhea and PMS were associated with an increase in visceral and somatic symptoms in women. This, rules out the possibility of alternative mechanisms, including CNS anomalies, which may account for the increased sensitivity. The small sample size and the fact that our research only took place at one location were two of the limitations of our study. Another thing we omitted was a control group.

Table 1: Socio-demographic characteristics of the studied patients.

N=100		
Age (years)		27.23 ± 4.25
Weight (Kg)		72.06 ± 7.62
Height (m)		1.6 ± 0.06
BMI (Kg/m ²)		28.18 ± 3.4
Residence	rural	45 (45%)
	urban	55(55%)
Working		52 (52%)
Marital status	Single	25 (25%)
	Married	40 (40%)
	Widow	35 (35%)
	High	19 (19%)
Socioeconomic status	Middle	51 (51%)
	Low	30 (30%)
Family history of IBS		19 (19%)
Dysmenorrhea		60 (60%)

Table 2: Clinical signs of the studied patients.

Clinical signs	N=100
Dyspepsia	26 (26%)
Stomach pain	40 (40%)
Urgency for defecation	20 (20%)
Flatulence	83 (83%)

Data presented as frequency (%).

Table 3: Lifestyle characteristics of the studied patients.

		N=100
Regular exercise		40 (40%)
Smoking		28 (28%)
Sufficient water drinking		33 (33%)
Fast food		66 (66%)
Number of meals	One	26 (26%)
	Two	25 (25%)
	Three	20 (20%)
	Four	29 (29%)

Table 4: Health problems among the studied patients.

	N=100
Regular medications	65 (65%)
Chronic health problem	35 (35%)
Food allergy	16 (16%)
Emotional stress	66 (66%)
Traveler's diarrhea	33 (33%)

Data presented as frequency (%).

Table 5: Depression and anxiety scores of the studied patients.

		N=100
Anxiety	Normal	27 (27%)
	Borderline	52 (52%)
	Abnormal	21 (21%)
Depression	Normal	48 (48%)
	Borderline	39 (39%)
	Abnormal	13 (13%)
Traumatic events during childhood		11 (11%)

Data presented as frequency (%).

Table 6: Impact on quality of life of the studied patients N=100.

N=100	
Physical health	11.99 ± 2.07
Psychological health	13.94 ± 1.35
Social relationships	10.59 ± 1.03

Data presented as mean ± SD.

Table 7: Quality of life of the studied patients regarding Dysmenorrhea.

	Dysmenorrhea (n=60)	Non-dysmenorrhea (n=40)	P value
IBS-QOL total score	39.8 ± 23.4	80.5 ± 7.5	<0.001*
Anxiety			
Normal	14 (23.3%)	13 (32.5%)	0.001*
Borderline	25 (41.7%)	27 (67.5%)	
Abnormal	21 (35.0%)	0 (0.0%)	
Depression			
Normal	32 (53.3%)	16 (40.0%)	0.014*
Borderline	17 (28.3%)	22 (55.0%)	
Abnormal	11 (18.3%)	2 (5.0%)	
Traumatic events during childhood	7 (11.7%)	4 (10.0%)	<0.001*
Physical health	11.17 ± 1.6	12.9 ± 1.9	<0.001*
Psychological health	13.40 ± 1.2	14.7 ± 1.1	<0.001*
Social relationships	9.9 ± 0.8	10.9 ± 0.9	<0.001*

Data presented as mean ± SD. *: statistically significant as P value <0.05.

5. Conclusions

IBS is a chronic functional gastrointestinal disorder. Dysmenorrhea was identified as, factor for IBS and increase its incidence. Also, we concluded that dysmenorrhea negatively affects and decrease the overall QoL. It is advised to consider dysmenorrhea when providing females with counseling and relevant services with the goal of alleviating their IBS symptoms, reducing the incidence rate of IBS, and further improving their QOL.

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Conflict of Interest

Nil

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