



Association between Marital Satisfaction and Severity of Symptoms in Patients with Irritable Bowel Syndrome (IBS)

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Abstract:

Background: Irritable Bowel Syndrome (IBS) is a functional ailment of the intestines characterized by altered defecation and abdominal irritation in the absence of detectable structural disorders.

Aim: The aim of the present study was to determine the association between marital satisfaction and the severity of symptoms in patients with IBS.

Methods: This is a cross-sectional study, which was conducted using available sampling on 77 IBS patients who were referred to internal specialists in specialized clinics in Jiroft City in 2022. Data were collected using IBS symptom severity and marital satisfaction questionnaires and analyzed using SPSS-22 statistical software and descriptive and inferential statistical tests.

Results: The severity of IBS symptoms had significant differences at different levels of three sub-criteria of the extent of marital satisfaction, level of satisfaction in marital relationships, and idealistic distortion of individuals in their marital life. However, this correlation was not significant in the sub-criterion of marital conflict resolution. Consequently, as a stressor, the level of marital satisfaction had a negative correlation with patients' severity of symptoms.

Conclusion: The more severe the IBS symptoms, the higher the effect of psychological factors. Furthermore, the more severe the stress, the higher its effect on the severity of IBS symptoms. Managing problems in marital life can help control IBS symptoms. Paying attention to the problems of married life as a stressor in IBS patients by doctors and the cooperation of the treating doctor with psychologists in the treatment process of these patients can help in controlling the symptoms of these patients.

Keywords: Irritable Bowel Syndrome (IBS), Marital satisfaction, Gastrointestinal (GI), Patients, Quality of life (QOL), Disease.

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1. INTRODUCTION

Irritable bowel syndrome (IBS) is the most commonly diagnosed disease of the gastrointestinal tract and a functional ailment of the intestines characterized by altered defecation and abdominal pain or irritation in the absence of detectable structural disorders [1, 2]. Patients with IBS experience a range of symptoms, including abdominal pain, bloating, and diarrhea, which can significantly impact their quality of life. Estimation of prevalence is difficult because of the broad and varying range of clinical symptoms in each patient and patients' avoidance of entering therapeutic systems [3, 4]. However, investigations have estimated the global prevalence of this disease to be about 10-20%. IBS is referred to as a "youth disease" since it is most common in people 25 to 54 years of age [5, 6]. Since IBS pathogenesis is not fully understood [1, 3, 5, 7], several studies have reported drug-psychological therapies to be more efficient than drug therapy alone, indicating multiple etiology of the disease [7, 8].

The lack of a reliable biomarker for IBS has led scholars to focus on associations between psychological factors and IBS, and this association is stronger in patients with more severe disease [1, 9]. Stress is among these psychological factors. IBS patients experience more stressful situations during their life and react more drastically to stress. This syndrome is accompanied by mental disorders in 20-60% of cases, and daily stress-causing events play an important role in aggravating its symptoms [10, 11]. Everybody's life is filled with various stress-inducing circumstances, and marital issues can be one of them. Additionally, conflicts between couples are factors that affect the physical and mental status of these patients [12-14].

Based on the facts mentioned, as stress-causing factors, conflicts in marital life can affect IBS incidence and symptoms severity. On the other hand, interestingly, individuals with satisfactory and supportive marital relationships show a lower rate of severe diseases and, if they get the disease, experience faster amelioration. Satisfaction in marital life is predicated on an objective sense of gratification, satisfaction, and pleasure experienced by a man and/or woman, considering all common aspects of their life [15-17]. Recent research suggests that the severity of IBS symptoms may be associated with marital satisfaction [18, 19].

Studies have shown that patients with IBS often experience a range of interpersonal difficulties, including greater burden and poorer relationship and sexual satisfaction experienced by partners [19, 20]. The burden perceived by partners of IBS patients increases with the severity of the illness and poorer sexual and relationship satisfaction. Partners of patients with IBS have a significant burden compared with partners of healthy individuals [18].

Patients with IBS with poor relationships also experience greater burden and poorer relationship and sexual satisfaction [19]. The link between subjective well-

being and gastrointestinal (GI) symptoms and IBS is independent of anxiety and depression. Well-being attributes and a sense of subjective well-being are associated with better GI symptoms and IBS [21-23]. Chronic illnesses such as IBS are not experienced by patients in isolation [24]. They live in a context of relationships, including spouses and partners, other family members, friends, and business associates [24, 25]. Those relationships can have an effect, both positive and negative, on the course of illness and may also be affected by the experience of living with a chronic disease. The impact of IBS on patients' relationships is an important area of research that has not received sufficient attention in the medical literature. Being aware of those interactions, by the patient and by the physician, may improve patient care [24, 26]. Interpersonal relationships were seen to trigger or exacerbate IBS symptoms potentially. Consequently, General Practitioners (GPs) sought to identify interpersonal problems to manage the related symptoms GPs reported not asking patients about any impact of IBS on their lives. Some GPs did not believe IBS could negatively affect patients' lives, whereas others had not considered that IBS might have any effect [19, 27].

Previous studies have explored the relationship between various psychosocial factors and the severity of IBS symptoms, but the specific association between marital satisfaction and symptom severity remains understudied. This research gap is particularly important, as marital relationships can play a crucial role in the overall well-being of individuals with chronic health conditions. Conducting research on the association between marital satisfaction and the severity of IBS symptoms would provide valuable insights into the complex interplay between interpersonal relationships and the management of this debilitating condition. By addressing this research necessity, we can better understand how the quality of a patient's marital relationship may influence the course and management of their IBS symptoms. This knowledge can inform the development of more comprehensive and tailored treatment approaches, ultimately improving the overall well-being and quality of life for individuals living with IBS.

In conclusion, the association between marital satisfaction and the severity of symptoms in patients with IBS is an important area of research that requires further investigation. Patients with IBS often experience a range of interpersonal difficulties, including greater burden and poorer relationship and sexual satisfaction experienced by partners. The burden perceived by partners of IBS patients increases with the severity of the illness and poorer sexual and relationship satisfaction. The impact of IBS on patients' relationships is an important area of research that has not received sufficient attention in the medical literature. Patient care may be enhanced by both the patient and the doctor being aware of those interactions that have not obtained enough attention in the literature on medicine. Being aware of those inter-

actions, by the patient and by the physician, may improve patient care. So, the present study is aimed at determining the association between marital satisfaction and the severity of symptoms in these patients.

2. MATERIALS AND METHODS

2.1. Study Design and Setting

This is a cross-sectional study of a descriptive-analytical type, which was conducted using available sampling on 77 IBS patients who were referred to internal specialists in specialized clinics in Jiroft City in 2022.

2.2. Study Participants and Sampling

The average difference and standard deviation of pain intensity criteria in two groups with varying levels of satisfaction were used to determine the sample size based on the study's objectives and design. Then, a pilot study was conducted with a sample size of 35 people. For this purpose, based on the results of the pilot study, the desired values were used for the pain intensity in two groups with very high and very low marital satisfaction. Therefore, considering the first type error of 0.05 and the second type error of 0.20, the sample size was 77 people.

Inclusion criteria included willingness to participate in the study, diagnosis of IBS disease based on ROM III criteria, having a medical record in an internal medicine specialist's office, being married, no history of physical illness, no history of psychological disorder, and minimal literacy.

2.3. Data Collection Tool and Technique

A three-part questionnaire including demographic information, an ENRICH Marital Satisfaction Questionnaire, and an IBS symptom severity questionnaire were used to collect data.

2.4. Enrich Marital Satisfaction Questionnaire

ENRICH Marital Satisfaction Questionnaire: This questionnaire is a 35-question instrument prepared by Foures and Elson in 1998. The alpha coefficient of this questionnaire for the four subscales of marital satisfaction, communication, conflict resolution, and ideal distortion is 0.86, 0.80, 0.84, and 0.83, respectively. Mohammad Hossein Asoudeh and his colleagues translated this questionnaire into Farsi. During a study, they reported the Cronbach's alpha coefficient of the questionnaire scales as 0.68 (after removing question 24, the alpha becomes 0.78), 0.78, 0.62, and 0.77, respectively [28].

2.5. IBS Severity Questionnaire

The second questionnaire in this study is the IBS symptom severity questionnaire, which measures the severity of the symptoms of patients with IBS. This questionnaire contains 5 questions that examine the symptoms of the disease, including pain, defecation disorder, bloating, the effect of the disease on daily life activities, and the duration of the disease. The average score for each section is 100, and the total score for the questionnaire is a maximum of 500. Mild cases are defined

with scores of 175-75, moderate with scores of 300-175, and severe cases with scores of more than 300.

Also, a researcher-made checklist consisting of personal information including age, gender, level of education, duration of marriage and age of marriage, number of children, and duration of gastrointestinal disease was used to collect demographic information of the participants.

To carry out the research, after introducing the purpose of the research to the respondents and obtaining informed consent from them, full explanations were given to those who agreed to participate in the research to guide them in answering the questionnaires. The mentioned questionnaires were completed by referring researchers to specialized clinics specializing in internal diseases in the city of Jiroft and asking patients about them. After checking the accuracy of the information contained in the questionnaires and extracting them, the obtained data and scores were entered into SPSS version 22 software. The data were analyzed using SPSS version 22 statistical software and T-tests and correlation coefficient.

3. RESULTS

A descriptive statistical analysis of 77 IBS patients and the frequency distribution of studied demographic indices is summarized in Table 1. The results showed that the average duration of marriage was 104 months (with a minimum of 12 and maximum of 480 months), and the average duration of IBS affliction was 84 months (with a minimum of 3 and maximum of 360 months). On average, the duration of disease affliction is lower than the duration of the marriage; therefore, on average, the patients show IBS symptoms after marriage. Of course, this interpretation could be influenced by the age of disease prevalence.

Table 1. Frequency distribution of studied individuals based on demographic indices.

Variable		Frequency	Frequency Percentage
Sex	Female	52	67.5
	Male	25	32.5
Age	> 18 years	2	2.6
	18-30 years	21	27.3
	< 30 years	54	70.1
Marriage Age	> 18 years	16	20.8
	18-30 years	49	63.6
	< 30 years	12	15.6
Education	High School Diploma and below	42	54.5
	B.Sc.	21	27.3
	M.Sc. and Ph.D.	14	18.2

Inspection of the distribution of the elements discussed in the questionnaire on IBS symptoms severity (Table 2) indicated that among participants, 21 had mild symptoms, 39 showed moderate symptoms, and 17 reported severe symptoms of the disease. The results of the ENRICH questionnaire also revealed that for the index of marital satisfaction, the average level was in the range of moderate (29.9), while both indices of marital

communication and marital conflict resolution showed a low average level (on average, 27 and 26, respectively). However, the index of idealistic distortion was at a moderate level (average= 15).

Table 2. Frequency distribution of participants based on main investigation criteria.

Factor	Intensity of Factor	Frequency	Frequency Percentage	Average \pm Standard Deviation
IBS Symptoms Severity	Mild	21	27.3	24.9
	Moderate	39	50.6	\pm
	Severe	17	22.1	80.6
Marital Satisfaction	Very Low	12	15.6	29.9
	Low	21	27.3	\pm
	Moderate	27	35.1	6.7
	High	12	15.6	Moderate Satisfaction
Communication	Very Low	12	15.6	27
	Low	35	45.5	\pm
	Moderate	19	24.7	6.6
	High	7	9.1	Low Level of Communication
	Very High	4	5.1	
Conflict Resolution	Very Low	21	27.3	26
	Low	26	33.8	\pm
	Moderate	15	19.5	5.8
	High	13	16.9	Low Level of Conflict Resolution
Idealistic Distortion	Very Low	7	9.1	15
	Low	14	18.2	\pm
	Moderate	33	42.9	4
	High	19	24.7	Moderate Level of Idealistic Distortion
	Very High	4	5.1	

Comparison of IBS symptom severity based on different levels of sub-criteria for marital satisfaction has shown that IBS symptom severity has a significant difference with different levels of marital satisfaction ($p=0.02$), marital communication ($p=0.015$), and idealistic distortion ($p=0.017$); so that the group "very low" for the indices of marital satisfaction has the highest scores for IBS symptoms severity. Despite this, there is no significant correlation between average IBS symptoms severity and level of satisfaction in marital conflict resolution ($p=0.56$).

Comparison of IBS symptom severity in different levels of marital satisfaction sub-criteria based on sex specified that in females, there is a strong and significant correlation between symptom severity and different levels of marital satisfaction ($p=0.009$) and idealistic distortion ($p=0.02$). Nevertheless, there is no correlation between the level of marital communication and marital conflict resolution and IBS symptoms severity ($p>0.05$). In males, the average IBS symptom severity, there was no significant difference between different levels of marital satisfaction sub-criteria and different levels of IBS symptom severity. Moreover, there were no any significant correlations between IBS symptoms severity and other demographic factors, such as marriage age, education level, duration of marriage, and duration of digestive disease affliction.

4. DISCUSSION

The aim of the present study was to determine the association between marital satisfaction and the severity of symptoms in these patients. According to our results, it could be briefly stated that IBS symptoms severity is significantly different in different levels of three sub-criteria of marital satisfaction, marital communication, and idealistic distortion of individuals in their lives. However, this correlation is not significant for the sub-criterion of marital conflict resolution. One of the fascinating results is that the resultant correlation between two sub-criteria of marital satisfaction and idealistic distortion is significant in females; while in males, none of the marital satisfaction sub-criteria is not statistically significant.

According to our results, other studies indicate that decreased life quality and satisfactory health levels are significantly correlated with stress and depression, and lower IBS scores are associated with higher satisfactory health levels. The psychological etiologic relationship of IBS was correlated with stress and depression [9]. In Motzer *et al.*'s study, inspection results for both elements, namely a sense of coherence (SOC) and holistic quality of life (QOL) in females with IBS, were lower than in females without IBS. The correlation between SOC and worry, depression, anxiety, and somatization without gastrointestinal symptoms was moderate. It reversed in all samples, and the only typical GI symptoms significantly associated with SOC and QOL were alternating constipation and diarrhea [29].

Results of Ebrahimi *et al.* investigation with 15 IBS-afflicted females based on diagnostic criteria of ROME-III indicated that cognitive behavioral therapy (CBT)-based therapeutic plan had a significant effect on decreasing IBS symptoms, improved life quality, and enhanced mental health in patients [30]. In a similar randomized clinical trial with IBS patients, it was also proven that the severity and frequency of IBS and QOL-IBS in patients treated with cognitive behavioral therapy were significantly different from patients who only received the drug [31]. On the other hand, training IBS patients resulted in enhanced life quality and decreased disease-related complaints and had an important role in the whole therapeutic process [32].

Several investigations have underlined challenges experienced by couples afflicted by IBS, such as the effects of spouse violence, relationships between IBS-afflicted mothers and their children, effects of social support, and the importance of family dynamicity on IBS. It has been established that healthy and mental stress-free relationships may significantly affect IBS patients' lives [25]. It has also been reported that most IBS patients show symptoms of sexual function disorders. A meta-analysis in 2019 using the criterion of sexual experience in Arizona indicated that 51% of IBS patients suffered from sexual function disorders and had a lower quality of life [33].

In explaining the findings of the current research, it can be mentioned that factors such as relationship support, depth, and conflict play a crucial role in influencing the severity of IBS symptoms. Specifically,

higher levels of support and depth in relationships are associated with lower symptom scores, while relationship conflict correlates with higher symptom severity. Additionally, patient satisfaction with medical care is influenced by a decrease in IBS severity, the number of diagnostic tests, recommendations, and follow-up visits. Interestingly, the severity of IBS symptoms at the initial consultation does not predict treatment satisfaction, highlighting the importance of symptom improvement over time for overall satisfaction. The findings also shed light on the impact of life satisfaction on IBS patients, showing that higher physical and mental quality of life are independently associated with greater general life satisfaction. The research underscores the need for a comprehensive approach to IBS treatment that considers not only symptom severity but also psychological factors, quality of life, and overall life satisfaction. The similarities and differences between these findings and other studies can be attributed to the multifaceted nature of IBS and the varying factors that influence patient outcomes. While some studies focus on the direct correlation between symptom severity and patient satisfaction, others delve into the broader aspects of quality of life, relationship dynamics, and psychological well-being. The complexity of IBS as a disorder of gut-brain interaction necessitates a comprehensive understanding of how various factors, including relationships, mental health, and quality of life, interplay to impact patient experiences and outcomes. The research findings highlight the intricate relationship between relationship quality, symptom severity, patient satisfaction, and life satisfaction in individuals with IBS. Understanding the nuances of these associations can guide healthcare providers in delivering more personalized and effective care to IBS patients, emphasizing the importance of addressing not only physical symptoms but also psychological and social aspects to enhance overall well-being and satisfaction among individuals living with IBS. In addition, it can be mentioned to clarify the current research's findings that the severity of IBS symptoms is significantly correlated with two sub-criteria of marital satisfaction (marital communication and idealistic distortion) in female IBS patients. However, this correlation is not statistically significant for male IBS patients. This suggests that the relationship between marital satisfaction and IBS symptom severity may be more pronounced in women compared to men. The differences between genders could be attributed to potential variations in how relationship dynamics and psychological factors influence the gut-brain interaction in IBS. While other studies have highlighted the general importance of relationship quality and support for IBS symptom management, this finding underscores the need to consider gender-specific factors when examining the interplay between interpersonal relationships and IBS outcomes. Further research is warranted to fully understand the complex mechanisms underlying these gender-based differences and their implications for a more personalized approach to IBS treatment.

CONCLUSION AND RECOMMENDATIONS

The research findings suggest that there is a significant relationship between the severity of IBS symptoms and the level of marital satisfaction, satisfaction in marital relationships, and idealistic distortion of individuals in their marital life. This is an important discovery, as it highlights the critical role that interpersonal relationships and psychological factors can play in the management and experience of IBS. The findings underscore the need for a more holistic approach to IBS treatment that goes beyond just addressing physical symptoms. By recognizing the influence of relationship dynamics and personal perceptions on IBS severity, healthcare providers can develop more comprehensive treatment plans that incorporate strategies to support and improve the quality of patients' intimate relationships. This could involve incorporating couples or family therapy, addressing communication and conflict resolution skills, and helping patients manage unrealistic expectations within their marriages. This highlights the importance of considering the impact of marital relationships on the health of individuals with IBS. Health policymakers should take note of these findings and consider incorporating marital counseling and support services into the treatment plans for individuals with IBS. By addressing the stressors associated with marital dissatisfaction, policymakers can potentially improve the overall health outcomes of individuals with IBS. Furthermore, the negative correlation between the level of marital satisfaction and the severity of IBS symptoms suggests that improving marital satisfaction may lead to a reduction in symptom severity. Health policymakers should consider the potential benefits of interventions aimed at improving marital satisfaction, such as couples therapy or relationship education programs. By addressing the underlying stressors associated with marital dissatisfaction, policymakers can potentially improve the overall health outcomes of individuals with IBS. In conclusion, the findings of this research highlight the importance of considering the impact of marital relationships on the health of individuals with IBS. Health policymakers should consider incorporating marital counseling and support services into the treatment plans for individuals with IBS. Additionally, interventions aimed at improving marital satisfaction may lead to a reduction in symptom severity and should be considered as part of the overall treatment plan for individuals with IBS. As a result, detecting problems of marital life as stressors in this disease with the aid of specialists and their joint attempts with experienced psychologists and psychotherapists to resolve them could help control the symptoms of this disease.

LIMITATIONS OF THE STUDY

Study limitations include the short study period, the use of the method of data collection with a questionnaire, the use of self-reporting methods, and the small number of participants. It is suggested that future studies should be conducted with a larger sample size and using qualitative

and interview data collection methods. The limitations of the research create cautions in generalizing the findings. Considering that this study was conducted at the university level, one should be cautious about generalizing the findings.

Suggestions for future studies that will be conducted by other researchers.

Gender-Specific Analysis: Future studies should delve deeper into the gender-specific differences observed in the correlation between marital satisfaction and IBS symptom severity. Investigating why this correlation is significant in females but not in males could provide valuable insights into the unique psychological and relational factors that influence symptom severity in each gender. Researchers could explore potential cultural, social, or biological factors that contribute to these differences.

Longitudinal Studies: Conducting longitudinal studies to track changes in marital satisfaction and IBS symptom severity over time could offer a more comprehensive understanding of the dynamic relationship between relationship quality and symptom management. By observing how changes in marital dynamics impact IBS symptoms and vice versa, researchers can uncover the temporal aspects of this association and potentially identify causal relationships.

Intervention Studies: Implementing intervention studies that focus on improving marital satisfaction and addressing idealistic distortions in individuals' marital lives could provide valuable insights into the effectiveness of relationship-based interventions in managing IBS symptoms. By designing interventions that target specific aspects of relationship quality, researchers can assess the impact of improving marital dynamics on symptom severity and overall well-being in IBS patients.

Multifactorial Approach: Given the complex interplay between psychological factors, relationship dynamics, and symptom severity in IBS, future studies should adopt a multifactorial approach that considers a wide range of variables. Exploring how factors like communication patterns, conflict resolution strategies, and idealistic perceptions interact with marital satisfaction to influence IBS symptoms can offer a more nuanced understanding of the mechanisms underlying this relationship.

Collaborative Research: Encouraging interdisciplinary collaboration between gastroenterologists, psychologists, and relationship experts could enhance the depth and breadth of future studies. By integrating expertise from different fields, researchers can gain a more comprehensive perspective on the complex interactions between psychological well-being, relationship quality, and IBS symptomatology. This collaborative approach can lead to more holistic and effective strategies for managing IBS symptoms through targeted interventions that address both the physical and psychological aspects of the disorder.

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have

accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

IBS	=	Irritable Bowel Syndrome
GI	=	Gastrointestinal
QOF	=	Quality of life

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This article reports the results of a research project approved by Jiroft University of Medical Sciences, Jiroft, Iran with the code of ethics IR.JMU.REC.1396.5.

HUMAN AND ANIMAL RIGHTS

No Animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

In order to comply with ethical considerations in this research, the information of the participants was kept confidential, and other people were not able to access this information. The names and surnames of the participants were not used for data collection, and data collection was done after obtaining the code of ethics from Jiroft University of Medical Sciences. To carry out the research, after introducing the purpose of the research to the respondents and obtaining informed consent from them, full explanations were given to those who agreed to participate in the research to guide them in answering the questionnaires.

STANDARDS OF REPORTING

STROBE guidelines have been followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the Zenodo Repository at <https://openpublichealthjournal.com/availability-of-data-materials.php>

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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