



Evaluation of Treatment-Seeking Behavior among the Patients with Irritable Bowel Syndrome Based on Their Psychological Profile

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Quantitative Study

Abstract

Background: Irritable bowel syndrome (IBS) is a functional gastrointestinal (GI) disorder associated with adverse mental status, impaired health-related quality of life (QOL), and high medical expenses. So, the impact of psychological factors on treatment-seeking behaviors in patients with IBS is not clearly defined. The aim of our study was to investigate the potential relationship between psychological factors and treatment-seeking behavior in patients with IBS.

Methods: This cross-sectional study was a part of the SEPAHAN research project and was conducted on 4763 non-academic staff of 50 different academic centers in Isfahan Province, Iran. From among the study population, 1024 individuals with irritable bowel syndrome (IBS) were evaluated. This process was repeated 15 days and a week before the distribution of the questionnaires. The demographic questionnaire, Rome III questionnaire, Hospital Anxiety and Depression Scale (HADS), General Health Questionnaire-12 (GHQ-12), and treatment-seeking behavior checklist were completed for each participant and the results were compared between participants with and without IBS.

Results: The participants with and without IBS were significantly different in terms of frequency of insurance coverage, visiting the doctor [general physician (GP) or specialist], leaving work because of somatic problems, leaving work because of gastrointestinal (GI) problems, visiting the GP, visiting the GP because of GI problems, visiting a specialist because of GI problems, and using medications ($P < 0.001$). Prescription of imaging and visiting a specialist were not significantly different between the two groups ($P = 0.014$).

Conclusion: It was found that treatment-seeking behavior had a relation with socioeconomic status and comorbid psychiatric disorders. Moreover, patients with IBS who presented more treatment-seeking behavior experienced more anxiety and depression.

Keywords: Rome III, Hospital Anxiety and Depression Scale (HADS), General Health Questionnaire-12 (GHQ-12), Treatment-seeking behavior, Irritable bowel syndrome (IBS)

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Introduction

Irritable bowel syndrome (IBS) is characterized by chronic abdominal pain, discomfort, bloating, and alteration of bowel habits (Drossman, Camilleri, Mayer, & Whitehead, 2002). IBS is a functional gastrointestinal (GI) disorder caused due to dysfunction of the gut-brain axis; however, excessive mast cell activation has a central pathophysiological role in the disorder (Stark, van Marriott, Ellis, & Harkness, 2007). Onset of IBS is more likely to occur after a stressful life event (Chang, 2011), but abnormalities in the gut flora result in inflammation and altered bowel function (Khanna, & Tosh, 2014).

The prevalence of IBS varies by country and by age, but the global prevalence is 10-15% (Drossman et al., 2002). Characteristic symptoms of IBS in normal population-based samples are common. However, only 25% to 50% of individuals with these symptoms, especially those with severe and recurrent abdominal pain, seek treatment (Sandler et al. 2002). IBS is associated with adverse mental status, impaired health-related quality of life (QOL), and high medical expenses (Thompson et al., 1999). Previous studies showed that psychiatric problems are prevalent in 40% to 60% of patients with IBS that it is significantly more than normal population (Talley, Howell, & Poulton, 2001; Levy et al., 2006; Whitehead, Palsson, & Jones, 2002; Locke, Weaver, Melton, & Talley, 2004).

In the face of malaise or illness and to resolve the problem, individuals choose different ways that are termed treatment-seeking behavior. These behaviors are lack of attention to the disease, treatment by medical service providers, and self-medication (MacKian, 2003).

Treatment-seeking behavior is influenced by various factors including the patient's expression of the need for treatment of disease, sensitivity and vulnerability to a specific disease, the patient's understanding of his/her disease, its causes and ways of dealing with it, access to services, and

financial costs and acceptability of provided services (Pourreza et al., 2011). On the other hand, one of the issues that may not be controllable is the low status of women in some areas that can be a barrier to treatment. In these cases, what is important is not the patient or consumer perspective, but the perspective of the dominant members of the family (Pourreza, 2004).

For example, a community survey with 6183 individuals in rural Bangladesh found a clear gender difference in treatment-seeking behavior, with women less likely to seek treatment compared to men (Bhuiy, 2008). Various studies indicate that factors and associated symptoms such as simultaneous presence of other gastrointestinal diseases, severity of symptoms, psychological factors, and reduced QOL affect the treatment-seeking behavior of patients with IBS (Koloski, Talley, Huskic, & Boyce, 2003; Wilson, Roberts, Roalfe, Bridge, & Singh, 2004; Williams et al., 2006). A study conducted in Greece showed that female gender and mixed type IBS (diarrhea and constipation) affected the treatment-seeking behavior of these patients (Katsinelos et al., 2009). A study conducted on Chinese patients showed that IBS and dyspepsia with significant anxiety and depression, and social disability were related with seeking health care and work days lost (Hu et al., 2002). Moreover, anxiety was an independent factor in determining the use of health care in individuals with IBS and dyspepsia (Huet et al., 2002). To the best of our knowledge, no study has been performed on the impact of psychological factors on treatment-seeking behaviors in patients with IBS in Iran. As mentioned above, this study attempted to investigate the potential relationship between psychological factors and treatment-seeking behavior in patients with IBS.

Methods

This cross-sectional study was a part of the SEPAHAN research project (Adibi et al., 2012) that was conducted in 2010-2012 on the

non-academic staff of Isfahan University of Medical Sciences, Iran. The SEPAHAN research project was conducted through multiple sessions held between experts from different departments of Isfahan University of Medical Sciences and the main aims of SEPAHAN one year before beginning the study. Ethical approval to conduct the study was provided by the Medical Research Ethics Committee of Isfahan University of Medical Sciences (#189069, #189082, and #189086).

The project was designed to be a cross-sectional study and we decided to gather all information through self-administered questionnaires. After 7 months, the final list of questionnaires was compiled. Most questionnaires selected were standard questionnaires that were previously validated in Iranian settings. However, we had to design some new assessment tools or translate some questionnaires into Persian using the forward-backward translation procedure. Two health professionals performed the forward translation independently. The back-translation was done by a third person who was a professional English translator. The translators and principal investigator of the project (PA) held several sessions in order to evaluate and edit the translations. The translations were then sent to a group of faculty members (one gastroenterologist, three psychiatrists, and one nutritionist) for content validity and distributed among 100 apparently healthy adults for face validity. Considering the feedback from the faculty members and the participants who tested the translations, the final Persian version of each questionnaire was developed (Adibi et al., 2012).

To increase the participation rate and the accuracy of collected data, we decided to distribute the questionnaires in two "waves" with a short period between them (3-4 weeks). To save time and decrease errors in the data extraction phase, we developed an optical mark recognition (OMR) system that could distinguish the selected answer for each question in the scanned pictures of questionnaires. All data management was

performed according to the principles of confidentiality (Adibi et al., 2012).

Isfahan University of Medical Sciences has over 20 thousand non-faculty employees and this study population consisted of 4763 individuals in 50 different centers in Isfahan Province. Cluster sampling was performed on 50 random sites including hospitals, campuses, and centers. The data used in this study is extracted from the database of the SEPAHAN project. The inclusion criteria consisted of being the non-academic staff of Isfahan University of Medical Sciences and 20 to 65 years of age, having IBS, and providing an informed consent to participate in the study. The exclusion criterion was the lack of complete information on individuals with IBS. From among the study population, 1024 individuals with IBS were evaluated. At baseline, all directors of various academic centers in different cities informed about the protocol of the study. The centers' personnel were informed of the study through brochures and posters distributed among the public relations staff 45 days prior to the distribution of the questionnaires. This process was repeated 15 days and a week before the distribution of the questionnaires.

After providing information about the content and objectives of the study, the questionnaires were distributed among employees in various centers in different cities of the province and public relations unit staff. Each participant was provided with a packet to send the questionnaire to the central office of Isfahan University of Medical Sciences.

Questionnaires

Demographic questionnaire: A demographic questionnaire including age, gender, marital status, education, history of medical diseases, smoking, pregnancy, weight, height, and physical activity variables was used in the present study.

Rome III questionnaire: In the Rome III classification, functional GI disorders (FGIDs) are classified into the six major esophageal (category a), gastroduodenal (category b),

bowel (category c), functional abdominal pain syndrome (category d), biliary (category e), anorectal (category F) domains for adults.

The functional bowel disorders (category C) include irritable bowel syndrome (C1), functional bloating (C2), functional constipation (C3), and functional diarrhea (C4).

Irritable bowel syndrome (C1) is more specifically defined as pain associated with change in bowel habit, which is different from functional diarrhea (Longstreth et al., 2006).

Hospital Anxiety and Depression Scale: The Hospital Anxiety and Depression Scale (HADS) was originally developed by Zigmond and Snaith (1983) and is commonly used by doctors to determine the levels of anxiety and depression that a patient is experiencing. The HADS is a fourteen-item scale that generates ordinal data; seven of the items are related to anxiety and seven to depression. Zigmond and Snaith created this outcome measure specifically to avoid reliance on aspects of these conditions that are also common somatic symptoms of illness, for example, fatigue and insomnia or hypersomnia. This, they hoped, would create a tool for the detection of anxiety and depression in individuals with physical health problems. There are a large number of studies that have explored the underlying factor structure of the HADS. Many support the two-factor structure, but there are others that suggest a three or four factor structure. Some argue that the tool is best used as a unidimensional measure of psychological distress (Zigmond, & Snaith, 1983; Bjelland, Dahl, Haug, & Neckelmann, 2002).

General Health Questionnaire-12: The 12-item General Health Questionnaire (GHQ-12) is a screening device for identifying minor psychiatric disorders in the general population and within community or non-psychiatric clinical settings such as primary care or general medical out-patients. It is suitable for all ages, adolescent and older adults, but not children, and it assesses the respondent's current state and whether that differs from his or her usual state. This self-

administered questionnaire focuses on two major areas; the inability to carry out normal functions, and the appearance of new and distressing phenomena. The GHQ-12 is a quick, reliable, and sensitive short form, ideal for research studies. Its reliability coefficients have ranged from 0.78 to 0.95 in various studies (Feyer et al., 2000).

Treatment-seeking behavior checklist: The treatment-seeking behavior checklist was a measurement tool designed for assessment of treatment behaviors through 10 items on the basis of reliability and validity of the SEPAHAN study. The items included type of visit (private or public), number of referrals to general practitioners, number of referrals to a doctor only because of GI problems, number of referrals to a specialist, number of referrals to a specialist only because of GI problems, the cost of doctors' visits, the type of imaging performed, payments for imaging, payments for lab tests, and medications prescribed in the past month for GI disorders.

Statistical analysis

The study was conducted on 1024 patients with IBS. The abovementioned questionnaires were completed and collected for statistical analysis using SPSS software (version 18, SPSS Inc., Chicago, IL, USA) in the form of descriptive statistics, including the reporting and summarizing of data using summary measures of numerical tables, graphs, and analysis. Independent sample t-test was used for quantitative variables, chi-square test for qualitative variables, and logistic regression for trend analysis and multivariate analysis (or multivariate covariance analysis).

Results

As shown in table 1, participants with and without IBS were significantly different in terms of frequency of insurance coverage, visiting the doctor (GP or specialist), leaving work because of somatic problems, leaving work because of GI problems, visiting the GP, visiting the GP because of GI problems,

Table 1. Comparison of patients with and without irritable bowel syndrome in terms of treatment-seeking behavior factors

Variables		IBS [n (%)]		P-value	OR	CI	
		No	Yes			Lower	Upper
Having insurance	No	3414 (91.3)	858(83.8)	< 0.001	2.032	1.00	2.00
	Yes	325 (8.7)	166 (16.2)				
Visiting the doctor (GP or specialist)	No	3338 (89.3)	791 (77.2)	< 0.001	2.050	2.00	2.050
	Yes	401 (10.7)	233 (22.8)				
Leaving work because of somatic problems	No	3581 (95.8)	900 (87.9)	< 0.001	3.00	2.00	3.00
	Yes	158 (4.2)	124 (12.1)				
Leaving work because of GI problems	No	3597 (96.2)	919 (89.7)	< 0.001	2.00	2.00	3.00
	Yes	142 (3.8)	105 (10.3)				
Visiting the GP	No	3603 (96.4)	930 (90.8)	< 0.001	2.00	2.039	3.00
	Yes	136 (3.6)	94 (9.2)				
Visiting the GP because of GI problems	No	3691 (98.7)	999 (97.6)	0.014	1.00	1.00	3.00
	Yes	48 (1.3)	25 (2.4)				
Visiting a specialist	No	3703 (99.0)	1003 (97.9)	0.008	2.00	1.00	3.00
	Yes	36 (1.0)	21 (2.1)				
Visiting a specialist because of GI problems	No	3656 (97.8)	974 (95.1)	< 0.001	2.00	1.00	3.00
	Yes	83 (2.2)	50 (4.9)				
Imaging prescription	No	3633 (97.2)	976 (95.3)	0.005	1.00	1.00	2.00
	Yes	106 (2.8)	48 (4.7)				
Using medications	No	3704 (99.1)	993 (97.0)	< 0.001	3.00	2.027	5.00
	Yes	35 (0.9)	31 (3.0)				

GP: General practitioner; GI: Gastrointestinal; OR: Odds ratio; CI: Confidence interval; IBS: Irritable bowel syndrome

visiting a specialist because of GI problems, and using medications. Nevertheless, prescription of imaging and visiting a specialist were not significantly different between the two groups.

The results showed that treatment-seeking behavior had a significant relationship with IBS, depression, female gender, marriage, BMI, and physical activity. However, it did

not have significant relationships with anxiety and educational level (Table 2).

There was not any significant relationship between GHQ score and number of referrals to the doctor. Nevertheless, the relationships between anxiety and depression scores, and referrals to the doctor were significant, too (Table 3).

Table 2. Results of regression analysis

Predictor variables	Coefficients (B)	Wald	P-value	95% Confidence interval for B	
				Lower	Upper
IBS*	0.00	22.00	0.00	1.00	1.00
Anxiety*	0.00	4.00	0.27	1.067	2.00
Depression*	0.00	0.00	0.00	0.00	1.00
Age	-0.36	6.00	0.10	0.00	0.00
Sex	-1.076	28.00	0.00	0.00	0.00
Marital status**	0.00	0.00	0.00	0.00	2.00
Educational group*	0.00	4.00	0.36	0.00	0.00
BMI	0.017	1.00	0.00	0.00	1.042
Physical activity	-0.085	0.00	0.00	0.00	1.00

IBS: Irritable bowel syndrome; BMI: Body mass index

** 1: Single; 0: married

* 1: Yes; 0: No

Table 3. Relationship between psychiatric symptoms and visiting the doctor

Variables		Visiting the doctor		P-value ANOVA	F
		No	Yes		
GHQ score	Mean	2.00	3.00	0.006	7.00
	SD	2.00	3.00		
Anxiety score	Mean	4.00	6.05	< 0.001	16.00
	SD	3.00	4.00		
Depression score	Mean	7.00	8.01	0.002	9.00
	SD	3.00	3.00		

ANOVA: Analysis of variance; GHQ: General Health Questionnaire-12; SD: Standard deviation

Discussion

Health-seeking behavior, as a multi-dimensional concept, relies on time and context (Poortaghi et al., 2015). Dressler has noted that health-seeking behavior is influenced by such matters as availability of services, transportation, and wealth of the patient or his immediate group (Dressler, 2001). Leininger is also of the opinion that people who frequently use the popular or folk sector choose this system as it is easily accessible and less expensive than the professional sector (Leininger, 1988). Slikkerveer opines that the economic status of the patients is the decisive factor in the choice of therapy (Slikkerveer, 1990).

Mainuddin, Ara, Rawal, Islam, and Shariful Islam conducted a cross-sectional study on 200 rural married women in Bangladesh using multistage sampling technique and face-to-face interviews to investigate the socio-economic characteristics, and proxy indicators for women empowerment in mobility and health-seeking behavior-related decision making. The results showed that only 12% of women were empowered to decide on their own about seeking healthcare and 8.5% in healthcare seeking for their children. In multivariate analysis, women empowerment in health-seeking behavior was higher among the age group of 25-34 years (OR = 1.76, CI = 0.82-3.21). Moreover, it had a significant relationship with [OR = 6.38, (CI = 0.98-4.21)], and women's working status [OR = 16.44, (CI = 0.79-2.71)] (Mainuddin, Ara, Rawal, Islam, & Shariful Islam, 2015).

Several reports have revealed that the need for reassurance is a key factor in seeking medical consultation among patients with functional GI disorders (Spiegel et al., 2005; Delaney, 1998; Howell, & Talley, 1999) and that such patients expect diagnostic tests beyond what is usually recommended by physicians (Lacy et al., 2007; Casiday, Hungin, Cornford, de Wit, & Blell, 2009; Bijkerk et al., 2003). As a result, both patients and doctors frequently experience frustration, dissatisfaction, and feelings of stigmatization (Dhaliwal, & Hunt, 2004). However, Spiegel et al. reported that a negative colonoscopy finding was not associated with reassurance or improved health-related QOL in patients with IBS. In a literature review, Koloski, Talley, and Boyce, (2001) even suggested that abnormal attitudes and beliefs about the illness are more important than symptom severity or knowledge about the illness in terms of patients' tendency to seek health care.

Chuma, Gilson, and Molyneux investigated the effects of socioeconomic factors on self-reported illnesses, treatment-seeking behavior, cost burdens, and coping strategies in 294 rural and 576 urban households along the Kenyan coast. Their study showed significant differences in treatment-seeking patterns in terms of socioeconomic status and regressive cost burdens. The results of their study suggested that the elimination of user fees at least in targeted hardship areas of economics, developing more flexible charging systems, and improving quality of care in all facilities can promote micro-finance schemes that enable small amounts of credit to be accessed with minimal interest rates (Chuma, Gilson, & Molyneux, 2007).

According to the results of this study, it can be said that socioeconomic factors and having access to health insurance, as influential factors in health-seeking behavior, are improving. The results of the current study showed a significant difference between participants with and without IBS in

terms of insurance coverage.

Results of previous studies showed that the levels of self-reported illness have generally been higher for chronic conditions in comparison with acute illnesses (Ceasay, Morgan, Kamanda, Willoughby, & Lisk, 1997; Thompson, Miller, & Witter, 2003; Gupta, & Datta, 2003). Considering the chronicity of IBS, more visits to the doctor by these patients were expected in comparison with the healthy population. The results of this study showed that treatment-seeking behavior had a significant relationship with IBS which confirmed the results of previous studies.

However, other studies have reported that the differences in cost are likely to relate more to the type and timing of the actions taken in response to an illness (Onwujekwe, & Uzochukwu, 2005; Filmer, 2005; Worrall, Basu, & Hanson, 2005).

Previous studies have shown that comorbidity with anxiety disorder in patients can be a reason for seeking treatment. For example, in an Australian study, individuals with alcohol dependence did not perceive themselves as disabled and did not seek treatment (Proudfoot, & Teesson, 2002). However, having a comorbid affective disorder, like anxiety, directly attributable to alcohol use increases the likelihood that such individuals will seek treatment (Proudfoot, & Teesson, 2002).

The results of the present study showed there was no significant relationship between GHQ score and referrals to the doctor, but the relationship between anxiety and depression scores, and referrals to the doctor were significant.

In a study on 210 patients with back pain admitted to an orthopedic emergency unit, the Oswestry Disability Index and HADS were used to investigate the relation of anxiety and depression with seeking treatment among these patients (Gottfryd et al., 2015). The results showed that the number of medical visits in the previous 6 months ($P = 0.04$) and the scores of anxiety and depression ($P = 0.05$) were

independently correlated with physical disability. Most patients (77%) would agree to participate in a hypothetical program of physical rehabilitation for prevention of back pain (Gottfryd et al., 2015).

In the study by Balasundaram, Sarkar, Hamide, and Lakshminarayanan (2014) in patients with HIV, and comorbidity with depression, there was a delay in starting treatment in one-fifth of the subjects due to depression, fear of stigma, disclosure to family, and side-effects (Balasundaram, Sarkar, Hamide, & Lakshminarayanan, 2014).

The results of the current study showed that prescription of imaging and going to a specialist were not significantly different between the two groups. This could be because visiting a specialist and prescription of imaging easily takes place in our country and many patients are treated by specialists in primary care without visiting a general practitioner. Therefore, the majority of the patients and healthy individuals have at least visited a specialist and undergone one imaging test.

In conclusion, the results of this study showed that treatment-seeking behavior had a relation with socioeconomic status and comorbid psychiatric disorders. Furthermore, patients with IBS who presented more treatment-seeking behavior experienced more anxiety and depression. On the other hand, the rate of behaviors like visiting the doctor (GP or specialist) and using medications were higher among patients with IBS. It is recommended that future studies explore the relationship between treatment-seeking behavior and illness factors of IBS and also intervention methods to reduce the economic losses caused by the repeated visits to the doctor by patients with IBS.

Conflict of Interests

Authors have no conflict of interests.

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