

Brief Communication

Functional somatic illnesses in patients with functional bowel disorders. A cross-sectional cohort study in western Saudi Arabia

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ABSTRACT

Objectives: To study the prevalence of functional gastrointestinal disorders (FGID) in Saudi patients with irritable bowel syndrome (IBS).

Methods: A cross-sectional study was conducted in patients with IBS treated at a private tertiary medical center in western Saudi Arabia between 2013 and 2017. We used ROME 3 criteria with data from the Generalized Anxiety Disorder 7-item (GAD-7) scale, the Patient Health Questionnaire-9 (PHQ-9) depression scale, and International Classification of Headache Disorders (ICHD) to assess the prevalence of psychosomatic illness. Statistical analysis of frequency and statistical correlation was performed using Chi-square.

Results: The final analysis of 307 patients revealed a combined 425 diagnoses of psychosomatic illness, including diagnoses of headache in 104 patients (34%), migraine in 93 patients (30.5%), fibromyalgia in 169 patients (55%), and depression in 59 patients (19%). There was a statistically significant correlation between patients' ages and diagnoses of joint pain and migraines.

Conclusion: Fibromyalgia and headache disorders were common in this cohort of Saudi patients with IBS. This coexistence of illness is partly explained by the functional nature of these illnesses. Collective efforts to provide multidisciplinary care is needed for these patients.

Keywords: functional, somatic, bowel, depression, migraine

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Functional bowel disorders, or functional gastrointestinal disorders (FGID), are groups of clinical disorders that share pathophysiological abnormalities related to altered visceral perception of intestinal painful stimuli following a previous biological stressor such as a post-infectious event, past psychological trauma and could be hereditary.¹ Clustering of clinical disorders, specifically irritable bowel syndrome (IBS),

depression, anxiety, fibromyalgia, and migraine, is common, suggesting a common pathophysiological etiology.² A survey related to a gastroenterology clinic in Riyadh, Kingdom of Saudi Arabia (KSA), showed prevalent depression and anxiety among their patients.³ The existence of an initial psychosomatic complaint by a patient with FGID predicted, over time, a subsequent future diagnosis of another illness, showing a connection with this group of disorders.⁴ This study aimed to assess the prevalence of psychosomatic illnesses in a group of Saudi patients diagnosed with ROME 3 criteria positive FGID.

Methods. This is a retrospective cross-sectional cohort study, as data was collected over a 4-year range to include an appropriate sample size, and the participants' patient histories of symptom presentation were examined using a comprehensive survey as well as information from the physician examinations. Our participant sample included patients who attended a gastroenterology clinic at a private tertiary medical center at any time between 2013 and 2017 with abdominal complaints that satisfied the ROME 3 criteria for patients attended with IBS symptoms at a gastroenterology clinic at International Medical Centre, Jeddah, KSA.

The study was approved by the Institutional Review Board of the International Medical Centre, Jeddah, KSA (IMC-IRB# 2010-12-002) in accordance with the Declaration of Helsinki. Patients provided written consent prior to participation in the study.

The study participants had to be 15 years of age or older and present with abdominal symptoms of abdominal pain, diarrhea, or constipation that fulfilled the ROME 3 criteria for IBS. The inclusion required an absence of red flag symptoms (namely, anemia, weight loss, gastrointestinal bleeding such as hematemesis, melena or hematochezia, or family history of colorectal cancer). They had to present with complaints of headache or migraine, joint or muscular pain, or anxiety and depression. Potential participants were excluded if they were younger than 15 years old, refused to participate in the study, provided incomplete filled questionnaire forms, or had an alternate diagnosis (other than FGID).

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Data collection. Survey and examination information were recorded at only one clinic visit for each patient during the data collection period. A physician interviewed each patient, obtained their complete medical history, and performed a physical examination. Laboratory tests performed for each patient were complete blood count, electrolyte panel, serum creatinine, erythrocytes sedimentation rate, stool analysis, and upper and lower endoscopy. Patients were asked to complete a self-administered, validated questionnaire for diagnosis of depression with items from the GAD-7 and measures of anxiety using items from the PHQ-9.^{5,6} The occurrence of headaches and migraines was determined using the International Classification of Headache Disorders, 3rd edition.⁷

Statistical analysis. Statistical analyses revealed symptom frequency among participants, and correlations between variables of interest were determined by a Chi-square test for all variables except patients' ages. The age variable was analyzed using the Mann Whitney test with reporting of mean and z scores; a $p < 0.05$ was considered statistically significant. Analysis of the data was performed using Statistical Package for Social Sciences, version 22 (IBM Corp, Armonk, NY, USA).

Results. Of the 402 patients with FGID, 307 completed the questionnaires and were available for final analysis. One hundred and fifty-four (50.3%) were females. Analysis showed that a total of 425 diagnoses of psychosomatic illness were present among the patients studied (Figure 1). Headache was noted in 34% patients, migraine in 32%, fibromyalgia in 58.7% and depression in 20%. Additionally, IBS subtypes were diagnosed based on ROME 3 criteria in 250 patients with IBS pain predominance (83.9%), 47 patients with IBS with diarrhea predominance, 40 patients with IBS constipation predominance and 181 patients with IBS Mixed subtype.

Correlation analysis between the 4 psychosomatic complaints (namely, headache, migraine, fibromyalgia, and depression) and demographics (age and gender) of

the patients showed a statistically significant correlation between age and the presence of migraines and joint pain (Table 1). Further correlation analysis did not show a statistically significant association between IBS subtypes and the psychosomatic illnesses of the study (Table 2).

Discussion. From the findings of this study, we can observe that there is a close relationship between functional gastrointestinal disorders and psychosomatic symptoms in our local patients. Primary headache and migraine are present in a third of the cohort and more within females despite been statistically insignificant. However, several findings detailed in the available literature from different countries such as the United States of America and Brazil do include similar observations of females being more afflicted with headache disorders than males.^{8,9} Depression diagnoses based on patient health questionnaire PHQ-9 occurred more in the middle age group of FGID patients at a statistically significant level among the whole domain of

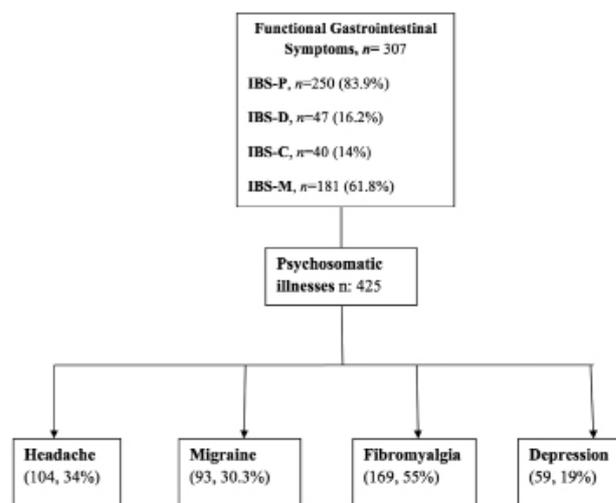


Figure 1 - Functional gastrointestinal symptoms and their associated psychosomatic illnesses within the cohort of the study.

Table 1 - Correlation between patient's age and gender to functional somatic symptoms.

Demographics	Headache				Migraine				Joints pain				Depression			
	Present	Absent	Z score	P-value	Present	Absent	Z score	P-value	Present	Absent	Z score	P-value	Present	Absent	Z score	P-value
Age, mean	144.21	136	-0.82	0.4	155.17	132.78	-2.168	0.03*	154.31	118.47	-3.858	0.001*	155	137	-1.481	0.139*
Gender, n (%)																
Male	43 (41.0)			0.07	40 (43.0)			0.176	76 (45.0)			0.1	27 (46.0)			0.56
Female	61 (58.6)				53 (57.0)				93 (55.0)				32 (54.0)			

Values are presented as numbers and percentages (%). *Mann Whitney test used, $p < 0.05$ statistical significance

Table 2 - Correlation of functional somatic symptoms to IBS subtypes.

IBS subtypes	Headache		Migraine		Joints pain		Depression	
	n (%)	P-value	n (%)	P-value	n (%)	P-value	n (%)	P-value
IBS	85 (83)	0.597	77 (84)	0.9	140 (84)	0.7	49 (86)	0.535
IBS-C	14 (14)	0.9	14 (16)	0.6	19 (12)	0.17	7 (13)	0.7
IBS-D	12 (12)	0.1	10 (11)	0.08	21 (13)	0.07	7 (12)	0.35
IBS-M	62 (103)	0.371	54 (59)	0.26	107 (65)	0.456	40 (70)	0.4

IBS: irritable bowel syndrome, IBS-C: irritable bowel syndrome – constipation predominance, IBS-D: irritable bowel syndrome – diarrhea predominance, IBS-M: irritable bowel syndrome-mixed types, Chi square used with $p < 0.05$ (statistical significance)

IBS subtypes. This relationship between age, depression, and IBS illuminates a compound problem which requires more global assessment and directed management of both conditions from the medical provider in a more multidisciplinary clinic setting. The results did not reveal any predilection of a certain type of IBS and its association with depression, although studies from other countries have reported close associations between depression and abdominal symptoms of constipation, abdominal pain, and diarrhea.¹⁰⁻¹³ It is notable that there is a degree of correlation as to worsening of the symptoms of the 2 conditions; worsening of IBS symptoms has been shown to be concomitant with worsening of depressive symptoms.¹⁴ Fibromyalgia was diagnosed in more than half of the cohort (55%) and was more likely in the older age group versus the middle age group. This finding may raise a question as to whether the accurate diagnosis for this complaint may, in some cases, be degenerative joint disease rather than true fibromyalgia; however, a strict diagnostic criteria was applied in our study for the diagnosis of fibromyalgia. A large cohort by Janssens et al,¹⁵ similarly reported increased prevalence of fibromyalgia in patients with IBS and chronic fatigue syndrome.

Study limitations. A limitation of our study was their inherent recall bias related to patients' subjective recall of their psychosomatic symptoms their day-to-day variability. Additionally, a large national representative sample would allow more estimation of the national burden assessment and the analysis results, especially if they confirmed the results of this study, it would be more applicable for directing management action regarding these debilitating symptoms and their profound effect on quality of life.

In conclusion, several psychosomatic symptoms have been identified in Saudi IBS patients. The prevalent coexistence of IBS with mood and headache disorders and the large proportion of IBS patients also diagnosed as fibromyalgia patients demands collective multidisciplinary actions to target therapy at the level of social workers, psychologists, and psychiatrists along with gastroenterologists in order to help patients realize

successful outcomes and improvements in their quality of life.

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Clinical Practice Guidelines

Clinical Practice Guidelines must include a short abstract. There should be an Introduction section addressing the objective in producing the guideline, what the guideline is about and who will benefit from the guideline. It should describe the population, conditions, health care setting and clinical management/diagnostic test. Authors should adequately describe the methods used to collect and analyze evidence, recommendations and validation. If it is adapted, authors should include the source, how, and why it is adapted? The guidelines should include not more than 50 references, 2-4 illustrations/tables, and an algorithm.