

ORIGINAL ARTICLE

Risk factors of irritable bowel syndrome among male medical students in Majmmah University, Saudi Arabia

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ABSTRACT

Background: Irritable Bowel Syndrome (IBS) is a disturbance in the gastrointestinal system that is accompanied by different symptoms, such as abdominal pain, bloating, and changed bowel habits without organic pathology. The disease affects 10%-15% of the population worldwide. The present study aimed to determine the risk factors of IBS among male medical students at Majmaah University and its effect on the quality of life.

Methodology: A cross-sectional study was conducted among male medical students in Majmaah, Saudi Arabia from August 2017 to November 2017. A total of 151 students from second to sixth levels were included in the study. A pre-tested questionnaire was used for collecting the data.

Results: In the current study, 92.1% of included subjects were aged 22-25 years. The results showed that 12.6% of the students had IBS' symptoms and signs and only 7.3% of them were diagnosed before with IBS. The most common type of IBS was mixed subtype (61%). The prevalence of IBS-C was 22.1% and the prevalence of IBS-D was 16.9%. IBS' prevalence was higher in students who had anxiety ($p < 0.001$), history of chronic health problem ($p < 0.001$), emotional stress ($p < 0.008$), and food hypersensitivity ($p < 0.001$).

Conclusion: It had been concluded that the medical students at Majmaah University had a lower prevalence of IBS (12.6%). Most cases were of mixed subtype. IBS is related to chronic medical conditions presentations like food hypersensitivity, emotional stress, and anxiety.

Keywords: Irritable bowel syndrome, medical student, risk factors.

Introduction

Irritable bowel syndrome (IBS) is a chronic disorder of the function of the gastrointestinal (GI) system associated with abdominal discomfort and changes in bowel habits without organic pathophysiology. IBS is considered as the most commonly diagnosed GI disease and could be diagnosed through excluding other diseases or through clinical trials [1]. Alteration in the pattern of bowel habits results in varied subtypes of IBS according to the associated symptoms; if IBS is accompanied with constipation, it is called IBS-C, if IBS is accompanied with diarrhea, it is known as IBS-D, or it can be accompanied with both constipation and diarrhea, it is called mixed or IBS-M, and the fourth type is any un-subtyped group of IBS (IBS-U). There are other different symptoms associated with IBS, such as distension in the abdomen and flatulence if the changes occurred in the pattern of bowel movements [2].

There has been much research on the underlying etiologies of this syndrome. Some study the relationship of diseases such as bacterial infections associated with IBS, which is based on post-infectious IBS theory. Several trials other than treatments were done in order to alleviate and relieve IBS' symptoms through an effective contact between both patients and their doctor, increase the awareness of the patients in addition to psychological

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support and counseling, and modification of dietary style [2].

Medical students are considered as the most commonly diagnosed IBS' patients because of the unlimited stressed conditions they face, whether in their academic environment, during practicing their responsibilities that always impact the number of sleeping hours, in addition to their dietary lifestyle [3].

A lot of studies were conducted among medical students in different universities in Saudi Arabia. For instance, a study was carried out in the University of Prince Sattam bin Abdul-Aziz and the prevalence of IBS was 21%, but with different associated symptoms; 34.3% had IBS-D, 20% had IBS-C, and 45.7% had other related symptoms [4]. While, the prevalence of IBS was 31.3% at the University of King Abdul-Aziz in Jeddah [3], and 10.5% at Taibah University that remarkably increased in the 5th year to become 16.8% among senior students. There was a significant relationship between IBS and students who had low socioeconomic status and low grades [5].

The current research aimed to determine the risk factors of IBS among male medical students at Majmaah University and its effect on the quality of life.

Subjects and Methods

This was a community-based, cross-sectional study. The study was conducted at Majmaah University, Majmaah, which is located in the northern part of Riyadh region from August 2017 to November 2017 [6,7]. The study included all male medical students from second to sixth level at Majmaah University. The total enumeration method was used in sample size estimation. The data were collected from 151 students by a pre-tested questionnaire. Data analysis was done by SPSS version 22.

Results

The association between IBS medical and past medical history is shown in Table 1. Forty-five percent of students who had a family history of the disease

and 54.5% of chronic health problems had IBS. IBS was higher (81.8%) among students who took no medications.

The association between IBS and the lifestyle of medical students is shown in Table 2. IBS was higher among students who were stressed (62.5%), took fast food (54.5%), anxious (100%), and those who had food hypersensitivity (54.5%). IBS was higher among non-smokers (72.7%) and had no complain of depression (62.5%).

Controlling confounding factors in multiple logistic regression analysis revealed an association between IBS and chronic health problems ($p = 0.008$), as shown in Table 3.

Discussion

IBS is a crucial health problem for doctors, patients, and students due to its bad impact on their quality of life and its exorbitant cost. Also, the physicians face a lot of difficulties during their attempt to controlling IBS' symptoms and remediate its impact.

In the current study, the prevalence of IBS was 12.6%. This finding was less than the prevalence of 31.8% reported among medical students and interns in Jeddah [8,9]. This finding was also lower than the prevalence of IBS (21%) that was reported at the University of King Saud bin Abdulaziz for Health Sciences, Saudi Arabia among medical students [10].

This study revealed that the prevalence of IBS was higher among overweight and highly educated participants; this result was in harmony with Chu et al. [11], who also reported in China that higher risks of functional bowel disorders were found among higher grades as compared to lower grade students particularly in medical colleges. IBS prevalence was found higher in stressed students in the present study; this finding was in line with Hungin et al. [12], who conducted a study among students at King Saud University in Riyadh. The researchers found that students diagnosed with IBS had

Table 1. Association between IBS and past medical history.

		IBS		Chi-square value	p-value
		No n (%)	Yes n (%)		
Family history of IBS	No	105 (75)	6 (54.5)	2.191	0.139
	Yes	35 (25)	5 (45.5)		
	Total	140 (100)	11 (100)		
Chronic Health Problem	No	123 (87.9)	5 (45.5)	9.092	0.003
	Yes	17 (12.1)	6 (54.5)		
	Total	140 (100)	11 (100)		
Medications	No	128 (91.4)	9 (81.8)	1.120	0.290
	Yes	12 (8.6)	2 (18.2)		
	Total	140 (100)	11 (100)		

Table 2. Association between medical, lifestyle, nutritional characteristics and IBS among male medical students.

		IBS		Chi-square	p-value
		No No. (%)	Yes No. (%)		
Stress	No	30 (22.4)	3 (37.5)	0.966	0.326
	Yes	104 (77.6)	5 (62.5)		
	Total	134 (100)	8 (100)		
Smoking	No	85 (61.6)	8 (72.7)	0.538	0.463
	Yes	53 (38.4)	3 (27.3)		
	Total	138 (100)	11 (100)		
Food source	Home food	76 (55.1)	5 (45.5)	0.380	0.538
	Fast food	62 (44.9)	6 (54.5)		
	Total	138 (100)	11 (100)		
Food hypersensitivity	No	128 (91.4)	5 (45.5)	20.530	< 0.001
	Yes	12 (8.6)	6 (54.5)		
	Total	140 (100)	11 (100)		
Anxiety	Ineligible	102 (74.5)	0(0.00)	20.085	< 0.001
	Eligible	35 (25.5)	8 (100)		
	Total	137 (100)	8 (100)		
Depression	Ineligible	66 (50.4)	5 (62.5)	0.443	0.506
	Eligible	65 (49.6)	3 (37.5)		
	Total	131 (100)	8 (100)		

Table 3. Risk factors for IBS among medical students.

Presence of IBS	p-value	OR
Chronic health problem		
No (n = 120)	0.008	0.114
Yes (n = 22)	.	.
Emotional stress		
No (n = 33)	0.121	4.499
Yes (n = 109)	.	.
Food hypersensitivity		
No (n = 127)	0.073	0.158
Yes (n = 15)	.	.

a much higher level of stress. The present study found that IBS is associated with anxiety; this finding was consistent with Kabra and Nadkarni [13] and Locke et al. [14].

In a survey which aimed to determine the prevalence and associated factors of IBS among medical students in Karachi, Sugaya N and Nomura S found that 37.1% of patients with IBS had depression, and 31.4% had anxiety [15]. The researchers also found that 55.8% of medical students with IBS showed psychological symptoms of anxiety.

The limitation of this survey was that it included only one university, hence, it may not be representative of medical students in all universities of Saudi Arabia.

Conclusion

The medical students at Majmaah University had a lower prevalence of IBS (12.6%). Most cases were of mixed subtype. IBS is related to chronic medical conditions presentations like food hypersensitivity, emotional stress, and anxiety.

List of Abbreviations

IBS Irritable bowel syndrome

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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Consent for publication

Written informed consent was obtained from all the participants.

Ethical approval

Ethical approval was granted by Ethics Committee/ Institutional Review Board/Research Committee. The study

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