

The Prevalence of Irritable Bowel Syndrome among Medical and Non-Medical Suez Canal University Students

Mariam M. Darweesh^{*}, Mennat Allah M. Abd El Hameed, Yomna M. Hassan, Khadiga A. Abd El Rheem, Shaza A. Mohamed, Marwa A. Mahdy, Ahmed A. Slwawy, Mona M. Abo El Ftooh

Faculty of Medicine, Suez Canal University, Ismailia, Egypt Email: *<u>mariam777mahmoud@yahoo.com</u>, <u>menna_elgaafary@yahoo.com</u>, <u>yomna-mh@hotmail.com</u>, <u>missrashied@hotmail.com</u>, <u>shaza_awaad@yahoo.com</u>, <u>marwamahdy30@yahoo.com</u>, <u>ahmedslwawy@yahoo.com</u>, <u>Mona_ouf12@yahoo.com</u>

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Abstract

Background: Irritable bowel syndrome (IBS) is one of the most frequently diagnosed gastrointestinal (GI) disorders in primary care and gastroenterology practices, despite the fact that many suffer symptoms without knowing their diagnosis or seek for medical consult, so this study aims to explore the prevalence of irritable bowel syndrome (IBS) among Suez Canal university students. Methods: A cross section with multistage cluster probability sample. Using Rome criteria III IBS module, the questionnaire was administrated to Suez Canal university students; a population consisting of (86) students of the faculty of medicine & non-medical (84) students of the faculty of commerce English section with total (170) students of the third batch from both faculties (whose mean age is 20 ± 0.82) years old with total (109) females and (61) males. Results: The prevalence of IBS according to Rome III criteria in Suez Canal University was 22.9%. 23.8% were diseased in the faculty of commerce while 22.1% in faculty of medicine. Females in this study represent 64.1% of the sample, 30.3% of them were diseased, while males represent 35.9% about 9.8% of them were diseased. IBS constipation predominant type was 28.2%, diarrhea predominant type was 15.4%, mixed type was 46.2%, the un-subtyped cases represent 10.3%. Conclusion: Irritable bowel syndrome is a common disease among Suez Canal university students, more common in non medical students than medical ones, can be considered as a female predominant disease. And this

^{*}Corresponding author.

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requires a real medical concern.

Keywords

Prevalence, Irritable Bowel Syndrome, IBS, Gastrointestinal Diseases, Rome III Criteria

1. Background

Irritable bowel syndrome (IBS) is a functional GI disorder characterized by abdominal pain and altered bowel habits in the absence of specific and unique organic pathology. The diagnosis of IBS is based on clinical findings and the exclusion of other disorder [1].

Most people with IBS have mild symptoms. Many people don't recognize IBS symptoms. Yet, IBS is one of the most common disorders seen by physicians. Not all individuals with IBS symptoms, seek medical care for their symptoms. Nevertheless, there are between 2.4 and 3.5 million annual physician visits for IBS in the United States alone. IBS is the most common disorder diagnosed by gastroenterologists and accounts for up to 12% of total visits to primary care providers [2].

A significant proportion—35% to 40%—of individuals who report IBS in the community are male. Approximately 60% to 65% of individuals who report IBS in the community are female [2].

There were not many studies that included either medical and non medical students together. Similar studies about the prevalence of IBS among medical students from South America [3], Pakistan [4], Saudi Arabia [5] revealed prevalence rates of 21%, 28.3%, 31.8% consequently.

The only published study that was made in Egypt by Ahmed Abdulmajeed *et al.* in an urban area in Suez governorate from January 2008 to August 2009. 117 individuals were included in this study. Rome II criteria were used for the diagnosis of IBS. The prevalence of IBS among the study sample was 34.2% [6].

Symptoms of IBS are similar to the symptoms of a wide variety of abdominal problems, some of which can be very serious. Because different conditions require different treatments, it's vital to seek out the correct diagnosis. There is no single definitive test to diagnose IBS, so other conditions must be ruled out before treatment can be started [7].

However, it must be mentioned that the presence of alarm symptoms, including progressive pain, pain that disturbs sleep, persistent nausea and vomiting, hematochezia or melenic stools, fecal occult blood positivity, fever, weight loss, or anorexia, is not compatible with IBS and denotes a more pressing and sinister diagnosis [7].

In particular, signs of active bleeding, including hematemesis or hematochezia, require urgent or emergency endoscopy by a gastroenterologist [7].

The condition usually causes long-term symptoms: May occur in episodes, vary, may be meal-related and of course interfere with daily life and social functioning in many patients [8].

Symptoms sometimes seem to develop as a consequence of a severe intestinal infection or to be precipitated by major life events, or in a period of considerable stress. In general, there is a lack of recognition of the condition; many patients with IBS symptoms do not consult a physician and are not formally diagnosed. And this is why this topic was chosen [8].

IBS sub classification According to the Rome III criteria, and on the basis of the patient's stool characteristics [8]:IBS with diarrhea (IBS-D):

- -Loose stools >25% of the time and hard stools <25% of the time
- -Up to one-third of cases
- -More common in men
- IBS with constipation (IBS-C):
 - -Hard stools >25% of the time and loose stools <25% of the time
 - -Up to one-third of cases
 - -More common in women
- IBS with mixed bowel habits or cyclic pattern (IBS-M):
- —Both hard and soft stools >25% of the time

On clinical grounds, other sub classifications can be used:

- Based on symptoms:
 - ---IBS with predominant bowel dysfunction
 - ---IBS with predominant pain
 - ---IBS with predominant bloating
- Based on precipitating factors:
 - -Post-infectious (PI-IBS)
 - -Food-induced (meal-induced)
 - -Stress-related

However, with the exception of PI-IBS, which is quite well characterized, the relevance of any of these classifications to the prognosis or response to therapy remains to be defined [8].

It must also be remembered that the Rome III criteria are not commonly used in clinical practice because many physicians may not have time to apply the criteria and most of the time they diagnose IBS just by exclusion of other diseases, especially in Egypt, but we used it because it's the most suitable tool to define IBS cases and also it's commonly used abroad. Furthermore, cultural issues may inform symptom reporting. In India, for example, a patient who reports straining or passing hard stools is likely to complain of constipation even if he or she passes stools more than once daily [8].

IBS is a major women's health issue. Data reveals an increased risk of unnecessary surgery for extra-abdominal and abdominal surgery in IBS patients. For example, hysterectomy or ovarian surgery has been reported in female patients with IBS as high as 47% to 55% and has been performed more often in the IBS patient than in comparison groups [1].

IBS patients really suffer from serious symptoms, they present with a twofold increase in somatic comorbidities compared to controls, possibly caused by common pathophysiological mechanisms. Nevertheless, to date, there has been no convincing evidence for a consolidated underlying pathophysiology or somatization [9].

Gastrointestinal disorders, such as functional dyspepsia, gastroesophageal reflux disease, functional constipation, and anal incontinence, occur in almost half of the patients. In a broad variety of extraintestinal comorbidities, fibromyalgia, chronic fatigue syndrome, and chronic pelvic pain are better documented and appear in up to 65% [9].

1.1. Rational

Irritable bowel syndrome (IBS) is one of the most frequently diagnosed gastrointestinal (GI) disorders in primary care and gastroenterology practices, despite the fact that many suffer symptoms without knowing their diagnosis or seek for medical consult, so we conduct this research to provide a definitive diagnosis & awareness about the prevalence of IBS among students to be able to avoid further health comorbidities.

1.2. Aim

To explore the prevalence of IBS among Suez Canal university students.

1.3. Objectives

- Assess the prevalence of IBS among Suez Canal university students.
- Discover undiagnosed cases of IBS.
- Aware diagnosed & undiagnosed cases about IBS.

1.4. Study Question

What's the prevalence of IBS among medical and non medical Suez Canal university students?

2. Methodology

A cross section, descriptive study. With multistage cluster probability sample. Using Rome III criteria questionnaire of IBS; which is a self-administrated consists of ten questions assessing the current status of an apparently normal person. Each question can be answered according to a scale describing the frequency of experiencing each symptom.

The questionnaire was administrated to Suez can university students; a population consisting of (86) students of the faculty of medicine & non-medical (84) students of the faculty of commerce English section with total (170) students of the third batch from both faculties (whose mean age is 20 ± 0.82) years old. With total (109) females and (61) males.

Participants were provided with the questionnaire and they give it back at the same day. Well trained data collecting team were responsible for distributing the questionnaire and providing help while participants filling it.

Data were extracted by one investigator to a Microsoft Excel sheet. Then the questions were coded for analysis, comparison between groups was assessed using the chi-squared test, with a 95% confidence interval (CI), p-value less than 0.05 was considered statistical significant. Data were analyzed using statistical package for social science (SPSS) version 20.

3. Results

A descriptive cross sectional on the prevalence of IBS between medical students represented by (86) students of the faculty of medicine & non-medical students represented by (84) students of the faculty of commerce English section with total (170) students of the third batch from both faculties (whose mean age is 20 ± 0.82) years old. The study included a total (109) female and (61) male and showed that:

- Generally, the students who are not diseased are more than those who are diseased as the not diseased students are 77.1% while the diseased are 22.9% (Figure 1).
- In diseased students the most common type of IBS is the mixed one 10.6%, followed by the constipation predominant type 6.5%, then the diarrhea predominant type 3.5% while the least common is un-subtyped cases 2.4% (Table 1).
- The diseased students in the faculty of commerce, English section, 51.3% are more than they are in the faculty of medicine, 48.7%, although there is no significant relation between faculty & diagnosis of IBS (Table 2).

While there is significance relation between sex & diagnosis, refer to that females are more likely to have IBS as the diseased females 84.6% are more than the diseased males 15.4% (Table 3).

• There is no significance relation between the sex of students of both faculties and the type of IBS as in the most common type of IBS, which is the mixed type; the diseased females in the faculty of medicine are (87.5%) while the diseased females in the faculty of commerce, English section are (80.0%). There were not any un-subtyped male cases at both faculties (Figure 2, Figure 3).





Figure 2. Types of IBS among students of faculty of commerce, English section.





Table 1. The rate of the several types of IBS.		
Туре	Percent (%)	
Not diseased	77.1	
Mixed	10.6	
Constipation predominant	6.5	
Diarrhea predominant	3.5	
Un-subtyped	2.4	

Table 2. The relation between	n the faculty and the diagnosis of IB	S.	
		Diseased (%)	Not diseased (%)
Faculty	Medicine	48.7	51.1
	English commerce	51.3	48.9
Table 3. The relation between	the sexand the diagnosis of IBS		
		Diseased (%)	Non diseased (%)
Sex	Male	15.4	42.0
	Female	84.6	58.0

4. Discussion

This study was conducted about prevalence of IBS among Suez Canal University students through the Rome III criteria IBS module among on the third year students of faculty of medicine and faculty of commerce English section.

To our knowledge, this is the first study about this topic performed in Suez Canal University and even in Egypt. The study results revealed that 77.1% of all the included students were free of the disease and only 22.9% were diseased. 23.8% of the students in faculty of commerce English section are diseased while 22.1% of them in faculty of medicine. Nahla Khamis Ragab Ibrahim *et al.* conducted a cross-sectional study among medical students and interns at King Abdulaziz University, Jeddah and showed a high prevalence of IBS (31.8%) [5].

It was also found that there was more prevalence of IBS among the females in both faculties—which are the same results as the study performed by Yan-Yan Dong *et al.* in Chinese College and University Students [10].

On the other hand, a cross-sectional study done by Okeke EN *et al.* at the Jos University showed more prevalence among the male participants, being present in (26.4%) of the males and (25.7%) of the females respectively [11].

In this study, The most common type found was the mixed-predominant type of IBS (IBS-M) with a prevalence of (10.6%)—then the constipation predominant type is (6.5%) of the diseased then the diarrhea predominant type is (3.5%) of the diseased, while there are (10.4%) of the cases un-subtyped.

However, the Akiko Shiotani *et al.* study on Japanese university students showed that the constipation-predominant type (IBS-C) is more prevalent (constipation-predominant type (IBS-C) 128, diarrhea-predominant type (IBS-D) 117, unclassified 23 of total 268 diagnosed cases) [12].

The prevalence among the faculty of commerce English section students more than the medical students may refer that having IBS isn't only related to stress, but also to the wrong eating habits that non-medical students may not be aware of.

The higher prevalence among the females highlights the hormonal role as a risk factor for IBS. Besides that, we have to put into consideration the difference in the biological response for IBS in males & females.

One of the major drawbacks have been faced during elaborating this study that the students—especially the non-medical students—found some difficulty in understanding the questionnaire but data collecting team did their best to simplify it for them.

On the other hand, a good point was that the study subject is suitable for diagnosis via the Rome III criteria as well as the sample size as a whole was representative as we include most of the students of the 2 batches.

5. Conclusion

The study revealed that IBS was a common disease among Suez Canal university students, more common in non-medical students than the medical ones. With differences in IBS type and also there was a relationship between sex & the disease.

6. Recommendations

1) Establish national programs to aware students of healthy diet needed to reduce their suffering of IBS.

- 2) Monitoring youth diet sources from the ministry of health.
- 3) Improve the educational programs to reduce students' stress.
- 4) Provide a more effective health care program to the students.

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Abbreviations

IBS: Irritable bowel syndrome GI: Gastrointestinal