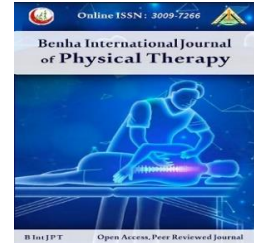


# Benha International Journal of Physical Therapy

Online ISSN: 3009-7266 Home page: <https://bijpt.journals.ekb.eg/>



Original research

## Prevalence of irritable bowel syndrome among Egyptian undergraduate physiotherapy students of Benha University

Adel M. Zedan<sup>1</sup>, Esraa Z. Mohamed Abdu<sup>2\*</sup>, Reda K. Abdelrazik<sup>1</sup>

<sup>1</sup>Department of Physical Therapy for musculoskeletal disorders and its surgery, Faculty of Physical Therapy, Benha University, Benha, Egypt.

<sup>2</sup>Third year physiotherapy student at faculty of physical therapy, Benha University, Qalubya, Egypt.

\*Correspondence to  
Dr. Esraa Zakarya, a  
third year physio  
therapy student at  
faculty of physical  
therapy, benha  
university  
, Qalubya, Egypt  
E-mail:  
[esraazakarya024@gmail.com](mailto:esraazakarya024@gmail.com)  
Tel: 01102165306

**Article history:**  
Submitted: 22-05-2024  
Revised: 23-05-2024  
Accepted: 24-05-2024

### Abstract

**Background:** Irritable bowel syndrome (IBS) is one of the most prevalent gastro-intestinal disorders, causing abdominal pain and altered bowel habits with unknown organic pathology. Studying the prevalence of such disorders among students may help make comparisons among universities and countries and determine their association with academic achievement. **Purpose:** This study aims to determine the prevalence of IBS among undergraduate students of faculty of physical therapy, Benha University, Egypt. **Methods:** This is a cross-sectional study. A survey includes some baseline data, Rome IV criteria for IBS, and if diagnosed by a physician with IBS. Forty students responded, and their characteristics were presented and the prevalence of IBS among them was calculated. **Results:** The prevalence of IBS among the sample was 25% (10 out of 40). **Conclusion:** IBS is common among undergraduate students of the faculty of physical therapy at Benha University, affecting about 25%. Further studies linking this disorder with the level of stress and academic achievement are needed.

**Keywords:** Irritable bowel syndrome, Prevalence, Students.

### Introduction

Irritable bowel syndrome (IBS) is one of the most common chronic gastro-intestinal disorders affecting up to 20 % of the population all over the world and affecting female more than male.<sup>1,2</sup> It is manifested by altered bowel habits and abdominal pain in the absence of a specific disease in any organ.<sup>1</sup> These symptoms may lead to a marked limitation of activities of daily life.<sup>2</sup> IBS has unknown etiology, however it has several risk factors located in the external environment, gut lumen, and neuromuscular, gut immune system and central nervous systems.<sup>2,3</sup> These factors may include diet, depression, anxiety, stress, and

smoking among others.<sup>2</sup> IBS has three subtypes which are predominant constipation, predominant diarrhea and mixed, which vary based on gender.<sup>4,5</sup> IBS is diagnosed clinically via its symptoms with exclusion of organic diseases (with help of tests as complete blood count and fecal calprotectin) and concerns as old age and unexplained weight loss.<sup>6</sup> Western studies indicated that most population-based IBS prevalence range 10%-15%.<sup>7</sup> Most (76.6%) of IBS patients in the US are undiagnosed.<sup>8</sup>

Students especially who are undergraduates are highly liable to IBS that is linked to increased

stresses as exams and because they always rely on fast foods for their diet. This is supported by the report that IBS subjects have high levels of anxiety and stress which exacerbate gastro-intestinal symptoms by affecting the brain-gut axis; the communication between the brain and the gut. As well, they increase gut sensitivity and alter gut motility. Similarly, dietary pattern has significant negative effect on IBS.<sup>9</sup> IBS can affect the academic performance of the studying students.

This may be explained by that students are enforced to miss classes due to IBS symptoms. This elevated absenteeism level among IBS students may decrease their academic achievement.<sup>10</sup> The IBS prevalence rate among university students range between 8-26 % and differ by country.<sup>10</sup> It is unknown if physiotherapy students of Benha university have IBS prevalence that lie within this range or not. Determining the prevalence of IBS among students of faculty of physical therapy, Benha University, can help these students to direct the decision maker toward their problems as stresses and help them to manage their symptoms. In addition, this may help increase their awareness about IBS; therefore they can improve their academic achievement. Therefore, the objective of this study is to determine the prevalence of IBS among physiotherapy students of Benha University and to present their characteristics

## Methods

### *Study design and setting:*

This cross-sectional (survey) study was conducted online. A survey questionnaire containing questions about personal demographic data, Rome IV criteria, whether diagnosed with IBS by a physician before, severity and frequency of symptoms and associated factors were submitted online via WhatsApp as a Google form link.

### *Participants:*

This study included forty undergraduate students of faculty of physical therapy at Benha University-Qalubya-Egypt. All undergraduate students of faculty of physical therapy at Benha

University-Qalubya-Egypt were asked to participate.

### *Procedures:*

An online survey was performed (<https://forms.gle/zMCgpEvvByJvt7pcA>). It included questions about demographic data, Rome IV criteria of IBS, and whether they were diagnosed by a physician with IBS or not among others.<sup>2</sup> This survey was posted as a link for a Google form on the online groups (Whats App) of the students.

IBS was diagnosed based on either physician diagnosis or achieving Rome IV criteria of IBS,<sup>2</sup> therefore the survey contained questions about whether the participant was diagnosed by a physician with IBS and also Rome IV criteria<sup>2</sup> was provided in the survey and the participant was asked to check what apply to him if the participant had abdominal pain in the last 3 months plus 2 out of 3 of the following criteria; pain changes with defecation, change in form of stool, and change in frequency of stool, the participant was diagnosed as having IBS.<sup>2</sup>

Other diseases mimicking IBS were excluded through inclusion of questions in the survey about them such as they were asked if they had recent infection and so on. In addition, physician diagnosed IBS after excluding other diseases.

### *Statistical analysis:*

Data were presented as count (Percentage). Prevalence was calculate as number of students diagnosed with IBS plus number of students having > 1 Rome IV criteria divided by total sample. Statistical package for social sciences software was used for analysis (SPSS version 24).

## Results

### *Demographic and clinical data:*

The sample included 60 % female, 45% between 70 and 80 kg, 58% between 20 and 24 years, 40% has family history of IBS, 17.5 % diagnosed with IBS by physician, 37.5% had recurrent abdominal pain past 6 ms, 40 % had one criteria IBS, 79.5% had at least one symptoms IBS, 20% reported their

symptoms are frequent (1/w), 40% reported their symptoms had severity >3 (VAS). (TABLE 1).

**Table (1):** Demographic and clinical data of the sample (N=40)

Variable		Count (Percentage)
Gender	Male	16 (40)
	Female	24 (60)
Weight	40-50	3 (7.5)
	50-60	5 (12.5)
	60-70	10 (25)
	70-80	18 (45)
	>80	4 (10)
Age	<17	6 (15)
	17-20	34 (85)
Family history of IBS	Yes	16 (40)
	No	24 (60)
Diagnosed by a physician with IBS	Yes	7 (17.5)
	No	33 (82.5)
Abdominal pain	Yes	15 (37.5)
	No	25 (62.5)
Rome IV	None	24 (60)
	One criteria (defecation or frequency or appearance of stool)	16 (40)
Symptoms of IBS (number)	0	9 (22.5)
	1	11 (27.5)
	2	4 (10)
	3	6 (15)
	4	4 (10)
	5	2 (5)
	6	4 (10)
Frequency of IBS symptoms	Rarely (1/m)	24 (60)
	Occasionally (2/m)	8 (20)
	Frequently (1/w)	8 (20)
Severity of IBS symptoms	1	15 (37.5)
	2	1 (2.5)
	3	8 (20)
	4	8 (20)
	5	4 (10)
	6	2 (5)
	7	2 (5)

IBS: Irritable bowel syndrome, m: months; w: weeks.

**Prevalence of IBS:**

Prevalence of IBS among the sample is 25%, 95% CI (11-39) as shown in table (2) and figure (1).

**Table (2):** Prevalence of IBS among the sample

	Prevalence (%)	95% Confidence Interval of the Difference	
		Lower	Upper
IBS			
Yes	10 (25)	11	39
No	30 (75)		

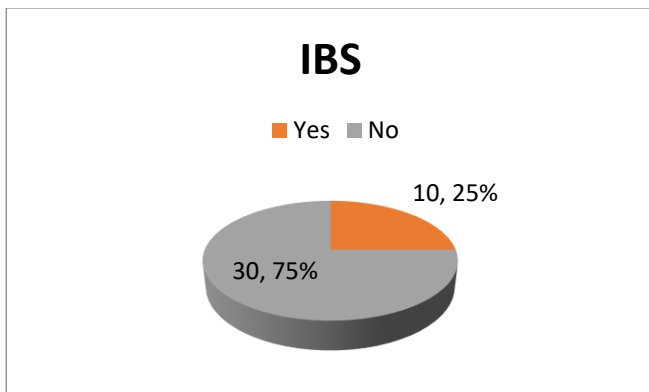


Fig. (1): Prevalence of IBS (Count and percent of students with and without IBS).

**Discussion:**

This cross-sectional study aims to determine the prevalence of IBS among undergraduate students of faculty of physical therapy, Benha University and their characteristics. This study showed that the prevalence of IBS among the sample is 25%. The majority of the sample were female, overweight, > 20 years, have no family history, and ≥one symptoms IBS. In addition 40 % had >one criteria IBS, 20% had frequent (1/w) symptoms, 7.5 had IBS not diagnosed by physician, and 40% had symptoms severity >3. The current study reports a prevalence

of 25% of IBS among the students and they fit the Rome IV criteria for the diagnosis of IBS which is higher compared with an international study in eight different countries in Europe which reported a prevalence of 11.5% , and it was reported that the global estimated prevalence of IBS is 10- 15%.<sup>2</sup> This difference may be due to the size of sample, the amount of stress the students face, food habits or diagnostic criteria. However, IBS is not a fatal disorder; the affected subjects can be limited in their daily activities, life quality and diet due to continuous clinical diagnoses, examinations, medication, and treatment that further negatively affect their psychology and productivity.<sup>10</sup>

Furthermore, the IBS prevalence rate among university students in China ranges between 7.85% and 10.4% and in Japan, the prevalence of IBS ranges between 19% and 26%.<sup>10</sup> From this report it is clear that comparing the prevalence of IBS in the current study to the previous mention ones reveals that it is lower than that of China and similar to that of Japan. Considering the characteristics of the sample, majority was female. This agreed with the documentation that IBS affects female more than male.<sup>1</sup>

This research may direct the decision makers to develop strategies to decrease the stresses among students and to help them identify and manage their symptoms and disorder. This

study should be taken with its limitations which include decreased number of participants; all students are from the same college, and relying only on questions and Rome IV criteria for diagnosing the IBS.

## Conclusion

IBS is not uncommon among undergraduate students of faculty of physical therapy at Benha University affecting about 25 %. About 77.5 of students have IBS symptoms that were > 3 in severity in 60% and frequent in 20 %.

## Recommendation:

It is recommended to conduct larger cross-sectional study to confirm the results of this study and to relate IBS symptoms (and diagnosis) with the level of stress and academic achievement Ethical approval.

## Acknowledgment:

Author of this study thanks Prof. Dr. Waleed Talaat Mansour; Dean of faculty of physical therapy-Benha University for his support and also Assis. Prof. Dr. Medhat EL-Amawy (Internal medicine department at Faculty of Medicine, Benha University) for his direction during survey construction. As well, author thanks the students participated in this study for their time and effort.

## References

1. Mansour-Ghanaei F, Fallah MS, Heidarzadeh A, Jafarshad R, Joukar F, Ghasemipour R. et al. Prevalence and characteristics of irritable bowel syndrome (IBS) amongst medical students of Gilan Northern Province of Iran. *Middle East Journal of Digestive Diseases* 2009; 1(2): 100-105.
2. Alshammari OM, Almuslam AS, Alrashidi AA, Alharbi KFO, Alqasem AA, Aljubour ZA, et al. Prevalence of irritable bowel syndrome among medical students in Hail University, Saudi Arabia. *The Egyptian Journal of Hospital Medicine* 2018; 71(2): 2581-2584.
3. Khan AR, Khan A, Ahmad F & Abbas Y. Prevalence of irritable bowel syndrome and its association with stress and other risk factors among University students of Peshawar. *Journal of Medical Sciences* 2018; 26(4): 312-316.
4. Fond G, Loundou A, Hamdani N, Boukouaci W, Dargel A, Oliveira J et al. Anxiety and depression comorbidities in irritable bowel syndrome (IBS): a systematic review and meta-analysis. *European archives of psychiatry and clinical neuroscience* 2014; 264: 651-660.
5. Lovell RM & Ford AC. Effect of gender on prevalence of irritable bowel syndrome in the community: systematic review and meta-analysis. *Official journal of the American College of Gastroenterology* 2012; 107(7): 991-1000.
6. Chey WD, Kurlander J & Eswaran S. Irritable bowel syndrome: a clinical review. *Jama* 2015; 313(9): 949-958.
7. Chang FY, Lu CL & Chen TS. The current prevalence of irritable bowel syndrome in Asia. *Journal of neurogastroenterology and motility* 2010; 16(4): 389.
8. Hungin APS, Chang L, Locke GR, Dennis EH & Barghout V. Irritable bowel syndrome in the United States: prevalence, symptom patterns and impact. *Alimentary pharmacology & therapeutics* 2005; 21(11): 1365-1375.
9. Das A, Razon AH, Ahmad T & Paul DK. Prevalence of irritable bowel syndrome and its associated risk factors among university students of Bangladesh. *JGH Open* 2022; 6(6): 421-426.
10. Chen HH, Hung CH, Kao AW & Hsieh HF. Exploring quality of life, stress, and risk factors associated with irritable bowel syndrome for female university students in Taiwan. *International Journal of Environmental Research and Public Health* 2021; 18(8): 3888.