Prevalence of Irritable Bowel Syndrome among Medical Students in Hail University, Saudi Arabia

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ABSTRACT
Background: despite the modern society and medical knowledge, irritable bowel syndrome has been common these days in medical students in Hail city.
Objectives: irritable bowel syndrome (IBS) is a common gastrointestinal disease presenting with abdominal pain, bloating and change in bowel habit. This study aims to assess the prevalence of irritable bowel syndrome in medical students in Hail's university, Saudi Arabia.
Methods: a cross-sectional study on the prevalence of irritable bowel syndrome was randomly distributed among men and women in Hail University in Hail city, of Saudi Arabia from January to February 2018 involving 133 medical student participants. **Results**: in 18% of the participants have been diagnosed with IBS and 28.5% fit Rome IV criteria for the diagnosis of IBS. Stress with a percentage of 69.2% and lack of exercise 75.9% being the highest risk factors of IBS.
Conclusion: our result showed that huge number of medical students are suffering from inflammatory bowel syndrome.
Keywords: Irritable bowel syndrome, Medical students, Rome IV criteria.

INTRODUCTION

Irritable bowel syndrome (IBS) is a chronic functional gastrointestinal disorder characterized by recurrent episodes of abdominal pain, discomfort and altered bowel habits that are not explained by structural or biochemical abnormalities [1]. IBS is a disorder that is a heterogeneous in nature and may have a number of causes which may lie anywhere from the external environment to the contents of the gut lumen and from the enteric neuromuscular apparatus and the gut immune system to the central nervous system. IBS is the most common chronic disease affecting the digestive system in approximately 10-20% of the worldwide population [2] and while in some people it represents a nuisance, for others it represents a significant negative impact on daily life activities. Only 15 % of these patients seek medical help and attention [2]. Local studies in Saudi Arabia revealed that 12% of primary health care visits and 28% of medical referrals to gastroenterologists are due to IBS [3,4]. The pathogenesis of this disease is not fully understood. However, there are many factors that can affect symptoms and severity of IBS such as anxiety, depression, smoking and stress [5]. Medical students experience a high level of stress and pressure that may negatively impact their general health and life activities. A Korean study found that the prevalence of IBS was 29.2% among 319 medical students [6].

A local study in eastern province of Saudi Arabia showed that the prevalence of stress among medical students was 53% [7]. As a result, medical students are at higher risk of experiencing IBS comparing to other students in other specialties. A cross-sectional study was conducted on medical students in Beijing, China showed that the prevalence of IBS is 33.3% [8]. A similar study in King Abdulaziz University, Jeddah showed a 31.8% prevalence of IBS among medical students and interns [9].

MATERIALS AND METHODS

A cross-sectional study involving 133 medical students from Hail university of Saudi Arabia was done between February-March 2018. The selected sample size for this study was randomly determined. A self-administered questionnaire was developed after a careful review of literature on the subject and it includes 14 questions. The questionnaire consisted of two parts. Part one; demographical data that includes gender, age, marital status, educational level. Part two; the students were asked whether they have been currently diagnosed with IBS or not, whether they have been experiencing abdominal pain, discomfort and change in the bowel habit if they have not been diagnosed with IBS. Students were also asked if the current abdominal pain has affected their educational level at university or not, if they are suffering from anxiety or not and if they

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have someone in their families who has been diagnosed with IBS or not. Data were collected by one method through a distribution of a survey website-link through medical students of Hail university in multiple social media platforms. Descriptive statistics were used to describe the answers of the participants in the study using numbers and percentages.

Comparing the answers for different questions within the different groups was done using Pearson chi-square test. Statistical significance was set at $p < 0.05$ and analysis was performed using IBM SPSS statistics, version 23 (IBM, Armonk, NY, USA).

The study was done after approval of ethical board of University of Hail.

RESULT

A total of 133 medical students participated in the study, 51.9% are males and 48.1% are females (Table 1). Almost all of the participants 95.5% are singles (Table 2), also, more than half of participants 63.2 % are between the ages of 20 to 30 years old (Table 3). Regarding the level of education, about 34.6% are in the 6th medical year being the highest number of participants and 6.8% are in the 5th medical year being the lowest number of participants (Table 4). Only 18% of participants are already diagnosed with IBS (Table 5). As regarding fitting Rome IV criteria for the diagnosis of IBS, 28.5% of the participants fit the criteria while 71.5% don't (Table 6). Concerning risk factors, 53.4% have a positive family history of IBS, 69.2% are suffering from stress, 11.3% are smokers and 75.9% don't exercise regularly (Table7)

Table (1): Sex distribution of the participants

Sex	Frequency	Percent
Male	69	51.9
Female	64	48.1
Total	133	100

Table (2): Marital status of the participants

Marital status	Frequency	Percent
Single	127	95.5
Married	6	4.5
Total	133	100

Table (3): Age distribution of the participants

Age	Frequency	Percent
20-23 years	84	63.2
24-26 years	49	36.8
Total	133	100

Table (4): Level of education of the students

Level of education	Frequency	Percent
2nd year	13	9.8
3rd year	21	15.8
4th year	27	20.3
5th year	9	6.8
6th year	46	34.6
Interns	17	12.8
Total	133	100

Table (5): Already diagnosed with IBS

Already diagnosed with IBS	Frequency	Percent
No	109	82
Yes	24	18
Total	133	100

Table (6): Fitting Roe IV criteria

1-Abdominal pain in the last 3 months	Frequency	Percent
Yes	71	53.4
No	62	46.6
Total	133	100
2- Pain changes with defecation		
Yes	79	59.3
No	54	40.7
Total	133	100
3-Change in form of stool		
Yes	62	46.9
No	71	53.1
Total	133	100
4- Change in frequency of stool		
Yes	84	62.9
No	49	37.1
Total	133	100
5- Fitting Rome criteria		
Yes	38	28.5
No	95	71.5
Total	133	100

Table (7): risk factors of IBS

Positive family history of IBS	Frequency	Percent
Yes	71	53.4
No	62	46.6
Total	133	100
Suffering from stress		
Yes	92	69.2
No	41	30.8
Total	133	100
Smoker		
Yes	15	11.3
No	118	88.7
Total	133	100
Exercise regularly		
Yes	32	24.1
No	101	75.9
Total	133	100

DISCUSSION

The global estimated prevalence of IBS is 10-15% [4]. Our study reports a prevalence of 18% of IBS among the medical students and interns of Hail University in Hail city, KSA and 28.5% of the medical students fit the Rome IV criteria for the diagnosis of IBS which is lower than a similar study in Prince Sattam bin Abdulaziz University in Riyadh city, KSA which reported a prevalence of 21% of medical students are having IBS [10].

In Japan 25.2% of the male nursing and medical school students have IBS [11] and in Nigeria 26.1% of the medical students are also having IBS [12]. However, our study result is higher compared with a study in China among university students 7.85% [13] and with an international study in eight different countries in Europe which reported a prevalence of 11.5% [14].

The disparity of our result with those of the cited published studies maybe attributed to the

variability of the study group, diagnostic criteria, age group, learning environment, culture and geographical location. The difference in sample size may also be another reason for this difference in disparity. It turns that IBS is increasing these days not only worldwide but also in medical students of Hail University in Hail city of Saudi Arabia. There was no significant difference in terms of prevalence of IBS between male and female participants.

This result would mean that IBS irrespective of gender, everyone is susceptible to experiencing it. In this study, stress among medical students maybe a major risk factor associated with the development of IBS with a percentage of 69.2%.

This finding corroborates the result of a study that medical students experience increased stress [12] which may be due to the length of time to finish medical school, difficult courses, exams, not to mention the number of case studies and other requirements to accomplish [15,16].

This study reports no statistically significant association between the level of education of the medical student and irritable bowel syndrome since all students are equally have already been diagnosed with IBS or being fit for Rome IV criteria. Stress is statistically associated to IBS as reported in this study.

Furthermore, the result of this study supports a similar study among medical students in Saudi Arabia where no significant association between irritable bowel syndrome and academic year level of students was found [10].

Looking at the other identified risk factors of IBS, only family history of IBS and lack of exercise were statistically associated in this current study showing that 53.4% of the participants have a positive family history of IBS and 75.9% are lacking regular exercises. Smoking was statistically not associated with IBS since the percentage of smokers is only 11.3%.

CONCLUSION

We can conclude that irritable bowel syndrome is common in medical students of Hail University in Hail city, KSA.
Stress and lack of exercise are two major risk factors of IBS. More community awareness and education is required and internal medicine doctors are advised to have an active role in the health education and awareness about IBS problem among medical students.

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