


ORIGINAL ARTICLE

Prevalence of hemorrhoids and irritable bowel syndrome and the association between them among adult Saudi and Bahraini Population, Saudi Arabia, and Bahrain, 2019

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ABSTRACT

Background: Despite the fact that it is difficult to estimate hemorrhoids' (H) true incidence, about 50% of people that are above the age of 50 have some degree of H that may be symptomatic or asymptomatic. Reviews of the hospital medical records show that Saudi Arabia's western region has the highest incidence rate. The present study is geared toward establishing the prevalence of irritable bowel syndrome (IBS) among Saudis under the objective of investigating its association with prevalence of H.

Methodology: This cross-sectional study was carried out among the adult population in Saudi Arabia and Bahrain. The total enumeration method was used for including all adult males and females who agreed to participate in this study. The final sample size was 939. Pre-tested, questionnaire was used in the data collection.

Results: At 5%, $p = 0.003$, age, and abdominal pain were significantly associated. The percentages of respondents across the different age groups who reported different amounts of pain significantly varied at a 5% level $p = 0.000$. The geographical region with which respondents came from and claim of abdominal pain with changes in the rate of passing stool were not significantly associated $p > 0.05$.

Conclusion: The prevalence of IBS is less than 5% according to the present data. However, IBS symptoms affect almost half of the respondents, while H were having no statistical association with IBS.

Keywords: IBS, hemorrhoids, associations.

Introduction

Irritable bowel syndrome (IBS) is the most common functional bowel disorder that affects about 20% of people at some point in their life [1,2]. It manifests as abdominal pain during defecation and distension in the absence of any demonstrable abnormality [1]. One-third of the patients with IBS experience diarrhea, another third experiences constipation, while the rest alternate between experiencing diarrhea and constipation [2,3]. Despite the fact that 20%-50% of patients end up consulting gastroenterologists, many of the IBS patients go on with their lives without undergoing medical treatment [4].

10%-20% of the general population is estimated to have IBS [5]. In addition, studies have shown that IBS is more common in females than it is in males, but the reason

for this is unidentified [6]. Coexistence between sleep disorders, anxiety, depression, and IBS has been found to exist. Reports also show that psychological factors seem to precede the onset of gut symptoms [6]. For instance, the thresholds for sensations of initial filling, evacuation,

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urgent evacuation, and utmost tolerance that have been recorded using a rectal balloon significantly decreased by focusing the examiner's attention on stimuli of the gastrointestinal through reading pictures of malignant gastrointestinal disorders in cases associated with IBS. In contrast, there was no observable change of these thresholds in patients without IBS [7]. Thus, despite the Rome II guidelines classifying IBS as a physical disorder and not a psychological one, there is an indication that psychological disorders play an important role in the development of IBS.

The relation between the two diseases is shown by just one study. 51 IBS patients and 70 non-IBS patients were involved in the study. 78.4% of the IBS patients were diagnosed with chronic gastritis (CG), while 50% of the patients without IBS had a positive CG diagnosis ($p < 0.001$). The hemorrhoids (H) percentage was lower in patients without IBS (15.7%) than those with IBS (33.7%), ($p < 0.05$) also, for urolithiasis detection, the percentages in IBS patients and non-IBS patients were 17.6% and 5.7% respectively, ($p < 0.05$) [8].

Despite the fact that it is difficult to estimate Hs' true incidence, it has been suggested by Goligher [9] that 50% of people that are above the age of 50 have some degree of H that may be symptomatic or asymptomatic. Reviews of the hospital medical records show that Saudi Arabia's western region has the highest incidence rate. The records showed that 10% or more of the surgical material observed in the outpatients' department represented anorectal disorders. From these, 90%, 7%, and 3% were cases of H, anal fissures, and anal fistulae, respectively. Reports also show that every week, 10 new H cases are observed on average and this translates to 520 cases annually in Saudi Arabia.

A systematic review and a meta-analysis of already published literature was carried out in an effort to estimate the IBS prevalence among Asian children with the inclusion of Saudi Arabia [10]. The review and analysis indicated that IBS ranged between 2.8% and 25.7%, with 12.4% pooled prevalence (95% confidence interval 9.87%-14.95%). In terms of gender, the prevalence risk ratio of girls to boys was 1.39. There is a diversity of prevalence subtypes and variations between studies [10].

Management

IBS is linked to both emotional and non-emotional causes and can be managed by either pharmacological therapies or non-pharmacological therapies [11]. It is, therefore, important for doctors to establish good relationships with their patients to garner their trust and properly explain the causative or triggering factors, diagnosis and treatment options. Recurrence and return of patients have been proven to reduce when this happens [11].

Dietary management, such as exclusion diets, good exercising patterns, and relaxation therapies, are all forms of non-pharmacological therapies. A disciplined attitude in the patient and the guidance of a trained and licensed dietician is necessary for the diet exclusion

therapy; meanwhile, a trained psychologist is needed for the relaxation therapies which are quite beneficial for the patient according to biological data and feedback [12,13].

Pharmacological therapy involves both dietary and drug therapies. Some of the treatments target the abdominal pain that comes with IBS by using antispasmodic medications or antidiarrheal and bulking agents (end organ treatments) [14]. The use of antidepressants, psychotherapy, and hypnotherapy are all central therapy methods. According to the British Society of Gastroenterology, drug therapy values are limited [14], so they advise that the therapies should target the predominant symptoms such as abdominal pain, diarrhea, or constipation [4,15] in order to properly manage IBS.

Main study objective

Due to the lack of similar studies in our region, to the best of authors' knowledge, our main aim is to find the prevalence of IBS and H and state their association with each other.

Subjects and Methods

Methods section lays down the blueprint of data collection, analysis, and presentation.

Study design

A cross-sectional study was carried out among the adult population of Saudi Arabia toward the prevalence of H and its association with IBS.

Study area

This study was conducted in different regions of Saudi Arabia and Bahrain in 2019.

Study population

All adult population who lives in Saudi Arabia and Bahrain who agreed to fill the questionnaire.

Sample size

The total enumeration method was used for including all the adult males and females who agreed to answer the questionnaire in this study. The sample size taken was according to the formula ($n = NZ2P(1 - P) / (D2 + Z2P(1 - P))$) at the significance level of ($p < 0.05$). The final sample size calculated was 939.

Data collection tools

Pre-tested, questionnaire was used for the data collection. The questionnaire assessed socio-demographic factors, Rome II criteria to screen for IBS, and other questions to screen for H.

Data analysis

Data was coded, entered, and analyzed using version 22 of the statistical package for the social sciences.

The key research tool is a concise model of community correlations evaluated at a chosen alpha level of 0.05 using chi-square.

Results

The results of the descriptive analysis showed that more than half of the respondents were between 18 and 30 years of age, while the final sample size was 939.

The number of Bahrainis combined was not higher than the number of Saudis enrolled in the study as summarized in Table 1. The p-values from the table use the Pearson Chi-square test to compare the proportions within each variable.

Age and abdominal pain were significantly associated with a 5% level of significance $p = 0.003$. The percentages of respondents across the different age groups who reported different amounts of pain significantly varied at 5% level $p < 0.000$ (Figure 2 and Table 2).

However, the area from which the respondents came and claimed abdominal pain with changes in the rate of passing stool was not significantly associated with $p = 0.143$, despite the proportions of those who reported abdominal pain and changes in the rate of passing stool across regions that varied significantly at $p < 0.001$.

Diagnosis with IBS was significantly associated with both abdominal pain combined with changes in the rate of passing stool, and abdominal pain combined with changes in the texture of stool $p < 0.05$ in both cases (Tables 2 and 3).

There was no significant gender correlation and whether or not one was diagnosed with H, which was also the case with H and educational level and H and area where in the above cases one came from $p > 0.05$ (Table 4).

Nonetheless, our findings (Table 4) indicate a correlation in the two listed cases between pregnancy and hemorrhoid diagnosis as well as age and H $p < 0.05$.

Discussion

The current study design was a cross-sectional descriptive design in which the measurement units were among the

respondents' self-reported opinions and experiences. Descriptive design studies are usually limited in terms of the quantity of analysis that only extends to sample data exploration and description. Even though chi-square analysis for associations was carried out in the present study.

Table 1. Demographic frequency distribution.

Variable	Frequency (%)	p-Values
Age		
18-30	544 (57.9)	0.000
30-40	202 (21.5)	
41-50	117 (12.5)	
51-60	57 (6.1)	
60>	19 (2.0)	
Gender		
Female	637 (67.8)	0.000
Male	302 (32.2)	
Nationality		
Saudi	491 (52.7)	0.352
Non-Saudi	448 (47.3)	
Region		
Bahrain	448 (47.7)	0.000
Central	81 (8.6)	
Eastern	116 (12.4)	
Northern	45 (4.8)	
Southern	30 (3.2)	
Western	219 (23.3)	
Education		
Primary school	22 (2.3)	0.000
High school	204 (21.7)	
University	713 (75.9)	
Pregnancy		
Yes	29	0.000
No	608	

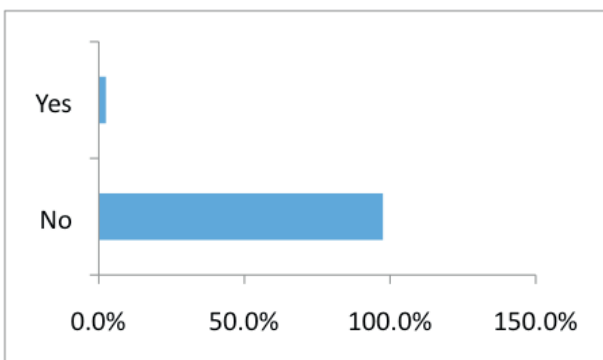


Figure 1. Bar chart of the prevalence of IBS.

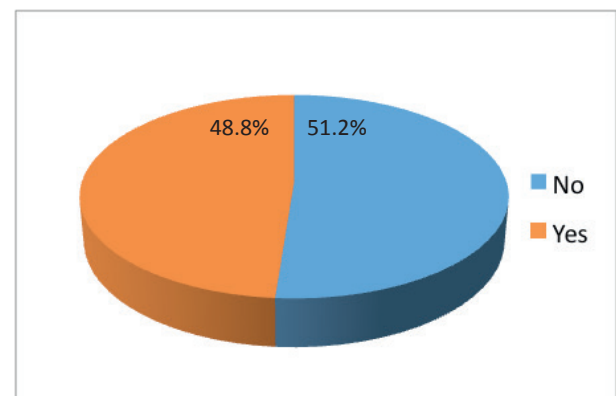


Figure 2. Frequency distribution for perceived pain at least once in a week for the last 3 months.

Table 2. Chi-square associations of abdominal pain with changes in the rate of passing stool.

Abdominal pain with changes in the rate of passing stool	Frequency (%)	p-values
Age		
18-30	171 (31.4)	0.003
30-40	82 (40.6)	
41-50	42 (35.9)	
51-60	16 (28.1)	
60>	4 (21.1)	
Gender		
Female	238 (37.4)	0.000
Male	77 (25.2)	
Region		
Bahrain	163 (36.4)	0.143
Central	21 (25.9)	
Eastern	35 (30.2)	
Northern	17 (37.8)	
Southern	10 (33.3)	
Western	69 (31.5)	
Education		
Primary school	9 (38.1)	0.032
High school	54 (26.5)	
University	252 (35.3)	
Pregnancy		
Yes	14 (48.3)	0.000
No	302 (36.4)	
Smoking		
Yes	45 (31.7)	0.121
No	270 (32.7)	
Diagnosis with IBS		
Yes	298 (32.5)	0.000
No	17 (73.9)	

Table 3. Chi-square associations of abdominal pain with changes in the texture of stool.

Abdominal pain with changes in the texture of stool	Frequency (%)	p-values
Age		
18-30	122 (22.4)	0.000
30-40	67 (33.2)	
41-50	34 (29.1)	
51-60	14 (24.6)	
60>	2 (10.5)	
Gender		
Female	175 (27.5)	0.000
Male	64 (21.2)	
Region		
Bahrain	114 (25.4)	0.227
Central	18 (22.2)	
Eastern	26 (22.4)	
Northern	14 (31.1)	
Southern	7 (23.3)	
Western	60 (27.4)	
Education		
Primary school	7 (28.6)	0.051
High school	40 (19.6)	
University	192 (26.9)	
Pregnancy		
Yes	10 (26.9)	0.000
No	226 (34.5)	
Smoking		
Yes	34 (23.9)	0.154
No	205 (25.7)	
Diagnosis with IBS		
Yes	223 (24.3)	0.000
No	16 (69.6)	

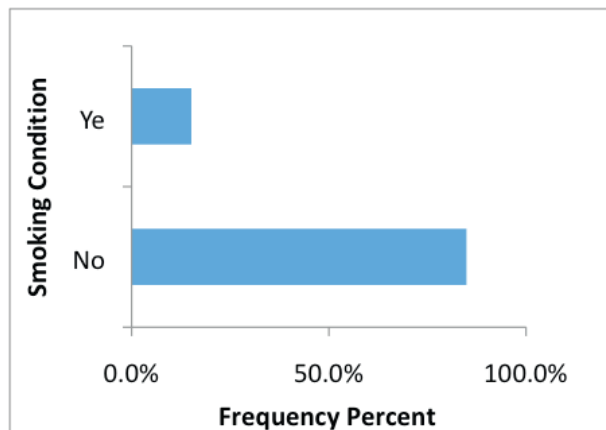


Figure 3. Frequency distribution of the smoking condition.

The current study aimed to explore and establish the prevalence of IBS and H within the Kingdom of Saudi Arabia. Our findings established that less than 5% of the sample respondents reported being diagnosed with IBS (Figure 1), a finding that contradicts with Rhee [5] that 10%-20% of populations worldwide suffer from IBS. The difference could have been due to the fact that our data was self-reported hence leaving out people who could be suffering from IBS without their knowledge or people not being truthful with the information given. The epidemiology of 10%-20% of the population suffering from IBS was also found by Alharbi [10]. None of the signs of IBS or H examined in this study was associated with smoking (Figure 3). It was confirmed in the present study results that the Western region has the highest

Table 4. Chi-square associations between H and demographic variables.

H diagnosis	Frequency (%)	p-values
Age		
18-30	56 (10.3)	0.000
30-40	55 (27.2)	
41-50	31 (26.5)	
51-60	13 (22.8)	
60>	9 (47.4)	
Gender		
Female	119 (18.7)	0.154
Male	45 (14.9)	
Region		
Bahrain	84 (18.8)	0.218
Central	13 (16.0)	
Eastern	11 (9.5)	
Northern	7 (15.6)	
Southern	7 (23.3)	
Western	42 (19.2)	
Education		
Primary school	5 (23.8)	0.460
High school	29 (14.2)	
University	130 (18.2)	
Pregnancy		
Yes	10 (26.9)	0.008
No	154 (23.3)	
Smoking		
Yes	19 (13.4)	0.164
No	145 (18.2)	
Diagnosis with IBS		
Yes	160 (24.3)	0.626
No	4 (69.6)	

incidence of H, which is in agreement with the work of Jamjoom, et al. [9]. Abdominal pains with changes in the rate of passing stool were more prevalent in females than males a statistically significant difference. The evidence of gender risk factor for IBS which connects with our findings remain well documented by Toner, et al. [16]; Jonefjäll, et al. [17]. Smoking while being connected to several human ailments is not connected by literature as well as in the present study to symptoms of neither bowel syndrome nor hemorrhoids. An interesting finding, however, is the statistical link between pregnancy and abdominal pain with changes in the rate of passing stool. These findings also resonated with the findings of Cullen et al. [18] and Kosai et al. [19]. Abdominal pain, according to the two aforementioned cited studies, however, does not directly link to IBS. Diagnosis with IBS had significant associations with abdominal pain

combined with disrupted rate of passing stool, and abdominal pain combined with changes in the texture of stool. Abdominal pains with a change in the texture of stool and change in the frequency of passing stool could be defined as symptoms of IBS. Additionally, the results established that diagnosis with IBS is not statistically linked to incidences of H. Even though it is a fact that the symptoms of IBS could increase the risk of H, our findings did not confirm any statistical association with H (Johannsson et al.) [20].

Conclusion

In conclusion, the prevalence of IBS is less than 5% according to the present data. However, IBS symptoms affect almost half of the respondents. Furthermore, the prevalence of H has no statistical association with prevalence of IBS.

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List of abbreviations

IBS	Irritable bowel syndrome
CG	Chronic gastritis
H	Hemorrhoids

Conflict of interest

The authors declare that they have no conflict of interest to the publication of this article.

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Consent to participate

Informed consent was obtained from all the participants.

Ethical approval

Permission was obtained from Almaarefa University research and ethic committee board numbered (3/192), letter reference number 920011909, dated:22/1/2020.

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