Original Article

Knowledge and Awareness of Saudi Population Toward Irritable Bowel Syndrome

Mukhtiar Baig[1], Wedyan Eid Alyoubi[1], Shada Mmohammed Albaqami[2], Norah Waleed Almaslmani[3], Rawan Ali Almalki[4], Abdulaziz Hamed Althikra[1], Sarah Abdullah Alosaimi[4], Khames Alzahrani[5*]

[1]Faculty of Medicine, King Abdulaziz University, Rabigh, Saudi Arabia. [2]Department of Family Medicine, Almatar PHC, Unaizah, Saudi Arabia. [3]Department of Family Medicine, Almuthalath PHC, Tabuk, Saudi Arabia. [4]Faculty of Medicine, Taif University, Taif, Saudi Arabia. [5]Saudi Board of Endodontic SR, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia.

Abstract

The common chronic condition known as irritable bowel syndrome (IBS) lacks any visible natomical or biochemical pathogenic cause. Abdominal pain and unregular bowel motions are symptoms of (IBS). IBS places a significant strain on healthcare systems by sending 20–50% of patients to gastrointestinal clinics. To determine the degree of knowledge and - of irritable bowel syndrome (IBS) among the Saudi community. Structured self-questionnaire prepared in Arabic and English to collect data from participants. To perform statistical analysis, data was subsequently transmitted to the SPSS application, version 20 (IBM SPSS Statistics for Windows, Version 20.0, Armonk, NY: IBM Corp). The study included 1008 participants, 65% of them were females and 35% of them were males. Most individuals fall in the age group of 20-30 years. 31.8% of participants were diagnosed with IBS by a doctor before. 19.2% had high knowledge scores of IBS, 38.6% had moderate knowledge, and 42.2% had low knowledge scores. The findings of the study indicate that there is a need for increased education and awareness initiatives to improve the understanding of irritable bowel syndrome among the Saudi population. Age, gender, and marital status were significantly associated with participants' knowledge scores.

Keywords: Irritable bowel syndrome, IBS, Knowledge, Awareness, Saudi Arabia

Introduction

Irritable Bowel Syndrome (IBS) is a prevalent chronic illness that, in the absence of any observable structural or biochemical pathologic process [1]. (IBS) is marked by abdominal pain and irregular stool movements [2]. Multiple risk factors, including chronic stress, anxiety, depression, and smoking, can cause IBS symptoms [3]. Diet may contribute to the onset of the symptoms [4]. Following the exclusion of organic causes of digestive problems, IBS is diagnosed using the Rome IV criteria [5]. It affects between 10 and 20% of adults worldwide and is the most frequent condition seen in gastroenterology clinics [1]. Health services are heavily burdened by IBS, which refers 20–50% of patients to gastrointestinal clinics [6]. It affects women more than men, and in almost half of the instances, the onset occurs before the age of 35 [7]. IBS diagnosis is critical for preventing resource waste and raising patients' quality of life [8]. According to studies made in 2022, the international prevalence of IBS was approximately 10-23% [9]. A study made in Jazan stated that the prevalence of IBS in Saudi Arabia was 16% [3]. Around 50 to 90% of the cases were females suffering from anxiety and depression which can be considered as major risk factors for IBS [10]. It is worth noting that the rate is much higher among young people compared to other age groups [11]. Students at universities, particularly those studying medicine, are said to be more susceptible to IBS compared with other population categories [12]. According to estimates, the prevalence of IBS among medical college students internationally could vary from 9.3 to 35.3% [5]. Based on several studies IBS affects 21% and 31.8 % of medical students in Riyadh and Jeddah, respectively [1]. IBS can also be influenced by hereditary factors, with family ancestry having a role in the improvement of IBS in up to 30% of patients [13]. Individuals having IBS utilize greater amounts of healthcare resources than other patients, which is evidenced by higher rates of unwarranted surgery, more tests and more pharmaceutical use, in addition to more frequent physician visits [14]. According to the findings of the study that was carried out in the Riyadh district of Saudi Arabia, IBS is less prevalent among Saudi citizens than it is globally

Address for correspondence: Khames Alzahrani, Saudi Board of Endodontic SR, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia.
Dr.khames.Alzahrani@gmail.com

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[4]. the southwest region of Saudi Arabia has a high IBS prevalence rate [15]. In 2019, the majority of respondents in Alahsa had a high level of awareness of irritable bowel syndrome [14]. Makkah has a higher prevalence of IBS, Researchers in this study also discovered several dietary, medical, and demographic factors linked to the risk of IBS [16]. Studies have been published on the prevalence and associated risk factors of Irritable bowel syndrome among female secondary school students in Al Rass city, Wejdan Alharbi *et al*. reported IBS is common among female secondary school pupils. IBS is linked to an unhealthy diet and poor mental health. It is advised to raise awareness of IBS and the value of leading a healthy lifestyle [8]. A lack of knowledge and attention given to IBS by healthcare providers, as well as a lack of effective therapies. This explains why a lot of individuals think it is challenging to get a diagnosis and treatment, which already has a big impact on their quality of life. Conducting outreach and awareness-raising initiatives on IBS among medical professionals and the general public is, therefore, essential [17]. There is an insignificant number related to IBS, especially in Saudi Arabia**.** The aim of our study was to assess the level of knowledge and awareness of irritable bowel syndrome (IBS) among the Saudi population.

Materials and Methods

A web-based questionnaire [11, 18] was sectionally evaluated for the current research. The study population consisted of adults either male or female between ages 18 to 60 who are living in Saudi Arabia. The following criteria apply to inclusion: living in Saudi Arabia, are between the ages of 18 and 60, are either male or female, are foreigners, and complete questionnaires. The following criteria apply to exclusions: living outside of Saudi Arabia, being younger than 18 or older than 60, health care practitioners, and uncompleted questionnaires.

By using a Raosoft calculator and a 95% degree of confidence, The size of the sample was estimated, so the minimum sample size was 384.

To gather data from the participants, an electronic structured self-questionnaire is prepared in Arabic and English and takes five to ten minutes to complete. The questionnaire had previously been used in one study and had been published and validated. After receiving participants' consent, a questionnaire is distributed electronically, and interviews are conducted with people from the general population of KSA who match the inclusion criteria. At first, basic demographic information is acquired, such as age, gender, educational background, and marital status. The questions then proceeded to shed light on participants' IBS knowledge and prevalence in terms of self-experience, alleviating factors, and genetic background. The final section addresses lifestyle and other common risk factors that might influence or be associated with IBS, prevalent manifestations as well as pharmacological and operative treatment options. Seventeen statements were utilized to evaluate the knowledge levels, with one point awarded for each statement that was answered correctly and zero points for each erroneous or unanswered statement. The scoring scale has three categories: strong knowledge (14-17 points), medium knowledge (11-13 points), and low knowledge (0-10 points).

The computer's "Microsoft Office Excel Software" (2016) program was used to input data. To perform statistical analysis, data was subsequently transmitted to the SPSS application, version 20 (IBM SPSS Statistics for Windows, Version 20.0, Armonk, NY: IBM Corp). Each univariate variable was subjected to a basic frequency analysis. Regarding bivariate variables, tabulation was used. Using Chi-square, the relationship between the variables was calculated. P-values less than 0.05 were regarded as significant.

Results and Discussion

Table 1 illustrates that starting with age, the data shows that most individuals fall in the age group of 20-30 years, with 31.8% of the total population. The age group of 41-50 years follows closely behind, with 25% of the population falling in this category. The least represented age group is less than 20 years, with only 9.9% of the total population. Moving on to gender, the data shows that females make up a significant portion of the population, with 65% of individuals being female and 35% being male. The distribution of individuals based on location shows that the highest number of individuals, 41.4%, are in the Middle region. The West region follows closely behind with 29.1%, while the South region has the least representation with only 3% of the population. The education level of the population is also represented in the data, with most individuals, 64.9%, having a university degree. The least represented education level is uneducated, with only 0.7% of the population falling into this category. Finally, the data shows the marital status of individuals, with the majority, 53.6%, being married. The second largest group is single individuals, with 41.5% of the population falling into this category. Divorced individuals make up only 3.3% of the population, while widowed individuals make up an even smaller portion, with only 1.7% of the population.

Table 1. Sociodemographic characteristics of participants (n=1008)

Parameter		No.	%
Age	less than 20	100	9.9
	20_30	321	31.8
	31_40	151	15.0
	41_50	252	25.0
	51_60	184	18.3
Gender	Male	353	35.0
	Female	655	65.0
Location	East	144	14.3
	Middle	417	41.4
	North	124	12.3

	South	30	3.0
	West	293	29.1
Education Level	uneducated	7	.7
	primary	10	1.0
	middle	24	2.4
	secondary	166	16.5
	diploma	77	7.6
	University	654	64.9
	Postgraduate	70	6.9
Marital Status	Married	540	53.6
	Single	418	41.5
	Divorced	33	3.3
	Widowed	17	1.7

Figure 1 shows that 31.8% of participants were diagnosed with IBS by a doctor before.

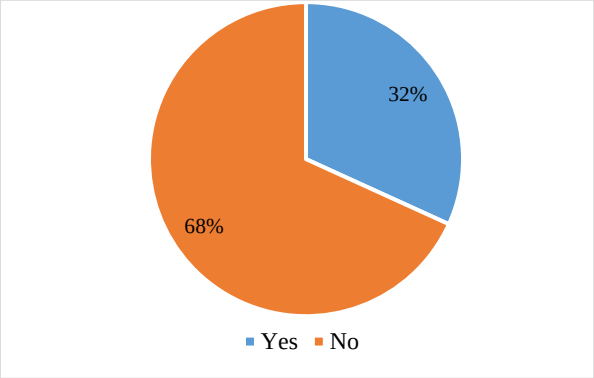

Figure 1. Prevalence of IBS diagnosed by a doctor among participants.

According to the data in **Table 2**, the majority of individuals (59.3%) have heard about IBS from their relatives or friends, while 48.8% have learned about it through the internet and social media. It is also worth noting that 24.8% of people have heard about IBS from specialist doctors or specialized facilities. Furthermore, the data also reveals that there is a significant number of individuals (9.0%) who have not heard of IBS at all. Additionally, 8.0% of respondents cited "other" sources as their means of learning about IBS. The survey also asked participants about their family history of IBS, with 47.7% reporting a family history of the condition. When it comes to the symptoms of IBS, the data shows that the most common symptoms reported by respondents include diarrhea/constipation/abdominal cramps (84.9%), change in appetite (32.9%), inflammatory bowel (23.9%), ulcers in the intestine (19.6%), and colon infection (7.8%). Lastly, the data on the symptoms experienced by respondents in the last months is particularly revealing. The majority of individuals reported experiencing a change in their stool (diarrhea or constipation) (40.2%) and a change in the number of times they defecate (increase or decrease) (29.3%).

Table 2. Determinants of IBS among study participants (n=1008).

Parameter		No.	%
Heard of irritable bowel syndrome	Relatives or friends	598	59.3
	Internet and social media	492	48.8
	The specialist doctor/specialized facility	250	24.8
	No, I haven't heard of that	91	9.0
	Other	81	8.0
Family history of IBS	Yes	481	47.7
	no	527	52.3
The most common symptoms of IBS	Diarrhea/constipation/abdominal cramps	856	84.9
	Change in appetite	332	32.9
	Inflammatory bowel	241	23.9
	Ulcers in the intestine	198	19.6
	Colon infection	79	7.8
Symptoms of IBS in the last months	It gets better after defecation	195	19.3
	Change like the stool (diarrhea or constipation)	405	40.2
	Change in the number of times you defecate (increase or decrease)	295	29.3
	I don't know	443	43.9

Table 3 presents information on the perceptions and knowledge of irritable bowel syndrome (IBS) among respondents. The majority of respondents (87.9%) believe that IBS affects their quality of life, with common symptoms such as diarrhea, constipation, stomach pain, and flatulence being acknowledged by 87.8% of respondents. Additionally, 85.1% of respondents recognize the psychological and emotional effects associated with IBS. However, there are varying perceptions on the causes and treatment of IBS, with 46.5% attributing it to genetic factors and bacterial and viral infections, and 78.6% believing that some prescription medications can improve symptoms. Furthermore, only 16.4% of respondents believe that surgical procedures can improve IBS, while 70.8% acknowledge that IBS is diagnosed based on symptoms. The data also shows that 59.8% of respondents believe that a differential diagnosis can aid in quickly diagnosing the disease.

Table 3. Knowledge of participants of IBS (n=1008).

	Yes	No	Don't know
IBS affects your quality of life	886 87.9%	33 3.3%	89 8.8%
IBS is more common than diabetes and high blood pressure:	362 35.9%	207 20.5%	439 43.6%

Common symptoms of IBS are diarrhea, constipation, stomach pain, and flatulence:	885 87.8%	10 1.0%	113 11.2%
The most annoying symptom of IBS is abdominal pain	857 85.0%	55 5.5%	96 9.5%
Irritable bowel syndrome can lead to hemorrhoids	436 43.3%	90 8.9%	482 47.8%
Irritable bowel syndrome can lead to malnutrition	700 69.4%	77 7.6%	231 22.9%
Irritable bowel syndrome can lead to absorption disorders	613 60.8%	54 5.4%	341 33.8%
Colon cancer is more common than IBS	213 21.1%	191 18.9%	604 59.9%
Nutritional factors and intolerance to some foods are accompanied by an increase in the incidence of IBS	668 66.3%	39 3.9%	301 29.9%
Genetic factors and bacterial and viral infections are among the most common causes of IBS	469 46.5%	89 8.8%	450 44.6%
Psychological and emotional effects are disorders that are frequently associated with IBS	858 85.1%	25 2.5%	125 12.4%
A change in diet may improve symptoms of IBS	838 83.1%	32 3.2%	138 13.7%
Some prescription medications have a role in improving the symptoms of IBS	792 78.6%	35 3.5%	181 17.9%
Alternative treatment methods (acupuncture - herbal treatment - tea - roots...) have a role in improving the symptoms of IBS	553 54.9%	73 7.2%	382 37.9%
Surgical procedures can improve IBS	165 16.4%	218 21.6%	625 62.0%
IBS is diagnosed based on symptoms:	714 70.8%	73 7.2%	221 21.9%
Differential diagnosis (the sum of possible medical diagnoses for a specific disease or symptom) helps in quickly diagnosing the disease	603 59.8%	37 3.7%	368 36.5%

Figure 2 shows participants' knowledge scores as 19.2% had high knowledge scores, 38.6% had moderate knowledge, and 42.2% had low knowledge scores.

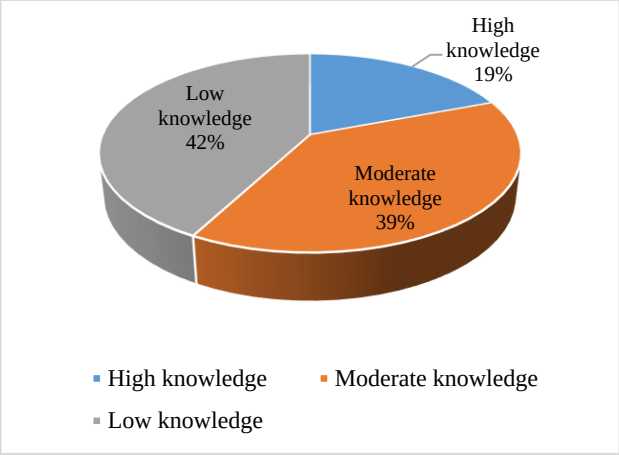

Figure 2. Presenting knowledge level of the participants

Table 4 shows that the first sociodemographic characteristic examined is age. The table shows that younger participants (less than 20 years old) had the lowest knowledge level, with only 9.9% having high knowledge. The knowledge level increased with age, with the highest percentage of high knowledge observed among participants aged 20-30 (31.8%). The association between age and knowledge level was statistically significant (P=0.001). Marital status was also found to be significantly associated with knowledge level (P=0.001). Single participants had the lowest knowledge level (41.5% having low knowledge), while married participants had the highest percentage of high knowledge (10.4%). Divorced and widowed participants had the lowest sample sizes and knowledge levels. Gender was another sociodemographic characteristic associated with knowledge level (P=0.002). Female participants had a higher percentage of high knowledge (13.4%) compared to males (5.9%). The percentage of participants with low knowledge was also higher among males (17.4%) compared to females (24.8%). Location was examined as a sociodemographic characteristic, and the association with knowledge level was marginally significant (P=0.065). Participants from the middle region had the highest sample size and the highest percentage of moderate knowledge (17.2%). Participants from the east and west regions had similar knowledge levels, while those from the north and south regions had the lowest knowledge levels. Finally, education level was found to be significantly associated with knowledge level (P=0.384). University students had the highest knowledge level, with 64.9% having

high knowledge. Participants with primary education had the lowest knowledge level, with only 0.1% having high knowledge. The knowledge level increased with higher education levels, with the highest percentage of moderate knowledge observed among participants with secondary education (8.2%).

Table 4. Participants' knowledge scores of IBS in association with their sociodemographic characters (n=1008).

Parameter		Knowledge score			Total (N=1008)	P value
		High knowledge	Moderate knowledge	Low knowledge		
Age	less than 20	8	34	58	100	**0.001**
		0.8%	3.4%	5.8%	9.9%	
	20_30	73	108	140	321	
		7.2%	10.7%	13.9%	31.8%	
	31_40	34	55	62	151	
		3.4%	5.5%	6.2%	15.0%	
	41_50	55	115	82	252	
		5.5%	11.4%	8.1%	25.0%	
	51_60	24	77	83	184	
		2.4%	7.6%	8.2%	18.3%	
marital status	Single	74	137	207	418	**0.001**
		7.3%	13.6%	20.5%	41.5%	
	Married	105	229	206	540	
		10.4%	22.7%	20.4%	53.6%	
	Divorced	10	17	6	33	
		1.0%	1.7%	0.6%	3.3%	
	widow	5	6	6	17	
		0.5%	0.6%	0.6%	1.7%	
Gender	Male	59	119	175	353	0.002
		5.9%	11.8%	17.4%	35.0%	
	Female	135	270	250	655	
		13.4%	26.8%	24.8%	65.0%	
Location	East	26	60	58	144	**0.065**
		2.6%	6.0%	5.8%	14.3%	
	Middle	71	173	173	417	
		7.0%	17.2%	17.2%	41.4%	
	North	38	47	39	124	
		3.8%	4.7%	3.9%	12.3%	
	South	6	11	13	30	
		0.6%	1.1%	1.3%	3.0%	
	West	53	134	106	293	
		5.3%	13.3%	10.5%	29.1%	
Education Level	Not educated	2	3	2	7	**0.384**
		0.2%	0.3%	0.2%	0.7%	
	Primary	1	3	6	10	
		0.1%	0.3%	0.6%	1.0%	
	Middle	5	10	9	24	
		0.5%	1.0%	0.9%	2.4%	
	Secondary	21	62	83	166	
		2.1%	6.2%	8.2%	16.5%	
	Diploma	16	25	36	77	
		1.6%	2.5%	3.6%	7.6%	
	University student	131	261	262	654	
		13.0%	25.9%	26.0%	64.9%	

Post-graduate	18 1.8%	25 2.5%	27 2.7%	70 6.9%

It is crucial to understand the level of knowledge and awareness of the Saudi population towards irritable bowel syndrome (IBS) as it is a common gastrointestinal disorder that can significantly impact an individual's quality of life. Understanding the level of awareness can help healthcare professionals and policymakers develop targeted educational campaigns to increase public knowledge about IBS. This can lead to earlier recognition of symptoms and prompt seeking of medical advice, which can ultimately improve the management of the condition.

According to our study results, 31.8% of participants were diagnosed with IBS by a doctor before. This was higher than reported in previous studies in Saudi Arabia. According to a prior study, 10.6% of the individuals had IBS [19]. This prevalence was lower than that of other studies done in the Kingdom of Saudi Arabia among adults and students, while medical students had higher rates of IBS (31.8%) in Jeddah City [20] and Riyadh City [21%] [21]. Just 18.5% of participants in another study reported having an official diagnosis of irritable bowel syndrome (IBS) [21]. This was less than what was stated in earlier Saudi research, as findings from Jeddah and Riyadh, KSA, cross-sectional studies revealed that 21.1% and 31.8% of medical students, respectively, fulfilled the requirements for an IBS diagnosis [21]. In Jeddah, Saudi Arabia, 15.6% of medical students and interns have IBS, according to Hasosah *et al*. [22].

As for knowledge of IBS, according to our study results 19.2% had high knowledge scores, 38.6% had moderate knowledge, and 42.2% had low knowledge scores. In a different Saudi study, nearly half of the participants said they were familiar with IBS [21]. This was less than a previous cross-sectional study that evaluated university students' knowledge of irritable bowel syndrome (IBS). That study found that 74% of students knew the basics of IBS, 26% knew about its complications, 33% knew about its risk factors, 7% knew about its prognosis, and 53% knew about its treatment strategies [23]. According to a different study, the majority of participants (70.5%) were aware of IBS and knew all the right information on its causes, symptoms, risk factors, prognosis, and treatment [18].

According to our results, the majority of respondents (87.9%) believe that IBS affects their quality of life, with common symptoms such as diarrhea, constipation, stomach pain, and flatulence being acknowledged by 87.8% of respondents. Additionally, 85.1% of respondents recognize the psychological and emotional effects associated with IBS. However, there are varying perceptions on the causes and treatment of IBS, with 46.5% attributing it to genetic factors and bacterial and viral infections. This was similar to another Saudi study that found that 29% of participants named changes in the type of stool—constipation or diarrhea—as a symptom, and 20.3% noted changes in the frequency of bowel movements—increasing or decreasing. According to 18.6% of participants, symptoms don't go away till after bowel movements [21]. In another study, diarrhea was shown to be the only "most commonly identified symptom" of IBS (48 %). Other symptoms of IBS were appropriately identified by the subjects. Among them were bloating (57%), constipation (57%), flatulence (62%), and abdominal pain (62%). (53%). Muscle soreness (12%), anemia (11%), joint pain (5%), rashes (5%), arthritis (3%), and fevers (8%), which are not usually connected with IBS, were also approved as indicators of the illness [24].

Moreover, 87.9% of our study participants think that IBS affects patients' quality of life, while 70.8% reported that it can be diagnosed by symptoms. In a previous study, 67.3% of participants think that IBS Reduces Quality of Life [21]. 67.9% of participants knew that IBS is diagnosed based on symptoms. 81.2% think that medical diagnoses help quickly detect IBS [21].

Raising awareness about IBS can help reduce the stigma associated with the disorder. Many individuals with IBS may feel embarrassed or ashamed to discuss their symptoms, leading to delayed diagnosis and treatment. By increasing public understanding of IBS, we can create a more supportive and understanding environment for those affected by the condition [13].

Moreover, understanding the knowledge and awareness of IBS among the Saudi population can help identify any misconceptions or myths surrounding the disorder. By addressing these misconceptions, healthcare professionals can provide accurate information and dispel any false beliefs, leading to better management of IBS [25].

Also, increasing knowledge and awareness of IBS among the Saudi population is essential for improving the management and support of individuals with the condition. By conducting research in this area, we can identify gaps in knowledge, develop targeted educational interventions, and ultimately improve the quality of life for those affected by IBS in Saudi Arabia [1].

Limitations

The study presents valuable insights into the understanding and awareness of irritable bowel syndrome among the Saudi population. However, it is important to acknowledge the limitations of this study. Firstly, the sample size and demographic representation may not be fully representative of the entire Saudi population, which could impact the generalizability of the findings. Additionally, the study may be limited by the self-reported nature of the data, which could introduce bias or inaccuracies. Furthermore, the study may

not have accounted for potential confounding variables that could influence the knowledge and awareness of irritable bowel syndrome. It is important for future research to address these limitations to provide a more comprehensive understanding of this important public health issue.

Future Implications

The study presents crucial findings that have significant implications for the future of healthcare in Saudi Arabia. The study highlights the need for increased awareness and education about IBS among the Saudi population. The findings suggest that a considerable percentage of the population lacks knowledge and awareness of IBS, which can lead to delayed diagnosis and ineffective treatment.

The implications of this study are far-reaching and require immediate attention from healthcare professionals and policymakers. It is essential to develop effective strategies to improve public knowledge and awareness of IBS, including the provision of educational programs and campaigns. This will not only lead to early detection and timely treatment of IBS but also improve the quality of life of those affected by this condition.

Moreover, this study provides valuable insights into the healthcare system in Saudi Arabia. It highlights the need for a more patient-centered approach to healthcare, where patients are empowered with knowledge and information to make informed decisions about their health. This approach can lead to better health outcomes and reduce the burden on the healthcare system.

Conclusion

The findings of the study indicate that there is a need for increased education and awareness initiatives to improve the understanding of irritable bowel syndrome among the Saudi population. Age, gender, and marital status were significantly associated with participants' knowledge scores.

The study highlights the importance of healthcare professionals in providing accurate information and support to individuals affected by irritable bowel syndrome. Overall, the study's conclusions emphasize the significance of addressing knowledge gaps and raising awareness about irritable bowel syndrome in Saudi Arabia. Further research and targeted interventions are warranted to enhance the management and quality of life for individuals with irritable bowel syndrome in the Saudi population.

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