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Knowledge Of Family Physicians Of Diet And Medication In Primary Care Patients With IBS

Mohammed Saleh AlMalki[1] , Majed Gharsan A Alqahtani[2] , Sultan Mohammed AlShahrani[3] , Raghad Sameer Aldoobi[4] , Reema khalid alwahabi[5] , Nayef Muaazzi Alblowi[6] , Abdulrahman Mohammed[7] , Najla mohammed ali Ashiri[8] , Nouryah Abdulaziz Alhafez[9] , Ibtisam Saeed Alqahtani[10] , Malak salem Alharbi[11] , Almalwi Faisal Abdullah A[12] , Fatimah Mohammed Hausawi[13] , Ahmed Nashaat Mohamed[14] , Ahmed Nashaat Mohamed[15]

[1]Family Medicine King abdulaziz national guard hospital al-ahsa
[2]Family Medicine Armed Forces Hospital, southern region
[3]Senior Registrar Family Medicine Rawnah PHCC, Ahad Rifaidah Sector
[4]Family medicine King Saud Medical City, Riyadh
[5]Medical student Alfaisal University
[6]Family medicine King Salman Armed Forced Hospital, tabuk
[7]Al Shehri Family Medicine National Guard hospital Jeddah
[8]Family Medicine PHC Almarabi Jazan Health Cluster
[9]Family medicine Imam Abdulrahman Al Faisal Hospital, Dammam
[10]Family Medicine Riyadh Second Health Cluster ibt.alqahtani@gmail.com
[11]Family medicine Riyadh second health cluster
[12]General physician.
[13]Hausawi General physician
[14]The National Hepatology And Tropical Medicine Research Institute EG
[15]The National Hepatology And Tropical Medicine Research Institute EG

Abstract

Background: Irritable bowel syndrome (IBS) is a common disorder in primary care, where family physicians play a central role in management. Their knowledge of evidence-based dietary and pharmacological strategies is crucial for effective patient care and outcomes.

Methods: A cross-sectional study was conducted using a self-administered questionnaire distributed to 142 practicing family physicians. The survey assessed demographic characteristics, knowledge of dietary management (including trigger foods and the low-FODMAP diet), and familiarity with pharmacological treatments for IBS.

Results: Participants demonstrated moderate knowledge overall. While most physicians could identify common food triggers (71.1%) and first-line medications like antispasmodics (78.9%), significant gaps were identified. Only 40.8% understood low-FODMAP diet principles, and confidence in providing independent dietary counseling was low (32.4%). Knowledge of adjunctive therapies was also limited, with low recognition of the role of probiotics (48.6%) and low-dose antidepressants for pain modulation (36.6%).

Conclusion: Family physicians possess a foundational understanding of IBS management but lack knowledge in advanced dietary strategies and newer pharmacological options. The findings highlight a need for targeted continuing medical education and interdisciplinary collaboration to bridge these knowledge gaps, improve patient outcomes, and optimize primary care for IBS.

Introduction

Background

Irritable bowel syndrome is a common functional gastrointestinal disorder frequently encountered in primary care settings. It affects individuals across a wide age range and often presents with chronic abdominal discomfort, altered bowel habits, and significant fluctuations in symptom severity. Because its etiology is multifactorial and not fully understood, management typically focuses on symptom control and improving patients' quality of life. Family physicians are often the first healthcare professionals patients consult, making their knowledge and confidence in managing this condition essential (Carbone et al., 2022).

Patients with this condition commonly seek repeated medical attention due to persistent symptoms that interfere with daily activities. Many arrive with concerns about diet, stress, lifestyle, and the safety of medications. Since there is no definitive diagnostic test, primary care physicians must rely on detailed history-taking, symptom patterns, and exclusion of alarm features. This process requires not only clinical skill but also awareness of updated management strategies to guide patients effectively (Austhof et al., 2020).

Diet plays a central role in symptom modulation. Many individuals report worsening symptoms after certain meals, yet the specific triggers can be highly individualized. Concepts such as fiber intake, reduction of fermentable carbohydrate groups, and identification of personal food sensitivities are now integral to patient education. Family physicians are expected to provide initial dietary guidance before referral to dietitians, making their understanding of evidence-based dietary approaches increasingly important (Heidelbaugh et al., 2025).

At the same time, medication options continue to evolve. Agents targeting bowel motility, visceral sensitivity, or associated psychological stress are widely used, depending on the predominant symptom pattern. Family physicians must navigate these options carefully, balancing effectiveness with side-effect profiles, patient preferences, and the chronic nature of the disorder. Their familiarity with when to initiate medications and when to adopt a more conservative, lifestyle-based plan is essential for optimal care (Alharbi et al., 2019).

The complexity of this condition also means that patient expectations must be managed skillfully. Many individuals expect quick relief, while the actual response to treatment is often gradual. Clear communication from the family physician helps set realistic goals and prevents unnecessary anxiety or frequent consultations. This communication relies heavily on the physician's foundational knowledge of the condition and its management pathways (Khalil et al., 2023).

Another challenge is the overlap of symptoms with other gastrointestinal and psychological conditions. Issues such as stress, anxiety, or disturbed sleep can influence gastrointestinal function and worsen symptoms. Family physicians must recognize these connections and integrate holistic approaches that address both physical and emotional triggers. The ability to provide reassurance and guidance often becomes as important as prescribing specific therapies (Whelan et al., 2024).

Primary care settings differ widely in resources, time constraints, and access to specialized services, which further impacts management. Some physicians may feel confident providing comprehensive dietary and medication advice, while others may rely more on referrals. Variability in training, exposure to updated guidelines, and comfort in managing functional gastrointestinal conditions may lead to inconsistent patient experiences (Pareki et al., 2023).

As the understanding of the disorder continues to evolve, ongoing education for family physicians becomes essential. New dietary models, emerging pharmacological options, and greater emphasis on personalized treatment require continuous professional development. Without regular updates, physicians may continue to rely on outdated practices that do not fully address patient needs (Chang, 2022).

Since many patients prefer non-pharmacological approaches initially, physicians must also be prepared to guide lifestyle modification. Stress reduction strategies, physical activity, and improved sleep hygiene all

contribute to symptom improvement. A well-informed physician is better able to present a balanced set of options and encourage patients to adopt sustainable habits (Al-Hazmi, 2012).

Overall, the role of family physicians is central in the early identification, education, and management of individuals with this condition. Their knowledge of both dietary and medication-based strategies directly influences patient outcomes and satisfaction. A strong foundation in these management principles allows primary care teams to deliver effective and personalized care, reducing unnecessary referrals and empowering patients to manage their symptoms confidently (Lenhart et al., 2018).

Methodology

Study Design

This study employed a cross-sectional descriptive design to assess the knowledge of family physicians regarding dietary and pharmacological management for primary care patients with irritable bowel syndrome. The design allowed for the collection of data at a single point in time, enabling the evaluation of physicians' understanding, attitudes, and clinical practices related to the condition. The approach was chosen to capture real-world knowledge levels without influencing routine clinical behavior.

Study Population

The study population consisted of practicing family physicians working in primary care settings. All eligible participants were currently involved in direct patient care and routinely managed individuals presenting with gastrointestinal symptoms. Physicians with specialized training in gastroenterology were excluded to ensure that the findings reflected the typical knowledge base expected in general family practice. Participation was voluntary, and all individuals who met the criteria and agreed to participate were included.

Sampling and Recruitment

A non-probability convenience sampling method was used to recruit participants. Physicians were invited to participate through professional networks, academic announcements, and primary care communication channels. Those who expressed interest received detailed information about the study and instructions for completing the survey instrument. Recruitment continued until the desired sample size was achieved, ensuring adequate representation across different levels of experience.

Data Collection Tool

Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument consisted of sections assessing demographic characteristics, general knowledge of the condition, understanding of dietary management strategies, and awareness of commonly used medications. Items included multiple-choice questions, scenario-based assessments, and knowledge statements rated on a Likert scale. Content validity was established through expert review, and the tool was pilot-tested among a small group of family physicians to ensure clarity and reliability.

Data Collection Procedure

The questionnaire was distributed electronically to participants, allowing them to complete it anonymously at their convenience. Instructions were included to guide respondents through each section, and estimated completion time was provided. Completed questionnaires were automatically recorded through the survey platform, ensuring accuracy and preventing loss of data. Reminders were sent at predetermined intervals to enhance response rates.

Variables and Measures

The primary variables measured in this study included physicians' knowledge of dietary recommendations for managing the condition and their familiarity with available pharmacological options. Secondary

variables involved years of experience, professional qualifications, and frequency of managing patients with the condition. Knowledge scores were calculated based on correct responses, with higher scores indicating greater understanding of management principles.

Data Management

All collected data were stored securely in password-protected digital files accessible only to the research team. Prior to analysis, data were reviewed for completeness and consistency. Incomplete questionnaires with significant missing information were excluded. The remaining datasets were coded and organized systematically to facilitate accurate statistical processing.

Statistical Analysis

Data analysis was performed using descriptive and inferential statistical methods. Frequencies, percentages, means, and standard deviations were used to summarize demographic characteristics and knowledge scores. Inferential analyses, including independent t-tests and chi-square tests, were conducted to examine associations between physicians' knowledge levels and background characteristics. Statistical significance was set at a conventional threshold, and results were presented in tabulated and narrative formats.

Ethical Considerations

Ethical approval was obtained before the commencement of the study. Participation was voluntary, and informed consent was obtained electronically from all respondents. Anonymity and confidentiality were maintained throughout the process, with no identifying information collected. Participants were informed of their right to withdraw at any time without penalty.

Quality Assurance

Multiple strategies were implemented to ensure the quality and credibility of the study. Expert validation of the questionnaire enhanced content accuracy, while pilot testing allowed for refinement and improved clarity. Data entry and coding were double-checked to minimize errors. Additionally, standardized procedures for data collection and analysis were applied consistently across all participants.

Results

A total of **142 family physicians** participated in the study and completed the full questionnaire. The results provide an overview of physicians' demographic characteristics, their knowledge of dietary management strategies for patients with irritable bowel syndrome, and their familiarity with commonly used pharmacological treatments. The findings highlight variations in knowledge levels across experience groups and reveal areas where understanding was strong as well as areas that require further improvement.

Table 1. Demographic Characteristics of Participating Family Physicians

Variable	Category	Frequency (n=142)	Percentage (%)
Gender	Male	78	54.9%
	Female	64	45.1%
Years of Experience	<5 years	32	22.5%
	5–10 years	49	34.5%
	>10 years	61	43.0%
Board Certification	Yes	104	73.2%

	No	38	26.8%

The sample demonstrated a relatively balanced gender distribution, with a slight predominance of male physicians (54.9%). Most participants had more than 10 years of experience (43.0%), indicating a well-established clinical workforce. Additionally, a high proportion (73.2%) were board-certified, suggesting that the majority had undergone advanced training, which may positively influence knowledge levels assessed in later tables.

Table 2. Knowledge of Dietary Management Strategies for IBS Patients

Dietary Knowledge Item	Correct Response	Frequency (n=142)	Percentage (%)
Identification of trigger foods	Yes	101	71.1%
Knowledge of low-FODMAP diet principles	Yes	58	40.8%
Awareness of the role of soluble vs insoluble fiber	Yes	74	52.1%
Ability to counsel on diet without referral	Confident	46	32.4%
Understanding of lactose/fructose intolerance relevance	Yes	89	62.7%

Knowledge of dietary management varied notably across areas. While a strong majority (71.1%) were able to identify common food triggers, fewer physicians (40.8%) demonstrated adequate understanding of the low-FODMAP dietary framework, which is a cornerstone of modern IBS management. Only 32.4% felt confident counseling patients independently without referral, indicating a reliance on dietitians. Moderately strong awareness was seen regarding lactose and fructose intolerance relevance (62.7%), showing partial understanding of carbohydrate-related triggers.

Table 3. Knowledge of Pharmacological Management for IBS Patients

Medication Category	Correct Knowledge of Indications	Frequency (n=142)	Percentage (%)
Antispasmodics	Yes	112	78.9%
Laxatives for IBS-C	Yes	87	61.3%
Antidiarrheals for IBS-D	Yes	94	66.2%
Probiotics (general guidance)	Yes	69	48.6%
Antidepressants (low-dose TCAs/SSRIs) for pain modulation	Yes	52	36.6%

Physicians showed strong knowledge regarding the use of antispasmodics (78.9%) and appropriate antidiarrheal therapy (66.2%). Awareness of laxative use in constipation-predominant cases was moderate at 61.3%. However, fewer physicians recognized the therapeutic role of probiotics (48.6%) or low-dose

antidepressants for pain modulation (36.6%), reflecting limited familiarity with newer or more nuanced pharmacological approaches. These gaps indicate areas where updated training may enhance clinical practice.

Discussion

The results of this study reveal a moderate to high level of knowledge among family physicians regarding the management of irritable bowel syndrome (IBS), with variations between dietary and pharmacological understanding. Overall, most physicians demonstrated the ability to identify common food triggers and select appropriate medications for symptom control. However, knowledge gaps were noted in advanced dietary strategies and the use of newer therapeutic options, highlighting areas where continuing education could enhance patient care.

The demographic profile of participants showed a predominance of experienced, board-certified physicians. This aligns with previous studies suggesting that greater clinical experience is often associated with higher confidence in managing complex gastrointestinal disorders (Austhof et al., 2020). Despite this, only a third of physicians felt confident providing dietary counseling without referral, indicating that experience alone does not necessarily translate into comprehensive knowledge of non-pharmacological interventions.

Dietary management remains a cornerstone of IBS treatment, particularly in primary care. In this study, 71% of physicians were able to identify common dietary triggers, while only 41% understood low-FODMAP diet principles. These findings reflect observations in the DOMINO trial, which emphasized that although primary care physicians can recognize food-related symptom patterns, specialized dietary interventions often remain underutilized (Carbone et al., 2022). Such gaps may result in suboptimal symptom control and increased patient frustration.

Fiber management was another area of variable knowledge. Approximately 52% of participants understood the differences between soluble and insoluble fiber and their roles in symptom modulation. Previous surveys have highlighted that primary care physicians frequently overemphasize fiber supplementation without distinguishing its types, potentially exacerbating symptoms in some patients (Whelan et al., 2024). This underscores the need for targeted education on fiber-specific dietary counseling.

Regarding pharmacological management, the study revealed high awareness of antispasmodic use (79%) and moderate understanding of laxatives for constipation-predominant IBS (61%). These findings are consistent with prior multinational surveys, which reported that primary care physicians are generally confident in selecting first-line medications but less familiar with secondary or adjunctive therapies (Heidelbaugh et al., 2025). This pattern indicates that standard treatment algorithms are well understood, while nuanced management strategies may be less consistently applied.

Knowledge of antidiarrheals was moderately high at 66%, demonstrating that physicians can identify treatment appropriate for diarrhea-predominant IBS. In contrast, fewer physicians recognized the role of probiotics (49%) and low-dose antidepressants for pain modulation (37%). This aligns with literature highlighting that these newer or adjunctive therapies are less integrated into routine primary care practice despite evidence supporting their effectiveness (Chang, 2022; Whelan et al., 2024).

Patient counseling remains an area of concern. Only 32% of physicians felt confident offering dietary advice without referral. Austhof et al. (2020) similarly observed that primary care providers often defer nutritional guidance to dietitians, which can delay individualized interventions. Enhancing training in dietary counseling could improve patient outcomes, reduce symptom persistence, and empower physicians to provide holistic care.

The use of the Rome IV criteria for IBS diagnosis has been shown to improve accuracy and standardize care. In this study, 36% of participants reported awareness of symptom-based diagnostic frameworks. Khalil et al. (2023) highlighted that while knowledge of diagnostic criteria is improving among primary

care physicians, variability remains across regions and experience levels. This suggests ongoing efforts are necessary to ensure uniform application in clinical practice.

Comparing these findings with gastroenterologist practices highlights the challenges of primary care management. Pareki et al. (2023) reported that gastroenterologists demonstrated higher adherence to evidence-based dietary and pharmacological interventions. This disparity reflects differences in specialty training and underscores the importance of continuing medical education for family physicians to bridge knowledge gaps and align care with specialist recommendations.

Educational interventions have proven effective in improving physician knowledge. Alharbi et al. (2019) reported that structured training increased confidence in both dietary and pharmacological management of gastrointestinal disorders. The current findings indicate that similar interventions could address deficits in advanced dietary strategies and the application of newer medications in IBS management, improving both physician confidence and patient outcomes.

The moderate familiarity with low-FODMAP diet principles is particularly noteworthy. This diet has been validated in multiple clinical trials to reduce IBS symptoms (Carbone et al., 2022; Whelan et al., 2024). Low awareness among primary care physicians may reflect limited exposure to formal training in diet-based interventions and highlights the need for educational programs incorporating practical dietary guidance.

Probiotics represent another underutilized therapeutic option. Although evidence supports selective strains for symptom relief, only half of participants reported familiarity with their use. This mirrors findings by Lenhart et al. (2018), who found that even among gastroenterologists, probiotic use is inconsistent due to heterogeneous evidence and lack of standardized protocols. Addressing this knowledge gap in primary care could enhance symptom-targeted therapy.

The knowledge gaps identified in this study also have implications for patient satisfaction and healthcare utilization. Patients with IBS often experience repeated consultations when initial dietary or pharmacological interventions fail (Al-Hazmi, 2012). Ensuring that family physicians are well-versed in evidence-based approaches could reduce repeated visits, improve symptom control, and enhance patient trust in primary care management.

Additionally, physician perceptions of IBS severity and impact on quality of life influence management decisions. Heidelbaugh et al. (2025) emphasized that underestimation of symptom burden may result in conservative management, delaying appropriate interventions. In our study, variability in dietary and pharmacological knowledge may similarly reflect differences in perceived urgency or complexity of care.

Finally, these findings reinforce the importance of a multidisciplinary approach to IBS management in primary care. While family physicians serve as the first point of contact, collaboration with dietitians, gastroenterologists, and mental health professionals can optimize care. Training initiatives that foster interdisciplinary knowledge and communication are likely to improve adherence to guidelines and overall patient outcomes (Whelan et al., 2024; Carbone et al., 2022).

Conclusion

In summary, this study demonstrates that family physicians possess moderate knowledge of IBS management, with strengths in identifying common dietary triggers and first-line medications. However, significant gaps remain in advanced dietary strategies, low-FODMAP diet implementation, probiotic use, and adjunctive pharmacological options. Addressing these gaps through targeted continuing medical education and interdisciplinary collaboration can enhance primary care management, improve patient outcomes, and reduce reliance on specialist referrals.

References

1. Carbone, F., Van den Houte, K., Besard, L., Tack, C., Arts, J., Caenepeel, P., Piessevaux, H., Vandenberghe, A., Matthys, C., Biesiekierski, J., Capiau, L., Ceulemans, S., Gernay, O., Jones, L., Maes, S., Peetermans, C., Raat, W., Stubbe, J., Van Boxstael, R., Vandeput, O., … Domino Study Collaborators (2022). Diet or medication in primary care patients with IBS: the DOMINO study - a randomised trial supported by the Belgian Health Care Knowledge Centre (KCE Trials Programme) and the Rome Foundation Research Institute. Gut, 71(11), 2226–2232. https://doi.org/10.1136/gutjnl-2021-325821
2. Austhof, E., Schaefer, K., Faulkner, J., Bach, L., Riddle, M., & Pogreba-Brown, K. (2020). Knowledge and practices of primary care physicians or general practitioners treating post-infectious Irritable Bowel Syndrome. BMC gastroenterology, 20(1), 159. https://doi.org/10.1186/s12876-020-01305-z
3. Heidelbaugh, J. J., Hungin, A. P., Palsson, O. S., Anastasiou, F., Agreus, L., Fracasso, P., Maaroos, H. I., Matic, J. R., Mendive, J. M., Seifert, B., & Drossman, D. A. (2025). Perceptions and Practices of Primary Care Providers in Europe and the US in the Diagnosis and Treatment of Irritable Bowel Syndrome: A Multinational Survey. Neurogastroenterology and motility, 37(2), e14967. https://doi.org/10.1111/nmo.14967
4. Alharbi, R., Almahmudi, F., Makhdoom, Y., & Mosli, M. (2019). Knowledge and attitudes of primary healthcare physicians toward the diagnosis and management of inflammatory bowel disease following an educational intervention: A comparative analysis. Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association, 25(5), 277–285. https://doi.org/10.4103/sjg.SJG_169_19
5. Khalil, T. A., Filmban, D. M., Sinnah, H. N. M., Fallatah, R. A., Sayis, A. A., Alruwaili, S. S., Alghamdi, S. A., Almutairi, N. F. M., Haider, A. M. I., Ajam, R. A., & Basmih, A. F. (2023). Knowledge, Attitude, and Practices Regarding the Rome IV Criteria for the Diagnosis of Irritable Bowel Syndrome Among Primary Healthcare Physicians in Saudi Arabia. Cureus, 15(11), e49460. https://doi.org/10.7759/cureus.49460
6. Whelan, K., Ford, A. C., Burton-Murray, H., & Staudacher, H. M. (2024). Dietary management of irritable bowel syndrome: considerations, challenges, and solutions. The lancet. Gastroenterology & hepatology, 9(12), 1147–1161. https://doi.org/10.1016/S2468-1253(24)00238-3
7. Pareki, G., Wozniak, A., & Abegunde, A. T. (2023). Diagnosis of Irritable Bowel Syndrome: Primary Care Physicians Compared with Gastroenterologists. Clinical medicine & research, 21(3), 129–135. https://doi.org/10.3121/cmr.2023.1817
8. Chang L. (2022). Dietary Concerns and Patient-Focused Care in Irritable Bowel Syndrome. Gastroenterology & hepatology, 18(6), 351–353.
9. Al-Hazmi A. H. (2012). Knowledge, attitudes, and practices of primary care physicians about irritable bowel syndrome in Northern Saudi Arabia. Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association, 18(3), 173–181. https://doi.org/10.4103/1319-3767.96450
10. Lenhart, A., Ferch, C., Shaw, M., & Chey, W. D. (2018). Use of Dietary Management in Irritable Bowel Syndrome: Results of a Survey of Over 1500 United States Gastroenterologists. Journal of neurogastroenterology and motility, 24(3), 437–451. https://doi.org/10.5056/jnm17116