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Systematic Review on Current Managements of Irritable Bowel Syndrome by Complementary and Alternative Medicine

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ABSTRACT

Irritable Bowel Syndrome (IBS) affects people worldwide. It causes physical and emotional anguish, typically alongside psychiatric illnesses. When conventional methods of treating irritable bowel syndrome (IBS) fail, patients may go to complementary and alternative medicine (CAM) for relief. The quality of the evidence is uneven, but complementary and alternative medicine (CAM) shows promise. A systematic review evaluates CAM efficacy, safety, and mechanisms for IBS treatment to identify gaps and guide future research. This systematic review evaluates and synthesises CAM's efficacy and use in irritable bowel syndrome treatment. This systematic review (1998-2023) included 15 studies from diverse sources, utilizing keywords related to Irritable Bowel Syndrome (IBS). Qualitative data methods extracted insights into Complementary and Alternative Medicine (CAM) interventions for IBS. The evaluation covered main findings, clinical features, outcomes, adverse effects, and follow-up periods. PRISMA-guided data extraction, including a flowchart, ensured a systematic approach. Inclusion criteria comprised various study types, while exclusion criteria targeted inconsistent data and low-quality studies. This study examines numerous controlled, randomised, and multicenter studies on IBS therapies, including Ayurvedic formulations, conventional nutrition, and CAM techniques. Participants, study locations, and interventions vary in the global study. Results from various studies on IBS therapeutic efficacy, risk factors, and patient preferences are shown. Studies on Ayurvedic, homoeopathic, and CAM treatments provide a complete overview of IBS care. The study found that Ayurvedic and CAM treatments for IBS are helpful, but mainstream medications are risky. To improve efficacy, tailored, culturally relevant programmes need research and standardisation.

INTRODUCTION

Irritable bowel syndrome (IBS), a prevalent gastrointestinal condition, manifests through abdominal discomfort and irregular bowel patterns and lacks identifiable causative diseases. This chronic disorder varies in intensity, spanning from mild to severe symptoms. Diagnosis often follows the Rome IV criteria, categorizing it as constipation-predominant (IBS-C), diarrhoea-predominant (IBS-D), or mixed (IBS-M) (Patel *et al.*, 2023; Ford *et al.*, 2020; Hongo & Sato, 2006). The prevalence of Irritable Bowel Syndrome (IBS) varies considerably worldwide. In North America, estimates fluctuate between 3% and 20%, generally hovering around 10% to 15%. Specifically, in the United States, using the Rome IV criteria, approximately 6.1% of the population is affected. Meanwhile, in the United Kingdom, the prevalence stands at roughly 10.5%, whereas in a North Indian community, it's approximately 4%. Globally, encompassing Rome III or IV criteria, the estimated prevalence of IBS rests at around 9.2%. These variations underscore the diverse geographic and diagnostic aspects influencing IBS prevalence rates across different populations (Saito *et al.*, 2002; Almarino *et al.*, 2023; Wilson *et al.*, 2004).

Irritable Bowel Syndrome (IBS) exerts a profound impact on the well-being of individuals it afflicts. Its hallmark

symptoms—abdominal pain, bloating, and irregular bowel patterns—not only induce physical discomfort but also evoke emotional distress. This condition interlaces with psychiatric disorders, with a striking 76% of IBS patients encountering major depressive disorders and 54% grappling with anxiety disorders. These mental health comorbidities further diminish the overall quality of life. IBS doesn't merely manifest as physical impairments; it profoundly affects health-related quality of life, impeding daily functioning. Moreover, dietary triggers often provoke or exacerbate IBS symptoms, compelling individuals to navigate through dietary adjustments and adding to their distress. Consequently, managing IBS necessitates not only alleviating symptoms but also striving to elevate the overall quality of life for those affected (Khan *et al.*, 2022; Fadgyas Stanculete *et al.*, 2023; Weber, 2022).

Traditional approaches to managing Irritable Bowel Syndrome (IBS) aim at mitigating symptoms through dietary modifications and pharmaceutical interventions. Dietary adjustments often involve augmenting fibre intake or opting for hydrolyzed guar gum, a preference observed among a majority of patients seeking relief. Pharmaceuticals prescribed for IBS encompass a spectrum such as antispasmodic agents, loperamide,

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antidepressants, alosetron and tegaserod (Hadley & Gaarder, 2005). Traditional approaches to treating Irritable Bowel Syndrome (IBS) often present inherent challenges. Despite encompassing various medications like laxatives, antidepressants, antispasmodics, and bulking agents, their efficacy and tolerability tend to disappoint many patients. Clinical trials haven't conclusively demonstrated their superiority over placebos in providing comprehensive relief from the diverse array of IBS symptoms. Moreover, these therapies come with constraints and limitations, underscoring the pressing necessity for treatments that empower patients with behavioral self-management techniques to alleviate their IBS symptoms (Hulisz, 2004; Lackner *et al.*, 2008).

Given the limitations of current Irritable Bowel Syndrome (IBS) treatments, there's a pressing demand for alternative approaches to better manage its symptoms comprehensively. Traditional medications like antispasmodics, antidiarrheals, and tranquilizers haven't demonstrated consistent effectiveness across all IBS symptoms globally. Complementary and Alternative Medicine (CAM) modalities, such as herbal treatments, acupuncture, and moxibustion, while frequently employed, often yield inconclusive or erratic results. Psychological therapies like mindfulness and acceptance and commitment therapy (ACT) hold promise, yet their efficacy varies. Osteopathy has shown some potential in alleviating IBS symptom severity. A holistic multi-disciplinary strategy, integrating lifestyle modifications, dietary management, pharmacological interventions, psychological approaches, and diverse alternative therapies, emerges as a necessity for more comprehensive and effective IBS management (Chang & Lu, 2009; Park *et al.*, 2013; Sebastián Sánchez *et al.*, 2017).

Complementary and Alternative Medicine (CAM) encompasses diverse medical systems and practices rooted in various theories, experiences, and philosophies aimed at enhancing health and addressing physical and mental ailments. These therapies, including acupuncture, dietary supplements, reflexology, yoga, massage, chiropractic services, Reiki, and aromatherapy, often operate outside the realm of conventional healthcare. While some countries are integrating certain CAM approaches into mainstream healthcare, their regulatory oversight remains limited, raising concerns about the lack of government supervision, particularly by agencies like the Food and Drug Administration. This unregulated nature poses challenges in recommending and guiding the use of CAM therapies (Moquin *et al.*, 2009; Falkenberg *et al.*, 2012; Fowler & Newton, 2006).

Within the realm of Complementary and Alternative Medicine (CAM), an array of therapies is utilized. This includes herbal remedies and acupuncture, often sought after for pain alleviation and enhancing one's overall well-being. Under the umbrella of CAM, dietary supplements like probiotics find prevalence, while mind-body practices such as yoga, meditation, and relaxation techniques aid in health maintenance and symptom management

across various health conditions. Additionally, dietary adjustments, incorporating vitamins and minerals, constitute another prevalent approach within CAM practices (Williamson *et al.*, 2003; Lunny & Fraser, 2010; Barnes *et al.*, 2008).

The surge in the utilization of Complementary and Alternative Medicine (CAM) approaches to address chronic conditions such as Irritable Bowel Syndrome (IBS) stems from the limitations of conventional treatments, which often prioritize symptom management over comprehensive treatment and may yield notable side effects. Within the realm of CAM, therapies like herbal or dietary supplements, mind-body practices, and acupuncture are garnering increased favour among individuals grappling with IBS. Treatments like peppermint oil and Iberogast®, hypnotherapy, cognitive behaviour therapy, and yoga have shown promise in enhancing treatment outcomes for IBS patients. For instance, herbal remedies like peppermint oil and specific probiotics have demonstrated efficacy, while mind-body interventions such as hypnotherapy and cognitive-behavioural therapy have exhibited effectiveness for a subset of patients (Chey *et al.*, 2011; Magge & Wolf, 2013; Grundmann, 2014).

The impetus behind exploring Complementary and Alternative Medicine (CAM) for Irritable Bowel Syndrome (IBS) management lies in the limitations inherent in conventional treatments and the prevalent adoption of CAM modalities by individuals with IBS. Conventional approaches for IBS often centre on mitigating symptoms yet may fall short of providing comprehensive relief and, at times, yield considerable side effects, creating an efficacy disparity. Consequently, a substantial number of IBS sufferers seek out CAM therapies encompassing herbal remedies, dietary supplements, mind-body practices, and various alternative modalities. These therapies are perceived as natural and beneficial, with some showcasing the potential to assuage abdominal discomfort and elicit a holistic response in managing IBS symptoms (Billings *et al.*, 2021; Hussain & Quigley, 2006; Parlar Kilic *et al.*, 2020).

Complementary and alternative medicine (CAM), encompassing herbal treatments, dietary supplements, and mind-body approaches, presents promising avenues for managing abdominal pain and overall response in Irritable Bowel Syndrome (IBS), yet the collective evidence quality remains limited. Specific CAM modalities, including soluble fibre, peppermint oil, probiotics, hypnotherapy, and cognitive-behavioural therapy, have demonstrated efficacy in alleviating IBS symptoms. Herbal remedies like peppermint oil and Iberogast®(®), alongside mind-body interventions, have showcased enhanced treatment outcomes in individuals with IBS. The inclusion of acupuncture and moxibustion has exhibited benefits in ameliorating symptom severity, addressing abdominal discomfort, and enhancing the quality of life among IBS patients. Nevertheless, comprehensive, methodologically robust clinical trials are imperative to delve deeper into

the effectiveness of CAM interventions in addressing the complexities of IBS symptoms. (Shen & Nahas, 2009; Yang *et al.*, 2022).

The aim of this systematic review is to comprehensively assess the efficacy, safety, and potential mechanisms of action underlying various Complementary and Alternative Medicine (CAM) modalities used in the treatment of Irritable Bowel Syndrome (IBS). The primary objectives include analyzing the collective effectiveness of CAM interventions in alleviating IBS symptoms, evaluating their safety profiles, and elucidating potential mechanisms through which these modalities exert their therapeutic effects. Additionally, the review aims to identify gaps in existing research, ascertain the quality of evidence, and offer insights into promising avenues for future investigation into CAM treatments for IBS.

MATERIALS AND METHODS

Search Strategy

This systematic review considered studies from 1998 to 2023 and finally included 15 studies. The authors have collected data from Pubmed, Google Scholar, Cochrane, Researchgate, Scopus, ScienceDirect, and other online libraries. The search process involved the use of specific keywords related to Irritable Bowel Syndrome (IBS), such as “irritable Bowel Syndrome (IBS),” “complementary and alternative medicine (CAM),” “constipation-predominant (IBS-C),” “diarrhoea-predominant (IBS-D),” and “mixed (IBS-M).” These keywords were carefully selected to ensure a broad yet focused scope, encompassing different aspects and management approaches of IBS. Additionally,

the inclusion of specific subtypes like IBS-C, IBS-D, and IBS-M also included the application of complementary and alternative medicine across different presentations of IBS. Qualitative data collection methods were utilized to extract relevant information regarding the management of IBS using complementary and alternative medicine. The literature search focused on articles providing insights into the effectiveness, outcomes, and patient experiences related to CAM interventions for IBS. This comprehensive approach aimed to present a nuanced and up-to-date overview of the current state of complementary and alternative medicine in managing Irritable Bowel Syndrome.

Evaluation

The review evaluated the main findings of each study, clinical features of each study, primary and secondary outcomes and the respective adverse effects. The follow-up period was also evaluated and recorded for each study. This enabled us to evaluate the various outcomes that are possible with IBS. The spectrum of adverse events have also been considered. This review also considered various drugs and medicines that have been employed in each study for the treatment of IBS. The evaluation of studies widely conducted bring a better picture of available complementary and alternative medicines for the proper management of IBS.

Data Extraction

This research used a PRISMA-compliant systematic review methodology. From the databases, 82 records were

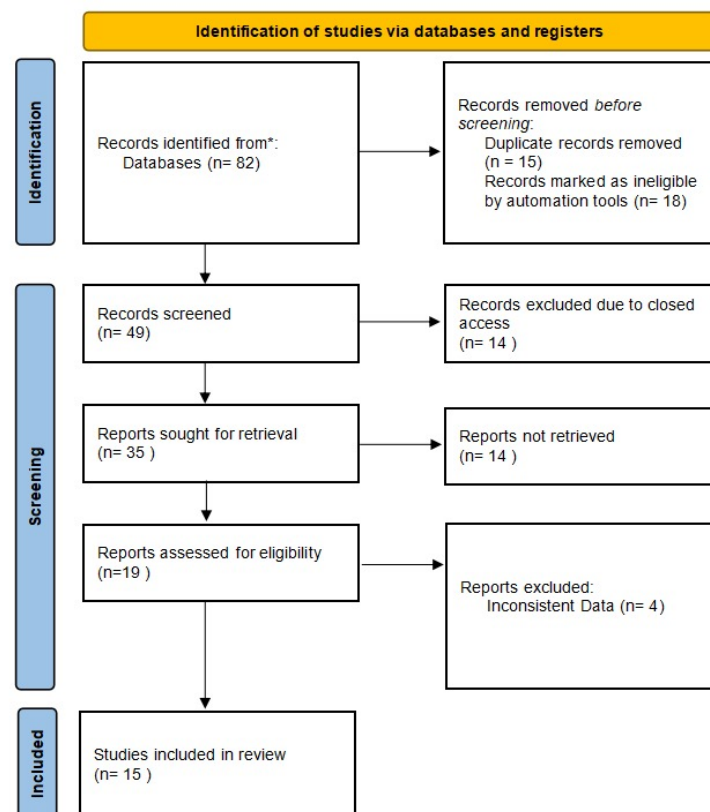


Figure 1: PRISMA flowchart of this study

initially retrieved. After using automation technologies to remove 15 duplicate records and indicate 18 as ineligible, 49 records were screened. 14 were excluded due to access restrictions. Although the study attempted to retrieve 35 reports, 14 were unsuccessful. Afterwards, 19 reports were reviewed to determine their eligibility; however, 4 were excluded since their data were inconsistent. According to the last stage, “Included,” fifteen studies were included in the review. A PRISMA flowchart provides a clear and organised visual representation of the data, allowing one to understand the study selection process easily. By following a systematic approach, the review’s methodology is made clear and reproducible, increasing the reliability of the studies included in the research.

Inclusion and Exclusion Criteria

Inclusion

- This study included randomised, cross-sectional, control and descriptive-analytical papers.
- This study included irritable bowel syndrome cases included in this paper.
- This study considered only the English language.
- This study included from 1998 to 2023.

Exclusion

- Inconsistent data were excluded from this paper.
- Review articles or similar papers were also excluded from this study.
- Low quality, insufficient data, and lack of response papers were excluded from this study.

RESULTS AND DISCUSSION

Results

Table 1 summarises studies on Irritable Bowel Syndrome treatments. Research of many kinds is covered in the studies. These include controlled studies, randomised controlled trials (RCTs), and multicenter research. Traditional Ayurvedic formulations, conventional nutritional therapy, and complementary and alternative medicine (CAM) methods are among the medicines or therapies that have been studied. The global exploration of treatments for irritable bowel syndrome is reflected in the heterogeneity of research with respect to the number of participants, country of study, and specific interventions. In order to assess the efficacy, safety, and possible action mechanisms of various therapies in symptom management of irritable bowel syndrome (IBS), the data provides a thorough baseline.

Table 1: Baseline characteristics of the studies included in this review

Studies	Type of Study	Medicine investigated	No. of patients	Country of study
Teja D Naik <i>et al.</i> (2023)	Randomised controlled parallel group study	Kalingadi churna,wsap	48	Karnataka
Dania chumann <i>et al.</i> (2022)	Randomised study	Ayurvedic or conventional nutritional therapy, FODMAP	69	Germany
Sally Brabyn <i>et al.</i> (2019)	Randomised controlled trials	Homoeopathic remedy, asafoetida or asafoetida plus nux vomica, IBS-C	307	UK
Virginia Sánchez-Monroy <i>et al.</i> (2021)	RCT	archibel, Isnes, Belgium	41	Mexico
L. Langmead (2006)	Randomised, controlled Oral	Aloe Vera Gel, Wheatgrass Juice, Boswellia Serrata	153	London
Diego Curro <i>et al.</i> (2016)	randomised controlled trials	Anti-diarrheal drugs, bile salt sequestrants and antibiotics	1225	Rome
Lena Oxelmark <i>et al.</i> (2016)	controlled study	CAM	854	Gothenburg
Qian Yang <i>et al.</i> (2022)	multicenter study	CAM	730	China
Richard W. McCallum <i>et al.</i> (2015)	Randomised controlled trials	Vitamin and Mineral	61	Australia
Ronald L. Koretz <i>et al.</i> (2004)	randomised controlled trials	CAM	258	US
GA Moody <i>et al.</i> (1998)	RCT	Homoeopaths and Herbalists	82	UK
L. Langmead <i>et al.</i> (2001)	RCT	Herbal medicines	760	UK

Khadijeh Hatami <i>et al.</i> (2020)	Randomised clinical trial.	Some herbal medicines, Maybeverine	40	UK
Cesar Ramos-Remus MD <i>et al.</i> (2008)	RCT	non-conventional remedies, complementary medicine and/or alternative therapies	100	Mexico
H Vahedi <i>et al.</i> (2010)	RCT	Homoeopathic medicines	100	Iran

Table 2 provided a comprehensive analysis of findings from various studies on Irritable Bowel Syndrome (IBS). Teja D Naik *et al.* (2023) observed significant improvements in clinical evaluation scales after a 4-week study, with higher scores indicating worse conditions. Dania Schumann *et al.* (2022) assessed expectations and disappointments over three months, revealing that Ayurvedic treatment reduced IBS-SSS. Sally Brabyn *et al.* (2019) identified bias in three 2-week studies on global IBS improvement, with low and high-risk bias domains. Virginia Sánchez-Monroy *et al.* (2021) reported that individualized homeopathic treatment reduced symptom intensity after 3 months. L. Langmead (2006) evaluated risk factors associated with alternative therapy over 3 months, revealing low success rates and substantial adverse effects of traditional therapies. Diego Curro *et al.* (2016) examined complementary therapies over a year but found few conclusive outcomes due to the absence of repeating RCTs. Lena Oxelmark *et al.* (2016) found natural product use and CAM benefits in 83.1%

of patients. Tiziana Larussa *et al.* (2019) identified a higher BMI and better CAM knowledge after 3 months, suggesting improved patient education. Qian Yang *et al.* (2022) noted the incidence of organic illnesses in probable IBS patients throughout 4 months. Richard W. McCallum *et al.* (2015) suggested that CAM therapy might reduce recurring stomach discomfort. Ronald L. Koretz *et al.* (2004) examined probiotics for childhood diarrhoea over 90 days. GA Moody *et al.* (1998) discussed CAM's benefits for inflammatory bowel illness over four months. L. Langmead *et al.* (2001) found cumin more effective than mebeverine over one year. Cesar Ramos-Remus MD *et al.* (2008) identified 12-month advantages of alternative musculoskeletal pain therapies. Over three months, H Vahedi *et al.* (2010) highlighted the HPA axis and chronic anxiety in IBS pathogenesis, and the decreased incidence of stomach discomfort, diarrhoea, and constipation. This research evaluated the efficacy of IBS therapy, identified risk factors, and explored patient preferences.

Table 2: Evaluation of findings of the included studies

Studies	Clinical Features of IBS	Follow-up period	Primary Outcome	Secondary Outcome	Adverse Effect
Teja D Naik <i>et al.</i> (2023)	Higher scores indicate worse conditions	4 weeks	mild IBS, moderate IBS and severe IBS . A decrease of 50 points is associated with an improvement in clinical symptoms.	Visual Analog Scale	Within-group significant improvements were observed on all clinical assessment scales in both groups.
Dania Schumann <i>et al.</i> (2022)	Expectations and frustrations were observed in patients	3 months	The estimated marginal means of reduction were in the Ayurvedic and conventional groups. The reduction in IBS-SSS was significantly higher in the Ayurveda group than in the conventional therapy group	The higher the IBS-SSS score and the higher the patients' expectations, the greater the reduction in IBS-SSS observed	There were no significant group differences in any of the secondary outcome measures. No serious adverse events occurred in either group.

Sally Brabyn <i>et al.</i> (2019)	Risk of bias was noted in three studies	2 weeks	The primary outcome was global improvement in IBS as measured by an IBS symptom severity score	Secondary outcomes included quality of life, abdominal pain, stool frequency, stool consistency, and adverse events	Four domains were at low risk of bias and two were at high risk of bias
Virginia Sánchez-Monroy <i>et al.</i> (2021)	Symptom severity decreased significantly after 3 months of treatment, pain scores decreased after 1 month of treatment.	4 months	The study found that the severity of symptom scores decreased significantly after 3 months of treatment, while the pain scores decreased after 1 month of treatment.	Emphasises the importance of individual medicinal approaches using LM potency, although the initial reduction of pain may also be due to the fact that <i>Lycopodium clavatum</i> and <i>Nux vomica</i> were the main homeopathic medicines, and these medicines contain a variety of alkaloids, which have significant analgesic effects on pain caused by physical and chemical stimuli. showed	The study suggests that individualised homeopathic treatment using LM potency benefits IBS patients.
L. Langmead (2006)	Alternative therapies have been shown to have more risk factors than any other form	3 months	Conventional therapies have shown very low success rates	Can cause serious side effects and can include fatal liver and kidney failure	Knowledge of long-term sequelae such as mutagenicity and carcinogenicity is still poorly observed
Diego Curro <i>et al.</i> (2016)	Probiotics may have a role in alleviating some symptoms of IBS. OR was 1.6 for dichotomous data from seven trials; SMD was 0.23 for continuous data from six trials	1 year	Several therapeutic approaches have been explored as complementary or alternative to traditional pharmacological treatments, including probiotics, prebiotics, synbiotics, fibre and herbal medicines	Due to increasing consumer spending on nutritional and healthy dietary supplements globally, their market has shown consistent growth over the past few years.	No definitive conclusions can be drawn due to the lack of RCTs that replicate results obtained in individuals. Research conducted so far.

Lena Oxelmark <i>et al.</i> (2016)	One died patient	1 month	After adjusting for age, sex, geographic residence and diet in a multivariate analysis, a statistically significant difference was observed.	The most commonly used natural products used by patients are omega 3, probiotics, aloe vera, vitamins, arctic root and other herbal products. Omega 3, Echinacea spp., kan yang, Siberian ginseng, arctic root and herbal products have been used in control.	In all, 83.1% patients experienced positive effects from CAM and 14.4% experienced negative effects.
Tiziana Larussa <i>et al.</i> (2019)	Adjusted Odds Ratio, 95% Confidence Interval of Significant Risk Factors for CAM Use	3 months	A higher BMI and better knowledge of CAM were observed	Time of childbearing was a protective factor. Only 19% of patients used CAM due to medical advice. However, a minority of patients had complete satisfaction with CAM.	This willingness to reuse suggests that health-care providers' knowledge and patient education should be improved.
Qian Yang <i>et al.</i> (2022)	The prevalence of organic disease among patients with suspected IBS was 10.41%. Warning signs for organic disease include PPV anaemia, faecal occult blood, and unintentional weight loss	4 months	There was a prevalence of organic disease in patients with suspected IBS	The PPV and miss diagnosis rate for the diagnosis of IBS were 91.67% and 74.77% when all alarm symptoms were combined with Rome IV.	Only rectal occult blood, unintentional weight loss, and anemia were associated with Rome IV, respectively.
Richard W. McCallum <i>et al.</i> (2015)	Decreased incidence of recurrent abdominal pain associated with constipation, diarrhoea, or both	3 months	Abdominal pain, acid reflux/heartburn, digestive allergies, liver conditions, nausea/vomiting and ulcers. The most commonly used methods were herbal, complementary and mind body and manipulative therapy	This explosive use of CAM therapies has created opportunities in recent years for the Centers for Complementary and Alternative Medicine and the National Institutes of Health to strongly support alternative medicine.	There were several Chinese and Ayurvedic preparations that were found to be better than placebo with no serious adverse effects.
Ronald L. Koretz <i>et al.</i> (2004)	Probiotics were beneficial in childhood diarrhoea or diarrhoea caused by antibiotics	90 days	Ginger has been found to be effective in relieving nausea and vomiting caused by motion sickness or pregnancy.	Homeopathy is effective in treating gastrointestinal problems or symptoms.	Gastroenterologists should be familiar with these techniques; It is probably already their patients.

GA Moody <i>et al.</i> (1998)	Many patients with inflammatory bowel disease have benefited	4 months	There was no significant difference in consultation rates between Asian and European patients with IBD.	Most patients were advised to continue their current medications, although two were asked to stop and 10 were advised to reduce their allopathic medication dosage.	Many patients with IBD believed them to be helpful.
L. Langmead <i>et al.</i> (2001)	Drug and Placebo and Standardization Preparation Placebos and drug in both powder and capsule form were similar in shape, color and smell.	1 year	Cumin was more effective than mebeverine in reducing the severity of IBS symptoms. Subgroups were correct for this analysis.	Cumin powder was more effective in improving IBS quality of life than mebeverine. Obstructions were also statistically significant except for changes in food abstinence in both groups. In composition analysis, cumin was significantly more effective than mebeverine	In Persian medicine, it is believed that every substance has efficacy
Cesar Ramos-Remus MD <i>et al.</i> (2008)	Benefits from musculoskeletal pain syndromes	12 months	Musculoskeletal pain syndromes involving the spine and extremities were the most common	Patients sought both physical and alternative care	53% reported some degree of efficacy in patients using alternative treatments.
H Vahedi <i>et al.</i> (2010)	Decreased incidence of abdominal pain, diarrhoea, constipation or both diarrhoea and constipation	3 months	Activates the hypothalamic-pituitary-adrenal (HPA) axis and the autonomic system	Chronic anxiety increases amygdalar activity leading to formation of an HPA axis that ultimately induces visceral hyperalgesia.	important role in the pathophysiology of IBS.21

Discussion

The investigation into CAM for IBS reveals widespread adoption of diverse therapies. Hussain and Quigley’s review (2006) underscores the prevalent use of CAM, often as standalone or complementary to conventional treatments. However, most lack robust clinical trials, primarily small-scale and low-quality studies, though interventions like hypnotherapy, specific herbal treatments, tailored diets, and probiotics show promise. Recognizing CAM’s prevalence among IBS patients, healthcare providers should acknowledge its potential benefits, particularly in certain therapies, but the scarcity of high-quality trials emphasizes the need for rigorous scientific exploration to validate and broaden CAM’s role in IBS management .

Billings *et al.* (2021) meta-analysis explored CAM’s efficacy in IBS. Among herbal therapy, dietary supplements, and

mind-body approaches, there were potential benefits over placebo, notably for abdominal pain. However, the confidence in these estimates remained low. Meanwhile, body-based and energy healing therapies didn’t show significant advantages. Overall, the evidence quality for CAM in IBS treatment was considered low, underscoring the need for high-quality trials to further explore their effectiveness (Hussain & Quigley, 2006).

Amsellem *et al.* (2021) review examined non-pharmacological interventions for IBS. Body-directed therapies like acupuncture and osteopathy showed promise in improving overall IBS symptoms compared to standard treatment at the 6-month mark. However, no clear advantage was observed over sham therapies for abdominal pain or overall symptoms. The evidence remained inconclusive regarding the superiority of hypnotherapy over standard treatment or supportive

therapy. The review emphasized the potential benefits of body-directed therapies but highlighted the need for higher-quality studies to firmly establish their clinical efficacy in managing IBS (Amsallem *et al.*, 2021).

A systematic review by Bu *et al.* (2020) aimed to determine the effectiveness and safety of Tuina (therapeutic massage) compared to no treatment or routine medical treatment for irritable bowel syndrome (IBS). The study delved into 8 trials involving 545 participants diagnosed with IBS-diarrhea or IBS-constipation, employing various Tuina manipulations. Despite all trials being in Chinese, the analysis found inconclusive evidence that Tuina alone significantly outperformed routine treatments for IBS-diarrhea in overall symptom improvement (>30% score enhancement) but suggested that Tuina combined with routine treatments might yield better results than routine treatments alone (Bu *et al.*, 2020).

A systematic review by Yang *et al.* (2022) was conducted in which 31 randomized controlled trials examined the efficacy of acupuncture and moxibustion for Irritable Bowel Syndrome (IBS). Acupuncture showcased a significant reduction in symptom severity when compared to pharmaceutical drugs (SMD, -35.45; 95% CI, -48.21 to -22.68; I² = 71%). The trial sequential analysis (TSA) demonstrated acupuncture's effectiveness. In contrast, acupuncture did not exhibit a marked reduction in symptom severity but did show therapeutic benefits in alleviating abdominal pain compared to sham acupuncture (SMD, -0.24; 95% CI, -0.48 to -0.01; I² = 8%). Moxibustion presented considerable therapeutic benefits in symptom severity (SMD, -3.46, 95% CI, -5.66 to -1.27, I² = 95%) and abdominal pain (SMD, -2.74, 95% CI, -4.81 to -0.67, I² = 96%) compared to sham moxibustion. Both acupuncture and moxibustion showed superior benefits for abdominal pain when compared to pharmacological medications and shams (SMD, -0.46; 95% CI, -0.68 to -0.24; I² = 47% for acupuncture and SMD, -2.00; 95% CI, -3.04 to -0.96; I² = 90% for the combination of acupuncture and moxibustion). Furthermore, both acupuncture (MD, 4.56; 95% CI, 1.46-7.67; I² = 79%) and moxibustion (MD, 6.97; 95% CI, 5.78-8.16; I² = 21%) showed significant improvements in quality of life compared to pharmaceutical drugs (Zhu *et al.*, 2018).

Complementary and Alternative Medicine (CAM) modalities exhibit promising potential in mitigating Irritable Bowel Syndrome (IBS) symptoms, often showcasing superiority over conventional treatments. Acupuncture, notably, has demonstrated enhanced efficacy in managing diarrhoea-predominant IBS compared to pharmaceutical drugs, offering relief with notably fewer side effects. Additionally, peppermint oil stands out as a safe and effective remedy for alleviating pain and overall symptoms in adult IBS patients. However, despite their effectiveness, conventional therapies like drugs frequently accompany side effects, varying in severity. For instance, rifaximin, alosetron, ramosetron, and pinaverium bromide showcase differing degrees of

side effects in diarrhoea-predominant IBS. Rifaximin and alosetron rank higher in side effect severity, while sham acupuncture and acupuncture exhibit notably milder side effects (Alammar *et al.*, 2019; Bahrami *et al.*, 2016).

Although Complementary and Alternative Medicine (CAM) enjoys widespread use for addressing Irritable Bowel Syndrome (IBS), discussions within the provided literature scarcely delve into the safety aspects or potential adverse effects associated with these interventions. Limited information indicates that certain herbal remedies may pose side effects or interact with conventional medications, underlining the necessity for extensive clinical investigations to evaluate their safety and efficacy. Specific references acknowledge potential safety concerns linked to herbal formulas utilized in IBS treatment. Consequently, while CAM therapies may present promising advantages for managing IBS, their safety profiles necessitate comprehensive assessment. Patients are strongly advised to seek guidance from healthcare professionals before initiating any new treatment regimen (Shen & Nahas, 2009; Thompson *et al.*, 2013).

CAM therapies encompass a spectrum of approaches potentially alleviating IBS symptoms through diverse mechanisms. For instance, herbal remedies such as peppermint oil might exhibit antibacterial properties and could influence the gut microbiota, offering relief. Acupuncture is believed to enhance gut motility and modulate the neuroendocrine system within the brain-gut axis, potentially contributing to symptom improvement. Moxibustion, a traditional Chinese medicine technique, is suggested to impact both the brain-gut axis and the immune system, potentially aiding in symptom management. Additionally, therapies like hypnotherapy and cognitive behaviour therapy are presumed to assist in stress management, a factor closely associated with IBS symptoms. These varied CAM modalities potentially offer relief via multifaceted mechanisms (Huang *et al.*, 2014; Isolauri *et al.*, 2016).

CAM therapies offer diverse advantages in alleviating symptoms associated with Irritable Bowel Syndrome (IBS). Soluble fibre emerges as a potential remedy for enhancing constipation and mitigating overall IBS symptoms, while peppermint oil demonstrates efficacy in alleviating abdominal pain. Various modalities within CAM, such as specific herbal therapies, hypnotherapy, cognitive behaviour therapy, acupuncture, and yoga, showcase improved treatment outcomes for individuals grappling with IBS. Probiotics present an overall beneficial impact on IBS; however, the definitive effectiveness of distinct strains remains less discernible. Additionally, certain Chinese herbal medicines exhibit promising efficacy in alleviating symptoms experienced by individuals with IBS. These diverse CAM interventions present multifaceted approaches for addressing different aspects of IBS symptoms (Bi *et al.*, 2018; Nee & Lembo, 2021).

The future trajectory of Complementary and Alternative

Medicine (CAM) in alleviating symptoms of IBS may entail explorations into probiotics, acupuncture, and exercise. Probiotics, with their potential to positively modify gut bacteria, stand as a promising avenue for enhancing digestive processes. Despite varied outcomes, acupuncture, when administered by qualified practitioners, holds promise as a potential relief for IBS symptoms. Additionally, regular physical exercise emerges as a feasible and potentially effective treatment strategy for managing IBS symptoms. These avenues highlight evolving paths within CAM, indicating potential directions for future research and therapeutic interventions for individuals grappling with IBS (Alammar *et al.*, 2019).

CONCLUSION

This study concluded that clinical therapies for Irritable Bowel Syndrome (IBS) are developed by synthesising numerous data. Traditional Ayurvedic methods, conventional treatments, and CAM are all part of the investigations, which range from randomised controlled trials to multicenter studies. Some research has shown that Ayurvedic and CAM treatments are effective, whereas other research has pointed out the dangers of mainstream medicine and the biases in study designs. The results highlight the importance of creating unique treatment plans for irritable bowel syndrome (IBS) that account for cultural differences and patient expectations. Further research and standardisation efforts are needed to improve treatment efficacy and address the complicated character of irritable bowel syndrome (IBS), as the complexity of the condition has been revealed through global treatments. Despite promising results in Ayurvedic and CAM treatments for Irritable Bowel Syndrome (IBS), the study highlights a critical research gap in the risk associated with mainstream medications. The heterogeneous nature of interventions and participant demographics in global studies calls for standardized, culturally relevant programs to enhance efficacy. Future research should focus on refining and tailoring these treatments, conducting large-scale trials, and establishing standardized protocols. This study contributes by emphasizing the need for further investigation into safe and effective IBS management, paving the way for improved clinical practices and patient outcomes.

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