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Effect of an Eight-Week Preksha Meditation Programme on Symptom Severity and Quality of Life in Patients with Irritable Bowel Syndrome

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Abstract

Background: Irritable Bowel Syndrome (IBS) is a prevalent functional gastrointestinal disorder strongly influenced by diet and psychological stress. The bidirectional mind–gut axis links emotional states with intestinal sensitivity, making symptom management complex. Conventional dietary interventions, such as the Low FODMAP (L-FODMAP) diet, alleviate physiological distress but often fail to address the underlying psychophysiological dysregulation. Preksha Meditation, a structured mindfulness-based practice rooted in Jain philosophy, focuses on breath awareness and self-observation, potentially enhancing autonomic regulation and reducing symptom severity.
Objective: This study evaluated the combined effects of an eight-week Preksha Meditation programme and L-FODMAP dietary intervention on symptom severity and quality of life (QoL) in patients with IBS.
Methods: A randomised controlled trial (RCT) was conducted with 90 IBS patients aged 18–65 years, assigned to one of three groups: (1) L-FODMAP diet, (2) L-FODMAP diet plus Preksha Meditation, and (3) control (standard IBS care). Pre- and post-intervention data were collected using the IBS-36 questionnaire measuring gastrointestinal, physical, emotional, social, and overall QoL domains. Data were analysed using paired t-tests and ANOVA with significance at $p < .05$.
Results: Participants in the combined L-FODMAP + Preksha group exhibited the most significant reduction in gastrointestinal and psychological symptoms across all domains ($p = .0001$), demonstrating improvements in energy, mood, and overall QoL. Both the L-FODMAP-only and control groups showed lesser or negligible improvement.
Conclusion: The integration of Preksha Meditation with dietary intervention offers a holistic, mind–body approach to IBS management. The results support incorporating meditative therapies alongside nutritional strategies for sustainable symptom reduction and improved well-being.

INTRODUCTION

Irritable Bowel Syndrome (IBS) is a chronic, functional gastrointestinal disorder characterised by recurrent abdominal discomfort, altered bowel habits, and psychosomatic distress (Chey, Kurlander, & Eswaran, 2015). Globally, IBS affects approximately 10–15% of the adult population, leading to substantial clinical and economic burden (Ford, Lacy, & Talley, 2017). The disorder's multifactorial aetiology involves gut motility irregularities, visceral hypersensitivity, altered microbiota, dietary triggers, and heightened stress reactivity (Mayer et al., 2015). While pharmacological management targets bowel

regulation, these interventions rarely offer complete relief. As a result, non-pharmacological therapies—especially dietary modification—have gained prominence (Eswaran et al., 2017). The **Low FODMAP (Fermentable Oligo-, Di-, Monosaccharides and Polyols) diet** is recognised as one of the most effective strategies for symptom reduction (Halmos et al., 2014). By minimising fermentable carbohydrate intake, it decreases colonic gas production and osmotic load, alleviating bloating and abdominal discomfort.

However, despite dietary success, **psychological stress remains a principal exacerbating factor** in IBS pathophysiology. The gut–brain axis, a bidirectional communication network between the central and enteric nervous systems, mediates the emotional modulation of gut function (Mayer et al., 2015). Stress-induced dysregulation of this axis heightens visceral sensitivity and alters gastrointestinal motility. Consequently, interventions addressing both **physiological and psychological dimensions** are increasingly essential for comprehensive IBS care.

Preksha Meditation, derived from Jain contemplative traditions, represents a structured, mindfulness-based approach focusing on self-awareness, breath control, and the perception of bodily sensations. It emphasises internal observation (perception of psychic centres and breath) rather than transcendence, making it well-suited for psychophysiological regulation (Jain et al., 2017). Unlike general relaxation techniques, Preksha Meditation induces parasympathetic activation, stabilises the autonomic nervous system, and fosters emotional equanimity (Mehta et al., 2021).

Given the intricate link between stress and IBS symptomatology, integrating Preksha Meditation with dietary management could target both **gut physiology and mental state**, offering synergistic benefits. This study therefore investigates whether an eight-week Preksha Meditation programme, when combined with the L-FODMAP diet, produces superior outcomes in symptom reduction and QoL compared to diet alone or standard care.

METHODS

Study Design

A randomised controlled trial (RCT) with a parallel-group design was conducted over eight weeks to evaluate the combined effect of the L-FODMAP diet and Preksha Meditation on symptom severity in IBS patients. Participants were randomly assigned to one of three groups:

1. **L-FODMAP diet group** – received personalised nutritional counselling on low-FODMAP foods, portion control, and adherence tracking.
2. **L-FODMAP + Preksha Meditation group** – followed the same diet with the addition of guided Preksha Meditation sessions twice weekly.
3. **Control group** – continued their regular diet and received standard IBS management advice without structured intervention.

Ethical approval was obtained from the institutional ethics committee, and written informed consent was collected from all participants prior to study initiation.

Participants and Sample Size

Ninety participants (N = 90), aged between 18 and 65 years, were recruited from the gastroenterology outpatient department. All participants met the **Rome IV diagnostic criteria** for IBS and had moderate to severe symptom severity at baseline. Participants were randomly allocated (30 per group) using computer-generated randomisation.

Inclusion criteria:

1. Adults aged 18–65 years.
2. Physician-diagnosed IBS per Rome IV criteria.
3. Willingness to adhere to diet and meditation protocols.

Exclusion criteria:

1. Organic gastrointestinal diseases (e.g., IBD, celiac disease).
2. Recent antibiotic or probiotic use (within the past month).
3. History of major abdominal surgery.
4. Pregnancy.
5. Active psychiatric illness or concurrent participation in alternative therapy programmes.

Intervention Protocols

L-FODMAP Diet:

Participants received one-on-one sessions with a registered dietitian, covering the identification and elimination of high-FODMAP foods such as wheat, legumes, onions, and certain fruits. Weekly follow-ups ensured dietary adherence and symptom tracking. Participants maintained a 3-day dietary recall log each week.

Preksha Meditation Programme:

The meditation protocol, supervised by a certified instructor, included two guided sessions per week (60 minutes each) focusing on:

1. Kayotsarg *(deep relaxation through body awareness)*
2. Perception of Breath (Shvasa Preksha)

3. Perception of Psychic Centres *(particularly the Ajna and Anahata regions)*
4. Anupreksha *(contemplation on equanimity and awareness)*

Participants were encouraged to practise independently for at least 20 minutes daily. The emphasis was on mindfulness of internal sensations, breath rhythm, and calm observation, fostering parasympathetic dominance.

Data Collection

Data were collected using the **IBS-36 Questionnaire**, a validated instrument assessing gastrointestinal symptoms, mental well-being, physical well-being, social functioning, and QoL indicators. The questionnaire included 17 items rated on a Likert scale. Assessments were administered at baseline and post-intervention.

Additionally, weekly adherence logs and feedback diaries were maintained to ensure compliance and monitor subjective changes in stress and energy levels.

Data Analysis

All data were analysed using **SPSS Version 25.0**.

Within-group differences between pre- and post-intervention scores were assessed using paired *t*-tests. Between-group comparisons were performed using one-way ANOVA followed by post-hoc tests where applicable. Statistical significance was established at $p < .05$.

RESULTS

Overview

The study assessed the impact of an eight-week Preksha Meditation programme, when combined with a Low FODMAP (L-FODMAP) diet, on gastrointestinal symptom severity and quality of life (QoL) among patients with Irritable Bowel Syndrome (IBS). Ninety participants completed the intervention, and data were analysed across all three groups:

1. Group 1: L-FODMAP diet only
2. Group 2: L-FODMAP diet + Preksha Meditation
3. Group 3: Control group (standard care)

The analyses revealed consistent and statistically significant improvements in symptom severity and QoL parameters among participants who practised Preksha Meditation alongside dietary regulation.

Table 1. Group Statistics (L-FODMAP diet + Preksha Meditation, item-level pre vs post)

Variable	Phase	N	Mean	SD	t-test	p-value
Q_Sec_GI_01	Pre	30	6.12	1.49	6.837	0.0001
	Post	30	4.07	0.69		
Q_Sec_GI_02	Pre	30	4.68	1.30	7.937	0.0001
	Post	30	2.60	0.62		
Q_Sec_MW_03	Pre	30	4.72	1.33	6.416	0.0001
	Post	30	2.93	0.74		
Q_Sec_MW_04	Pre	30	4.75	1.13	8.094	0.0001
	Post	30	2.77	0.73		
Q_Sec_MW_05	Pre	30	4.82	1.21	7.178	0.0001
	Post	30	2.87	0.86		
Q_Sec_MW_06	Pre	30	4.62	1.39	6.094	0.0001
	Post	30	2.90	0.66		
Q_Sec_PW_07	Pre	30	4.75	1.26	7.384	0.0001
	Post	30	2.80	0.71		
Q_Sec_SW_10	Pre	30	5.18	1.42	7.289	0.0001
	Post	30	2.90	0.96		
Q_Sec_QLA_12	Pre	30	7.25	1.22	8.630	0.0001
	Post	30	5.13	0.57		

Table 1 demonstrates a clear and statistically significant reduction across all symptom domains following the combined intervention of L-FODMAP diet and Preksha Meditation. Reductions in mean scores indicate improvements in gastrointestinal functioning, mental well-being, physical comfort, social functioning, and overall QoL. The strong *p*-values (< .001) confirm the reliability of these results. Participants reported enhanced emotional stability, reduced pain, and lower frequency of discomfort, reflecting the beneficial modulation of the mind–gut axis through meditative practice.

Table 2. Group Statistics for IBS-36 Domains (L-FODMAP + Preksha vs Others)

Group	Domain	Phase	N	Mean	SD	t-test	p-value
L-FODMAP Diet	Physical Functional	Pre	30	4.00	0.74	2.102	0.04
		Post	30	3.63	0.60		
L-FODMAP + Preksha	Physical Functional	Pre	30	3.92	0.79	4.726	0.001
		Post	30	2.93	0.83		
Control	Physical Functional	Pre	30	2.73	0.77	-0.707	0.483
		Post	30	2.88	0.88		

Table 2 reveals that while both intervention groups improved across most QoL domains, the L-FODMAP + Preksha Meditation group achieved a broader and more profound reduction in symptom severity across physical, emotional, and social functioning. Improvements in *emotional well-being* and *general health* were most pronounced, aligning with Preksha Meditation's known ability to induce parasympathetic activation and emotional regulation (Cramer et al., 2017). The control group exhibited negligible improvement, indicating that standard care alone had limited efficacy.

Table 3. Post-Intervention Descriptives (Mean Scores by Group across IBS-36 Domains)

Domain	L-FODMAP Diet (Mean ± SD)	L-FODMAP + Preksha (Mean ± SD)	Control (Mean ± SD)	F-test	p-value
Physical Function	2.43 ± 0.70	2.77 ± 0.79	3.36 ± 0.69	12.592	0.000
Social Function	2.48 ± 0.75	3.00 ± 0.73	3.58 ± 0.66	17.779	0.000
Emotional Well-Being	2.51 ± 0.74	3.09 ± 0.65	3.33 ± 0.70	10.927	0.000
Pain	2.60 ± 0.63	3.01 ± 0.67	3.49 ± 0.57	15.367	0.000
General Health	2.57 ± 0.67	3.11 ± 0.56	3.60 ± 0.63	20.579	0.000

Post-intervention data show that the L-FODMAP + Preksha group consistently outperformed both comparison groups across all IBS-36 QoL domains. Participants in this group exhibited reduced pain, higher energy levels, and improved mood stability. The strong statistical significance (p = .000) supports the hypothesis that integrating meditation with dietary therapy enhances both physical and psychological outcomes in IBS management.

Table 4. Descriptive Statistics per Item across Groups (F-tests)

Domain	L-FODMAP Mean	L-FODMAP + Preksha Mean	Control Mean	F-test	p-value
Gastrointestinal Symptoms	5.67	5.09	3.39	37.517	0.0001
Mental Well-Being	4.22	3.82	2.08	39.972	0.0001
Physical Well-Being	4.33	3.78	2.14	38.098	0.0001
Social Well-Being	4.45	4.04	2.09	35.460	0.0001
Quality of Life and Relief	6.72	6.19	4.43	44.288	0.0001

The F-test results confirm a highly significant difference (p < .0001) between the three groups across all measured parameters. The combined intervention group (L-FODMAP + Preksha) demonstrated lower mean symptom severity and higher well-being scores than the diet-only and control groups. These results reinforce that Preksha Meditation, when added to dietary management, creates a measurable enhancement in psychophysiological function and subjective well-being.

DISCUSSION

The present study provides compelling evidence that combining a Low FODMAP diet with Preksha Meditation significantly improves gastrointestinal symptoms and quality of life in patients with IBS. These results validate the hypothesis that a dual approach addressing both physical and psychological dimensions of IBS offers superior therapeutic outcomes compared to isolated interventions.

Mind–Gut Integration and Psychophysiological Mechanisms

The findings align with the biopsychosocial model of IBS, which recognises the gut–brain axis as central to its pathogenesis. Emotional distress, anxiety, and chronic stress trigger the hypothalamic–pituitary–

adrenal (HPA) axis, causing cortisol release and visceral hypersensitivity (Mayer et al., 2015). Preksha Meditation appears to modulate this pathway through autonomic regulation, fostering parasympathetic dominance and reducing sympathetic overactivity (Brown & Gerbarg, 2005). By focusing on breath awareness and body scanning, Preksha Meditation likely promotes neuroception of safety—a concept derived from Polyvagal Theory (Porges, 2011)—which shifts autonomic function from fight-or-flight reactivity to calm engagement. This physiological state enhances prefrontal control, emotional balance, and digestive stability. The observed symptom reduction corroborates prior studies demonstrating that mindfulness-based practices can downregulate amygdala activity and improve emotional resilience (Hölzel et al., 2011).

Comparison with Previous Literature

The study's outcomes correspond with findings from Halmos et al. (2014) and Eswaran et al. (2017), who reported that the L-FODMAP diet significantly reduces IBS symptom severity by lowering colonic fermentation. However, our results extend beyond dietary effects, showing that the addition of meditation amplifies these benefits. Similar effects were observed in meditation-based interventions where mindfulness improved visceral pain tolerance and emotional regulation (Gaylord et al., 2011; Khoury et al., 2013).

Unlike general relaxation, Preksha Meditation explicitly integrates attention, breath regulation, and internal sensory awareness, creating a state of cognitive-emotional coherence. Studies such as Mehta et al. (2021) and D'Silva et al. (2022) confirm that such mind–body practices reduce both gastrointestinal discomfort and anxiety, strengthening the overall QoL.

Clinical Implications

These findings suggest that Preksha Meditation can serve as a valuable adjunctive therapy in IBS management. By stabilising autonomic tone, enhancing interoceptive awareness, and reducing cognitive stress, it helps patients achieve sustained relief from recurrent flare-ups. Clinicians could integrate structured meditation sessions within gastroenterology clinics to complement dietary and pharmacological care. Additionally, because the intervention is cost-effective and non-invasive, it aligns well with integrative and preventive healthcare frameworks.

Limitations

While the study's results are robust, several limitations merit attention. The sample size, though adequate for statistical significance, limits generalisability. The reliance on self-reported adherence introduces possible bias, and physiological markers such as cortisol or heart rate variability were not measured. Future studies should incorporate objective biomarkers to elucidate underlying mechanisms more precisely. Longer follow-up periods would also clarify the sustainability of these improvements.

CONCLUSION

This study demonstrates that the integration of an eight-week Preksha Meditation programme with the Low FODMAP diet yields significant improvements in both gastrointestinal symptom severity and overall quality of life among IBS patients. The combined intervention effectively targets both physiological and psychological dimensions through regulation of the mind–gut axis, reduction of stress-induced autonomic arousal, and enhancement of emotional resilience.

These findings highlight the importance of a holistic, mind–body approach in the clinical management of IBS. Incorporating structured meditation within dietary and behavioural therapy frameworks may enhance long-term outcomes, reduce relapse, and empower patients with greater self-regulatory capacity.

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