

MINDFULNESS BASED STRESS REDUCTION IN IRRITABLE BOWEL SYNDROME PATIENTS

Krishna Prakash¹

¹Psychiatrist, Upasana Hospital, QS Road, Kadapakkada, Kollam, Kerala, India.

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Corresponding Author:

Dr. Krishna Prakash,
Email: Kichu4760@gmail.com

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ABSTRACT

Background: Irritable bowel syndrome (IBS) is a common and often debilitating chronic gastrointestinal disorder characterized by abdominal pain and altered bowel habits. Pharmacological treatments are often ineffective; hence, mindfulness-based stress reduction (MBSR) may improve the quality of life because the exact pathology of IBS is still unclear. **Materials and Methods:** 50 adult patients aged between 25-60 years with IBS were counselled with IBS-SSS, VSI, FFMQ, and PHQ-12 questionnaires and followed up for three months. The clinical variables FFMQ, VSI, and IBS-SSS were compared after three months. **Results:** Five-facet mindful questionnaires were compared at baseline studies after three months of treatment (follow-up); all MBSR variables had a significant p-value ($p < 0.001$). **Conclusion:** MBSR counselling program for three months had significant and satisfactory results for IBS adult patients.

INTRODUCTION

Irritable bowel syndrome (IBS) is a functional disorder of the lower gastrointestinal (GI) tract defined by the presence of chronic or recurring symptoms that include abdominal pain, flatulence, bloating, and altered bowel habits.^[1] IBS is classified as a functional GI disorder, and hence there are no known biochemical, structural, or physiological abnormalities that consistently characterize it. Often a diagnosis of IBS is made when other GI diseases, including inflammatory bowel disease (e.g., Crohn's disease or ulcerative colitis), lactose or gluten intolerance, and intestinal parasites, have been ruled out.^[2]

It is suggested that chronic GI symptoms are generated by a combination of intestinal, motor, sensory, and central nervous system activity termed the "brain-gut axis".^[3] The mechanism for these associations provides a bidirectional relation between sensation in the intestines and external stressors through neural connections that have the ability to affect GI sensation, motility, and secretion. Increased muscle contractions and pain can also increase psychological distress through amplified cognitive interpretation of these sensations.^[4] Hence an attempt is made to evaluate the patients after the 3rd month of treatment, and their MBSR is compared with baseline studies.

MATERIALS AND METHODS

50 adult patients who regularly visited the psychiatry department at Upasana Hospital, QS Road, Kadapakkada, Kollam, Kerala-691001, were studied. **Inclusive Criteria:** Adult patients aged between 20 to 60 years with symptoms of IBS (irritable bowel syndrome) were selected for study.

Exclusion Criteria: Patients who are already under IBS treatment for serious medical conditions and are psychotic with suicidal features were excluded from the study.

Method: Clinical and psychological variables were assessed at baseline (pre-treatment) and treated for three months. Primary clinical outcomes were chosen to assess the degree of mindfulness and major domains of IBS severity, including the composite major of GI systems on the IBS-specific measure QOL (quality of life) and measure IBS-specific fear and anxiety (established) as important treatment targets for IBS and other chronic pain targets. Secondary outcomes were included to assess a broader array of problem areas often reported by individuals with IBS, including negative effects, pain catastrophizing, widespread bodily pain, and magnetic resonance of the brain. Imaging scans were completed at baseline and after 3 months of treatment separately.

Gastrointestinal symptom severities were assessed using the severity score from the IBS-SSS, and a validated 5-item instrument was used to measure the severity of abdominal pain, distension, and dissatisfaction with bowel habits. Interference with quality of life (QOL) over past fear and anxiety was

assessed using the VSI (visceral sensitivity index) related to IBS.

Mindfulness was assessed using the Five Facet Mindfulness Questionnaire: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. The FFMQ contains 39 items that are related on a 5-point Likert scale. The five-factor structure of the FFMQ has been confirmed in subsequent studies for persons who medicate or have participated in meditation counseling programs like MBSR through observing that scale is less destructive in meditation-naïve persons. Hence, FFMQ scores reflect greater mindfulness.

Symptoms of anxiety and depression were assessed using the Hospital Anxiety and Depression (HAD) scale over the past two weeks in non-psychotic patients. The Personal Health Questionnaire-12 (PHQ-12) is a validated scale assessing the degree to which an individual is bothered by common somatic symptoms, including back pain and headaches, over the course of two weeks. The Pain Catastrophizing Scale (PCS) is a 13-item scale assessing pain-related catastrophizing thinking in three dimensions: helplessness, rumination, and magnification. The total score was used in this analysis.

The duration of the study was from February 2022 to August 2023.

Statistical Analysis: baseline analysis of FFMQ, IBS-SSS, IBS-QOL, and VSI observe, describe, act-aware, non-judge, non-react, HAD depression, and anxiety. PCS versus IBS patients were compared with the IBS patients after three months by t-test. The statistical analysis was carried out in SPSS software. The ratio of males and females was 2:1.

RESULTS

Table 1: Five Facet Mindfulness Questionnaires Included, Observe, describe, and act aware. Non-

judge Non-react, description and examples in irritable bowel syndrome (Baer et al).

Table 2: Comparison of values in pre and post-treatment variables in IRBS patients

- IBSSS: 273.58 (± 55.5) at baseline, 123.75 (± 20.4) after three months; t test was 41.3 and $p < 0.001$.
- IBS-QOL: 53.05 (± 9.3) at baseline, 75.18 (± 10.22) after 3 months treatment, t test was 11.5 and $p < 0.001$.
- VSI: 43.26 (± 9.3) at baseline, 20.16 (± 4.28) after three months; t test 15.9 and $p < 0.001$.
- FEMQ observe: 21.96 (± 3.26) in baseline study, 24.18 (± 5.32) after three months of treatment, t test was 2.51 and $p < 0.001$.
- FEMQ describe: 25.04 (± 3.18) at baseline study, 28.24 (± 4.20) after 3rd months of treatment, t test 4.29 and $p < 0.001$.
- FEMQ Act ware: 24.16 (± 4.16) at baseline study, 28.28 (± 4.25) after 3rd month of treatment, t test was 4.89 and $p < 0.001$.
- FEMQ Non-Judge: 26.11 (± 5.16) baseline study, 30.28 (± 4.8) after 3rd months, t test was 4.18 and $p < 0.001$.
- FEMQ Non-react: 20.94 (± 4.28) baseline study, 18.34 (± 5.73) after 3rd month treatment, t test 2.56 and $p > 0.001$.
- HAD depression: 4.26 (± 1.18) at baseline, 3.16 (± 1.26) after 3rd month of treatment, t test was 4.5 and $p < 0.001$.
- HAD anxiety: 7.36 (± 2.30) baseline studies, 4.16 (± 2.04) after 3rd month of treatment, t test was 7.3 $p < 0.001$.
- PCS: 16.16 (± 4.04) baseline study, 8.28 (± 3.05) after 3rd month of treatment, t test 11.0 and $p < 0.001$.
- PHQ-12 – 6.06 (± 2.05) baseline study, 3.58 (± 1.06) after 3rd months, t test was 7.5 and $p < 0.001$.

Table 1: Five Facet Mindfulness Questionnaires (from Baer. etal)

| FFMW scale | Abbreviation | Description | Example Item |
|------------------------------------|--------------|--|--|
| Observing | Observe | Noticing or attending to internal or external experience (E.g. sounds, Emotions though bodily sensation) | I notice the smells and aroma of things |
| Describing | Describe | Labelling internal experiences with words | I am good at finding words to describe my feeling |
| Acting with Awareness | Act ware | Attending to ones activities of the moment (in contrast to auto pilot) | I find myself doing things without paying attention (R) |
| Non Judging of inner experience | Non Judge | Accepting one's thought and Emotions without Evaluation (E.g. Good or bad) | I think same of my emotions are bad or in appropriate and I should not feel them (R) |
| Non-reactivity to inner experience | Non React | Detaching from one's thoughts and emotion; allowing them to come and go without becoming overly identified with them | I perceive my feelings and emotions without having to react to them |

Table 2: Comparison of values of pre and post treatment variables is IRBS patients

| Variables | Baseline | Treated for three months | (No. of patients: 50) | |
|---------------|-----------------------|--------------------------|-----------------------|-------------|
| | | | t test | p value |
| IBS-SSS | 273.58 (± 55.5) | 123.75 (± 20.4) | 41.3 | $P < 0.001$ |
| IBS-QOL | 53.05 (± 9.8) | 75.18 (± 10.22) | 11.05 | $P < 0.001$ |
| VSI | 43.26 (± 9.3) | 20.16 (± 4.28) | 15.9 | $P < 0.001$ |
| FEMQ observe | 21.96 (± 3.26) | 24.18 (± 5.32) | 2.51 | $P < 0.001$ |
| FEMQ Describe | 25.04 (± 3.18) | 28.24 (± 4.20) | 4.29 | $P < 0.001$ |

| | | | | |
|----------------|----------------------|----------------------|------|---------|
| FEMQ Act ware | 24.16 (± 4.16) | 28.28 (± 4.25) | 4.89 | P<0.001 |
| FEMQ Non-judge | 26.11 (± 5.16) | 30.28 (± 4.8) | 4.18 | P<0.001 |
| FEMQ Non-react | 20.94 (± 4.28) | 18.34 (± 5.75) | 2.56 | p>0.001 |
| Had Depression | 4.26 (± 1.18) | 3.16 (± 1.26) | 4.5 | P<0.001 |
| HAD Anxiety | 7.36 (± 2.30) | 4.16 (± 2.04) | 7.3 | P<0.001 |
| PCS | 16.06 (± 2.05) | 8.28 (± 3.05) | 11.0 | P<0.001 |
| PHQ-12 | 6.06 (± 2.05) | 3.58 (± 1.06) | 7.5 | P<0.001 |

Abbreviation: FEMQ – Five Emotional Mindfulness Questionnaires

HAD – Hospital Anxiety and depression scale, IBS-SSS – IBS severity scoring system

PCS – pain catastrophizing scale, PHQ-12 – Personal Health questionnaires

VSI – Visceral sensitivity Index

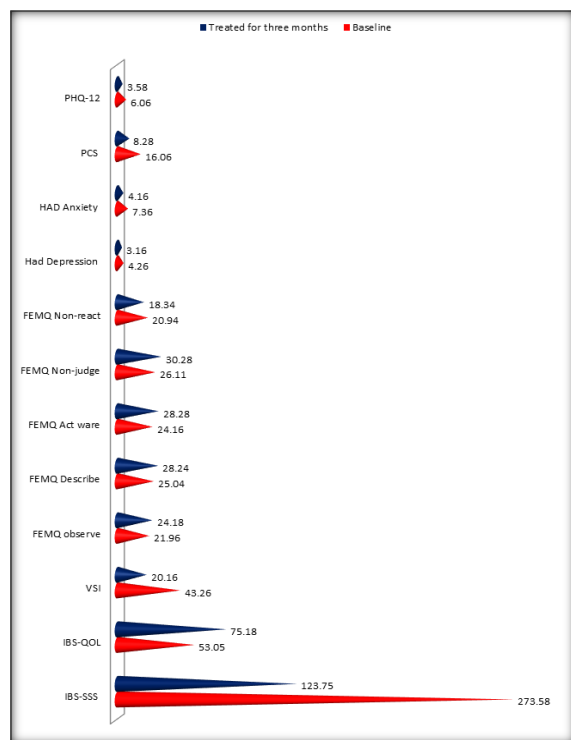


Figure 1: Comparison of values of pre and post treatment variables in IRBS patients

DISCUSSION

Present MBSR study in the Kerala population. FFMQ (Five-Facet Mindfulness Questionnaire) of different scales, including observation and describing action with awareness Non-judging of inner experience and non-reactivity to inner experience protocols were applied in the counselling study for three months (Table 1). In a comparative study of the values of pre- and post-treatment variables in IRBS patients, IBS-SSS, IBS-QOL, VSI, FEMQ observe, FEMQ describe, FEMQ non-judge, FEMQ non-react, HAD depression, HAD anxiety, PCS, and PHQ-12 had significant p-values ($p < 0.001$) (Table 2). These findings are more or less in agreement with previous studies.^[6,7,8]

Patients with IBS syndrome have greater activation of brain areas associated with negative emotions, memory retrieval, and attention to sensory stimuli compared to healthy individuals. Quality of life in IBS patients is a multi-complex index, including social relations, job satisfaction, education, sexual activity, and mental conditions. These patients have

limited social relationships and suffer from different symptoms of depression, and many have concerns about the nature of their disease.^[9] Treatment through emotion regulation can be beneficial for improving the quality of life and reducing other variables in patients with IBS because of its simultaneous emphasis on emotional insight and clear behavioral guidelines. Establishing psychological distance from aversive emotions may be a part of the reappraisal process, but mindfulness differs from such processes in that it treats the labeling or monitoring of the experience as an end in itself rather than a means by which to control the emotion.^[10] The treatment of MBSR includes a focus on all emotions instead of suppressing them or avoiding emotional events. It is reported that, in the comparison of MBSR and emotion regulation in reducing experimental avoidance, MBSR is related to understanding and accepting problems and emotion regulation.^[11] MBSR is linked to increased metacognitive awareness. The capability to experience thoughts and emotions through a focused approach in which thoughts and emotions are experienced as mental events and not as an exact reflection of reality. As a result, increased counseling on attention and metacognitive awareness leads to changes in tactics employed against internal negative experiences through increased acceptance of thoughts, emotions, and facts of reality.

CONCLUSION

In the present study, the counseling of IBS patients with MBSR showed significant improvement. Degrees of improvement are solely dependent on emotional control, acceptance of thoughts and reality, and patience. It will modify the behavior, and GIT-related neurological factors will gradually return to normal, and there will be remarkable improvement in IBS. The present study demands further genetic, neurological, nutritional, and environmental studies because the exact pathophysiology of IBS is still unclear.

Limitation of study: Owing to the remote location of the research centre, the small number of patients, and the lack of the latest techniques, we have limited findings and results.

➤ The present study was approved by the Ethical Committee of the Faculty of Medical Sciences at

Upasana hospital, QS Road, Kadapakkada, Kollam, Kerala-691001.

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