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Case Report

Effect of integrated yoga and naturopathy intervention on psychological states and quality of life in a patient with irritable bowel syndrome: a single case report

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ABSTRACT

Irritable bowel syndrome (IBS) is a chronic disorder of gut-brain interaction characterized by abdominal pain, altered bowel habits, and significant psychological distress, which adversely affect quality of life. The present case report describes the effect of an integrated Yoga and Naturopathy (Y and N) intervention on psychological well-being and quality of life in a patient with IBS associated with autoimmune comorbidities. A 57-year-old male with a 25-year history of IBS and a 40-year history of vitiligo presented with epigastric pain, altered bowel habits, anxiety, depression, and reduced quality of life. He had a strong family history suggestive of autoimmune predisposition and was receiving pharmacological treatment for multiple conditions. The patient underwent a 10-day residential Y and N program comprising yoga practices, pranayama, deep relaxation techniques, hydrotherapy, mud therapy, acupuncture, massage therapy, reflexology, cleansing procedures, and a plant-based naturopathic diet. Psychological well-being and quality of life were assessed using the generalized anxiety disorder-7 (GAD-7), patient health questionnaire-9 (PHQ-9), and IBS quality of life (IBS-QOL) scales before and after the intervention. Following the intervention, anxiety scores decreased from 18 to 10, depression scores reduced from 14 to 4, and IBS-QOL scores improved from 57.3 to 69.9. The patient also demonstrated reductions in body weight and body mass index and reported discontinuing long-term symptomatic medications, with a subjective improvement in overall well-being. This case suggests that integrated Y and N interventions may improve psychological health and quality of life in patients with IBS and associated autoimmune conditions. Further large-scale studies are warranted to validate these findings.

Keywords: Irritable bowel syndrome, Yoga therapy, Naturopathy, Quality of life, Anxiety, Depression, Integrative medicine, Case report

INTRODUCTION

Irritable bowel syndrome (IBS), a chronic bowel disease characterized by frequent changes in bowel habits and abdominal pain associated with defecation resulting in modifications in the microbiome, immunological system, intestinal permeability, gastrointestinal (GI) motility, and visceral sensitivity.[1,2] Abdominal discomfort, bloating, urgency, a sense of incomplete evacuation and changed bowel habits without any biological/biochemical abnormalities are some of GI symptoms associated with IBS.[3] Global prevalence of IBS account for about 17.14%.[4]

Y and N are an exclusive form of primary healthcare treatment that emphasizes illness prevention, recognizes the body's innate capacity for healing, and encourages individual accountability for reaching optimal health.[5] Previous studies on yoga have shown to improve the psychological well-being of patients suffering from IBS.[6] However, the combined effect of Y and N on psychological well-being of patients suffering from IBS along with other autoimmune comorbidities remains unexplored. Hence, this study aims to evaluate the effect of integrated Y and N on psychological well-being and quality of life in patient with IBS associated with autoimmune comorbidities.

CASE REPORT

A 57-year-old male entrepreneur in the textile industry presented to the Vivekanandha Nature Cure Hospital on 10th March 2026, with a complex clinical profile spanning four decades. He came with complaints of epigastric pain immediately after food for the past 30 years, previously diagnosed as IBS through Rome IV criteria, and also has vitiligo for the past 40 years. His familial history includes consanguineous marriage of his parents, indicating a strong genetic predisposition toward autoimmune dysfunction. All the siblings have dermatological disorders, including his brother diagnosed with psoriasis and his sister suffering from dryness of skin.

The patient was a former smoker and quit smoking in 2016. He consumed alcohol occasionally and stopped drinking in 2024. His past surgical history included appendectomy (2001), inguinal hernia repair (2011), haemorrhoidectomy (2011), and cholecystectomy (2016). During this period, the patient was under stress and depression. He is under pharmacotherapy for his multiple conditions. It includes Rabeprazole for burning sensation at morning before food, Eldoper for diarrhea at night after food, hydroxyzinchydrochloride for allergy at night after food, Mirtazapine for depression at night after food, Mistovate inhaler for cough) after getting admission, he underwent Y and N treatment for a period of 10 days. Important timelines discussed in Table 1 below.

Table 1: Important history and timelines of the patient.

Years	History
1968	Parents had consanguineous marriage
1982	Brother had psoriasis
1986	Patient had vitiligo
1995	Patient had IBS
2016	Patient had multiple joint pain
10.03.2026	Patient visited our OPD
12.03.2026	Patient admitted in our IPD
13.03.2026	Pre-test data collected
14.03.2026-23.03.2026	Integrated Y and N interventions were given to the patient
23.03.2026	Post-test data collected

Diagnostic assessment

On general physical examination patient was conscious and well-oriented. Upon inspection patient had generalised depigmentation all over the body. His gait was tandem. The systemic examination shows normal except for tenderness found over the epigastric region. No mass or lumps found. There was no enlargement found over the head and neck. No signs of pallor, cyanosis, clubbing, lymphadenopathy, and icterus found.

Therapeutic intervention

The patient received Y and N treatments for 10 days. Details of the treatments are listed in Tables 2 and 3.

Table 2: Detailed Y and N intervention.

Interventions	Duration	N
Pawanmuktasan series-I	20 minutes	Daily
Asanas		
Tadasana Virkshasana Katichakrasana Chakkichalanasana Gatyatmakmeruvakrasana Naukachalanasana Vakrasana Uttanpadasana Pawanamuktasana without headlift Sethubadasana Gomukasana Shavaudharakarshanasana Ardha katichakrasana Suptaudharakarshanasana Ardha uttanpadasana	35 minutes	Daily

Continued.

Intervention	Duration	N
Pranayama		
Sheetkari Nadishodana Bhramari Chandra nadi	10 minutes	daily
Deep relaxation technique		
DRT	45 minutes	daily
Kriyas		
Enema Jalaneti Netraneti	30 minutes	Once in 3 days
Mud therapy Mud pack to eyes Mud pack to abdomen	25 minutes	Daily
Acupuncture		
Ren-12, Sp-9, St-36, Lu-5, St-25	20 minutes	1st day to 7th day
Hydrotherapy		
Ice massage to abdomen	15 minutes	1st day
Hot arm and foot bath	15 minutes	Daily
Cold hipbath	20 minutes	5 days (Alternate days)
Cold spinal compress	20 minutes	5 days (Alternate days)
Cold spinal jet spray	15 minutes	5th and 8th day 4th and 7th day
Massage therapy		
Legs	20 minutes	5th and 7th day
Back	15 minutes	1st, 2nd, 5th and 7th day
Neck and shoulder	15 minutes	2nd and 8th day
Full body massage	60 minutes	9th day
Reflexology		
To palms and soles	15 minutes	Daily

Table 3: A comprehensive dietary intervention during a 10-day residential YN program.

Time	Diet	Quantity
6:00 AM	Detox drink (ajwain/lemon/fenugreek/anise)	100 ml
8:00 AM	Juice (ash gourd/cucumber/curry leaves/beetroot)	200 ml
9:00 AM	Breakfast (Green pea idly/red rice puttu/little millet porridge/chick pea dosa) Chutney (mint/coconut/horse gram) Sprouts (green gram/peanut)	250 g 50 g
12:30 PM	Rice (Black channa rice/brown rice/little millet rice/ varagu rice) Curry (Ash gourd/ivy gourd/moringa) Buttermilk (Amla/plantain pith)	300 g 100 ml
2:30 PM	Juice (lemon honey/orange/pomegranate/ mushmelon)	150 ml
4:45 PM	Herbal tea	50 ml
7:00 PM	Dinner (red rice porridge/kodo millet porridge/coriander Pongal/pearl millet idly) Chutney (onion/peanut/beetroot) Soup (greengram/pumpkin/horsegram/beetroot/ivy gourd)	200 g 100 ml
9:00 PM	Detox drink (cinnamon/clove/jeera/coriander seed)	100 ml

Outcome assessments

GAD-7

Based on the diagnostic and statistical manual of mental disorders, fourth edition (DSM-IV), the GAD-7 is a seven-item self-report Likert scale designed to evaluate the severity of anxiety disorders. The evidence of anxiety symptomatology for the last two weeks was measured by this self-report. A 4-point Likert-type scale is used to rate each item (0=not at all; 1=several days; 2=more than half the day; 3=almost every day). The overall symptom severity score, which ranges from 0 to 21, is calculated by adding the ratings for each item.[7]

IBS-QOL

The IBS-QOL measure is a tool that has been created and validated to assess the impairment of QoL in IBS. A 5-point Likert scale (1=not at all, 2=mildly, 3=moderately, 4=quite a little, 5=extremely or a great deal). Individual responses to the 34 items are added and averaged to provide a total score, which is then converted to a 0-100 scale for ease of understanding, with higher scores indicating greater IBS-specific quality of life. The IBS-QOL has eight subscale scores: dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual, and relationships.[8]

PHQ-9

The PHQ-9 was used to assess individuals' levels of depression using the DSM-IV criteria. The answers to the nine questions were rated from 0 to 3. The overall score was between 0 and 27. Depression was categorized as none (0-4 points), mild (5-9 points), moderate (10-14 points), pretty severe (15-19 points), and severe (20 points).[9]

The results show a reduction in GAD-7, IBS-QOL, and PHQ-9, indicating reduced anxiety levels, improved quality of life, and reduction in depressive states, respectively. There was also a reduction in weight and BMI. The results are listed in Table 4.

Table 4: Follow-up and outcome measures.

Variables	Pre-data	Post data
Height	163 cm	163 cm
Weight	67.5 kg	63 kg
BMI	25.4 kg/m^2	23.7 kg/m^2
GAD-7	18	10
IBS-QOL	53.7	69.9
PHQ-9	14	4

The participant demonstrated improvements across all measured outcomes following 10 days of the intervention. Body weight decreased from 67.5 kg to 63.0 kg, representing a reduction of 4.5 kg. Correspondingly, BMI decreased from 25.4 kg/m² to 23.7 kg/m², indicating an improvement in weight status.

Psychological outcomes also showed marked improvement. The GAD-7 score decreased from 18 to 10, reflecting a reduction in anxiety severity. Similarly, the PHQ-9 score decreased from 14 to 4, indicating a substantial reduction in depressive symptoms. Quality of life related to IBS improved considerably, with the IBS-QOL score increasing from 53.7 to 69.9, representing an improvement of 16.2 points. This increase suggests enhanced overall well-being and reduced impact of IBS symptoms on daily functioning.

Overall, the findings indicate that the intervention was associated with favourable changes in physical health, psychological status, and IBS-specific quality of life.

DISCUSSION

The objective of the study was to find the impact of Y and N in a patient with IBS associated with depression and anxiety. Results showed improvement in quality of life and reduction in anxiety and depressive levels after 10 days of Y and N interventions. This indicates that Y and N treatments are effective in improving quality of life in patients with IBS associated with depression and anxiety. The results mightt be attributed to interventions (yoga therapy, hydrotherapy, mud therapy, acupuncture, and plant-based naturopathic diet) provided to the patient. A randomized controlled trial on IBS patients treated with yoga has shown to reduce sympathetic tone and regulate the hypothalamic-pituitary-adrenal (HPA) axis, which is associated with disturbances in gut motility.[10] Literature suggests that meditation is fundamentally a physiological condition of reduced metabolic activity, different from sleep, which elicits physical and mental relaxation and is reported to improve psychological balance and emotional stability.[11] Mud packs over the abdomen have been shown to improve parasympathetic activity, which would be impaired in IBS.[12,13]

A previous study shows acupuncture may modulate central pain processing in IBS through two mechanisms: 5-HT (Hydroxytryptophan) pathway modulation at the insula and ascending route modulation of mood and affect in the higher cortical center at the pulvinar and medial nucleus of the thalamus.[14] Ice massage over the abdomen has been shown to produce parasympathetic dominance by inducing the baroreflex mechanism through attenuating the sympathetic nervous system.[15] Hot arm and foot baths, which act as passive heat stress, excite the reflex zones of palms and soles, contributing to the regulation of the autonomic nervous system (ANS).[16] Cold treatments lead to peripheral vasoconstriction, causing blood volume to shift towards the core, raising central pressure. This in turn triggers the baroreflex, which lowers sympathetic nerve activity and shifts autonomic heart rate control toward parasympathetic dominance.[17]

Literature shows that massage techniques like Swedish massage and foot reflexology can improve joint function, reduce pain, and control cortisol and inflammatory markers (including TNF-α and IL-6) to promote lymphatic drainage and neuroendocrine balance.

Additionally, massage therapy may enhance psychological well-being and assist in the management of comorbid conditions.[18] Plant-based diets are high in fiber, polyphenols, and other bioactive chemicals that selectively boost probiotic gut bacteria, such as short-chain fatty acid (SCFA) producers. SCFAs are essential for preserving the integrity of the gut barrier, regulating immunological responses, and promoting metabolic health.

As a result, the distinct gut microbiota profiles associated with vegetarian eating habits support better metabolic outcomes and anti-inflammatory benefits.[19]

The outcomes observed in this case report align with previous research reporting beneficial effects of integrative Y and N interventions on psychological parameters and health-related outcomes. The reductions in anxiety (GAD-7), depression (PHQ-9), body weight, and BMI observed in the present case are comparable to findings from earlier studies, thereby reinforcing existing evidence regarding the effectiveness of such interventions in improving both physical and psychological health among individuals with GI and stress-related symptoms. Therefore, in patients with IBS and depression, the comprehensive YN treatments help to improve quality of life and reduce stress, depression, anxiety, disease progression, and related health conditions.

Strength

This is the first-ever case report on the management of IBS through Y and N intervention which targets on psychological well-being and quality of life. The patient does not report any side effects.

Limitations

Major improvements in inflammatory markers were not assessed, and since this is only one instance, the reproducibility and validity of the findings might vary. Therefore, further thoughtful clinical observational studies employing advanced markers are encouraged in light of this promising single study. To validate our findings, larger sample size studies are required.

CONCLUSION

Thus, integrated YN interventions are effective in improving quality of life and reduce stress, depression, anxiety, disease progression, and related health condition in IBS patient.

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