

Original Research

Effect of Yoga in the Management of Irritable Bowel Syndrome in Obese Individuals

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ABSTRACT:

Objective: Irritable bowel syndrome is the most frequently encountered condition the present study focuses on management of IBS in obese subject. **Method:** we have performed randomized controlled trial in 66 subject, and 33 subjects were assigned to yoga intervention group and the remaining 33 subjects were assigned to control group and were advised to follow their normal daily routine work. **Result:** In the present study it was reported that there was significant correlation between obesity and IBS and with intervention of yoga there was significant reduction in weight (total lipid profile P value 0.05, and there was improvement in the BMI. The study also showed significant relation ($p < 0.05$) between yoga intervention and improvement in the condition of IBS. **Conclusion:** Based upon our study it is observed that yoga intervention and breathing exercise can be an important tool for the management of IBS and obesity, but further studies is required to look for other causes and symptoms of IBS and its control by other various methods.

Keywords: Irritable Bowel Syndrome, obese, yoga.

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INTRODUCTION:

Irritable bowel syndrome is a condition having the following symptoms: abdominal pain, usually associated with GI dysfunction, bloating, and changes in stool appearance. Most of these conditions have no clear explanation. It is the most frequently encountered gastrointestinal (GI) abnormality. Worldwide prevalence alters from 9% to 23%, it causes for up to 12% of total visits to primary care providers, and 70% it is widely spread disorder diagnosed by gastroenterologists (1,2)

It is highly prevalent globally and varies from 5–10% in Asia to 9–22% in the European countries. Several factors, including environmental factors, contribute to

IBS etiology (3) Although the etiology of IBS is unclear. It has been proposed in many studies that manifestations of IBS are associated with dietary habits and can be commonly seen in obese individuals with abnormal satiety signaling (4).

IBS causes significant morbidity, with IBS-related symptoms accounting for 3.6 million annual physician visits, impaired quality of life, and decreased work productivity.5-7 (5). various studies have been kept forward to establish the origin of IBS, such as visceral hypersensitivity and psychological factors and autonomic nervous system dysfunction seems to be involved in the pathophysiology of IBS (6).

Yoga comprises of body postures, breathing exercises,

and meditation. The goal of practicing yoga asanas focuses on strengthening of muscle tissues and nervous system, while reaching a balance of body and mind.

It is hypothesized that practicing yoga corrects underactivity of the parasympathetic nervous system induced by stress¹⁷ and it has been proven to be effective in the reduction of stress and psychological disorders in different patient populations. The above-mentioned conditions have a crucial role in the occurrence and prevalence of IBS. It may be therefore considered that yoga may play appreciable role in management of IBS manifestations. The role of this study is to establish the role of obesity in the onset of IBS and management of IBS by intervention of yoga.

Previous work has shown minimal activity/exercise is associated with improvement of IBS symptoms. The primary care to control IBS includes dietary regulation (classically with the slow introduction of increased fiber or a fiber supplement), reassurance, and stress reduction. However, many patients fail this approach and require medical therapy, although most drugs prescribed target individual symptoms rather than altering the natural history of the disorder.

The increased occurrence of IBS in obese individuals could be explained by several factors, such as sedentary lifestyle, dietary pattern, alteration of the levels of anorexigenic hormones, psychological disorders, changes of gut microbiota, and chronic inflammation. (7)

MATERIAL AND METHODS:

According to the Power/Sample Size calculations 130 patients were originally screened for study eligibility, 15 was excluded based on the eligibility criteria. An additional 49 rejected in participation and failed to fill the consent form due to lack of interest and time. 66 patients willing to participate and randomized to either yoga or waitlist control group (33 in study group and another 33 in control group total n = 66) the mean age of study participants was 36.5 ±8.0

The participants were included by using a validated self-administered modified Rome III questionnaire, different gastrointestinal disorders including symptoms related to IBS were assessed (6)

In the current study, on the basis of the Rome III diagnostic criteria for functional gastrointestinal

disorders, we defined IBS as having recurrent abdominal pain or discomfort at least “sometime” in the last 3 months associated with two or more of these criteria: improvement with defecation at least “sometimes” and onset associated with change in frequency or form (appearance) of stool at least “sometimes”

INTERVENTION:

A set of yoga program including Halasana, Setubandha Sravangasana, Viparita Karani, Supta Baddhakonasana; and Supta Pada Ghustasana, dhanurasana, suryanamaskara, trikonasana, pawanmukthasana, bhujangasana and savasana for muscle relaxation at the end of each session . The yoga poses will be done with the aid of props (blocks, bolsters, chairs, straps, and blankets) to reduce tension and strain, promote circulation, and reduce apprehension of pain. The practice will help bring awareness to habitual patterns of holding tension, as well as increase range of motion and strength. The intervention will be conducted by an experienced yoga trainer. The proposed yoga programme will be intervened weekly twice for 1.5 hours duration per session for 12 weeks. For the control group usual care given and medication allowed as needed.

RESULTS:

General characteristics of study participants in comparison of yoga and control group are described in table 1. The group mean values ±S.D. for the different lipid profile variables is given in table 2

The yoga group alone showed a significant increase. There was a significant reduction in total cholesterol (p<0.05) with 95% CI of [38.931, 0.982] for the yoga group; . Triglycerides levels were decreased significantly in the yoga group compared with control group (p<0.05) with 95% CI of [111.328, 8.672], while LDL cholesterol was reduced significantly in the yoga group compared with control group (p<0.05) with 95% CI of [30.267, 0.081]. in the present study we have also noted that there was significant correlation between yoga intervention and improvement in Abdominal pain NRS (4.42±0.62). The outcome result regarding FDI, FACIT and PSGI sleep quality was also promising.

Table 1:

	Study group outcomes	control group outcomes	p-value
Age (y)	38.76 ±8.32	36. ±7.78	0.02
Weight (Kg)	75.9 ±10.78	65.8 ±12.5	0.01
BMI kg/m ²	26.7 ±4.55	24.9±3.99	0.30
Abdominal pain NRS	4.42±0.62	5.19±0.18	0.15
FDI	17.52±0.83	15.21±1.62	0.79
PSGI sleep	1.34±0.06	1.54±0.05	0.50
Quality Facit: fatigue	26.95 ±2.44	25.15±0.54	0.15

Table 2:

mg/dl	Preintervention Yoga	Post intervention yoga	Cohens d	Control group Base values	Control group After 12 weeks	Cohens d
Total cholesterol	164.00±22.72	150.04±31.25	0.71	170.74±48.37	161.17±28.37	0.51
Triglycerides	163.35±56.33	135.09±42.43	0.60	157.26±145.19	167.26±44.17	0.64
LDL cholesterol	101.78±22.66	86.61±24.02	0.66	117.83±33.77	113.61±22.82	0.54
HDL cholesterol	45.13±11.12	33.09±6.89	0.17	42.52±11.37	43.09±8.36	0.08
VLDL	38.50±11.34	22.05±8.69	0.61	32.04±13.29	35.64±9.00	0.61

FDI = Functional Disability Inventory; NRS = Numeric Rating Scale; PSQI = Pittsburgh Sleep Quality Index.

FACIT = Functional Assessment of Chronic Illness Therapy

DISCUSSION:

IBS is the widest spread condition associated with abdominal discomfort and disturbances in defecation. According to previous studies it is established that occurrence of IBS is more commonly seen in women as compared to men (8). It has also been reported in various studies that physical activity plays important role in the management of IBS it was reported (9) that subject performing minimal workout were 3.6 times less suffered from IBS than those with the physically inactive subjects. In the current study also, it was observed that various form of yoga and breathing exercise played appreciable role in the management of yoga. The exact mechanism behind association between yoga and IBS is unclear it may be explained by the change of gas transit and colonic transit due to increase physical activity (10). In earlier studies it was observed that yoga has significant potential in the management of IBS (11,12). In earlier studies it was also reported that yoga corrects under activity of parasympathetic nervous system induced by stress (13). And yoga has been proven to be effective in the reduction of stress and psychological disorders in various patients (14), these factors play crucial role in the occurrence and prevalence of IBS. According to Octavia et.al prevalence of IBS in obese adults varies from 11.6 % to 24 % depending upon the study population According to Gabriella Pugliese and its colleague's obesity was positively correlated with IBS. Various studies have proved a positive correlation between yoga and its effect in the management of obesity, improvement of quality of life and reduction in lipid profile tells s et.al (15). So, the present study also shows promising findings that yoga intervention was significant in weight reduction and reduction in the symptoms of IBS.

CONCLUSION:

Based upon our study it is observed that yoga intervention and breathing exercise can be an important tool for the management of IBS and obesity, but further studies is required to look for other causes and

symptoms of IBS and its control by other various methods, further studies is required to check whether yoga can be suggested for prolonged period and with longer duration in obese with IBS, for complete wellbeing of the patient.

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