

Integrated Naturopathy and Yoga Management (INYM) of Obesity: A Single Case Study

Dr.Sushmitha CT¹ & Dr.P.Sudhakar Reddy²

1. Assistant Professor, Dept.of PG Studies in Swasthavritta &Yoga
JSS Ayurveda Medical College, Mysuru
2. Professor & Head, Dept.of PG Studies in Swasthavritta &Yoga
JSS Ayurveda Medical College, Mysuru

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ABSTRACT

Introduction: Obesity is a global health concern, necessitating effective and holistic intervention strategies. This single case study explores the successful treatment of a 38-year-old woman with obesity using the INYM (Integrated Naturopathy and Yoga Management) protocol.

Methods: A 38-year-old female patient with complaints of obesity approached the OPD of Yoga and Naturopathy. The participant completed a 10-week INYM (Integrated Naturopathy and Yoga Management) protocol. This comprehensive intervention involved dietary monitoring, fasting therapy, hydrotherapy treatments, yoga routines, and strategic lifestyle changes aimed at achieving weight loss and promoting a healthier lifestyle. The assessment included an evaluation of anthropometric measurements, lipid profile, fasting and postprandial blood glucose levels, and knee joint pain.

Results: The results showed weight reduction (92 kg to 70.9 kg), Body Mass Index (BMI) (32.9 kg/m² to 25.4 kg/m²), total cholesterol (192 mg% to 149 mg%), triglycerides (143 mg% to 62 mg%), Low-Density Lipoprotein (LDL) (124 mg% to 107 mg%), High-Density Lipoprotein (HDL) (37 mg% to 52 mg%), fasting blood glucose (112 mg/dL to 84 mg/dL), and postprandial glucose (267 mg/dL to 131 mg/dL). Following the intervention, the anti-hypertensive, oral hypoglycemic, thyroid-raising, and analgesic medicines were not required to be continued. Her knee pain was minimized on discharge as observed on a Visual Analog Scale. She had an improved feeling of wellness and overall functional health. All her parameters were within the normal range at the 10-week follow-up, as she had incorporated the lifestyle program into her daily routine.

Conclusion: The 10-week INYM Protocol intervention had moderately strong positive effects on anthropometric and self-reported variables in women with obesity. Yoga is safe in this population and can be recommended as a technique for combating obesity in individuals.

Keywords: Obesity, Yoga Therapy, Naturopathy, INYM, Integrative medicine.

INTRODUCTION

Obesity is increasing globally, especially in developing and newly industrialized countries. The current prevalence is higher in women (15%) compared to men (11%), representing a 1.4 times higher risk for women. [1] Belly fat, known as abdominal

obesity, is a concerning build-up of fat around the stomach. It's not just an issue for overweight individuals. This type of fat has been recognized as a significant risk factor for heart and metabolic problems. [2], [3] Abdominal obesity poses a substantial risk for major diseases, elevating stress levels. Insufficient

physical activity, disrupted eating patterns, and unhealthy lifestyle choices contribute to obesity. Recognizing that a sedentary lifestyle is a primary contributor to obesity, medical guidelines emphasize the importance of regular physical activity for managing nonmorbid obesity. [4] The World Health Organization (WHO) has proposed that individuals with a BMI of 18.5–24.9 kg/m² are considered to have a normal BMI, those with a BMI of 25.0–29.9 kg/m² fall under the category of overweight and are at increased risk of disease, and individuals with a BMI of 30.0–34.9 kg/m² and 35.0 - 39.9 kg/m² or higher are classified as grade 1 and grade 2, respectively, indicating high and very high risk. Those with a BMI of ≥ 40 are categorized as morbidly obese(Grade 3), with an extremely high risk of disease. [5]

Table 1: Baseline variables

| Variables | Day 1 |
|-----------------------|------------------------|
| Height | 167 cms |
| Weight | 92 kgs |
| BMI | 32.9 kg/m ² |
| VAS for b/l Knee pain | 06 |
| Total cholesterol | 192 mg/dl |
| Triglycerides | 143 mg/dl |
| LDL | 124 mg/dl |
| HDL | 37 mg /dl |
| FBS | 112 mg/dl |
| PPBS | 267 mg/dl |
| HbA1C | 6.2 % |

and manifesting in the physical body (Vyadhi) through vital energy pathways. Research has shown that yogic practices can improve insulin sensitivity in individuals with diabetes and contribute to weight reduction in those with obesity. This case highlights the potential benefits of integrating yoga and naturopathy into Obesity management. [6] For many obese individuals who don't follow traditional exercise recommendations, trying alternative treatments like naturopathy and Yoga can be a helpful way to lose weight.

Patient information

A 38-year-old female patient with a sedentary lifestyle approached Yoga and Naturopathy OPD on October 10, 2023, with gradually increased body weight for 4 years. She also complained of generalized weakness, fatigability, and bilateral knee pain for 4 years. She also had diabetes mellitus and dyslipidemia for 1 year.

Clinical findings

The patient's body weight was found to be 97.9 kg, height was 167 cm with a BMI of 35.1 kg/m². Her pulse rate was 78 beats/minute and her blood pressure was 120/70 mmHg. Before admission, she was taking oral hypoglycemic medication (combination of glimepiride and metformin BD, Voglibose 0.03 mg BD for 1 year) and tab. Aceclofenac, BD with a family history of being negative for obesity, diabetes, and arthritis. The baseline variables are mentioned in Table 1

Diagnostic focus and assessments:

Height was recorded on a stadiometer. Weight was recorded using an electronic research grade weighing scale. BMI was calculated and according to that patient was diagnosed with Morbid Obesity. Vitals were recorded. Visual Analog Scale (VAS) for knee pain was noted. The Blood glucose levels, and lipid profile, were checked at baseline and post-intervention in the same laboratory.

Timeline: The patient's status on admission, discharge, 5th-week, and 10th-

week follow-up are described in Table 2.

Table 2:

| | Variables | Data on admission (Baseline) | Data on discharge (2 weeks) | 5th week follow up | 10th week +2 days follow up |
|---------------------------|--|---|---|---|---|
| General parameters | Height (cms) Weight (Kg) BMI (kg/m ²) | 167 cms 92 kgs 32.9 kg/m ² | 167 cms 84 kgs 30.1 kg/m ² | 167 cms 79 kgs 28.3 kg/m ² | 167 cms 70.9 kgs 25.4 kg/m ² |
| Lipid profile | Total cholesterol (mg %) Serum triglycerides (mg %) HDL (mg %) LDL (mg %) | 192 mg/dl 143 mg/dl 37 mg/dl 124 mg/dl | - | - | 149 mg/dl 62 mg/dl 52 mg/dl 107mg/dl |
| Blood glucose | FBS (mg %) PPBS (mg %) | 112 mg/dl 267 mg/dl | - | - | 84 mg/dl 134 mg/dl |
| VAS for pain | VAS for b/l Knee pain | 6 | 3 | 1 | 1 |

Kg - Kilograms, kg/m² - Kilogram/meter², mg% - milligrams/100 ml of blood

Methods: The participant underwent a 10-week IYN program, which included dietary changes, fasting, hydrotherapy, and yoga routines. The intervention was designed to address both physical and mental aspects of well-being. The participant's progress was monitored through daily assessments of vital signs, blood parameters, and anthropometric measurements.

INYM Protocol: After a thorough evaluation, the INYM protocol, which included Naturopathic therapies like therapeutic fasting, raw diet therapy, and a

naturopathic-based low-calorie diet (LCD) has been practiced by Indian and Western naturopaths, was advised and followed. [7] Hydrotherapy, mud therapy, and manipulative therapies, focusing on detoxification was also planned. These therapies were adjusted based on the patient's daily response. Recognizing the mind-body connection in obesity, an integrated yoga program consisting of asanas, pranayama, meditation, relaxation techniques, and counseling sessions based on yoga principles was designed. Table 3 shows the INYM protocol and daily routine.

Table 3: The INYM protocol

In Yogic understanding, obesity is classified as Adhija Vyadhi (stress-borne illness), whereas

| Yoga therapy session (1 and half hour 6 days in a week for 10 weeks 2 days) | | Naturopathy treatments (4 days in a week for 10 weeks 2 days) |
|---|---------------|--|
| Loosening exercise, asana, pranayama, meditation and relaxation technique | Total-90 mins | Therapeutic fasting (4 days in a week) The subject underwent Juice Fasting using lime juice with honey, ash guard juice, bottle gourd juice, vegetable soup, buttermilk, and orange juice for a period of 4 consecutive days every week followed by Fruit diet, raw diet and bland boiled diet for next 3 days respectively and the cycle repeated. Sun bath(15 mins) Warm water enema (10 mins) on the days of Juice fasting. Full body oil massage(45 mins) with Mustard oil Steam bath (10 mins) Cold hip bath (20 mins). Mud bath (40 mins) Gastro hepatic pack |
| <u>Sukshma Vyama</u> (loosening exercises) From neck to toes including all the joints | 15 mins | |
| <u>Surya namaskara</u> 6 rounds with breathing | 10 mins | |
| <u>Asana</u> Tadasana- 2 Rounds Ardhakatichakrasana- 2rounds Veerabhadarasana 1 and 2 series-2 rounds each Trikonasana-1 round Ardhachakrasana followed by padahastasana- 2 rounds Pawanamuktasana- 3 rounds Setubandasana Utitapadasana- 2 rounds Bhujangasana- 2 rounds Shalabhasana- 2 rounds Dhanurasana- 2 rounds Makarasana Shashankasana- 1 Vakrasana-2 Chakkichalana asana Ushtrasana- 2 rounds Ardha matsyendrasana-2 rounds Janusirsasana -2 rounds Chakkichalanasana- 5 rounds each in clockwise and anticlockwise direction Shavasana | 30 mins | |
| <u>Pranayama</u> (each for 3 minutes) Nadishuddhi pranayama Surya anuloma viloma Surya bhedana Bhastrika Brahmari pranayam | 15 mins | |
| <u>Meditation</u> Guided meditation on breath awareness Omkaara chanting Nadanusandhana (A,U,M, AUM) | 10 mins | |
| <u>Relaxation</u> Deep relaxation technique | 10 mins | |

Naturopathy adapts an approach of unity of disease, wherein all diseases are the result of the accumulation of toxins in the system, as a result of following a non-natural lifestyle. She was put on a structured Naturopathy and Yoga therapy

session for 10 weeks and 2 days days. She was advised with therapeutic fasting, warm water enema, sunbath (20 mins), mud bath (30 mins), full body massage (45 mins), steam bath (10 mins), gastro-hepatic pack (20 mins), and cold Hip bath for 4 days a

week for 10 weeks continuously and 1 and ½ hour of Tailored Yoga program.

Follow-up

Following the 2-week inpatient protocol, the patient received instructions to adhere to a calorie-restricted vegetarian diet and prescribed yoga program upon discharge. Additionally, she was advised to incorporate weekly juice fasting into her routine. Subsequent follow-up visits were scheduled at our center at the 5th and 10th weeks post-discharge, during which all parameters were reassessed.

Outcomes

The results showed weight reduction (92 kg to 70.9 kg), Body Mass Index (BMI) (32.9 kg/m² to 25.4 kg/m²), total cholesterol (192 mg% to 149 mg%), triglycerides (143 mg% to 62 mg%), Low Density Lipoprotein (LDL) (124 mg% to 107 mg%), High Density Lipoprotein (HDL) (37 mg% to 52 mg%), fasting blood glucose (112 mg/dl to 84 mg/dl), postprandial glucose (267 mg/dl to 131 mg/dl). Following the intervention, the oral hypoglycemic and analgesic medicines were not required to be continued. Her knee pain was minimized on discharge as observed on a Visual Analog Scale. She had an improved feeling of wellness and overall functional health. The follow-up data suggests the sustained effect of the INYM protocol.

Discussion

The investigation into the effect of the INYM protocol on the treatment of obesity revealed potential alterations in certain laboratory and clinical parameters among participants with obesity, underscoring the necessity for further research on accessible treatment options due to the escalating morbidity and mortality associated with obesity. As per the meta-analysis done by Galani and Schneider, it was suggested that lifestyle changes are one of the most effective methods in reducing weight and the risks of cardiovascular diseases.

Weight loss usually leads to the improvement in the overall well-being of patients and their biomarkers such as systolic and diastolic blood pressure, blood sugar, insulin, total serum cholesterol, inflammatory biomarkers, and low-density lipoprotein (LDL) [8] The data suggest that 10 weeks of holistic treatment of Naturopathy and Yoga therapy is helpful to reduce abdominal obesity, BMI, reduce joint pain, and improve quality of life was reported after follow-up. There was a significant decrease in BMI. Incorporating yogic asana and Naturopathic therapies in the treatment protocol of patients with Obesity may prove beneficial in the long run. The yoga techniques and Naturopathy treatments incorporated as a treatment protocol enhance mindfulness, boost energy expenditure, maintain autonomic balance, induce profound relaxation for the body and mind to prevent exhaustion, and effectively manage stress, thereby facilitating adherence to a healthy lifestyle.[9],[10] Some other studies are showing the stress-relieving, relaxing effects of balneotherapy on people without obesity.[11],[12],[13] Based on the few available studies, recent meta-analyses showed that yoga was effective concerning anthropometric variables in overweight or obese persons as well as in patients with type 2 diabetes or other cardiovascular risk constellations.[14],[15]

The integrated approach of combining yoga and naturopathy showcased a synergistic effect on the Patient's health. By addressing both the physical and mental aspects of her well-being, the treatment plan provided a comprehensive and holistic solution. The integration of yoga and naturopathy leveraged the mind-body connection, emphasizing the importance of mental health in overall well-being. The integrated approach encourages long-term lifestyle changes, promoting sustainability in health improvements beyond the treatment period.

Conclusion: The case report highlights significant improvements in obesity status, enhancing the patient's quality of life after a 2-week INYM intervention. These positive changes remained sustainable for 10 weeks with straightforward lifestyle adjustments. Given the observed effects in this case, INYM could be considered a safe and beneficial intervention in the management of Obesity. The study calls for further research with larger sample sizes and diverse populations to validate and explore the broader applicability of this integrated approach in obesity management.

Recommendations:

The study recommends further research to validate the findings and explore the long-term sustainability of the integrated approach. Additionally, clinical studies involving diverse populations are needed to generalize the effectiveness of naturopathy and yoga in obesity management.

Informed consent

An informed written consent was obtained from the patient for reporting this case.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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