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Case Report

Yoga on Obesity

Impact of Yoga on Obesity - A Case Study

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Obesity, a global health concern, is largely driven by sedentary lifestyle and poor dietary habits, leading to conditions such as diabetes, hypertension, and depression. This case study examined the impact of an 8-week structured Yoga program on a 32-year-old male IT professional with a BMI of 38 kg/m². The intervention included daily sessions of asanas (e.g., Trikonasana and Paschimottanasana), Pranayama (Kapalbhati and Bhramari), and mindfulness. The subject experienced an 8 kg weight loss, improved BMI and waist-hip ratio, and enhanced mental well-being. Integrating modern medicine with Ayurvedic principles, this study highlights yoga's holistic benefits for physical and psychological health. It emphasizes yoga not only as a fitness tool, but also as a therapeutic approach to promote metabolic balance, stress relief, and lifestyle regulation. Further studies are required to confirm its effectiveness across various populations.

Keywords: Yoga, Obesity, Ayurveda, Lifestyle, BMI, Sthaulya

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Introduction

Obesity is a worldwide health issue impacting millions, and its prevalence has swiftly increased. Risen over recent decades. The WHO defines it as excessive fat accumulation posing health risks, with body mass index (BMI) as a key indicator. Approximately 12% of the global population is obese.

It stems mainly from sedentary lifestyles and poor diets, leading to complications, such as diabetes, hypertension, PCOS, and depression. Addressing obesity requires education and lifestyle modification.

This case report explores the effectiveness of *Yoga* as a complementary approach to obesity management through improved metabolism and mindfulness.

Case Report

A 32-year-old male IT employee visited our outpatient department with the chief complaint of progressive weight gain over the past five years. He reported a sedentary lifestyle and poor dietary habits during Covid.

He attempted various weight management strategies, including dietary management and gym feeding. However, no improvement was observed. His body mass index was 38 kg/m² and him as obese. The waist-to-hip ratio was 0.85. His vital signs were normal; however, no other systemic complications were observed.

Furthermore, the patient had no family history of diabetes or hypertension. He also attempted weight loss interventions, such as dietary changes and physical exercise, but showed no significant success. The patient had no history of diabetes, hypertension, or metabolic disorder.

Intervention details

The intervention consisted of an eight-week structured yoga therapy program designed to treat obesity. The patient was engaged in supervised yoga sessions six days a week, each lasting approximately 60 min.

The sessions featured a blend of physical poses (*Asanas*), techniques for controlling breath (*Pranayama*), and relaxation practices to enhance overall well-being.

Table 1: Name of the *Asana* with duration per session, frequency per day, and duration of intervention.

SN	Practice	Duration per session	Frequency per day	Duration of intervention
1.	Neck movement	10 times	2 times per day	8 weeks
2.	Shoulder rotation	10 times	2 times per day	8 weeks
3.	Upper arm stretch	10 times	2 times per day	8 weeks
4.	Knee squeeze	10 times	2 times per day	8 weeks
5.	Ankle rotation	5 times	2 times per day	8 weeks
6.	Twisting	3 times	2 times per day	8 weeks
7.	Trikonasana	5 times	2 times per day	8 weeks
8.	Paschimottanasana	3 times	2 times per day	8 weeks
9.	Pawanmuktasana	3 times	2 times per day	8 weeks
10.	Dhanurasana	5 times	2 times per day	8 weeks
11.	Kapalbhati	15 min	2 times per day	8 weeks
12.	Bhramari	15 min	2 times per day	8 weeks

Table 2: Parameters measured before and after intervention.

Parameters	Before intervention	After intervention
Weight	107 kg	99 kg
Height	174 cm	174 cm
BMI	35.34	32.7
Waist-hip ratio	0.85	0.83

Parameters

Body Mass Index (BMI) is the preferred index for estimating the degree of fatness or adiposity because of its simplicity of use and interpretation in epidemiological surveys. Anthropometric parameters, such as weight and height, were used to assess the BMI of the participants. The Body Mass Index (BMI) was determined by dividing weight in kilograms by the square of height in meters. Expressed as kg/m2. BMI was classified into four categories: underweight, normal weight, overweight, and obese. A lower BMI threshold (18.5 kg/m2) is universally used to define underweight. However, WHO uses the BMI cut-offs of 25-29.9 and 30 kg/m2 to classify overweight and obesity, whereas the upper two BMI cut-offs used to classify overweight, and obesity vary for the Asian population. Because Asians have increased cardiovascular and diabetes risks with a lower BMI, the proposed cut-offs for Asians are According to WHO (2000), a BMI of 23–24.99 kg/m² is considered overweight, while a BMI greater than 25 kg/m² is classified as obese. The waist-hip ratio (WHR) is an anthropometric measure that assesses body fat distribution in relation to bone structure.

In this case study, WHR was considered an additional parameter to evaluate changes in body composition over the 8-week *Yoga* therapy intervention. Unlike the widely used waist-hip ratio (WHR), which indicates central obesity, the wrist-hip ratio compares waist circumference, a reflection of bone structure, and frame size with hip circumference, which represents a lower body fat distribution. A lower WHR can indicate a healthier body composition, particularly in individuals with a smaller bone structure, as excess fat accumulation in the hips may be better proportioned relative to the body frame size. Over the course of the intervention, the participant experienced a reduction in both overall body weight and hip circumference, while wrist circumference remained stable, suggesting a favorable shift in fat distribution. The reduction in WHR aligns with the benefits of yoga, which promotes fat loss through enhanced metabolism, improved circulation, and better hormonal regulation.

***Yogic* practices**

Preparatory movements for 5-10 minutes: it include neck rotation, neck forward and backward bending, shoulder rotation, wrist rotation, waist rotation, knee squeeze and relax, side stretch, twisting, and ankle rotation.

- Standing position: *Trikonasana*
- Sitting position: *Paschimottanasana*
- Supine position: *Pawanmuktasana*,
- Prone position: *Dhanurasana*
- Shatkarma: *Kapalbhati* 5 rounds (120 strokes per round)
- *Pranayama*:
- *Bhramari* (10 minutes)

Case Management

The impact of *Yoga* on obesity was examined in a patient who successfully reduced 8 kg over a span of 8 weeks through a structured yoga-based intervention. The patient followed a daily *Yoga* regimen that incorporated various *Asanas*, including *Trikonasana*, *Paschimottanasana*, *Pawanmuktasana*, and *Dhanurasana*, which are known for their benefits of improving metabolism, enhancing flexibility, and promoting fat loss. In addition to *Asanas*, the patient practiced *Pranayama* techniques such as *Kapalbhati* and *Bhramari*, Which helped regulate breathing, improve oxygen circulation, and boost overall energy levels. A key component of the intervention was daily mindfulness meditation for 10-15 minutes, which contributed to stress reduction and emotional well-being, both of which play a crucial role in weight management. Along with *Yoga*, the patient made significant lifestyle modifications, including adopting a balanced and nutritious diet while ensuring proper hydration.

Throughout the 8-week period, the patient experienced consistent weight loss of approximately 1 kg per week, reflecting steady progress. Apart from weight reduction, notable improvements were observed in physical fitness, including increased stamina, improved posture, and enhanced flexibility. The psychological benefits were also significant, as the patient reported reduced stress, improved focus, and an overall sense of well-being. These findings suggest that *Yoga* serves as an effective and non-strenuous approach to managing obesity, offering both physical and mental health benefits, without the need for intensive workouts or restrictive diets. This case highlights the potential of *Yoga* as a sustainable and accessible method of weight management and overall health improvement.

Discussion

Obesity is a growing global health concern, significantly increasing the risk of various metabolic disorders, such as diabetes, hypertension, cardiovascular diseases, and psychological stress. *Sthaulya* (obesity) is considered one of the eight most condemned diseases (*Ashtauninditiya*) in *Charak Samhita.*[1] When excessive fat (*Meda*) and muscle (*Mamsa*) accumulate in the body, the buttocks, breasts, and abdomen become heavy and tend to sag while walking.[2] Individuals suffering from *Sthaulya* often experience persistently low mood or depression.[3]

Despite their large physical stature, these individuals lack proportionate strength. Excessive accumulation of *Meda Dhatu* obstructs the movement of *Vata*, leading to its aggravation. This aggravated *Vata*, upon entering the stomach, heightens hunger and enhances the digestion and absorption of food. As a result, a person develops an insatiable appetite and consumes large quantities of food.

When food is unavailable during times of need, individuals may face the risk of developing severe health complications, some of which can be life-threatening and may even lead to sudden death.**[4]**

Etiology of *Sthaulya* (Obesity)[5]

Sthaulya is attributed to the following causative factors:

1. Excessive intake of food
2. Consumption of heavy, sweet, cooling, and unctuous foods
3. Sedentary lifestyle or lack of physical activity
4. Avoidance of sexual activity
5. Sleeping during the day
6. Continuous indulgence in pleasure or happiness
7. Absence of mental exertion

Consequences of These Factors[6]

1. Disproportionate growth of Dhatus - fat tissue increases while other tissues remain underdeveloped\
2. Reduced lifespan
3. Sluggish body movements due to looseness
4. Difficulty in performing sexual activities
5. Decreased quantity of semen
6. General debility from imbalance in Dhatus
7. Foul body odor
8. Excessive perspiration
9. Increase in *Kapha*, as fat is inherently Kapha-dominant
10. Inability to tolerate physical exertion
11. Increased appetite and thirst

Yoga primarily influences the mind or psyche. *Vyadhi* (illness) is identified as a hindrance in the practice of *yoga*, alongside other mental challenges. **[7]** It is evident that a troubled mind can affect the body, breath, emotions, and attitudes, impacting the entire being. Disruptions in the body can influence the breath and mind; disturbances in breathing can affect both the mind and body; and mental disturbances can impact the body and breath. This interconnectedness of body, breath, and mind can be harnessed through suitable *Yoga* practices, such as *Asana, Pranayama*, meditation, and visualization, to foster positive transformations.

***Asanas* for obesity**

***Trikonasana* (Triangle Pose) -** It has an impact on muscles of waist, back of the legs, and sides of the trunk.

The fat around the waist will be reduced with regular practice of this *Asana***[8]**, *which* compresses and stretches the abdominal and flank regions and reduces subcutaneous fat and obesity.**[9]**

***Pashchimottanasana* (Back stretching Pose) -** It circulates *Prana* (vital energy) in *Sushumna*, improves digestive power and makes the abdomen thins.**[10]**

***Pawanmuktasana* (wind-releasing pose) -** It compresses and massages the abdomen and digestive organs, and is effective in removing constipation, flatulence**[11]**, and obesity.

***Dhanurasana* (Bow Pose) -** The liver, kidneys and abdominal organs get massaged with the practice of *Dhanurasana*.

It reduces belly fat and removes constipation. *Dhanurasana* stretches and compresses the abdominal and flanks regions.**[12]**

***Kapalbhati* (Forehead cleansing) -** Performing *Kapalbhati* removes the diseases caused by *Kapha Dosha* and brings cleanliness in the body.**[13]** This purification process involves cleansing the respiratory system, nasal passage, and sinuses of the skull.**[14]** Forceful contraction and relaxation of the abdominal muscles will be useful in reducing fat in the abdominal region. It also increases metabolism, thereby reducing the risk of obesity. In overweight people, *Kapalbhati* could reduce waist and hip circumferences.**[15]**

***Bhramri* -** Practices such as *Bhramari* and *Nadi Shodhana Pranayama* are thought to help regulate the autonomic nervous system, alleviate stress, and foster relaxation, which may, in turn, have a beneficial impact on lipid metabolism in people with diabetes.**[16]** *Pranayama* contributes to maintaining a balanced and healthy digestive system by promoting relaxation and reducing stress-induced gastrointestinal issues. Additionally, the increased metabolic rate resulting from deep breathing supports optimal digestion and food utilization, thereby enhancing overall metabolic health (Sheng et al., 2017).**[17]**

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