WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.63
Volume 15, Issue 13, 918-925. Case Study ISSN 2277–7105

ROLE OF SLEEP HYGIENE INTERVENTION IN FACILITATING WEIGHT REDUCTION IN AN OVERWEIGHT INFORMATION TECHNOLOGY PROFESSIONAL: A CASE REPORT

[1*]Dr. Amulya Murthy Aku, [2]Dr. Durgawati Devi

[1]PhD Scholar Department of Swasthavritta and Yoga, National Institute of Ayurveda Deemed-to-be-University.

[2]Professor and HOD Department of Swasthavritta and Yoga, National Institute of Ayurveda Deemed-to-be-University.

Article Received on 28 May 2026,
Article Revised on 18 June 2026,
Article Published on 01 July 2026,

https://doi.org/10.5281/zenodo.21031114

***Corresponding Author**

Dr. Amulya Murthy Aku

PhD Scholar Department of Swasthavritta and Yoga, National Institute of Ayurveda Deemed-to-be-University.

How to cite this Article: [1]*Dr. Amulya Murthy Aku, [2]Dr. Durgawati Devi (2026). Role Of Sleep Hygiene Intervention In Facilitating Weight Reduction In An Overweight Information Technology Professional: A Case Report. World Journal of Pharmaceutical Research, 15(13), 918–925.

ABSTRACT

Background: Sleep disturbances are increasingly recognized as important contributors to obesity and metabolic dysfunction. Poor sleep quality may impair hormonal regulation of appetite, increase caloric intake, reduce physical activity, and hinder weight-loss efforts. **Case Presentation:** A 28-year-old male Informati on Technology professional employed in Mumbai presented with obesity and persistent difficulty in achieving weight reduction despite adherence to dietary modifications and regular physical activity. His body weight was 98.3 kg at presentation. Detailed lifestyle assessment revealed inadequate sleep duration, irregular sleep timings, prolonged screen exposure before bedtime, and poor sleep quality. **Intervention:** The patient was advised a structured sleep hygiene protocol including fixed sleep and wake timings, restriction of screen exposure before bedtime, avoidance of late-night meals and stimulants, optimization of the sleep environment, and maintenance of a consistent sleep schedule. Existing dietary measures and physical activity were continued without major modifications. **Outcome:** Progressive improvement in sleep quality and duration was observed over the follow-up period. Over four months, the patient's body weight reduced from 98.3 kg to 72.0 kg, corresponding to a total weight reduction of 26.3 kg. The patient reported improved energy levels, better daytime functioning, and enhanced adherence to lifestyle measures.

Conclusion: This case highlights the potential role of sleep hygiene optimization as an important adjunctive strategy in obesity management. Assessment and correction of sleep-related factors may enhance the effectiveness of conventional weight-loss interventions.

KEYWORDS: Sleep Hygiene, Obesity, Weight Reduction, Sleep Quality, Lifestyle Modification, Case Report.

INTRODUCTION

Obesity is a major public health challenge associated with an increased risk of metabolic disorders, cardiovascular diseases, reduced quality of life, and premature mortality. While dietary modification and physical activity remain the cornerstone of obesity management, emerging evidence suggests that other lifestyle factors, particularly sleep, play a significant role in body weight regulation and metabolic health.

Sleep is increasingly recognized as an important determinant of energy balance. Inadequate sleep duration, poor sleep quality, irregular sleep schedules, and sleep deprivation have been associated with increased appetite, altered secretion of leptin and ghrelin, insulin resistance, reduced energy expenditure, and weight gain. Individuals with chronic sleep disturbances often experience difficulty achieving and maintaining weight reduction despite adherence to conventional weight-loss strategies.

Information Technology (IT) professionals are particularly vulnerable to sleep disturbances owing to prolonged screen exposure, irregular work schedules, occupational stress, and extended working hours. These factors may contribute to both poor sleep quality and obesity, creating a cycle that adversely affects overall health and well-being.

The present case report describes an obese 28-year-old Information Technology professional with chronic poor sleep who had previously experienced limited success with diet and exercise-based weight-loss efforts. Following implementation of structured sleep hygiene measures and optimization of sleep patterns, substantial weight reduction and improvement in overall health outcomes were observed over a four-month period. This case highlights the importance of evaluating sleep-related factors as part of a comprehensive approach to obesity management.

Patient Information

A 28-year-old male Information Technology professional employed at a multinational software company in Mumbai presented with concerns regarding persistent obesity and inability to achieve significant weight reduction despite repeated lifestyle modification attempts. The patient reported progressive weight gain over the preceding several years, which adversely affected his physical health, self-confidence, workplace productivity, and overall quality of life.

At the time of presentation, his body weight was 98.3 kg. The patient had previously undertaken multiple weight-loss attempts involving calorie-restricted diets, gym-based exercise programs, walking, and other physical activities. Although temporary reductions in weight were occasionally observed, sustained and clinically meaningful weight loss could not be achieved.

Detailed lifestyle assessment revealed a history of poor sleep habits. The patient reported late bedtimes, prolonged screen exposure before sleep, irregular sleep schedules due to occupational demands, delayed sleep onset, inadequate sleep duration, and frequent non-restorative sleep. He often felt unrefreshed upon awakening and experienced daytime fatigue and reduced energy levels.

Dietary history revealed that the patient was generally compliant with dietary recommendations and had made conscious efforts to reduce caloric intake. Similarly, he had been regularly engaging in physical activity; however, these measures had not resulted in satisfactory weight reduction. This prompted a comprehensive reassessment of lifestyle factors, during which sleep disturbance emerged as a potentially significant contributor to weight-loss resistance.

There was no known history of diabetes mellitus, hypertension, hypothyroidism, major psychiatric illness, chronic systemic disease, or use of medications known to significantly influence body weight. Family history was non-contributory. The patient was motivated to achieve sustainable weight loss and willingly participated in the recommended intervention.

Clinical Findings

At presentation, the patient appeared obese with central adiposity. Anthropometric assessment revealed a body weight of 98.0 kg and a height of 174 cm, corresponding to a Body Mass

Index (BMI) of 32.4 kg/m², consistent with Class I obesity. Waist circumference was measured at 124 cm, indicating significant abdominal obesity and elevated cardiometabolic risk.

A detailed sleep assessment revealed a longstanding history of poor sleep habits persisting for approximately five years. The patient reported a habitual bedtime of around 3:00 AM, primarily due to prolonged mobile phone use and social media scrolling during late-night hours. He typically woke at approximately 8:00 AM to prepare for work and reach his office by 10:00 AM. Consequently, his average sleep duration was limited to approximately 5 hours per night.

The patient described difficulty maintaining a regular sleep schedule, delayed sleep onset, non-restorative sleep, daytime fatigue, reduced alertness, and persistent feelings of tiredness despite sleeping. He reported that these sleep-related difficulties had become a routine part of his lifestyle and had remained largely unaddressed for several years.

Although the patient had previously attempted dietary restriction and regular physical activity for weight reduction, the outcomes were unsatisfactory. The coexistence of chronic sleep deprivation, irregular sleep timing, and obesity suggested a possible relationship between sleep disturbance and resistance to weight-loss efforts.

General physical examination was otherwise unremarkable. No clinical features suggestive of endocrine disorders, major systemic illness, or other secondary causes of obesity were identified during evaluation.

Timeline

Time Period	Clinical Events
Approximately 5 years before presentation	Patient developed a habit of sleeping at approximately 3:00 AM due to prolonged mobile phone use and social media scrolling. Average sleep duration reduced to approximately 5 hours per night.
Subsequent years	Progressive weight gain occurred despite intermittent attempts at dietary control and physical activity. Poor sleep habits continued.
Prior to consultation	Patient followed calorie restriction and regular exercise but failed to achieve satisfactory and sustained weight reduction.
Baseline Assessment	Weight: 98.0 kg; Height: 174 cm; BMI: 32.4 kg/m²; Waist circumference: 124 cm. Detailed sleep history revealed chronic sleep deprivation and irregular sleep schedule.
Week 1	Structured sleep hygiene intervention initiated. Patient was educated regarding the role of sleep in weight regulation and overall health.
Month 1	Improved adherence to regular sleep schedule and reduction in late-night mobile phone use. Sleep quality and morning freshness

	improved.
Month 2	Continued improvement in sleep duration and consistency. Progressive reduction in body weight observed.
Month 3	Improved daytime energy levels, reduced fatigue, and better adherence to healthy lifestyle practices.
Month 4	Weight reduced to 72.0 kg. Significant improvement in sleep habits, daytime functioning, and overall well-being reported by the patient.

Diagnostic Assessment

The patient underwent comprehensive clinical and lifestyle assessment at baseline. Anthropometric evaluation revealed a body weight of 98.0 kg, height of 174 cm, BMI of 32.4 kg/m², and waist circumference of 124 cm, confirming the presence of obesity with significant central adiposity.

Detailed sleep history revealed chronic sleep deprivation and poor sleep hygiene persisting for approximately five years. The patient habitually slept at around 3:00 AM following prolonged mobile phone use and social media scrolling and awoke at approximately 8:00 AM on working days. Average sleep duration was approximately five hours per night. The patient also reported non-restorative sleep, daytime fatigue, reduced energy levels, and impaired daytime functioning.

Laboratory investigations demonstrated impaired fasting glucose with a fasting blood sugar level of 116 mg/dL, suggestive of prediabetes. Lipid profile assessment revealed elevated serum cholesterol and triglyceride levels. Thyroid function tests were within normal limits, thereby excluding hypothyroidism as a contributory factor to obesity and weight gain. Ultrasonographic evaluation of the abdomen revealed Grade II fatty liver.

The patient was not receiving any medications known to influence body weight and had no history of diabetes mellitus, hypertension, endocrine disorders, or other major systemic illnesses. However, he complained of chronic constipation and pain in weight-bearing joints, particularly during prolonged standing and physical activity, which were considered secondary consequences of excess body weight.

Based on the anthropometric findings, metabolic abnormalities, lifestyle history, and sleep assessment, obesity associated with chronic sleep deprivation and poor sleep hygiene was identified. The persistence of obesity despite previous dietary and exercise interventions

suggested that sleep disturbance might be an important contributing factor to the patient's weight-loss resistance.

Differential diagnoses including hypothyroidism, medication-induced weight gain, and other secondary endocrine causes of obesity were considered and excluded through clinical evaluation and laboratory investigations.

Table: Changes in Anthropometric, Sleep and Metabolic Parameters Following Sleep Hygiene Intervention.

Parameter	Baseline	Follow-Up
Weight (kg)	98.0	72.0
Height (m)	1.74	1.74
BMI (kg/m²)	32.4	23.8
Waist Circumference (cm)	124	92
Average Sleep Duration	Approximately 5 hours/night	Approximately 7.5–8 hours/night
Bedtime	3:00 AM	10:30–11:00 PM
Wake-up Time	8:00 AM	6:30–7:00 AM
Fasting Blood Sugar (mg/dL)	116	89
Total Cholesterol (mg/dL)	290	175
Triglycerides (mg/dL)	280	110
HDL Cholesterol (mg/dL)	35	52
LDL Cholesterol (mg/dL)	199	101
Fatty Liver (Ultrasonography)	Grade II Fatty Liver	No evidence of Fatty Liver
Constipation	Present	Resolved
Weight-Bearing Joint Pain	Present	Markedly Improved
Daytime Fatigue	Present	Resolved
Sleep Quality	Poor	Significantly Improved

Follow-up and Outcomes

The patient was monitored regularly following implementation of structured sleep hygiene measures. Compliance with the intervention was satisfactory throughout the follow-up period. Progressive improvement in sleep duration, sleep quality, daytime alertness, and overall well-being was observed within the initial weeks of intervention.

At baseline, the patient weighed 98.0 kg with a BMI of 32.4 kg/m² and waist circumference of 124 cm. Following the intervention, body weight reduced to 72.0 kg with a corresponding BMI of 23.8 kg/m². Waist circumference reduced from 124 cm to 92 cm, indicating substantial reduction in central adiposity.

Significant metabolic improvement was also observed. Fasting blood glucose decreased from 116 mg/dL, which was suggestive of prediabetes, to 89 mg/dL within the normal range. Lipid profile parameters demonstrated marked improvement, with total cholesterol decreasing from 290 mg/dL to 175 mg/dL, triglycerides from 280 mg/dL to 110 mg/dL, and LDL cholesterol from 199 mg/dL to 101 mg/dL. HDL cholesterol increased from 35 mg/dL to 52 mg/dL.

Ultrasonographic evaluation of the abdomen showed complete resolution of previously diagnosed Grade II fatty liver. Additionally, the patient reported complete resolution of constipation, substantial reduction in weight-bearing joint pain, improved energy levels, enhanced workplace productivity, and restoration of normal sleep patterns.

No adverse events or complications were reported during the intervention period. The patient expressed high satisfaction with the treatment outcome and demonstrated continued adherence to the recommended sleep practices.

DISCUSSION

This case report describes a 28-year-old obese Information Technology professional with a five-year history of chronic sleep deprivation and poor sleep hygiene who demonstrated significant improvement in anthropometric and metabolic parameters following sleep optimization. Over a four-month period, body weight decreased from 98.0 kg to 72.0 kg, BMI reduced from 32.4 kg/m² to 23.8 kg/m², fasting blood glucose normalized, lipid profile improved substantially, and Grade II fatty liver resolved.

Sleep is increasingly recognized as an important determinant of metabolic health. Chronic sleep deprivation has been associated with obesity, insulin resistance, dyslipidemia, and non-alcoholic fatty liver disease. Proposed mechanisms include alterations in appetite-regulating hormones such as leptin and ghrelin, increased cortisol levels, impaired glucose metabolism, and reduced daytime energy expenditure. These changes may contribute to weight gain and difficulty achieving successful weight reduction.

An important finding in the present case was the patient's inability to achieve meaningful weight loss despite previous dietary and exercise efforts. Detailed assessment revealed long-standing sleep deprivation, with an average sleep duration of approximately five hours per night. Following implementation of sleep hygiene measures and restoration of a regular sleep

schedule, marked improvement was observed in body weight, metabolic parameters, sleep quality, and overall well-being.

Although causality cannot be established from a single case, this report highlights the potential contribution of sleep disturbances to obesity and weight-loss resistance. The findings emphasize the importance of evaluating sleep habits as part of a comprehensive obesity management strategy. Further studies are required to better understand the role of sleep optimization in supporting weight reduction and metabolic health.

Patient Perspective

Before seeking consultation, I believed that weight loss depended mainly on diet and exercise. Despite making repeated efforts to control my diet and engage in regular physical activity, I was unable to achieve satisfactory results. During evaluation, I became aware of the impact that my poor sleeping habits might be having on my weight and overall health. By reducing late-night mobile phone use and maintaining a regular sleep schedule, I gradually experienced better sleep quality, improved energy levels, and increased daytime productivity. Over time, I observed significant weight loss along with improvements in my overall health. This experience helped me understand the importance of sleep as an essential component of a healthy lifestyle.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical information. All efforts have been made to protect the patient's identity and maintain confidentiality.

Conflict of Interest: None.