

From Humors to Metabolism: An Integrative Review of Obesity Management in Unani Medicines

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Abstract

Unani Medicine, a traditional complementary and alternative medicine (CAM) system, adopts a holistic, temperament-based approach to disease prevention and management. In classical Unani literature, obesity is described as Simān-e-Mufrit, a pathological condition arising from humoral imbalance, particularly the predominance of phlegm (Balgham) and derangement of temperament (Su'-e-Mizāj), most commonly of a cold and moist nature. This condition is attributed to a sedentary lifestyle, weakened digestive and metabolic faculties, and excessive consumption of calorie-dense, fatty foods. The present narrative review aims to elucidate the Unani concept of obesity, with emphasis on its etiopathogenesis and traditional management strategies, and to explore their relevance in contemporary obesity management. Classical Unani texts, including Al-Qānūn fī'l-Ṭibb, Kitāb al-Hāwī fī'l-Ṭibb, Kāmil al-Ṣanā'a, Firdaws al-Hikma fī'l-Ṭibb, Kitāb al-Kulliyāt, Ṭibb-i-Akbar, and Iksir-i-A'zam, were reviewed, along with contemporary scientific literature retrieved from PubMed, ScienceDirect, Wiley Online Library, and Google Scholar. Unani Medicine conceptualizes obesity as a disorder characterized by excess Balgham and impaired metabolic faculties. Management is primarily based on dietotherapy (Ilāj bi'l-Ghizā'), regimenal therapy (Ilāj bi'l-Tadbīr), and pharmacotherapy (Ilāj bi'l-Dawā'), individualized according to temperament and disease severity. The Unani system thus offers a comprehensive and personalized framework for obesity management, and its principles may serve as valuable complementary strategies alongside conventional approaches, warranting further pharmacological validation and well-designed clinical trials.

Keywords: *Simān mufrit*, obesity, humoral imbalance, Unani medicine, regimental therapy, complementary medicine

INTRODUCTION

Obesity is a complex, systemic disorder marked by the excessive and abnormal accumulation of body fat, leading to adverse health consequences [1]. The International Classification of Diseases (ICD-10 and ICD-11) defines obesity as having a body mass index (BMI) of 30 kg/m² or higher, while overweight is defined as a BMI between 25 and 30 kg/m². According to the World Health Organization (WHO), individuals with a BMI ≥ 25 are considered overweight, and those with a BMI ≥ 30 are classified as obese. Obesity in children and adolescents is defined as having a BMI at or above the 95th percentile for age and gender [2]. Obesity has emerged as a significant public health challenge in India, with data from the National Family Health Survey-5 (NFHS-5) indicating that one in four Indians is affected [3]. Specifically, 12.1% of men and 14.8% of women are either overweight or obese [4]. The total number of obese individuals in the country is estimated to be around 135 million.

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Abdominal obesity affects approximately 12% of Indian men and 40% of women, posing an even greater health risk [3].

Globally, the situation is equally alarming. In 2022, about one in every eight people worldwide suffered from obesity. Of the 2.5 billion overweight adults (aged 18 and above), nearly 890 million were classified as obese [5].

Obesity significantly elevates the risk of numerous non-communicable diseases (NCDs), including cardiovascular disease, stroke, type 2 diabetes, polycystic ovarian syndrome (PCOS), and various cancers (endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon cancers) [6]. Understanding the link between obesity and both morbidity and mortality is essential for effective public health planning [7]. Over the past two decades, the global rise in obesity has contributed substantially to the burden of chronic disease and disability, with profound consequences for both human health and economic systems [8].

Unani Medicine, rooted in Greco–Arabic traditions and enriched by the contributions of classical scholars, like *Buqrāt* (Hippocrates), *Jālīnūs* (Galen), *Rāzī*, *Ibn Sīnā* (Avicenna), and *Ṭabarī*, provides a distinct and holistic framework for understanding and managing obesity. Known in Unani terminology as *Simān Mufrit*, obesity is conceptualized not merely as an imbalance of calories but as a disorder stemming from a derangement of temperament (*Su'-e-Mizāj*), particularly one characterized by coldness and moisture (*Burūdat wa Rutūbat*), along with the dominance of phlegmatic humor (*Balgham*). This classical understanding anticipates many features now recognized in modern endocrinology, including metabolic slowdown, inefficient digestion, and systemic congestion.

Several anti-obesity medications are presently approved for clinical use; however, they demonstrate variable efficacy and distinct safety profiles [9]. The Food and Drug Administration (FDA) has approved several pharmacological agents for the management of obesity. These medications are broadly classified into two categories: centrally acting drugs that suppress appetite, such as phentermine and the previously used sibutramine, and peripherally acting agents, like orlistat, which reduce dietary fat absorption [10]. Consequently, there is a growing inclination toward traditional systems of medicine for safer and more effective options in obesity management, particularly to minimize the adverse effects associated with contemporary pharmacological therapies [11].

Through centuries of clinical observation and theoretical refinement, Unani physicians developed a structured therapeutic model encompassing dietotherapy (*Ilāj bi'l-Ghidhā'*), regimental therapy (*Ilāj bi'l-Tadbīr*), and pharmacotherapy (*Ilāj bi'l-Dawā'*). These treatments emphasise restoring humoral balance, stimulating metabolism, and expelling morbid matter, often through natural, temperament-specific interventions. The integration of classical textual knowledge with experiential therapeutics makes Unani Medicine a valuable complementary system in the broader discourse on obesity management.

This review explores the classical definitions, etiological concepts, pathophysiology, clinical features, complications, and therapeutic modalities of *Simān Mufrit* as documented in authoritative Unani texts. By revisiting these traditional insights considering contemporary health challenges, the study underscores the enduring relevance of Unani principles for managing obesity through safe, holistic, and personalised interventions.

METHODOLOGY

This review is a narrative synthesis of classical Unani concepts of obesity (*Simān Mufrit*), its etiopathogenesis, clinical features, complications, and management. Primary data were obtained through a manual review of authoritative classical Unani texts. Relevant information was collected from classical Unani texts, including *Al-Qānūn fī'l-Ṭibb*, *Kitāb al-Hāwī fī'l-Ṭibb*, *Kāmil al-Ṣanā'a*, *Firdaws al-Ḥikma*, *Ṭibb-i-Akbar*, and *Iksīr-i-A'zam*, along with official references such as the Unani

Pharmacopoeia of India, National Formulary of Unani Medicine, and Essential Drugs List of Unani Medicine.

Modern literature was obtained from standard medical textbooks and electronic databases, such as PubMed, Scopus, ScienceDirect, Wiley Online Library, and Google Scholar, using keywords such as “obesity,” “*Simān Mufrit*,” “*Unani Medicine*,” “humoral imbalance,” “*Balgham*,” “temperament,” “dietotherapy,” “regimenal therapy,” and “pharmacotherapy.” This review considered only published literature from 1934 to 2024, focusing on studies that discussed the management of obesity. Publications addressing the concept, pathophysiology, complications, and management of obesity from Unani or contemporary biomedical perspectives were included. Duplicate records, conference abstracts, editorials, and articles unrelated to the review topic were excluded.

Historical Perspectives on Obesity

Buqrāṭ (Hippocrates, 420 BC) was among the earliest to offer a comprehensive account of obesity in his seminal work *Fasūl-e-Buqrāṭiyā*, discussing its causes, associated complications, preventive measures, and treatment strategies [12]. *Rofus* (98–171 AD), in *Tahzīb al-Samīn* (“Curing Obesity”), observed that obese individuals are more susceptible to diseases due to an excess of *Khilṭ-e-Balgham* (phlegmatic humor) and a deficiency of *Khūn-e-Ṣāliḥ* (healthy blood) [13]. *Jālīnūs* (Galen, 119–200 AD) noted that obesity correlates with reduced life expectancy and was one of the first to introduce a systematic, scientific approach to understanding morbid obesity [14]. *Ali ibn Rabban Ṭabarī* (700–780 AD), in his authoritative text *Firdaws al-Ḥikmah*, provided detailed insights into the pathophysiology and etiological factors of *Simān Mufrit* (morbid obesity), rooted in the theory of humoral imbalance [15]. *Zakariyyā Rāzī* (860–925 AD) highlighted the role of *Ghizā-e-Dahniyah* (fatty and oily foods) as a primary cause of obesity [16]. *Ibn Sina* (980–1037 AD) highlighted the *taqleel Ghidhā’* (decrease in food intake) as a crucial tool for treating obesity in his treatises *Al-Qanoon fī-tib* [17]. *Jurjānī* (12th century AD) discussed the consequences of obesity and its management. He has worked on both nutrition therapy and medication therapy for the management of obesity [18]. *Ibn Nafīs* (1207–1288 AD) outlined the link between respiratory, cardiovascular, and cerebrovascular diseases and excessive obesity [19]. Daud Antaki (1541–1599AD) discussed the complications and treatment of obesity in his book *Tazkiratu Uolil Albab*. Akbar Arzani, a well-known Unani physician, believes that excessive fat storage is hazardous to the human body and can lead to various diseases [20].

Concept of Obesity in Unani Medicine

Obesity is derived from the Latin word “*Obedere*,” meaning “to devour,” and in English, it refers to a condition of being excessively fat [21]. It is characterized by the abnormal growth of adipose tissue, resulting from an increase in the size, number, or both of fat cells [6]. In Unani Medicine, obesity is referred to as *Simān Mufrit*, an Arabic term in which *Simān* denotes *shaḥm* (fat), and *Mufrit* means excessive. *Simān Mufrit* is also described by other terms such as obesity, corpulence, and *farbahi* (meaning fatness) [22]. The Persian term *farbahi* is synonymous with *motapa* (fatness), and it is classified into two types: one associated with *shaḥm* (fat) and the other with *lahm* (flesh or muscle) [18]. In the present context, *farbahi* refers specifically to the excessive accumulation of *shaḥm* (fat) in the body.

Obesity is a pathological condition marked by abnormal or excessive deposition of fat, leading to disproportionate body shape and weight. Classical Unani physicians considered it a morbid state because it disrupts the natural functions of the body and predisposes individuals to a variety of health disorders [22].

Unani texts classify *Simān Mufrit* into two types: *maqāmī* (local) and *umūmī* (general). Local obesity refers to the accumulation of fat in a specific organ, commonly seen in the abdomen or breasts, resulting in regional protrusion. General obesity, on the other hand, involves the widespread accumulation of fat throughout the body [23]. Unani physician Galen (*Jalīnoos*) described three gradations of fatness: *Pachis* (fat), *Efsarkos* (chubby), and *Polisarkos* (obese). Of these, *Pachis* and *Efsarkos* were not

considered harmful, with *Efsarkos* representing a state of balanced temperament and proportionate body composition. In contrast, *Polisarkos* was identified with *Simān Mufrit* and was associated with significant health risks [24].

Types of Body Fat Distribution [25]

Although the pattern of fat accumulation varies among individuals, body fat distribution can generally be categorized into four main types: visceral fat, lower body fat, abdominal subcutaneous fat, and overall body fat coverage. These distribution patterns influence metabolic health differently, with visceral fat being most strongly associated with obesity-related complications. The key characteristics of each type are as follows:

- *Lower Body Fat*: Fat is primarily stored in the thighs, hips, and buttocks.
- *Abdominal Subcutaneous Fat*: Most of the fat is deposited just beneath the skin in the abdominal region, including the stomach and chest.
- *Overall Fat Coverage*: Fat is distributed more diffusely across the body, including the arms, breasts, thighs, buttocks, and lower back.
- *Visceral Fat*: This fat accumulates within the visceral cavity, surrounding internal organs such as the stomach, colon, liver, and pancreas. Among all types, visceral fat is most closely linked to serious metabolic disturbances and obesity-related health risks, unlike other fat depots, which are relatively less harmful.

Classification of Obesity According to the World Health Organization (WHO)

The World Health Organization (WHO) classifies obesity primarily based on Body Mass Index (BMI), which is calculated by dividing a person's weight in kilograms by the square of their height in meters (kg/m^2). It is important to note that there is a significant difference in the classification criteria for adults and children/adolescents, as growth patterns vary with age and between sexes. In children and adolescents, sex-specific and age-specific percentiles or Z-scores are used, making gender considerations particularly important in paediatric assessments of obesity. Classification of obesity and weight in adults, depending on BMI, is given in Tables 1 and 2, respectively:

Table 1. Classification of obesity by BMI in adults [26].

Classification	Obesity class	BMI (kg/m^2)
Obesity	I.	30.0–34.9
Severe obesity	II.	35.0–39.9
Morbid obesity	III.	≥ 40

Table 2. Classification of obesity by BMI in adult Asians [27].

Classification	BMI (kg/m^2)
Underweight	< 18.5
Normal range	18.5–24.9
Overweight	25–29.9
Obese	> 30

Classification of Obesity by BMI in Children [28]

- Overweight 85th percentile to less than the 95th percentile.
- Obesity 95th percentile or greater.
- Severe Obesity 120% of the 95th percentile or greater 35 kg/m^2 .

Aetiology

The causes of *Simān-e-Mufrit* in Unani Medicine are diverse and multifactorial. According to *Razi* and *Ibn Nafis*, it can be a hereditary or congenital disorder [12]. Phlegmatic persons are prone to obesity. One major cause is a cold and moist temperament (*Su-e-Mizaj Bārid Ratb*) or the predominance of

coldness and moisture in the body, which contributes to the accumulation of fat (*shahm*). Additionally, excessive and abnormal accumulation of humors that are normally expelled from the body can lead to this condition. Dietary habits, such as the excessive consumption of cold and moist foods, along with fatty, sweet, and starchy items, are also contributing factors [15, 29]. The use of *Hammām* (bath) immediately after meals, along with a sedentary lifestyle marked by excessive rest, lack of physical activity, and luxurious living, further exacerbates the condition [21, 30]. Other causes include excessive alcohol intake and prolonged sleep, especially due to sleeping on soft clothing and bedding, which promotes increased moisture (*rutubat*) in the body, ultimately resulting in obesity [15, 17, 18, 22].

Pathophysiology of Obesity

The preservation of health requires the proper balance of both temperament (*mizājī*) and bodily structure (*tarkīb-e-badan*). Any disturbance in either of these leads to the onset of disease. In the case of *Simān Mufrit* (obesity), the pathology often begins with a cold temperament abnormality (*sū'-e-mizāj bārid*), which causes vascular constriction. This constriction impairs the flow of vital pneuma (*rūḥ*) to the organs, weakens innate heat (*ḥarārat gharīzīyah*), and disrupts both digestion (*hazm*) and metabolism (*istihāla*). As coldness and moisture (*rutubat*) dominate, a state of congestion (*imtīlā'*) develops, leading to the gradual accumulation of phlegmatic material (*balghamī mawādd*) in the body. Over time, this pathological accumulation progresses into a structural imbalance (*sū'-e-tarkīb*) [14].

In Unani, fat (*shahm*) is considered the waste product of digested blood [31]. According to *Majūsī* and *Ibn Sīnā*, blood contains a subtle, oily component that serves as nourishment for the muscular organs (*a 'dā'-e-laḥmīyah*). When this component is diverted to colder regions of the body, such as cold organs or membranes, the prevailing coldness (*barūdat*) solidifies it into fat. Thus, *barūdat* acts as the active cause (*sabab-e-fā'ilī*) for the production of *shahm* [32].

When hepatic digestion (*Haḍm Kabidī*) is impaired, it gives rise to phlegmatic imbalance (*sū'-e-mizāj-e-balghamī*), thereby increasing the coldness of the liver. The phlegm generated under these conditions enters the bloodstream and disrupts metabolic transformation (*istihāla*). Furthermore, in individuals with inherently cold temperaments, the metabolic rate becomes sluggish, preventing the proper utilization of acquired energy. This unutilized energy is stored as fat, ultimately contributing to *Simān Mufrit* [14, 33].

Under normal physiological conditions, the blood vessels (*'urūq*) remain open, allowing the smooth distribution of nourishment (*ghidhā'*) and vital spirit (*rūḥ*) to the organs. However, in pathological states, such as excessive fat accumulation and phlegm dominance, congestion (*imtīlā'*) occurs, leading to vascular narrowing. Additionally, obesity or a predominance of coldness (*ghalaba-e-barūdat*) can independently cause vessel constriction. This narrowing further reduces *ḥarārat gharīzīyah*, while decreased innate heat itself contributes to vascular stiffness, creating a cycle between these factors. Ultimately, the weakening of innate heat impairs both digestion and metabolism, resulting in fat (*shahm*) accumulation and progression toward *Simān Mufrit* [16, 32].

Clinical Presentation

The patient typically presents with abnormal obesity, often marked by a prominently protruding abdomen or potbelly [22]. Associated symptoms include shortness of breath (*dīq al-naḥās*), palpitations (*khafaqān*) [17, 18, 21], sluggish movements or restricted mobility (*buṭī al-ḥarakat/qayd al-badan*) [21, 22], general weakness and lethargy [17, 18, 21, 23]. The patient may also demonstrate an inability to tolerate hunger and thirst [16–18]. Additional clinical features often include excessive sweating, muscular pain, nausea, joint pain, and low back pain. In males, loss of libido and reduced semen production may be observed. In females, infertility is common, and if conception occurs, there is an increased risk of miscarriage [14, 34, 35].

Comorbidities and Complications

Unani scholars, particularly *Hakīm Akbar Arzānī*, have described multiple complications associated with *Simān Mufrit*, categorizing them into seven primary groups. These include shortness of breath (*dīq*

al-naḥās) due to congestion (*imtīlā'*) in the vessels and body cavities, as well as episodes of fainting or apoplexy when morbid matter reaches the vital spaces of the heart or brain. Fragile blood vessels may rupture under pressure, leading to haemorrhage. In obese individuals, vascular compression restricts the flow of cold air, leading to corruption of the temperament of the *pneuma (rūḥ)* and resulting in putrefaction and febrile conditions. Palpitations (*khafaqān*) and vomiting are frequently observed. Infertility is also a common outcome among men due to poor semen maturation, excessive moisture, or compression at the base of the penis that prevents proper penetration, and among women due to poor maturation of their reproductive fluids. Additionally, the presence of abdominal fat (*thirb*) around the uterine opening causes obstruction, which may also lead to miscarriage even if conception occurs. Other complications include paralysis (*fālij*) and frequent diarrhoea (*dhiarb*) [20]. Furthermore, because body channels become narrowed, symptoms often go unrecognised until the disease becomes well established, and the delivery of medicinal substances to vital organs is impaired, making these conditions more severe and harder to treat [18, 21]. Additionally, Galen (*Jālīnūs*) noted that *Simān Mufrit* reduces vessel diameter due to excessive pressure, leading to *imtīlā'* and obstructed *tarwīḥ* (adequate oxygenation or tissue ventilation). The combination of congestion and lack of *tarwīḥ* (tissue anoxia) may ultimately result in sudden and unexpected death [14].

In addition to the complications described in Unani medicine, modern medicine also recognises a wide range of systemic disorders associated with obesity. Given their clinical significance, these complications are summarized in Table 3.

Table 3. Complications and comorbidities [36].

System	Diseases
Cerebrovascular	Stroke.
Respiratory	- Obstructive sleep apnoea (OSA). - Obesity Hypoventilation Syndrome (OHS).
Cardiovascular	- Coronary Heart Disease. - Congestive Cardiac Failure. - Hypertension.
Gastrointestinal	- Gastroesophageal Reflux Disease. - Barrett's Oesophagus. - Erosive Oesophagitis. - Diverticular Disease. - Oesophageal Cancer. - Colon Cancer. - Abdominal Hernia.
Hepato-biliary	- NASH (Non-alcoholic steatohepatitis). - Liver Cirrhosis. - Hepatocellular Carcinoma. - Gallstone. - Gall Bladder Cancer.
Reproductive disorders	<i>Female:</i> Menstrual Irregularities, PCOS, Infertility. <i>Male:</i> gynaecomastia.
Cutaneous	- Acanthosis nigricans. - Cutaneous fungal and yeast infections. - Venous stasis.
Metabolic	- Dyslipidaemia. - Type 2 Diabetes Mellitus. - Hyperinsulinemia. - Metabolic Syndrome. - Gout. - Gestational Diabetes.
Musculoskeletal	Osteoarthritis.
Cancer	<i>Male:</i> Liver cancer, Pancreas cancer, Rectum cancer, Prostate cancer. <i>Female:</i> Gall bladder, Bile duct, Breast, Ovary, Uterine, Cervix.

Principles of Treatment (Uṣūl-e-‘Ilāj)

The treatment of *Simān Mufrit* (morbid obesity) in Unani Medicine is based on several core principles (Uṣūl-e-‘Ilāj) outlined by classical scholars like *Zakariyya Rāzī* and *Ibn Sīnā*. The first step involves removing the underlying cause, followed by correcting the temperament (*Ta’dīl Mizāj*) to restore balance in the bodily humors (*Sū’-e-Mizāj Māddī*). Mild resolvents (*Adwiyah Muṭṭifāh*) are prescribed to dissolve and disperse accumulated morbid matter gently [17]. In cases with excessive buildup, evacuation (*Tanqiyah*) through diuretics, diaphoretics, or suitable purgatives is used. When phlegm (*balgham*) dominates, phlegm-expelling drugs (*Mushil-e-Balgham*) are recommended; and in cases of blood congestion (*Imtilā’-e-Dam*), bloodletting (*Faṣḍ*) is beneficial [16]. To resolve morbid matter (*Tahlīl-e-Māddah*), vigorous physical exercise (*Riyāzat-e-Kathīrah*) and evacuative therapies are employed to thin the humors and prevent solidification. This also generates heat in the blood, which the absorptive faculty (*Quwwat-e-Jādhbah*) resists, thereby preventing reabsorption of morbid substances [16, 21]. Further, body calefaction (*Taskhīn-i-Badan*), desiccation (*Tajfīf-i Badan*), and weight reduction (*Tahzīl*) are key parts of the regimen [35]. Lastly, dietary regulation focusing on foods low in nutritive value but that promote fullness is essential, supporting gradual and sustained weight loss [16, 17].

Therapeutic Approaches for Obesity (*Simān Mufrit*)

Unani Medicine offers a holistic and individualized approach to managing *Simān Mufrit* (obesity), based on balancing the four humors and correcting the temperament (*mizāj*). Treatment includes diet therapy (*‘Ilāj bi’l-Ghidhā’*), regimenal therapy (*‘Ilāj bi’l-Tadbīr*), and pharmacotherapy (*‘Ilāj bi’l-Dawā’*), aiming to eliminate morbid matter, reduce excess fat, and restore metabolic harmony. The following section outlines key pharmacological prescriptions rooted in classical texts and traditional Unani practice.

Dietotherapy (‘Ilāj bi’l-Ghidhā)

In Unani Medicine, dietary regulation (*‘Ilāj bi’l-Ghidhā*) plays a central role in the management of obesity, as food is considered both a source of nourishment and a potential cause of disease. Therefore, carefully planned dietary interventions are essential not only for weight reduction but also for correcting the underlying humoral imbalance. The following dietary guidelines, derived from classical Unani texts, emphasize moderation, digestion-friendly choices, and the avoidance of fat-producing substances:

Unani Medicine emphasizes gradual and balanced dietary modifications as a cornerstone in the effective management of obesity (*Simān Mufrit*). The quantity of food intake should be reduced progressively rather than abruptly to prevent potential adverse effects on health [18]. In support of this *Ibn Hubal Baghdādī* stresses that dietary restriction must be introduced step by step, as a sudden reduction may lead to harmful consequences in obese individuals [18, 29]. Meals should be consumed at one time, avoiding split or repeated portions throughout the day. The diet should focus on light foods that help dissolve accumulated morbid matter and emphasize low-nutritive, easily digestible items [16, 18]. The inclusion of vinegar is particularly recommended for its strong fat-reducing action [16, 29]. Increased consumption of vegetables and hot spices – such as long pepper (*filfil darāz*), cumin (*zīrah*), garlic, onion, spinach, and turnip – is encouraged due to their dissolving and metabolism-enhancing effects [22]. Fatty and greasy foods should be strictly avoided [29]. Preferred dietary items include lentils, aged cheese, whole-grain bread, and barley bread [19]. The intake of lean meats, especially from wild animals living in mountainous regions, is advised, as they are considered less moistening compared to meats from valley-dwelling animals, which are believed to promote heaviness and increase bodily moisture. Among fish, rock fish and red mullet are regarded as suitable choices. Additionally, the Mediterranean diet, particularly as practised on the Greek island of Crete during the 1950s, is recommended for its nutritional balance and health-promoting properties. Finally, drinking warm water instead of cold water is advised, as it aids digestion, improves metabolism, and supports the reduction of body fat in obese individuals [24].

Regimenal Therapy (*'Ilāj bi'l-Tadbīr*)

In Unani Medicine, *'Ilāj bi'l-Tadbīr* (regimenal therapy) plays a vital role in managing *Simān Mufrit* (obesity) by promoting the elimination of morbid matter and restoring humoral balance. Exercise (*Riyāzat*) is strongly recommended, particularly vigorous and full-body activities, such as fast running, which reduces body fat, and swimming in the sea, known to be highly effective in weight reduction [16, 21, 29]. Rough massage (*Dalk Khashin*) should be performed before bathing using oils infused with ingredients, like bitter gourd root, marshmallow root, gentian, aristolochia, ammoniacum, and centaury, which help dissolve excess matter [16]. Dry baths (*Hammām Yābis*) are advised, where hot air, rather than water, is used to induce profuse sweating; ideally, this should be done after massage and before food intake. If available, bathing in natural hot spring water is preferred due to its resolvent properties; otherwise, water mixed with salt and heated under sunlight may be used [15, 19, 21]. Diuresis (*Idrār*) through urinary excretion helps expel morbid humors, particularly by opening alternative vascular routes. During summer, keeping the body uncovered enhances the resolution of matter through increased perspiration, contributing further to weight reduction [16].

Pharmacotherapy (*'Ilāj bi'l-Dawā'*)

Pharmacotherapy (*'Ilāj bi'l-Dawā'*) occupies a pivotal role in the management of chronic conditions such as *Simān Mufrit* (obesity) and related metabolic imbalances. Rooted in centuries of empirical knowledge, Unani medicine offers an array of single and compound formulations composed of herbal, mineral, and natural substances that facilitate weight reduction, enhance digestion, balance humors (*Akhlāt*), and eliminate morbid matter (*Mawād-i-Fāsida*).

Unani Pharmacotherapeutic Formulations for the Management of *Simān Mufrit* (Obesity)

The following clinical prescriptions (*Ma'mulāt-i-Matab*) are traditionally used in Unani practice to facilitate weight reduction, improve digestion, balance humors, and eliminate accumulated morbid matter.

- *Sandarūs* (Sandarac resin, *Tetraclinis articulata*) 2 grams should be administered along with 20 ml of *Sharbat-i-Sikanjabīn* (a traditional syrup prepared from vinegar and honey/sugar) or mixed in an appropriate quantity of water [18].
- Prepare a herbal powdered formulation (*Safoof*) by combining equal parts of the following dried herbs: *Zīrah* (Cumin, *Cuminum cyminum*), *Nānkhuwāh* (Ajwain, *Trachyspermum ammi*), *Sadāb* (Rue, *Ruta graveolens*), *Karafs* (Celery, *Apium graveolens*), *Bādiyān* (Fennel, *Foeniculum vulgare*), and *Marzanjūsh* (*Marjoram*, *Origanum majorana*). To this blend, add *Lāk* (Lac, *Laccifer lacca*) in double quantity (two parts) and *Borah Armanī* (*Borax*, *Sodium borate*) in one-fourth part. All ingredients should be thoroughly dried, finely powdered, and mixed uniformly. Administer 4 grams of this powder along with vinegar for optimal therapeutic effect [29].
- Administer a combination of *Itrīfāl Ṣaghīr* 10 grams, along with *Iyyārij Fiqrā* and *Turbud* (*Operculina turpethum*) 3 grams each, once a week [16].
- Prepare a fine powder by pounding and sieving *Lāk Mughṣūl* (*Washed Lac*, *Laccifer lacca*) 7 grams, along with *Zīrah Sāh* (*Black cumin*, *Bunium persicum*) and *Ajwāin* (*Carom*, *Trachyspermum ammi*) 14 grams each. Administer 7 grams of this powdered mixture with 25 ml of *Sikanjabīn* syrup [22].
- Take Castor Seeds (*Dānah-i-Arand*, *Ricinus communis*) 800 grams and mix them thoroughly into cow's milk to prepare flatbreads (*chapātīs*). Administer two *chapātīs* daily as part of the therapeutic regimen [16].
- Prepare a powdered mixture consisting of *Ajwain* (*Ptychotis ajowan*), *Tukhm-e-Sudāb* (*Ruta graveolens*), and *Zīrah* (*Carum carvi*) 1 part each, along with *Marzanjūsh* (*Origanum vulgare*), *Borah Armanī* (*Armenian bole*) 4 parts, and *Lāk* (*Coccus lacca*) 1 part. Administer 4.5 grams of this powder on an empty stomach [18].
- Prepare a fine powder by combining equal amounts of *Bekh-i-Khatmī* (*Althaea officinalis*), *Bekh-i-Qisaul Himār* (*Pueraria tuberosa* DC.), and *Bekh-i-Jaoshīr* (*Ferula galbaniflua*). Administer 3.5 grams of this powdered mixture daily [17].

- Prepare a daily decoction using two parts of Filfil (*Piper nigrum*), two parts of Fitrasalyon (*Apium graveolens*), and half a part each of Asaroon (*Asarum europaeum*) and Anīsūn (*Pimpinella anisum*). Regular use of this decoction is beneficial for promoting weight loss [16].
- Prepare pills using the following ingredients: Sandarūs (Trachelobium hornemanianum) 14.5 grams, Lāk Mughṣūl (Coccus lacca) 9 grams, Halīlah Zard, Halīlah Siyāh, and Halīlah Qablī (Terminalia chebula), Balīlah (Terminalia bellerica), and Āmlah (Emblica officinalis) 4.5 grams each, Zīrah (Carum carvi) 7 grams, and Namak Lahorī (Rock salt) 5 grams. Form the mixture into pills and prescribe the dosage according to the patient's mizāj (temperament) and age [37].

In addition to the above therapies, numerous single and compound medicines are documented in classical Unani texts for the effective treatment of *Simān Mufrit*. A detailed listing of these formulations is presented in Tables 4 and 5, respectively. Clinical trials evaluating Obesity in Unani Medicine are summarized in Table 6.

Table 4. Single drugs (*Adwiyah Mufradah*) beneficial for obesity (*Simān Mufrit*).

S.N.	Unani name	Botanical name	Key anti-obesity activity	Type of evidence	Reference
01	Amla	<i>Emblica officinalis</i>	Improved lipid profile and reduced atherosclerotic lesions	Animal study	[38]
02	Asl-us-soos	<i>Glycyrrhiza glabra</i>	Reduced body weight, visceral fat, TC, TG, and glucose	Animal study	[39]
03	Ajwain	<i>Trachyspermum ammi</i>	Reduced cholesterol and obesity markers	Animal study	[40]
04	Badiyan	<i>Foeniculum vulgare</i>	Appetite suppression and improved fat metabolism	Experimental study	[41]
05	Darchini	<i>Cinnamomum zeylanicum</i>	Reduced adipogenesis and enhanced lipolysis	Meta-analysis + Experimental studies	[42]
06	Filfil Siyah	<i>Piper nigrum</i>	Reduced body weight and improved lipid metabolism	Animal study	[43]
07	Gilo	<i>Tinospora cordifolia</i>	Reduced body weight and improved lipid profile	Animal study	[44]
08	Gudmar booti	<i>Gymnema sylvestre</i>	Reduced BMI, TC, TG, LDL	Animal study	[45]
09	Hulba	<i>Trigonella foenum-graecum</i>	Reduced TC, TG and VLDL	Human clinical study	[46]
10	Juntiyana	<i>Gentiana lutea</i>	Inhibited adipogenesis and weight gain	Cell culture + Animal study	[47]
11	Karafs	<i>Apium graveolens</i>	Improved lipid profile and reduced body weight	Animal study	[48]
12	Kholanjan	<i>Alpinia galanga</i>	Reduced weight gain and inhibited pancreatic lipase	Animal study	[49]
13	Luk Maghsool	<i>Coccus lacca</i>	Anti-inflammatory, diuretic, weight reduction	Experimental study	[50]
14	Lahsan	<i>Allium sativum</i>	Improved lipid metabolism and oxidative stress	Animal study	[51]
15	Marzanjoosh	<i>Origanum majorana</i>	Reduced TG, TC, LDL; hepatoprotective	Animal study	[52]
16	Muqil (Guggul)	<i>Commiphora mukul</i>	Anti-obesity and lipid-lowering effects	Clinical and experimental studies	[53]
17	Mur Makki	<i>Commiphora myrrha</i>	Improved obesity-related metabolic parameters	Animal study	[54]
18	Sandroos	<i>Trachylobium hornemannianum</i>	Reduced body weight and adiposity	Animal study	[55]
19	Zaravand	<i>Aristolochia rotunda/repens</i>	Reduced body weight and dyslipidemia	Animal study	[56]

Table 5. Compound drugs (Adwiyah Murakkabah) beneficial for obesity (*Simān Mufrit*).

Formulation	Major therapeutic action	Dose	Supporting evidence	Type of evidence	Reference
<i>Sufuf-i-Mohazzil</i>	Lipolytic (Muhazzil)	5–10 gm	Traditionally used for obesity management, it contains several herbs with reported anti-obesity activity	Traditional use + experimental evidence on ingredients	[57]
<i>Itrifal Sagheer</i>	Digestive and metabolic support	10–15 gm	Limited direct evidence for obesity; mainly used for associated systemic disorders	Traditional use	[19, 58]
<i>Jawarish Kamuni</i>	Improves digestion and metabolism	10–15gm	Traditionally used to improve gastrointestinal function, which may support weight management	Traditional use	[18]
<i>Jawarish Falafili</i>	Digestive stimulant and carminative	3–5gm	Contains thermogenic and digestive herbs potentially beneficial in obesity	Traditional use + ingredient-based evidence	[59]
<i>Qurs Luk</i>	Anti-inflammatory and deobstruent	5–10gm	Traditionally prescribed for obesity and related metabolic disorders; experimental evidence is available for some constituents	Traditional use + experimental studies	[50]
<i>Dawa ul Kurkum</i>	Hepatotonic, metabolic stimulant, deobstruent	5gm	Contains ingredients with reported anti-obesity and lipid-lowering effects	Traditional use + experimental studies	[60]

Table 6. Clinical trials evaluating obesity in Unani medicine.

Study	Design	Intervention	Key outcomes	Reference
Efficacy of Jawarish Falafali in <i>Simān Mufrit</i> (Obesity): A Pre–Post Analytical Clinical Study	Pre-post clinical	Jawarish Falafali	↓ BMI, body weight, waist circumference, and improved lipid profile	[59]
The Effects of Unani Formulation Jawarish Bisbasa in Dyslipidaemia and Anthropometric Parameters Associated with Central Obesity: An Open-Label Clinical Trial.	Open-label trial	Jawarish Bisbasa	↓ anthropometric & lipid parameters	[61]
Evaluate the efficacy of Unani medicine in the management of <i>Simān Mufrit</i> (obesity)	Randomized single-blind	Sufoof formulations	Improved clinical signs/symptoms of obesity	[62]
Therapeutic Evaluation of an Unani Formulation (Safoofe Muhazzil Khaas) in the Management of <i>Simān Mufrit</i> (Obesity)	Controlled intervention	Safoofe Muhazzil Khaas	Reduction in body weight and obesity symptoms	[63]
Efficacy of Riyazat (Physical Exercise) with Hammam-E-Bukhari (Steam Bath) in the Management of <i>Simān Mufrit</i> (Obesity)	Open clinical trial	Exercise (Riyazat) + Hammam-eBukhari (Steam Bath) +diet regulation	Significant improvement in body weight, BMI, waist circumference, Waist HR, Skin fold thickness	[64]
Comparative Study of Kundur (<i>Boswellia serrata</i>) and Tareeq (Diaphoresis) in the Management of <i>Simān Mufrit</i> (Obesity)	Randomised, three-arm clinical study	<i>Boswellia serrata</i> , steam diaphoresis	Significant weight reduction and decreases in BMI, waist circumference, waist–hip ratio, and skin-fold thickness	[65]

DISCUSSION

Obesity (*Simān Mufrit*) is now recognized as a multifactorial metabolic disorder involving complex interactions among dietary habits, physical inactivity, genetic susceptibility, endocrine dysfunction, chronic inflammation, and altered energy metabolism. While modern medicine explains obesity through

mechanisms, such as insulin resistance, adipose tissue dysfunction, dyslipidaemia, and metabolic inflammation, Unani Medicine interprets the condition through the framework of humoral imbalance and derangement of temperament (*Su'-e-Mizāj*). Despite differences in terminology, several classical Unani concepts show remarkable parallels with contemporary biomedical understanding.

According to Unani scholars, obesity results primarily from the predominance of *Balgham* (phlegm) and a cold and moist temperament (*Su'-e-Mizāj Bārid Rath*), leading to impaired digestion (*hazm*), disturbed metabolic transformation (*istiḥāla*), and excessive accumulation of fat (*shaḥm*). These descriptions may be correlated with reduced metabolic efficiency, impaired energy expenditure, and abnormal lipid storage. The Unani concept of weakened digestive and metabolic faculties resembles modern observations of metabolic dysregulation, altered glucose utilization, and reduced fat oxidation in obese individuals.

Classical Unani texts identify excessive intake of fatty and calorie-dense foods, prolonged sleep, and sedentary behavior as major contributors to obesity. These observations closely correspond to modern evidence demonstrating that positive energy balance and physical inactivity promote adipocyte hypertrophy, lipid accumulation, insulin resistance, and metabolic syndrome. Furthermore, the Unani concept of *imtīlā'* (congestion) may reflect pathological states associated with ectopic fat deposition, vascular dysfunction, and impaired metabolic homeostasis.

Modern research has established that adipose tissue functions as an active endocrine organ that secretes adipokines and inflammatory mediators, including tumor necrosis factor- α (TNF- α), interleukin-6 (IL-6), leptin, and adiponectin, which play important roles in insulin sensitivity and energy regulation. Excess adiposity promotes chronic low-grade inflammation, leading to insulin resistance and obesity-related metabolic complications. Interestingly, the Unani description of *Balgham* accumulation, diminished innate heat (*ḥarārat gharīzīyah*), and impaired metabolic transformation may represent a systemic pathological state comparable to metabolic inflammation and endocrine dysfunction described in contemporary medicine [66, 67].

The Unani understanding of diminished *ḥarārat gharīzīyah* is particularly noteworthy when viewed through a modern lens. Reduced innate heat may be interpreted as decreased metabolic activity, impaired mitochondrial energy utilization, and lower thermogenesis, all of which contribute to fat accumulation. Similarly, the accumulation of phlegmatic material (*Balgham*) may be linked with altered lipid metabolism and excessive adipose tissue expansion, which are now recognized as central mechanisms in obesity-associated insulin resistance [68].

The principles of obesity management in Unani Medicine also demonstrate considerable overlap with contemporary therapeutic approaches. Dietary regulation (*Ilāj bi'l-Ghidhā'*) emphasizes gradual caloric restriction, avoidance of fatty foods, and consumption of vegetables, spices, and substances that enhance digestion and metabolism. These recommendations parallel modern dietary interventions aimed at improving insulin sensitivity, reducing adiposity, and regulating lipid metabolism. Likewise, vinegar and thermogenic spices recommended in Unani texts have been investigated for their potential effects on satiety, glucose regulation, fat oxidation, and body-weight control.

Regimenal therapies (*Ilāj bi'l-Tadbīr*), including exercise (*Riyādat*), massage (*Dalk*), and steam bath (*Ḥammām*), are intended to enhance circulation, facilitate elimination of morbid matter, and restore humoral balance. Modern evidence similarly demonstrates that regular physical activity improves insulin sensitivity, increases glucose uptake, enhances lipid utilization, reduces systemic inflammation, and improves overall metabolic health [69, 70]. Pharmacotherapy (*Ilāj bi'l-Dawā'*) employs herbal formulations possessing *Muhallil* (resolvent), *Mufattiḥ* (deobstruent), and *Mulattif* (attenuant) properties. Experimental studies have shown that several Unani medicinal plants, including *Trachyspermum ammi* (Ajwain), *Ruta graveolens* (Suddāb), and *Origanum majorana* (Marzanjūsh), possess antioxidant, anti-inflammatory, hypolipidaemic, and metabolic regulatory effects that may

contribute to weight reduction and improved metabolic function. Likewise, *Apium graveolens* has demonstrated anti-obesity activity through reduction of body weight and enhancement of thermogenesis, while cinnamon (*Cinnamomum zeylanicum*) supplementation has shown beneficial effects on body weight and BMI in meta-analyses. These findings support the possibility that several traditional Unani drugs exert their effects through mechanisms involving lipid metabolism, energy expenditure, and insulin regulation.

Overall, the convergence between classical Unani concepts and contemporary biomedical research suggests that notions, such as *Balgham* predominance, *Su'-e-Mizāj Bārid Ratb*, impaired *istihāla*, and reduced *ḥarārat gharīziyah*, may correspond to broader physiological disturbances involving insulin resistance, chronic inflammation, adipose tissue dysfunction, and altered lipid metabolism. Integrating these traditional concepts with modern scientific evidence may provide a more comprehensive understanding of obesity and support the development of complementary therapeutic strategies.

Safety, Toxicity, and Clinical Considerations

Unani medicine utilizes herbal formulations, dietary modifications, and regimental therapies for the management of *Simān Mufrit* (obesity). Although most commonly used medicinal plants are generally considered safe at recommended doses, excessive use may cause gastrointestinal disturbances, allergic reactions, and potential herb–drug interactions, particularly in patients receiving antidiabetic, antihypertensive, or anticoagulant medications [71, 72].

Regimental therapies, such as *Riyādat* (exercise), *Dalk* (massage), *Hammām* (steam bath), and *Hijāma bi'l Sharṭ* (wet cupping), are generally safe when performed by trained practitioners. However, excessive exercise may lead to musculoskeletal injuries, steam baths may cause dehydration or dizziness, and wet cupping may occasionally result in local pain, bruising, infection, or vasovagal reactions if performed improperly [73].

Another important concern is the lack of standardization of some herbal products. Variations in plant sources, processing methods, and storage conditions may affect safety and efficacy, while contamination with heavy metals or microbial agents remains a potential risk [72].

Overall, Unani interventions appear relatively safe when used appropriately under professional supervision. However, further well-designed clinical studies are needed to establish long-term safety, toxicity profiles, and standardized treatment protocols for obesity management [74].

CONCLUSION

Unani Medicine offers a comprehensive and holistic perspective on obesity (*Simān Mufrit*), emphasizing the role of humoral imbalance, particularly the predominance of *Balgham* (phlegm), derangement of temperament (*Su'-e-Mizāj Bārid Ratb*), unhealthy dietary habits, and sedentary lifestyle. The classical principles of dietotherapy (*Ilāj bi'l-Ghidhā*), regimenal therapy (*Ilāj bi'l-Tadbīr*), and pharmacotherapy (*Ilāj bi'l-Dawā*) aim not only to reduce excess body fat but also to restore metabolic balance and overall health. Many of these concepts show parallels with contemporary understanding of obesity, including the roles of impaired metabolism, lipid dysregulation, inflammation, and lifestyle factors.

The available evidence suggests that several Unani medicinal plants and formulations possess anti-obesity, hypolipidemic, and metabolic-regulating properties. However, most of the supporting data originate from experimental studies, animal models, traditional literature, and small-scale clinical investigations. Although a few clinical studies have reported beneficial effects on body weight, lipid profile, and metabolic parameters, the overall evidence remains limited by small sample sizes, methodological heterogeneity, short follow-up periods, and lack of standardized treatment protocols.

Therefore, while Unani Medicine holds promise as a complementary approach to obesity management, its clinical effectiveness requires further validation. Future research should focus on well-

designed randomized controlled trials, multicentre clinical studies, long-term safety assessments, and mechanistic investigations of commonly used Unani drugs and formulations. Standardization of herbal preparations, dosage regimens, and outcome measures will be essential to strengthen the evidence base and facilitate integration of Unani principles into contemporary obesity care. Such efforts may help establish scientifically validated, safe, and sustainable strategies for the management of obesity and its associated metabolic disorders.

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