

IMPACT OF ASBĀB SITTA ḌARŪRIYYA ON SIMAN MUFRIT̃ (OBESITY): A
COMPREHENSIVE COMPARATIVE REVIEW OF UNANI AND MODERN
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ABSTRACT

Background- Obesity is a major public health problem worldwide, with increasing prevalence and associated metabolic disorders. Conventional medicine views obesity as an energy imbalance but traditional systems like Unani medicine provide a more holistic view in understanding the etiology and prevention of obesity. The central theme of this framework is the Asbāb Sitta Ḍarūriyya (Six Essential Determinants of Health) emphasizing lifestyle regulation in the protection of health. **Objective-** To review the Unani concept of Asbāb Sitta Ḍarūriyya in context of obesity and exploring its relevance by comparing classical Unani concepts with contemporary biomedical evidence. **Methods-** A narrative review was performed with primary data from classical Unani literature and current biomedical research on obesity and metabolic syndrome. The six determinants of health (Air (Hawā), Foods and Drinks (Ma'kūlāt-o-Mashrūbāt), Bodily Movement and Repose (Al-Ḥaraka wa'l Sukūn al-Badanī), Psychic Movement and Repose (Al-Ḥaraka wa'l Sukūn al-Nafsānī), Sleep and Wakefulness (Al-Nawm wa'l Yaqza), and Retention and Evacuation (Al-Iḥtibās wa'l-Istifrāgh) were analyzed for conceptual similarities with the current scientific understanding of obesity. **Results-** The review reveals a significant convergence between the classical Unani principles and the modern biomedical evidence. The Unani explanations for fat accumulation such as impure air, cold-moist dietary patterns, physical inactivity, emotional imbalance, disturbed sleep, and impaired elimination closely align with current evidence linking environmental, dietary, behavioral, psychological, circadian and metabolic factors to obesity and metabolic syndrome. These findings highlight the significance of holistic lifestyle modification in the prevention and management of obesity. **Conclusion-** Though Unani medicine and modern biomedicine have different terminologies and theoretical basis, the principles of moderation, individualization and lifestyle regulation are similar. A holistic model of evidence-based biomedical recommendations and culturally sensitive Unani lifestyle interventions can offer a comprehensive framework for prevention and management of obesity.

INTRODUCTION

Siman Mufrīt̃ (Obesity) has emerged as one of the most pressing public health challenges of the 21st century. The World Health Organization (WHO) estimates that 1.9

billion adults were overweight and more than 650 million adults were obese in 2016.^[1] More recent estimates suggest that by 2022 approximately 2.5 billion adults (43 % of the global population) were overweight

and 890 million adults (16 %) were obese, underscoring a continuing upward trend.^[2]

Modern biomedical research largely conceptualizes obesity as an energy imbalance resulting from excessive caloric intake relative to energy expenditure. However, such a reductionist model does not explain the complex interactions that exist among dietary factors, physical activity, environmental exposures, psychological health, patterns of sleep, and elimination processes.

Integrative health could offer wider windows to appreciation of these interactions. According to the physicians practicing Unani medicine, health is maintained by the proper management of six essential factors: *Asbāb Sitta Darūriyya*, namely, *Hawā* (air), *Ma'kūlāt-o-Mashrūbāt* (foods and drinks), *Al-Haraka wa'l Sukūn al-Badanī* (bodily movement and repose), *Al-Haraka wa'l Sukūn al-Nafsānī* (psychic movement and repose), *Al-Nawm wa'l Yaqza* (sleep and wakefulness), *Al-Ihtibās wa'l-Istifrāgh* (retention and evacuation). These have been enumerated in classical texts such as *Al-Qanun fi'l-Tibb* by Ibn Sīnā and *Kitab al Kulliyat* by Ibn Rushd, guiding preventive and therapeutic practices over centuries.^[3]

Despite their historical significance, the six key factors have received little attention in current obesity research. Furthermore, the conceptual language and underlying theories of Unani and modern biomedical paradigms differ significantly. This review attempts to bridge this gap by carefully comparing Unani descriptions of each component with the most recent studies on lifestyle factors that contribute to obesity. We seek to show that many Unani principles are still relevant today and that incorporating these viewpoints could improve obesity prevention strategies by drawing on cross-disciplinary literature, from classical treatises to contemporary epidemiological studies.

Methodological approach

To develop a comprehensive comparison between Unani and modern perspectives on the six essential factors, we searched primary Unani texts through Unani classical text books, modern Unani research papers and scholarly works discussing *Asbāb Sitta Darūriyya* and obesity. We complemented these findings with a systematic review of biomedical literature addressing air pollution, diet, physical activity, mental health, sleep, and excretory health as determinants of obesity. The literature was collected from electronic resources, such as databases of science direct, Web of Science, Google, PubMed, Google Scholar, Research gate, with main resource libraries that have collections of Unani books and manuscripts searched for the relevant material available on the topic. The literature search was conducted using keywords such as '*Siman Mufrit*', '*Asbāb Sitta Darūriyya*', 'Unani medicine and obesity', 'lifestyle factors and metabolic syndrome', 'air pollution and visceral fat', etc."

Hawā (Air) and obesity

The Unani perspective on air in relation to obesity

In relation to weight management, Unani scholars postulated that impure air could contribute to the thickening of humours and the buildup of waste products, which in turn might predispose individuals to obesity. They noted that cities with crowded, polluted air were associated with lethargy and sluggish digestion, whereas rural or mountainous areas with fresh air promoted vigor and metabolic efficiency. Although these observations were descriptive rather than quantitative, they highlight an early recognition of environmental influences on weight regulation.^[4]

Majoosi states in *Kamil Us Sana* that in order to convert *martoob mizaj*, one should obtain desiccant applications toward the typical temperament (*Mu'tadil mizaj*). The individual should be kept at a high elevation and in a hot climate for this reason.^[15,16] *Razi* argues that since an obese person has *barid mizaj*, *tadabir* with *har yabis mizaj* should be obtained to lessen obesity.^[16,17] *Mizaj* of Winter season is *barid ratab* and the air in that season also has *barid ratab mizaj* as it contains high moisture content. This results in decreased *tahallul* of body fluids and accumulates the *khilte balgham* in the body during winter season. The daily body activities are also decreased during this season because of accumulation of *khilte balgham* and it disturbs the metabolism leading to excessive deposition of fat.^[16,18] So winter season may also play a role in potentiating the obesity. Ibn Sīnā said that dry air makes the men lean.^[16,19]

Martoob ghiza, *rogananiyat* (fatty oils) and *kasrate ghiza* (excessive eating) produces excessive *balgham* as well as disturbs the metabolism which may lead to excessive deposition of fat in the body and when this fat crosses the normal criteria for a healthy person, it becomes the major cause of obesity.

Modern research on air pollution and obesity

Contemporary studies support the notion that environmental air quality influences metabolic health. Long-term exposure to particulate matter (PM_{2.5} and PM₁₀), nitrogen dioxide and other pollutants is associated with increased risk of metabolic syndrome and its components, including abdominal obesity. A review of epidemiological studies reported that ambient air pollution increases the risk of metabolic syndrome through mechanisms such as systemic inflammation, oxidative stress and endothelial dysfunction. In addition, observational studies have shown that exposure to traffic-related PM_{2.5} is associated with increased waist circumference and visceral adipose tissue, with stronger associations for women, although effect sizes differ by population.⁵ Another study found that PM_{2.5} air pollution levels >25 µg/m³ were associated with increased risks of obesity and components of the metabolic syndrome.^[6]

Biologically plausible mechanisms linking air pollution to obesity include activation of the hypothalamic-pituitary-adrenal (HPA) axis, induction of insulin resistance through oxidative stress, and epigenetic modifications that influence adipogenesis. Animal studies have shown that PM_{2.5} exposure causes increased visceral fat deposition and inflammatory

cytokine production. In humans, air pollution may reduce outdoor physical activity and encourage sedentary behaviour, indirectly promoting weight gain. From a public health perspective, these findings highlight the need for environmental policies to reduce air pollution and for clinicians to consider environmental exposures when managing obesity.

Comparative Analysis: Unani vs. Modern Perspectives on Air and Obesity.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Common Ground / Alignment
Core Philosophy	Impure air thickens humours and causes sluggish digestion, predisposing to obesity.	Air pollution is linked to increased risk of metabolic syndrome and abdominal/visceral obesity.	Both recognize air quality as a foundational determinant of metabolic health and weight regulation.
Key Environmental Triggers	Crowded/polluted cities, cold and moist winter air (<i>barid rataab</i>), and low elevations.	Long-term exposure to particulate matter (PM _{2.5} , PM ₁₀), nitrogen dioxide, and traffic-related pollution.	Shared understanding that polluted/poor-quality environments directly contribute to weight gain.
Underlying Mechanisms	Accumulation of phlegm (<i>khilte balgham</i>) and disruption of temperament (<i>mizaj</i>).	Systemic inflammation, oxidative stress, HPA axis activation, epigenetic modifications, and endothelial dysfunction.	Both identify systemic internal disruption (humoral vs. cellular/hormonal) caused by external air.
Behavioral & Dietary Links	Damp foods (<i>martoob ghiza</i>), fatty oils, and excessive eating compound the effects of bad air on metabolism.	Air pollution discourages outdoor physical activity, leading to a sedentary lifestyle which promotes weight gain.	Environmental factors interact closely with diet and physical activity levels to exacerbate obesity.
Proposed Interventions	Relocate to fresh air, high elevations, or hot/dry climates (<i>har yabis mizaj</i>); personalized humoral treatments.	Implement public health environmental policies to reduce ambient pollution; clinical lifestyle management.	Emphasis on altering environmental exposure (moving to fresh air vs. reducing pollution) to prevent obesity.

Ma'kūlāt-o-Mashrūbāt (Foods and drinks)

Unani perspective on food and drinks in relation to obesity

Diet is the cornerstone of Unani obesity theory. Foods and drinks themselves have temperaments (Mizāj) and can either kindle or suppress the body's innate heat. Diets rich in cold, wet, fatty or sugary substances are thought to produce excess Barūdāt and Ruṭūbat in the blood, leading to adipose deposition.^[33] According to Greek physicians life relies on diet, *Quwwat-e-Tabiyia* (nutritive faculty) and *Harārat Gharīziyya* (innate energy).^[16,19] According to Buqrāt (Hippocrates), the quality (*kaifyat*) and quantity (*Kammiyat*) of diet and importance of balanced diet in relation to occurrence of disease is an important factor in the treatment of obesity. He said, the one who wants to reduce weight should take sattv like diet, chapaties made from husk flour (that is of low calorie value and rich in fibers). With this, it is quite evident that concept of low calorie diet is not new and was present in the minds of ancient Unani physicians. According to *Razi* and *Rabban Tabri*, *ratab ghizayen* produce obesity much more rapidly in comparison to what the other diets do.^[16,20,21]

And also avoiding oily foods and those food which increase the formation of blood and phlegm like *kheera*, *kakdi*, *kaddu* etc. they should be avoided in an attempt to

decrease weight. Hot spices should be added in *ghiza* (food) e.g. *Filfil Daraz*, *Haldi*, *Zeera*, *Lehsun*, *zanjabeel*.^[16,22] These are hot in temperament. These are commonly used as spices and found all over India. Preclinical studies on ginger reported that it contains two major constituents namely gingerol and shaghol which suppress the absorption of dietary fat from the intestines and helps in dissolution of excess fat deposited inside the body. It increases the BMR and thus controls obesity. It also has antihyperlipidemic activity and reduces abnormal cholesterol level in the blood.^[16,23] *Haldi* has hot and dry temperament. It has *Munaffis Balgham* (Expectorant) and *Mujaffif* (Dessicant) action. It is one of the best natural antiseptics. It is a good digestive tonic and blood and liver purifier. It helps in the clearing and improved the functioning of the entire digestion system particularly the intestines. It also helps in reducing the blood cholesterol levels and regulates the blood sugar level. Its antioxidant property prevents the body from free radical damage and decreases the oxidative stress and thus prevents cardiovascular complications associated with obesity.^[16,24] The foods having cold temperament should not be used in winter season because these foods produces *baroodat* in the body and causes the obesity.^[16,19] *Ibn e hubl Baghdadi* has cautioned that intake of diet should not be decreased suddenly instead of that it should be decreased in step by step fashion otherwise the side effects may occur in obese

persons.^[16,25,26] Excessive intake of alcohol has also been described as one of the cause of obesity in Unani text.^[16,27]

Modern dietary research and obesity

Modern nutrition science identifies excessive caloric intake, consumption of energy-dense foods, sugary beverages and saturated fats as major contributors to obesity. The WHO notes that energy intake should be balanced with energy expenditure and that total fat should not exceed 30 % of total energy, with saturated fat <10 % and trans-fat <1 %. Free sugar intake should be less than 10 % of total energy and ideally below 5 % for additional health benefits. A healthy diet includes at least 400 g of fruit and vegetables per day, legumes, nuts and whole grains, while limiting salt intake to less than 5

g per day.^[7] Modern dietary patterns such as the Mediterranean diet and the DASH (Dietary Approaches to Stop Hypertension) diet, which emphasise plant-based foods, olive oil, nuts and fish, are associated with lower obesity risk.^[8] Conversely, proximity to fast-food outlets and an obesogenic food environment are associated with higher obesity prevalence.^[9] Epidemiological evidence underscores the link between diet and obesity. Observational and interventional studies show that unhealthy dietary habits—high intake of refined carbohydrates, saturated fats, and sugar-sweetened beverages—are significant risk factors for obesity.^[8] Meta-analyses indicate that fast-food outlet density correlates with increased body mass index (BMI), while access to fruit and vegetable outlets is inversely associated with obesity.^[9]

Comparative Analysis: Unani vs. Modern Dietary Perspectives on Obesity.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Common Ground / Alignment
Core Philosophy / Cause	Excessive intake of cold/moist foods suppresses innate heat (<i>Harārat-e-Gharīziyya</i>) and weakens nutritive faculty (<i>Quwwat-e-Tabī'īyya</i>), causing <i>Ruṭūbat</i> and <i>Balgham</i> (phlegm) accumulation.	Chronic energy imbalance caused by excessive caloric intake combined with low energy expenditure, leading to metabolic dysregulation.	Both recognize that an imbalance in dietary intake relative to the body's processing capacity leads to fat deposition.
Dietary Triggers (To Avoid)	Foods with a cold and moist temperament (<i>Barid wa Ratab</i>), along with oily, sweet, and phlegm-producing foods.	Energy-dense foods, refined carbohydrates, saturated fats, sugary beverages, and alcohol.	Shared emphasis on avoiding excessive intake of fats, sugars/sweets, and heavy/energy-dense items.
Recommended Foods	Hot and dry foods and spices (e.g., ginger, turmeric, garlic, black pepper) to enhance digestion and fat dissolution.	Fiber-rich foods such as fruits, vegetables, whole grains, and legumes.	Preference for functional, natural foods that regulate metabolism and aid digestion (high-fiber and metabolism-boosting profiles).
Overall Dietary Strategy	Strict moderation in both the quality (<i>Kaifiyat</i>) and quantity (<i>Kammiyat</i>) of the diet.	Calorie control and adopting structured healthy dietary patterns (e.g., Mediterranean or DASH diet).	Both strongly advocate for dietary moderation and gradual, sustainable dietary modifications for effective obesity management.

Al-Ḥaraka wa'l Sukūn al-Badanī (Bodily movement and repose)

Physical activity is vital for maintaining overall health and well-being. Many studies highlight the wide-ranging advantages of regular exercise. It supports the healthy functioning of the heart, muscles, bones, blood components like cholesterol, immunity, and the nervous system. It also lowers several risk factors linked to non-communicable diseases like obesity.^[33] Unani physicians emphasize that exercise is important for stimulating innate heat (*hararat ghariziya*) and promoting the removal of waste from the body. But extended exertion leads to the dispersion of this natural

heat. Rest is required to ease tiredness and reduce overheating, which may harm bodily fluids. Too much activity causes dryness of innate fluids, while too much rest raises fluid levels causes obesity and reduces innate energy.^[34]

Rest (*sukoon*) is equally important to prevent exhaustion and to allow tissues to recover. The interplay between movement and rest must be balanced; continuous inactivity results in accumulation of phlegm and fat, whereas excessive movement leads to depletion and emaciation. Therefore, Unani scholars recommended moderate exercise—such as brisk walking, calisthenics

or moderate sports—for weight control, combined with appropriate rest periods.

They also emphasised exposure to sunlight and fresh air during physical activity for additional benefits. Greco-Arab physicians theorized that physical activity is essential for the activation of innate energy and to excrete the waste products of the body. Rest is necessary to save the body temperature and body fluids.^[16,18] If the aim is to reduce the body weight, exercise should be done before the meal.^[16,28] Razi recommended avoiding soft beds, as they are believed to induce *ratubat* (moisture) in body, therefore in order to reduce weight, the person should sleep on hard bed as it produces hardness in body, decreases the growth of muscles. He further said that exercise should be done without clothes as it produces more dryness in body.^[16,17]

Ibn Sīnā (Avicenna) stated that rest in all conditions induces the cold and moist temperament in body. *Majoosi* said that *riyazat* is the second name of body movement and he classified body movement into two groups (1) *Riyazat* (Exercise) (2) *Dalak* (Massage).^[16,19]

Riyazat (Exercise): It is one of the most important tools for reducing the obesity by expenditure of extra energy. However, exercise should be on regular basis and it should be introduced gradually and under medical supervision especially in the advanced obesity, otherwise, negative effects may occur. Exercise should be done in the warm places that receive good solar energy. Exercise should be active and followed by massage of *Muhallil Roghaniyat* oils like Dill oil. Baths

should be taken regularly before the meals. Bath should be taken in that water which have effect of alum or sulphur.^[15,16]

Dalak (Massage) is extensively documented in Unani literature for weight reduction. *Dalak kaseer* (prolonged massage) liquefies excess fat and resolves morbid humours. Hard massage should be performed until the body muscles become prominent and firm.^[16,18]

Modern physical activity guidelines and obesity

Contemporary public health guidelines align with the Unani emphasis on regular, moderate physical activity. The WHO recommends that adults engage in at least 150 to 300 minutes of moderate-intensity aerobic activity or 75 to 150 minutes of vigorous-intensity activity per week. Digital exercise interventions and lifestyle programs emphasise these recommendations for weight management and overall health.^[10] Notably, nearly one-third of adults globally are physically inactive and fail to meet these guidelines; women, older adults and adolescents exhibit higher levels of inactivity. Encouraging physical activity can involve public health policies to create supportive environments (e.g. safe walking paths, sports facilities, active transportation infrastructure, and community programs).^[11] Empirical evidence demonstrates that physical activity reduces obesity risk and improves metabolic parameters. Meta-analyses show that active individuals with obesity have a 21 % lower risk of all-cause mortality and a 24 % lower risk of cardiovascular mortality compared with those who are insufficiently active.

Comparative Analysis: Unani vs. Modern Perspectives on Physical Activity and Rest.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Common Ground / Alignment
Core Philosophy & Role of Exercise	Exercise stimulates innate heat (<i>hararat ghariziya</i>) and promotes waste removal. Body movement is classified into <i>Riyazat</i> (Exercise) and <i>Dalak</i> (Massage).	Physical activity is vital for heart, muscle, and bone health, immunity, and reducing risk factors for non-communicable diseases and obesity.	Both emphasize the profound health benefits of exercise for improving circulation, metabolism, and weight management.
Consequences of Inactivity & Role of Rest	Excessive rest (<i>sukoon</i>) raises fluid levels, induces a cold/moist temperament, causes accumulation of phlegm and fat, and reduces innate energy.	Physical inactivity is a major global health issue, strongly linked to higher risks of obesity, metabolic dysfunction, and cardiovascular mortality.	Both recognize that while rest is necessary for recovery, chronic inactivity directly drives fat accumulation and health decline.
Specific Guidelines & Prescriptions	Advocates moderate exercise before meals. Recommends long-duration hard massage (<i>Dalak kaseer</i>) to liquefy fat. Guidelines are qualitative.	Recommends 150-300 mins of moderate aerobic activity or 75-150 mins of vigorous activity per week. Guidelines are quantitative.	Both agree on the necessity of regular, moderate activity, though modern science quantifies the exact duration and intensity needed.
Lifestyle & Environmental Modifiers	Exercise in warm, sunlit places; sleep on hard beds to reduce moisture (<i>ratubat</i>); exercise without clothes to promote dryness; bathe in alum/sulphur water.	Public health policies focus on safe walking paths, active transportation, sports facilities, and digital exercise interventions.	Both acknowledge that environmental and lifestyle contexts heavily influence the effectiveness of physical activity routines.

Personalization Evidence Base	&	Nuanced, personalized recommendations based on an individual's temperament, condition, and the season.	Evidence based on meta-analyses (e.g., 21% lower mortality risk for active obese individuals), customized by age and fitness level.	Integration of both models encourages personalized, culturally resonant exercise prescriptions adapted to individual health status.
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Al-Ḥaraka wa'l Sukūn al-Nafsānī (Psychic movement and repose)

Joy/Relaxation: According to Unani theory, joy and pleasure create a gradual *outward* expansion of vital warmth. This “dilates” vessels and slows the pulse.^[35] The result is a net *cooling/moistening* effect on the body. For example, one review explains that *Siman Mufrit* involves increased *Ratūbat* (moisture) and *Barūdāt* (coldness), with buildup of fatty-phlegmatic matter (*Maddā-i-balghāmiyya*).^[36] In practice, Unani authors explicitly link excess happiness to phlegm accumulation. As mentioned, *Farhat* (happiness) and *suroor* (delight) appear in classical etiologies of obesity.^[37]

Grief/Anxiety/Fear: In contrast, grief (*Gham*), worry (*Fikr*) and fear (*Khauf*) have the opposite impact. Unani texts describe these emotions as causing an inward shift of heat and rapid depletion of innate warmth. For example, fear and sorrow produce a *small, weak, slow* pulse and draw heat into the interior. The body becomes colder and drier in temperament. This inward motion *heats* the core while *cooling* the periphery. The practical effect is a quick digestion (*taḥlīl*) of bodily moisture. Thus, anxiety and grief are classically associated with weight loss and emaciation, not fat gain. No classical source suggests that chronic fear or worry leads to obesity; indeed, Unani regimens for melancholic temperaments aim to *warm* and *moisten* the body to counteract stress-induced dryness.^[38]

Modern evidence on mental health and obesity

Modern research confirms a bidirectional relationship between obesity and mental health disorders. Cross-sectional and longitudinal studies reveal that adults with obesity have significantly higher rates of depression and anxiety than those with normal weight.² A recent review focusing on young adults found that 45.3 % of adults aged 20–39 with depression were obese compared with 30 % of adults without depression, indicating a strong correlation between depression and obesity.

Meta-analyses suggest that baseline obesity increases the risk of subsequent depression, with the association stronger in individuals aged 20–59 and varying by sex and ethnicity.^[2] Psychological consequences of obesity include low self-esteem, social stigma and body image dissatisfaction, which may perpetuate a cycle of emotional eating and further weight gain.^[2]

Several mechanisms may support this bidirectional relationship. Chronic stress activates the HPA axis, which raises cortisol levels. This increase promotes visceral fat storage and insulin resistance. Depression often leads to reduced physical activity, changes in appetite, and sleep disturbances, all of which impact body weight. On the other hand, obesity can trigger inflammation and hormonal shifts that affect neurotransmitter levels, potentially leading to depression. Social factors, like discrimination and isolation, also worsen mental health issues. Modern psychological treatments for obesity must include behavioral and psychological strategies, as they are essential for effective treatment.

Modern psychological interventions for obesity

Behavioral and psychological interventions are essential to effective obesity treatment. Cognitive behavioural therapy (CBT) addresses maladaptive thoughts and behaviours related to eating, physical activity and body image. Mindfulness-based interventions, including Acceptance and Commitment Therapy (ACT), mindfulness-based stress reduction (MBSR) and Mindfulness-Based Eating Awareness Training (MB-EAT), have gained attention for weight management. A meta-analysis reported that mindfulness-based interventions may offer physical and psychological benefits for overweight and obese adults, though high-quality research is needed to establish efficacy. Contemporary lifestyle modification programs typically integrate dietary advice, exercise recommendations and behavioural therapy to enhance adherence; self-monitoring, realistic goal setting and coping strategies to manage triggers are core components.^[13]

Emerging evidence suggests that mindfulness interventions may improve eating behaviours, reduce emotional eating and promote long-term weight loss. For adolescents, mindfulness-based interventions have been associated with reductions in BMI (by approximately 1.1 kg/m²) and waist-to-hip ratio, along with improvements in cortisol, ghrelin, blood pressure and insulin resistance. These interventions help individuals become aware of hunger and satiety cues, reduce impulsivity and emotional eating and cultivate a compassionate self-view.

Comparative Analysis: Unani vs. Modern Perspectives on Mental Health and Obesity.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Comparison / Divergence
Impact of Positive Emotions (Joy/Relaxation)	Causes gradual outward expansion of vital warmth, creating a cooling and moistening effect. Increases moisture (<i>Ratubat</i>) and coldness (<i>Barūdāt</i>), leading to phlegm accumulation and weight gain/obesity.	Generally associated with better mental health and metabolic outcomes, though excessive "comfort" and relaxation can indirectly lead to a sedentary lifestyle and weight gain.	Major Divergence: Unani explicitly links excess happiness/relaxation to fat accumulation, while modern science views well-being as protective, with sedentarism as a secondary behavioral risk.
Impact of Negative Emotions (Grief / Anxiety/ Fear)	Causes an inward shift of heat, depleting innate warmth. Makes the body colder and drier, causing quick digestion of moisture (<i>tahlīl</i>). Strongly associated with weight loss and emaciation, not fat gain.	Chronic stress and anxiety activate the HPA axis, elevating cortisol levels which promote visceral fat deposition and insulin resistance. Strongly associated with weight gain.	Major Divergence: Unani views negative emotions as emaciating (weight loss via dryness), whereas modern science identifies them as major obesogenic factors.
Depression & Mental Health Disorders	Melancholic temperaments (associated with stress/sadness) cause dryness. Regimens aim to warm and moisten the body to counteract this stress-induced dryness.	Bidirectional link with obesity (e.g., 45.3% of depressed young adults are obese). Depression alters appetite, disrupts sleep, and decreases physical activity. Obesity causes inflammation and stigma.	Divergence in physiological manifestation, but both recognize the profound systemic and metabolic impact of mental state on the physical body.
Therapeutic Interventions	Focuses on balancing the temperament (<i>Mizaj</i>) by counteracting the specific humoral imbalance caused by the emotion (e.g., warming/moistening a stressed body).	Employs psychological interventions like CBT, Acceptance and Commitment Therapy (ACT), and Mindfulness (MBSR, MB-EAT) to reduce emotional eating, manage stress, and improve satiety cues.	Both recognize the necessity of addressing the mind to heal the body, though modern interventions focus heavily on cognitive/behavioral modification rather than humoral correction.

Al-Nawm wa'l Yaqa (Sleep and wakefulness)**Unani concepts of sleep**

Unani scholars advocated that proper sleep and wakefulness are necessary for maintenance of health. Sleep is a form of rest, physical as well as mental. Excess of wakefulness produces dryness in the body. Excessive sleep causes coldness, weakness, laziness in the body and headache etc.^[30] So excess of rest i.e. sleep causes change in temperament toward the phlegmatic side (Balghami) and as per the Unani philosophy accumulation of khilt-e-balgham in the body is the major cause of obesity and as excess of wakefulness produces dryness in the body so it might be taken as a preventive measure for reducing obesity.^[19]

Modern evidence on sleep and obesity

Contemporary research supports the crucial role of sleep in metabolic regulation. A meta-analysis revealed that short sleep duration is significantly associated with abdominal obesity, with a relative risk of 1.08 for central obesity among individuals sleeping six hours or less per night. The National Sleep Foundation recommends adults obtain 7–9 hours of sleep per night; insufficient sleep (<7 hr) is linked to increased body weight, while prolonged sleep (>9 hr) may also be detrimental. Mechanistic studies suggest that sleep deprivation affects levels of appetite-regulating hormones, increasing ghrelin and decreasing leptin, resulting in increased hunger and caloric intake. Sleep loss also hyperactivates the HPA axis and increases sympathetic activity, leading to insulin resistance and fat storage.

Epidemiological studies have shown that short sleep is associated with higher BMI, waist circumference and risk of metabolic syndrome. In contrast, interventions that increase sleep duration improve insulin sensitivity and reduce hunger. Sleep quality is also important. Obstructive sleep apnoea (OSA), common in obese people, disrupts sleep architecture and worsens metabolic dysregulation. For weight management, good sleep hygiene practices (e.g., regular sleep schedules, reducing caffeine and screen exposure at night, and creating a restful environment) are recommended.^[31]

On initial observation the views of Unani and modern biomedical on sleep and obesity may seem to be contradictory, but a further comparative analysis shows that both systems are addressing two different ends of the same physiological spectrum. Classical Unani physicians such as Ibn Sīnā and Rāzī observed that excessive sleep increases burudat (coldness) and rutubat (moistness) in the body, moving it toward a phlegmatic (balghami) temperament, marked by sluggish digestion, diminished metabolic heat, lethargy, and a propensity for balgham (phlegm) accumulation. Unani scholars identified this humour as the dominant one underlying obesity. Extended sleep in a relatively active, low caloric, historically pre-modern environment was a metabolic depressant, tending to the development of adiposity through impaired digestion and increased humoral moisture. In contrast recent studies show that not getting sleep. Which is very common in today's inactive societies. Is strongly linked to weight gain through

hormone changes. When we don't sleep enough our bodies make ghrelin and cortisol and less leptin. This can impair our body's ability to handle glucose make us hungrier for high-calorie foods and make us less active during the day because of fatigue. All these changes can make us more likely to become obese and develop metabolic syndrome. It's also important to note that modern research shows that sleeping much. More than 9 hours. Is linked to higher body weight, lower metabolic rate and a higher risk of heart and metabolic problems. These findings are similar to what classical Unani descriptions say about the effects of oversleeping. Together these insights suggest that both Unani theory

and modern science warn against sleep patterns. Unani theory explains that much sleep can lead to obesity through its humoral framework.

Modern science shows that not getting sleep can disrupt our metabolism. The apparent contradiction makes sense when we look at it through a U-shaped risk model. This model shows that both little and too much sleep can harm our metabolic health. On the hand getting a moderate amount of sleep can support a healthy balance, in Unani physiology and hormonal and metabolic stability in modern biomedical science.

Comparative Analysis: Unani vs. Modern Perspectives on Sleep and Obesity.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Common Ground / Alignment
Core Mechanism of Sleep	Sleep increases coldness (burudat) and moistness (rutubat), shifting the body to a phlegmatic (balghami) temperament. It slows digestive heat (hararat-e-ghareeziya).	Sleep is a central regulator of metabolism. Its disruption alters appetite-regulating hormones (ghrelin/leptin), hyperactivates the HPA axis, and induces insulin resistance.	Both paradigms acknowledge sleep as a foundational physiological regulator of metabolic balance and energy processing.
Impact of Excessive Sleep	Major concern in Unani: Prolonged sleep acts as a metabolic depressant, increasing moisture, lethargy, and accumulation of phlegm (khilt-e-balgham), driving obesity.	Excessive sleep (>9 hours) is associated with higher body weight, lower metabolic rate, and increased cardiometabolic risk.	Direct alignment: Both systems agree that oversleeping disrupts metabolic health, reduces energy expenditure, and promotes fat deposition.
Impact of Wakefulness / Short Sleep	Excess wakefulness produces dryness (yubusat). Moderate wakefulness reduces moisture and is seen as a preventive measure against obesity.	Major modern concern: Insufficient sleep (<7 hours) severely increases obesity risk by spiking cortisol, increasing hunger for calorie-dense foods, and reducing daytime activity.	Apparent divergence resolving into a U-shaped model: Unani values moderate wakefulness to prevent fat, while modern science warns that chronic sleep deprivation severely damages metabolic health.
Overall Strategy & Conclusion	Requires a balance between sleep and wakefulness to maintain humoral equilibrium and prevent excessive rutubat (moisture) or yabusat (dryness).	Recommends 7–9 hours of sleep per night and emphasizes sleep hygiene (reducing screen time/cafeine, regular schedules) for hormonal-metabolic stability.	Both traditions converge on moderation. Optimal, balanced sleep duration is essential for preventing obesity, cautioning against the extremes of chronic sleep loss or prolonged oversleeping.

Ihtibās wa Istifrāgh (Retention and evacuation)

Unani principles of *Ihtibās wa Istifrāgh* in relation to obesity

In the Unani framework, obesity (*Siman Mufrit*) is seen as a problem where the body has much cold and moist qualities. When bad matter, phlegm builds up in the body it leads to a lot of thick and cold fluids getting stuck in the tissues. Old books about Unani say that *Siman Mufrit* is a disease that happens because of much phlegm. They say that when phlegm is the problem in the body it can cause obesity. To treat this Unani doctors use methods called *Istifrāgh* to get rid of the fluids and make the body balanced again. Unani therapies, which are also called *ilāj-bi-tadbīr* use things that happen naturally and things that are done on purpose. The body gets rid of things through urine, sweat and stools.

Doctors also give patients things to do to help this process. Some old methods that are still used today include *Hijāmah*, which's a way of using cups to remove bad blood *Fasd*, which is a way of removing blood from the body, *Ishāl*, which is a way of using medicine to make the body get rid of bad things, *Qai*, which is a way of making the body throw up to get rid of bad things *Idrār*, which is a way of using medicine to make the body get rid of extra fluids and *Ta'riq* which is a way of making the body sweat to get rid of bad things.

For example a time ago Ibn Sīnā, who is also known as Avicenna said that when the bad fluids, in the body are diluted they can be removed using these methods. In obesity specifically, these methods are believed to *burn off* or expel excess phlegm and fat. *Hammam* (steam

bath) therapy is classic: *Zakariyā Rāzī* advises a hot steam bath to open pores and perspire out *balghamī* matter. In modern terms, *Hammam* induces thermogenesis and diaphoresis, mobilizing lipid stores. Similarly, *Hijāma* is said to draw off stagnant blood and detoxify tissues, while *Fasd* quickly lowers overall blood volume and *akhlāt*. Each of these techniques “evacuates the morbid humours” and lightens the *tabī‘at* (innate health power). By contrast, failure of *Istifrāgh* – i.e. pathological *Ihtibās* – perpetuates weight gain and its complications.^[39]

Modern research on evacuation and retention

Contemporary medicine recognises that gastrointestinal health and elimination processes influence metabolic outcomes. Constipation—characterised by infrequent bowel movements or hard stool—is a common digestive disorder that affects 15–30 % of the population and is more prevalent among women and older adults. A Mendelian randomisation analysis concluded that genetically predicted obesity increases the risk of constipation (OR = 1.138), whereas constipation did not causally contribute to obesity. The study noted that physical inactivity, low water and fiber consumption, aging, female sex and obesity are risk factors for constipation. Another cross-sectional study using

NHANES data found that high dietary fiber intake reduces the risk of stool-consistency-based constipation among obese individuals. Adequate hydration, magnesium intake and lifestyle changes were also associated with reduced constipation risk, while factors such as depression, hypertension and polypharmacy increased the likelihood of constipation. These findings show that lifestyle bowel health and weight control are connected.

The gut microbiota is really important for digestion and immunity. It links bowel function and obesity. When there's an imbalance in gut microbes called dysbiosis it can change how the body gets energy from food. This imbalance can also create substances that affect appetite and inflammation and change how the intestines work. Eating foods in fiber and fermented foods helps keep gut microbes healthy. This improves bowel movements and metabolic health. On the hand eating low-fiber foods and using antibiotics can cause constipation and metabolic problems. The gut microbiota plays a role in all of this. A healthy gut microbiota is important for bowel health and weight control. It helps our body process food. Keeps our intestines working properly. A balanced diet, with fiber and fermented foods supports a gut microbiota.

Comparative Analysis: Unani vs. Modern Perspectives on Retention and Evacuation.

Feature / Theme	Unani Medicine Perspective	Modern Scientific Perspective	Common Ground / Alignment
Core Philosophy & Mechanism	Obesity is a humoral imbalance (excess cold/moist). <i>ihitbās</i> (retention) of malignant matter, especially balgham (phlegm), leads to the accumulation of cold moist fluid and fat.	Gastrointestinal health and elimination influence metabolism. Obesity increases the risk of constipation, and gut dysbiosis affects energy extraction, appetite, and inflammation.	Both emphasize that regular, healthy elimination of bodily waste is critical for metabolic health and weight regulation.
Consequences of Retention (<i>Ihtibās</i>)	Pathological <i>Ehtibās</i> (failure to evacuate) perpetuates weight gain and the accumulation of morbid humours.	Constipation and dysbiosis lead to metabolic disturbances, driven by physical inactivity, low water/fiber intake, and poor diet.	Retention of waste (whether framed as humours or delayed GI transit) disrupts balance and exacerbates obesity.
Methods of Evacuation (<i>Istifrāgh</i>)	Natural excretion is bolstered alongside active therapies (<i>ilāj-bi-tadbīr</i>): Hammam (steam baths), <i>Hijāmah</i> (wet cupping), <i>Fasd</i> (venesection), <i>Ishāl</i> (purgation), and <i>Idrār</i> (diuretics).	Focuses on increasing dietary fiber, ensuring adequate hydration, magnesium intake, regular physical activity, and promoting beneficial gut microbiota.	Unani use of laxative herbs and thermogenesis (<i>Hammam</i>) parallels modern advice to increase fiber, fluid intake, and metabolic clearance.
Integrative Management Strategy	Aims to expel excess phlegm/fat and lighten the innate health power (<i>tabī‘at</i>) through personalized regimenal therapies.	Aims to optimize gut health, improve bowel regularity, and balance the microbiome through lifestyle and dietary modifications.	Combining both approaches allows for culturally resonant lifestyle interventions that optimize bowel health and metabolic outcomes.

DISCUSSION

The information we have looked at shows that the old Unani ideas about the six things that affect our health are very similar to what we know now about what causes obesity. Even though the words and ideas used are different. Like the ideas of humours and temperaments compared to our modern understanding of hormones and molecules. The basic ideas, about how we live our lives are the same. This part of our discussion brings together

what we have learned from comparing these ideas looks at how the different factors affect each other and thinks about how we can use all of this information to help prevent and manage obesity using Unani concepts and modern science together to enhance obesity prevention and management of obesity.

Integrative strategies for obesity prevention and management

We can make a plan that combines Unani and modern ways to help people with obesity. This plan would include making changes to the environment like reducing the air we breathe and making more parks. It would also include food plans that're right for each person taking into account the kind of person they are. We would make exercise plans that fit each persons personality and how fit they are. We would give people help with their minds using techniques like being mindful and changing how they think. We would do this in a way that makes sense to their culture. We would also help people sleep better by getting them to sleep at the time and for the right amount of time so their bodies can work properly.. We would help people have healthy guts by eating food that is high in fiber drinking plenty of water and not taking antibiotics unless we really need to.

If we teach people about health in a way that makes sense to them using words and ideas from Unani they might listen more. Doctors and other healthcare people could work with Unani practitioners to make plans that respect what people believe while still using ideas that we know work. Obesity interventions, like these would be really helpful. Unani and modern perspectives can work together to make these interventions even better.

Limitations and research gaps

This review looks at what the old Unani texts and modern science say about things. It is not perfect. First the old Unani descriptions are words and do not have numbers like we use today. When we try to say what humoral balance means in terms we have to make some guesses and we might make it sound simpler than it really is. The science studies we looked at are not all the quality. Some of them are very good. Look at a lot of people but others just look at what is happening and might not be totally accurate. We need to do studies to really understand how things like pollution, food, exercise, mental health, sleep and going to the bathroom all work together to affect obesity. The Unani way of doing things like diets, herbs and cupping might help with obesity but we do not know for sure because there are not many good studies on it. We need to do some clinical trials to see if these things really work. We also need to look at how our genes, culture and money situation all work together. Even, with all these problems looking at the Unani way and the new science way together shows us some really good things. The old ideas and the new ideas work together. The Unani ideas and the science ideas are both important. This review looks at both the Unani ideas and the science ideas to understand things.

CONCLUSION

The six essential factors, known as *Asbāb Sitta Darūriyya*, in Unani medicine provide a complete view of what affects health and disease. When we look at these factors alongside modern scientific research, they

closely match today's lifestyle factors that contribute to obesity. Air quality, diet, physical activity, mental health, sleep, and elimination are all important for regulating metabolism. Both classical and modern approaches highlight the need for moderation, balance, and personalization. Although Unani concepts use humoral language, their practical advice—clean air, fresh and moderate diets, regular exercise, mental peace, enough sleep, and proper elimination—still holds true.

The obesity epidemic needs multiple strategies that tackle the various causes of weight gain. Combining Unani wisdom with modern evidence could improve the cultural appeal and overall effectiveness of public health initiatives. In the future, research should focus on well-structured Randomized Controlled Trials (RCTs) to measure how effective specific Unani therapies, like Hammam and Dalak, are for managing weight. We also need interdisciplinary studies to link Unani humoral principles, such as *Khilt-e-Balgham*, with modern markers of metabolic syndrome and gut health issues. Ultimately, including the preventive framework of *Asbāb Sitta Darūriyya* in national public health policies could create community health programs that resonate culturally and receive higher adherence, enhancing our collective fight against obesity.

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