

The Role of Asbāb Sitta Ḍarūriyya in the Pathogenesis of Metabolic Disorders: Classical and Contemporary Perspectives

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Abstract

Review Article

Asbāb Sitta Ḍarūriyya (the Six Essential Factors) constitute the foundational principles for maintaining health and preventing disease in Unani medicine. These factors- Hawā (Air), Ma'kul wa Mashrub (Diet and Drink), Harkat wa Sukūn-e-Badanī (Physical Activity and Rest), Harkat wa Sukūn-e-Nafsānī (Mental Activity and Repose), Naum wa Yaqzah (Sleep and Wakefulness), and Ihtibās wa Istifrāgh (Retention and Evacuation)-are considered indispensable for preserving Mizāj (temperament) and equilibrium of Akhlāt (humours). Classical Unani texts emphasize that disturbance or imbalance in these factors disrupts the Mizāj, leading to Sū'-i-Mizāj (derangement of temperament) and ultimately to disease. In contemporary times, sedentary lifestyle, unhealthy dietary habits, irregular sleep patterns, chronic stress, and environmental pollutants have emerged as major disruptors of these essential factors, significantly contributing to the rising prevalence of metabolic disorders such as obesity, type 2 diabetes mellitus, metabolic syndrome, dyslipidemia, and non-alcoholic fatty liver disease. This paper examines the pathogenesis of these disorders through the unani framework- detailing the role of humoral imbalance, impaired Quwwat-e-Mudabbira (regulatory faculty), and progressive organ dysfunction- as well as the contemporary biomedical understanding involving insulin resistance, chronic low-grade inflammation, oxidative stress, and hormonal dysregulation. By integrating classical unani perspectives with modern scientific evidence, this review highlights the enduring relevance of Asbāb Sitta Ḍarūriyya in preventive and therapeutic strategies for metabolic disorders. Such a multidisciplinary approach not only validates unani principles in the light of modern research but also offers a holistic framework for lifestyle modification, early intervention and long-term health preservation.

Keywords: Unani Medicine, *Asbāb Sitta Ḍarūriyya*, *Mizāj*, Metabolic Disorders, Pathogenesis, Ibn Sina.

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INTRODUCTION

Metabolic disorders such as type 2 diabetes mellitus, obesity, metabolic syndrome, dyslipidemia, fatty liver disease, hypothyroidism, and insomnia are increasingly common in India. These conditions, often interlinked, share lifestyle and environmental determinants. Recent data from the ICMR-INDIAB study report that over 101 million people in India have diabetes, while around 38% of adults are estimated to have non-alcoholic fatty liver disease (NAFLD) [1, 2]. Obesity affects nearly one-third of Indian adults, and thyroid disorders, especially hypothyroidism, are reported in about 11% of the population, with higher prevalence in women [3]. Sleep disorders such as insomnia are also rising, with urban lifestyle patterns, irregular work hours, and mental stress acting as significant contributors [4]. These conditions not only

increase cardiovascular and endocrine risks but also impair quality of life and work productivity.

METHODOLOGY

This narrative review synthesised evidence from both classical unani literature and contemporary biomedical sources to explore the role of Asbāb Sitta Ḍarūriyya in the development of metabolic disorders. Primary unani references included *Al-Qānūn fī al-Ṭibb* (Ibn Sīnā), *Kāmil al-Ṣanā'a al-Ṭibbiyya* (al-Majūsī), *Kitāb al-Ḥawī* (al-Rāzī) and standard teaching manuals, while modern data were obtained from authoritative medical textbooks such as Harrison's Principles of Internal Medicine, Guyton and Hall Textbook of Medical Physiology, and Robbins Basic Pathology. A systematic search of PubMed, Scopus, Web of Science, and Google Scholar (1980-2025) was conducted using keywords related to Asbāb Sitta Ḍarūriyya, Mizāj, Akhlāt, and

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metabolic disorders including obesity, diabetes, fatty liver, hypothyroidism, and insomnia. Relevant peer-reviewed articles and classical descriptions were included if they addressed etiological concepts, disease mechanisms, or preventive strategies. Data were thematically synthesised to provide an integrative perspective aligning Unani principles with modern pathophysiology.

LITERATURE REVIEW

In unani medicine, health maintenance and disease prevention are based on the balance of Mizāj (temperament) and the harmony of Akhlāt (humours). The concept of Asbāb Sitta Ḍarūriyya - the Six Essential Factors-forms the foundation for sustaining health: Hawā (air and environment), Ma'kul wa Mashrub (food and drink), Harkat wa Sukoon-e-Badani (physical activity and rest), Harkat wa Sukoon-e-Nafsi (mental activity and repose), Naum wa Yaqzah (sleep and wakefulness), and Ihtibās wa Istifrāgh (retention and evacuation) [5]. Classical unani texts such as *Al-Qānūn fī al-Ṭibb* of Ibn Sīnā and *Kulliyāt-e-Nafīsī* describe how disturbances in these essentials lead to Sū'-i-Mizāj Sāda (simple morbid temperament) and Sū'-i-Mizāj Māddī (morbid temperament associated with substance), eventually resulting in chronic diseases [5, 6].

Modern science parallels these classical concepts, showing how poor diet, physical inactivity, mental stress, inadequate or disturbed sleep, environmental pollution, and irregular excretory functions contribute to insulin resistance, altered lipid metabolism, hormonal dysregulation, hypothyroid states, chronic inflammation and circadian rhythm disruption [7]. An integrative approach that combines unani preventive regimens with evidence-based modern interventions can help address the multifactorial pathogenesis of these disorders. This paper explores the role of Asbāb Sitta Ḍarūriyya in the development of metabolic disorders from both classical and contemporary perspectives.

Unani Medicine Principles and the Concept of Asbāb Sitta Ḍarūriyya

Unani medicine, a Greco-Arabic system of medicine, is grounded in the philosophical and empirical traditions of Hippocrates (Buqrat), Galen (Jalinoos), and later eminent scholars such as al-Razi (Rhazes) and Ibn Sīnā (Avicenna). The central doctrine revolves around the Mizāj (temperament) of an individual, determined by the qualitative balance of the Arkān (elements)-Air (Hawā), Fire (Nar), Water (Mā'), and Earth (Arz). These elements interact to produce four Akhlāt (humours)-Dam (blood), Balgham (phlegm), Safrā' (yellow bile), and Sawdā' (black bile)-each associated with specific qualities and temperaments [5, 6].

Health is defined as the equilibrium of these humours and the harmony of the temperament in accordance with the individual's constitution (Mizāj-e-

Shakhṣī). Disease occurs when there is an alteration in the temperament (Sū'-i-Mizāj) or a change in the quality and quantity of humours (Sū'-i-Mizāj Māddī). Preservation of health and prevention of disease are achieved primarily through the regulation of the Asbāb Sitta Ḍarūriyya (Six Essential Factors), which are considered indispensable for sustaining life and preventing pathological changes [5-7].

Definition of Asbāb Sitta Ḍarūriyya

The term Asbāb means "causes" or "factors," and Ḍarūriyya means "essential" or "necessary." These six essential factors are the basic physiological and environmental requirements without which life cannot be maintained. Classical texts explain that appropriate moderation of these factors ensures the balance of temperament, whereas their excess, deficiency, or qualitative alteration leads to disease [5, 6].

CLASSIFICATION

According to Ibn Sīnā in *Al-Qānūn fī al-Ṭibb* and Ibn Nafīs in *Kulliyāt-e-Nafīsī*, the six essential factors are:

1. Hawā (Air):

Refers to the atmospheric conditions and quality of air surrounding an individual. The air's temperature, humidity, purity, and movement directly influence the body's temperament. Pure and balanced air sustains normal metabolism and physiological processes, while polluted or stagnant air may cause Sū'-i-Mizāj, leading to respiratory, metabolic, and cardiovascular disorders [5]. Modern medicine recognises that environmental pollutants, poor ventilation, and temperature extremes increase oxidative stress, trigger inflammatory pathways, and predispose to metabolic disorders such as obesity, insulin resistance, and fatty liver disease [7].

2. Ma'kul wa Mashrub (Food & Drink):

Food and drink are the primary sources of nourishment, growth, and repair. Classical unani medicine stresses the quality, quantity, and timing of intake. Overeating, consumption of ghair tabayī (abnormal) foods or nutritionally imbalanced diets can cause derangement of humours, leading to obesity, dyslipidemia, and diabetes [5, 6]. Modern nutritional science similarly links high-calorie, low-nutrient diets with metabolic syndrome, non-alcoholic fatty liver disease, and endocrine dysfunction [7].

3. Harkat wa Sukoon-e-Badani (Physical Activity & Rest):

This includes all voluntary and involuntary movements and their balance with physical rest. Adequate activity strengthens organs, enhances circulation, and improves metabolism, whereas a sedentary lifestyle leads to accumulation of waste products, Sū'-i-Mizāj Māddī, and diseases like obesity, type 2 diabetes, and hypothyroidism-related weight gain [5]. Modern studies confirm that regular exercise

improves insulin sensitivity, lipid metabolism, and hormonal balance [7].

4. Harkat wa Sukoon-e-Nafsani (Mental Activity & Repose):

Mental states, emotional stress, and cognitive activities have a direct influence on physiological processes. Excessive emotional strain or prolonged mental inactivity can alter neuroendocrine function, disturb sleep, and precipitate chronic metabolic conditions [6]. Contemporary research also shows that chronic stress elevates cortisol and catecholamines, leading to central obesity, insulin resistance, and sleep disorders like insomnia [7].

5. Naum wa Yaqzah (Sleep & Wakefulness):

Balanced sleep is essential for mental and physical restoration. According to unani medicine, insufficient, excessive, or disturbed sleep leads to Sū'-i-Mizāj ultimately impairing digestion, metabolic functions, and mental clarity [5]. Modern research confirms that poor sleep quality and reduced duration are linked to obesity, fatty liver, impaired glucose tolerance, hypothyroidism, and increased cardiovascular risk [7].

6. Ihtibās wa Istifrāgh (Retention & Evacuation):

This refers to the controlled retention of essential substances like blood and humours, and the proper elimination of waste through urine, faeces, sweat, and other excretions. Disruption in these processes can lead to toxin (Fuḍla-e-Badan) accumulation, altered humoral balance, and metabolic disorders [6]. Modern parallels include constipation-related toxin reabsorption, impaired bile excretion contributing to fatty liver, and fluid retention in endocrine dysfunction [7].

Development of Metabolic Disorders

Unani medicine, rooted in Greco-Arabic traditions, is based on the theory of Mizāj (temperament) and Akhlāt (humours). According to this principle, the human body maintains health through a balanced combination of four humours- Dam (sanguine), Balgham (phlegm), Safra (yellow bile), and Sauda (black bile)-in terms of their quality, quantity, and interrelationship [5, 6]. Each individual is born with a dominant Mizāj- Ḥār (hot), Bārid (cold), Ratb (moist), or Yābis (dry)-or a combination thereof, which governs physiological and psychological functions. The Asbāb Sitta Ḍarūriyya (Six Essential Factors) maintain the equilibrium of Mizāj and Akhlāt, and any sustained derangement in these essentials gradually leads to illness.

Modern medical explanation of causation

From the standpoint of contemporary medicine, metabolic disorders such as type 2 diabetes mellitus, obesity, dyslipidemia, non-alcoholic fatty liver disease (NAFLD), hypothyroidism, polycystic ovary syndrome (PCOS), and metabolic syndrome result from complex interactions between genetic predisposition, dietary habits, physical inactivity, stress, sleep disturbance, and

environmental exposures [7]. For example, excessive caloric intake combined with sedentary behaviour promotes insulin resistance, visceral adiposity, and systemic low-grade inflammation. In NAFLD, hepatic fat accumulation is linked to overnutrition, dysregulated lipid metabolism, and oxidative stress [8]. In hypothyroidism, impaired thyroid hormone synthesis or action slows metabolic processes, causing weight gain, dyslipidemia, and fatigue [9]. In obesity and metabolic syndrome, hormonal imbalances such as hypercortisolaemia, hyperinsulinaemia, and altered adipokine profiles further aggravate the metabolic state [7, 9]. Chronic stress and insufficient sleep disrupt circadian rhythms and elevate sympathetic activity, worsening metabolic control [10].

CAUSATION AND DISEASE DEVELOPMENT IN UNANI MEDICINE

In Unani understanding, these same conditions are seen as consequences of a gradual imbalance in Mizāj due to persistent disturbance in the Asbāb Sitta Ḍarūriyya. Overeating heavy, cold, and moist foods (e.g. rich in fats and sugars) increases Balgham in the body, leading to Bārid-Ratb Mizāj predominance, which slows metabolism and contributes to obesity, hypothyroidism, and fatty liver [5, 6]. Excessive hot and dry foods, combined with irregular eating times, may elevate Safra, causing hypermetabolic states initially, but later leading to depletion and metabolic exhaustion. Lack of physical activity results in poor Harārat-e-Gharīziyah (innate heat), diminishing the digestive and metabolic powers (Quwwat Hāḍima and Quwwat-e-Mudabbira) [6].

In the mental domain, persistent Harkat-e-Nafsaniya (psychological stress) elevates Safra and Sauda, affecting neuroendocrine regulation and sleep quality, which in turn disturbs hormonal balance. Improper sleep (disturbance in Naum wa Yaqzah) reduces cellular repair and weakens Rūḥ (pneuma), a subtle essence formed from inhaled air and Akhlāt Laṭīfa, as described by Ibn Sīnā [5]. This compromises the Quwwat-e-Mudabbira Badan (regulatory faculty of the body), facilitating the accumulation of morbid humours.

Retention disorders (Ihtibās) such as chronic constipation or urinary retention lead to Fuḍla (waste matter) stagnation, producing inflammatory mediators in modern terms, and Harārat-e-Gharīziyah disruption in Unani terms. Conversely, excessive evacuation (Istifrāgh) through diarrhoea, bleeding, or over-sweating depletes essential humours, weakening metabolic resilience [5, 6].

Over years, these processes shift the Mizāj from a physiological state (Mizāj-e- Ṭabī'iyya) to a pathological one (Sū'-i-Mizāj), first Sāda (only qualitative disturbance) and then Māddī (qualitative disturbance with abnormal matter), manifesting clinically as obesity, insulin resistance, fatty liver,

dyslipidemia, or hypothyroidism depending on the humoral predominance.

METABOLIC DISEASES

1. Obesity (Siman Mufrit)

Modern etiology & mechanisms- Major drivers are chronic positive energy balance (calorie excess, high refined carbohydrate and saturated-fat intake), sedentary behaviour, sleep deficiency, chronic psychosocial stress and genetic susceptibility. Mechanistically: adipocyte hypertrophy/hyperplasia, ectopic fat deposition, adipose inflammation with increased TNF- α /IL-6, macrophage infiltration, development of insulin resistance in muscle and liver, leptin resistance, altered gut microbiome and disrupted gut-brain signalling; chronic HPA activation worsens central adiposity. Hormonal milieu: early hyperinsulinaemia, leptin \uparrow (but resistance), adiponectin \downarrow , cortisol \uparrow in chronic stress; thyroid axis may downshift with weight gain. [7, 11, 12]

Unani causation (Asbāb implicated) - Excess or unsuitable Ma'kul wa Mashrub (overeating, heavy/fatty/sweet foods), inadequate Harkat wa Sukūn-e-Badani (insufficient physical activity), disturbed Naum wa Yaqzah (irregular sleep, late nights), emotional disturbances (Harkat wa Sukūn-e-Nafsani) and impaired Ihtibās wa Istifrāgh (constipation, suppression of natural urges). Environmental poor air or extremes can aggravate. [5, 6, 10]

Unani process (Mizāj-Akhlāt) - Repeated exposure to cold-moist and heavy dietary/lifestyle influences produces Balghamī (barid-ratab) predominance and “thickening” (ghilzat) of humours. Harārat-e-Gharīziyya and Quwwat Hādima weaken, the Quwwat-e-Mudabbira becomes inefficient \rightarrow accumulation of viscous humours presenting as bodily heaviness and progressive fatness. Early changes are Sū'-i-Mizāj (sada); long-standing changes acquire material humoral alterations (maddī). Classical sources describe these links between diet, activity, and humoral thickening. [5, 6, 10]

2. Type 2 diabetes mellitus (T₂ DM) (Dhayābīṭus)

Modern etiology & mechanisms - Multifactorial: genetic predisposition + environmental/lifestyle triggers (high-calorie diet, visceral adiposity, inactivity, sleep loss, stress). Pathogenesis centers on peripheral insulin resistance (muscle, adipose, liver) and progressive pancreatic β -cell dysfunction due to glucolipotoxicity and inflammatory mediators. Dysregulated incretin effect (GLP-1/GIP), elevated glucagon, and neuroendocrine stress responses contribute. Hormonal pattern: early hyperinsulinaemia, later relative insulin deficiency; cortisol and catecholamine excess aggravate hyperglycaemia. [7, 13]

Unani causation (Asbāb implicated) - Excess intake of concentrated sweet foods, irregular mealtimes, inactivity, sleep disturbance, chronic emotional stress

and impaired evacuation (constipation). Over time these produce disturbances in digestive faculty and hepatic handling of nutritive fluid. [5, 6, 9]

Unani process (Mizāj-Akhlāt) - Faulty diet and digestion produce abnormal nutritive matter; depending on constitution and diet the predominance may be Safrā (if heat-predominant) or Balgham (if moist/sluggish) causing inappropriate transformation of nutriment. Initially a functional derangement (Sū'-i-Mizāj Sāda) of digestive/metabolic regulation occurs; with persistence, material humoral derangement (maddī) appears - classical descriptions correspond to “sweet urine” states and chronic wasting/thirst patterns. The regulatory faculty (Quwwat-e-Mudabbira) becomes unable to restore balance. [5, 9, 11]

4. Dyslipidemia (Ikhtilāl-e-Duhūn-e-Dam)

Modern etiology & mechanisms - Caused by dietary excess (saturated and trans fats, refined carbs), insulin resistance (\uparrow hepatic VLDL), reduced LDL clearance, genetic dyslipidemias; hypothyroidism and drugs can worsen profile. Mechanisms: increased hepatic lipogenesis, impaired lipoprotein lipase activity, inflammation altering HDL function. Hormonal: hyperinsulinaemia, reduced thyroid hormone action. [7, 12]

Unani causation (Asbāb implicated) - Oily/fried food intake, overeating, inactivity, poor sleep and impaired evacuation lead to hepatic overload. [5, 6, 10]

Unani process (Mizāj-Akhlāt) - Excess oily/hot foods generate ghilzat-e-duhūn and impair liver's purificatory faculty (tanqiya). Circulating blood becomes thicker/greasier leading to atherogenic humoral states - clinically mapping to hypertriglyceridaemia, low HDL and atherogenesis. [5, 6, 10]

5. Non-alcoholic fatty liver disease (NAFLD) / MASLD (Tashahhum-e-Kabid)

Modern etiology & mechanisms - Strongly linked to obesity and insulin resistance: increased FFA flux to liver, de-novo lipogenesis (especially from fructose), mitochondrial dysfunction, oxidative stress, and gut-derived endotoxin promoting inflammation. Progression from simple steatosis \rightarrow steatohepatitis (NASH) \rightarrow fibrosis involves inflammatory cytokines (TNF- α , IL-6), stellate cell activation and fibrogenesis. Hormonal: hyperinsulinaemia, adipokine imbalance (\downarrow adiponectin). [8, 12, 13]

Unani causation (Asbāb implicated) - Heavy/fatty and carbohydrate-rich meals, late dinners, inactivity, chronic sleep loss and impaired evacuation (constipation) with associated mental stress and air/environmental factors. [5, 6, 10]

Unani process (Mizāj-Akhlāt) - Repeated hepatic overload by dense humours (Akhlāt Kathīfa)

produces barid-ratab Sū'-i-Mizāj-e-Kabid (liver becomes cold-moist in temperament) with accumulation of oily deposits (tashahhum). If inflammatory elements predominate, Unani texts describe transition to a "warm" phase of liver disturbance corresponding to inflammation and possible fibrosis. [5, 6, 10]

6. Hypertension (Dightuddam Qawi)

Modern etiology & mechanisms - Multifactorial: obesity, high salt intake, RAAS overactivity, sympathetic overdrive, endothelial dysfunction, arterial stiffness and chronic inflammation. Hormonal: ↑ catecholamines, ↑ angiotensin II/aldosterone, cortisol involvement; insulin resistance contributes to vascular dysfunction. [7, 12]

Unani causation (Asbāb implicated) - Imtilā' (fullness) from overeating/inactivity, chronic mental anger/anxiety, poor sleep, and extreme climatological exposures (Hawā). Retention of thick humours and impaired evacuation aggravate vascular tension. [5, 8, 11]

Unani process (Mizāj-Akhlāt) - Dense humours and fullness increase vessel reactivity (taḥarruk-e-urooq) and intravascular "tension," gradually producing sustained high pressure which stresses heart and organs - described as progressive Sū'-i-Mizāj of qalb and urooq. [5, 8, 11]

7. Hypothyroidism (Qillat-e-Ifrac-e-Ghuddah-e-Daraqiyya)

Modern etiology & mechanisms - Most commonly autoimmune (Hashimoto) causing glandular destruction; other causes include iodine deficiency, post-ablative states and drugs. Lowered T4/T3 reduces basal metabolic rate, causing weight gain, cold intolerance, bradycardia, constipation and dyslipidemia. Hormonal: ↓T4/T3, ↑TSH (primary). [13]

Unani causation (Asbāb implicated) - Long-term cold-moist diet/climate, inactivity, chronic stress and sleep disturbance that promote barid-ratab temperament and weaken innate heat. [5, 6, 11]

Unani process (Mizāj-Akhlāt) - Balghamī predominance and reduction of Harārat-e-Gharīziyya lead to sluggishness of digestion and secretion (quwwā reduction). Glandular inability to produce adequate "heat"/secretion is interpreted as diminished functional output of the thyroid region - clinically paralleling hypothyroid features. [5, 6, 11]

8. Polycystic ovary syndrome (PCOS) (Ikhtilāl-e-A'māl-e-Mabayyaz)

Modern etiology & mechanisms - Multifactorial: insulin resistance with compensatory hyperinsulinaemia stimulates ovarian theca androgen production; altered gonadotrophin secretion (↑LH: FSH), low SHBG, systemic inflammation and adipokine

dysregulation contribute. Hormonal: ↑insulin, ↑androgens, disturbed LH/FSH ratio. [7, 13]

Unani causation (Asbāb implicated) - High-calorie diet, inactivity, sleep disturbance, emotional stress and impaired evacuation producing balghamī predominance and local humoral accumulation in reproductive organs. [5, 6, 11]

Unani process (Mizāj-Akhlāt) - Sū'-i-Mizāj of reproductive organs (commonly balghamī barid-ratab) produces viscous humours around ovaries/uterus that obstruct normal cyclicity and ovulation; chronicity leads to cystic changes and menstrual irregularity described in classical texts. [5, 6, 11]

9. Gout / Hyperuricaemia (Niqris)

Modern etiology & mechanisms - Excess production (purine-rich diets, high fructose intake) or impaired renal excretion of urate leads to saturation/crystal deposition; inflammatory response to monosodium urate crystals causes acute arthritis. Associated with insulin resistance, obesity, CKD and diuretics. [7, 12]

Unani causation (Asbāb implicated) - Excess of hot/dry foods (meat, certain legumes), alcohol-like excesses, inactivity and impaired evacuation; constitutional predisposition (safra/sawdā imbalance). [5, 6, 10]

Unani process (Mizāj-Akhlāt) - Increase in Safra or Sawdā (depending on diet and constitution) and accumulation of morbid matter leads to local deposition (takharruj/tahallub) around joints; classical Unani texts describe acute inflammatory flares and chronic joint deposition consistent with gouty attacks. [5, 6, 10]

10. Insomnia / sleep disorders (Sahar)

Modern etiology & mechanisms - Insomnia and chronic sleep restriction cause HPA-axis activation, sympathetic overdrive, impaired glucose tolerance, increased ghrelin, decreased leptin, higher cortisol and impaired nocturnal GH secretion - all promoting weight gain, IR and hypertension. [10, 12]

Unani causation (Asbāb implicated) - Late heavy suppers, stimulants, emotional agitation, noisy/impure air and irregular sleep-wake schedules; mental disturbances (Harkat-Nafsanī) and dietary errors. [5, 6, 9]

Unani process (Mizāj-Akhlāt) - Disturbance of Naum wa Yaqzah and agitation of Rūḥ produces a ḥār-yābis (heat-dry) or mixed imbalance in faculties causing wakefulness and digestive derangement; prolonged disorder diminishes restorative heat and increases susceptibility to humoral derangement with metabolic cascade effects. [5, 9, 11]

Classical Unani scholars emphasised that health is preserved when Asbāb Sitta Ḍarūriyya (six essential factors) are in an optimal state - air (Hawā'), food and drink (Makūl wa Mashrūb), physical activity and rest (Ḥarakah wa Sukūn Badanī), mental activity and rest (Ḥarakah wa Sukūn Nafsānī), sleep and wakefulness (Naum wa Yaqzah), and retention and evacuation (Ihtibās wa Istifrāgh) [3, 16, 18]. Any sustained deviation in these factors leads to gradual derangement in temperament and humoral balance, predisposing to disease.

Principles of Marḍ (Disease) in Unani Medicine

In Unani doctrine, Marḍ (disease) is defined as an abnormal condition in the Mizāj of the body that results in derangement of function [1, 19]. Zakariyā Rāzī in Kitāb al-Ḥāwī states that disease arises when the natural temperament is altered beyond the capacity of Tabi'at to restore balance [19]. This imbalance may occur at the level of Mizāj (qualitative change), Akhlāt (quantitative or qualitative change in humours), or A'ḍā' (structural pathology).

Unani scholars classify diseases broadly into:

1. Sū'-i-Mizāj - simple or compound qualitative imbalance in temperament.
2. Sū'-i-Tarkīb - alteration in structure or anatomical arrangement.
3. Fasad-e-A'ḍā' - functional impairment due to local pathology.
4. Taffarq-e-Ittisāl - disruption in tissue continuity (e.g., fracture, wound) [5, 16].

Causes of Marḍ Due to Asbāb Sitta Ḍarūriyya

According to Unani theory, disturbance in Asbāb Sitta Ḍarūriyya plays a fundamental role in disease causation. Each factor has a defined role in maintaining health, and its excess or deficiency can initiate pathological changes:

1. Hawā' (Air): Impure or extreme-quality air alters the innate heat and Rūḥ (pneuma), disturbing humoral quality, leading to metabolic and respiratory ailments [3, 16, 20].
2. Makūl wa Mashrūb (Food & Drink): Excessive, deficient, or imbalanced diet causes changes in Kaifiyyat (quality) and Kammiyyat (quantity) of humours, predisposing to Sū'-i-Mizāj Har (hot temperament disorders like hypertension) or Sū'-i-Mizāj Barid (cold disorders like hypothyroidism) [1, 18].
3. Ḥarakah wa Sukūn Badanī (Physical Activity & Rest): Sedentary behaviour leads to accumulation of cold and moist humours, contributing to obesity, diabetes, and fatty liver; excessive exertion depletes innate heat and moisture, causing debility [5, 19].
4. Ḥarakah wa Sukūn Nafsānī (Mental Activity & Rest): Emotional extremes disturb the heart and

brain's temperament, altering Rūḥ production and affecting endocrine regulation [16, 20].

5. Naum wa Yaqzah (Sleep & Wakefulness): Sleep deficiency increases Harārat, leading to dryness and irritability; oversleeping increases cold and moist qualities, impairing metabolism [17, 19].
6. Ihtibās wa Istifrāgh (Retention & Evacuation): Improper evacuation leads to humoral corruption (Ikhtilāt-e-Akhlāt), while excessive evacuation depletes essential fluids, both resulting in disease susceptibility [1, 5, 16].

DISCUSSION

The findings of this review reaffirm the timeless relevance of Asbāb Sitta Ḍarūriyya as articulated in unani medicine, both as determinants of Ṣiḥḥat (health) and as pivotal factors in the pathogenesis of Marḍ (disease). The increasing burden of lifestyle-related metabolic disorders such as type 2 diabetes mellitus, obesity, non-alcoholic fatty liver disease (NAFLD), hypertension, and dyslipidemia mirrors the derangements predicted by Unani physicians when these essential factors are neglected or improperly regulated.

In classical terms, sustained alteration in Hawā' (air) quality, Makūl wa Mashrūb (diet), Ḥarakah wa Sukūn (activity-rest cycles), Naum wa Yaqzah (sleep-wake balance), Ḥarakah wa Sukūn Nafsānī (mental activity-rest balance), and Ihtibās wa Istifrāgh (evacuation-retention) progressively disturbs Mizāj (temperament) and Akhlāt (humours), thereby impairing Harārat-e-Gharīziyah (innate heat) and Quwwat (faculties) [1, 16, 17]. This conceptual framework parallels modern biomedical understanding that chronic exposure to environmental pollutants, high-caloric processed foods, physical inactivity, chronic stress, circadian rhythm disruption, and impaired detoxification mechanisms directly contribute to oxidative stress, systemic inflammation, endothelial dysfunction, and hormonal imbalance [21, 22].

Previous studies have demonstrated this alignment. For instance, Khan *et al.*, (2018) found that individuals with a Balghamī Mizāj had a higher prevalence of obesity and metabolic syndrome, supporting the Unani view that cold-moist temperament predisposes to slow metabolism and humoral accumulation [23]. Similarly, Ahmad *et al.*, (2020) reported that irregular sleep patterns and nocturnal wakefulness were significantly associated with insulin resistance and dyslipidemia, echoing Unani observations on Naum wa Yaqzah imbalance leading to Sū'-i-Mizāj Ḥār Yābis (hot-dry temperament) disorders [24].

Correlation can also be seen in the role of Ḥarakah wa Sukūn Badanī. Classical Unani literature warns that excess sedentary behaviour fosters Istifrāgh-e-Madda deficiency, allowing Akhlāt-e-Fāsīdah (corrupt humours) to accumulate, particularly Balgham and

Saudā', resulting in obesity, atherosclerosis, and depressive disorders [18, 19]. This correlates with modern findings that reduced physical activity lowers mitochondrial efficiency, increases visceral fat deposition, and alters adipokine secretion - mechanisms central to the development of insulin resistance and cardiovascular disease [25].

Another critical link is Makūl wa Mashrūb, where Unani physicians stressed moderation in quality (kaifiyyat) and quantity (kammiyyat) of intake. Contemporary research supports this, showing that high-glycaemic diets, saturated fats, and ultra-processed foods induce gut microbiota dysbiosis, chronic low-grade inflammation, and metabolic endotoxaemia, resonating with Unani descriptions of humoral putrefaction (Tafsīd al-Akhlāt) and Ikhtilāf-e-Mizāj (mixed temperament disturbance) [26].

The mental-emotional factor (Ḥarakah wa Sukūn Nafsānī) also stands out. Unani theory recognises that excessive grief, anger, or anxiety can alter the temperament of the heart and brain, impair Rūḥ production, and disrupt endocrine homeostasis [17, 20]. Modern psychoneuroendocrinology confirms that chronic stress dysregulates the hypothalamic-pituitary-adrenal (HPA) axis, increases cortisol, promotes central adiposity, and accelerates metabolic disease progression [27].

Finally, disturbances in Ihtibās wa Istifrāgh - such as chronic constipation, urinary retention, or excessive diarrhoea - are well-documented in Unani medicine as initiating factors for systemic disorders through toxin accumulation or depletion of essential moisture (Rutoobat-e-Gharīziyah). This aligns with modern research linking gut dysmotility, dysbiosis, and impaired detoxification pathways with systemic inflammation, metabolic endotoxaemia, and autoimmune predisposition [28].

Collectively, these correlations between Unani theoretical constructs and contemporary biomedical mechanisms suggest that Asbāb Sitta Ḍarūriyya provide a comprehensive preventive and therapeutic framework for metabolic diseases. Integration of these principles into modern lifestyle interventions - validated by epidemiological and clinical research - offers a promising pathway for reducing the global burden of these disorders.

CONCLUSION

This study highlights the pivotal role of Asbāb Sitta Ḍarūriyya in understanding and managing metabolic disorders. Classical Unani medicine recognises these six essential factors as both preservers of Ṣiḥḥat and triggers of Marḍ when imbalanced, a view strongly supported by modern biomedical evidence on the influence of environment, diet, activity, sleep, mental health, and elimination processes on metabolic health.

The parallels between Mizāj and Akhlāt imbalance with contemporary mechanisms such as hormonal dysregulation, chronic inflammation, and oxidative stress emphasise the relevance of Unani preventive strategies. Integrating these timeless principles into current healthcare models could provide a holistic framework for reducing the global burden of lifestyle-related metabolic diseases.

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