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Pre-IBN Sina Integration of foundational texts on Munafeul Aza (Human Physiology): A historical synthesis

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Abstract
This study examines the development of human physiological conceptions, or Munafeul Aza, as influential physicians and intellectuals understood them before IBN Sina's (Avicenna) seminal contributions. Using primary Greco-Arabic texts, the study looks at the fundamental notions put out by Erasistratus, Hippocrates, Aristotle, and Galen. These early philosophers established important anatomical and functional theories of different organ systems, influencing the Unani medical system and serving as an empirical and philosophical foundation for subsequent medical advancements. Using a descriptive methodology, this work integrates and evaluates early physiological narratives that influenced human biology's humoral and holistic perspective. It also makes an effort to link new scientific discoveries with traditional knowledge.

Keywords: Munafeul Aza, Unani Physiology, Pre-IBN Sina medicine, Humoral theory, Greco-Arabic medical tradition

Introduction

The roots of human physiological thought stretch deep into antiquity, long before the golden age of Islamic medicine epitomized by IBN Sina (Avicenna). The Unani system of medicine, a Greco-Arabic tradition, is grounded in centuries of accumulated knowledge first developed by Greek physicians and philosophers and later expanded, refined, and transmitted through Arabic scholarship. The field of *Munafeul Aza*, or human physiology, which focuses on the functions of various body organs, emerged from this confluence of empirical observations and philosophical reasoning.

From the era of Hippocrates in 5th century BCE Greece to the formative works of Aristotle, Erasistratus, and Galen, there existed a dynamic and evolving tradition of understanding the body not merely as a physical structure but as a living, responsive system governed by natural laws. These thinkers laid the groundwork for physiological principles that would later be integrated into the Unani medical framework. Their works addressed vital concepts such as humoral balance, the role of environmental influences on health, organ-specific functions, and the intrinsic faculties (*Quwa*) that sustain life processes.

Hippocrates, often hailed as the "Father of Medicine", introduced the theory of the four humours blood, phlegm, yellow bile, and black bile and proposed that health depended on their harmonious balance. His treatise *Airs, Waters, and Places* emphasized environmental and geographical factors in health, concepts that prefigured the Unani understanding of *Mizaj* (temperament) and *Tabiyat* (the body's self-preserving faculty). Aristotle, combining natural philosophy with empirical study, proposed a hierarchical view of bodily faculties and posited the soul (*Nafs*) as the animating principle of life, with the heart as its primary seat. His embryological insights, especially regarding the formation of the fetus and maternal influence, later echoed in the Unani doctrines of *Hararat-e-Ghareezia* (innate heat) and *Rutoobat* (moisture).

The Alexandrian physician Erasistratus contributed to the emergence of functional anatomy by describing the roles of arteries, veins, and nerves, distinguishing between sensory and motor pathways, and proposing a pneumatic theory of physiology. He advanced the idea that arteries carried *pneuma* (vital air), a precursor to the Unani concept of *Rooh-e-Haywani* (vital spirit), essential for voluntary movement and bodily vitality.

Synthesizing the Hippocratic and Aristotelian traditions, Galen developed a comprehensive framework of physiological faculties including nutrition, growth, and genesis. His doctrine of the *Natural Faculties* described the body as a regulated system operating through attracting, transforming, and expelling mechanisms. This view parallels contemporary understanding of digestion, circulation, and metabolism. His extensive writings on the pulse (as seen in *Kitab al-Nabd al-Saghir*) established diagnostic protocols that remain foundational in Unani practice.

The transition from Greco-Roman to Arabic medical scholarship occurred during the early Islamic centuries, especially under the Abbasid Caliphate, which established translation centers like *Bayt al-Hikmah* (House of Wisdom) in Baghdad. Here, ancient texts were translated into Arabic and further refined by Islamic scholars. These ideas later travelled to the Indian subcontinent through Persian and Turkish influence, eventually becoming institutionalized as the Unani system of medicine. Through this trans regional synthesis, the legacy of pre-IBN Sina thinkers became embedded in a broader epistemological and cultural matrix.

The present study aims to revisit, analyze, and synthesize these foundational physiological concepts before IBN Sina. The study elucidates how ancient physiological insights informed holistic understandings of the human body by focusing on primary historical texts and their interpretations in early Unani medicine. Furthermore, it highlights the continuity between traditional knowledge systems and emerging biomedical understandings, thus validating the relevance of historical perspectives in modern contexts.

Hippocrates and the foundations of humoral physiology

Often regarded as the "Father of Medicine," Hippocrates (c. 460-370 BCE) developed the theory of the four humors blood, phlegm, yellow bile, and black bile which served as the foundation for our current understanding of human physiology. Geographical, seasonal, and climatic impacts on physiological processes were the main topics of his treatise Airs, Waters, and Places, which focused on environmental determinants of health. Prefiguring the idea of Mizaj in Unani thinking, he proposed that the balance of humours determined temperamental features in addition to bodily status.

Among his contributions were:

- Focus on Tabiyat, the body's inherent capacity for healing.
- Body excretions and the pulse's function as diagnostic instruments.
- Understanding the importance of food, water, and air in preserving health.

Aristotle's biological teleology and embryology

Alexander the Great's mentor and Plato's pupil, Aristotle (384-322 BCE), combined philosophy with biology. He classified the body into vegetative, sensitive, and intellectual components and proposed the idea of the soul (NAFS) as the body's form. In pieces such as Generation of Animals and De Anima, he suggested:

- The fetus's heart develops earliest among its organs.
- Semen is thought to contain the heat that is necessary for life.
- Maternal blood's function in foetal nutrition
- Gender determination based on temperament (Aristotle, trans Peck, 1943) [1].

These concepts developed the Unani philosophy of Hararat-E-Ghareezia (innate heat) and Rutoobat (moisture) as the foundation for physiological activities.

Erasistratus and the emergence of functional anatomy

- One of the first Greek anatomists from the Alexandrian school to differentiate between various organ systems functionally rather than just structurally was Erasistratus (c. 304-250 BCE). He conducted in-depth research on the neurological and cardiovascular systems and suggested:
- Instead of carrying blood, arteries transported pneuma, or vital air.
- The brain gave rise to nerves involved in voluntary movement.
- The distinction between motor and sensory nerves
- Capillary networks that connect veins and arteries
- The physiological mechanism of digestion and the role of the epiglottis

Understanding Quwwat-e-Haywaniyah (vital force) and Rooh-e-Haywani (vital spirit) in later Unani literature was greatly aided by these revelations (Nutton, 2004) [4].

Galen's systematization of natural faculties

Aristotelian and Hippocratic knowledge were combined by Galen (129-216 CE) to create a system that dominated medical philosophy for millennia. Galen listed the following three essential faculties in his writings, including De Naturalibus Facultatibus and Kitab al-Nabd al-Saghir: Growth, Nutrition, and Genesis (creation)

- Sub-disciplines, Appealing, absorbing, digesting, and releasing
- Types of pulses and their classification and description
- Lifestyle, location, and emotional factors' effects on pulse
- Anatomical and humoral observations combined (Galen, trans, Brock, 1916) [2].

Galen's conception of Tabiyat, the innate force that preserves equilibrium, is comparable to how the immunological and regulatory systems are conceptualised today. Additionally, he highlighted the pulse as the primary diagnostic tool a concept still used in Unani medicine today because of thorough pulse classifications (Nabd).

Kitab Al-Nabd Al-Saghir: A focus on pulse diagnosis

A distinct diagnostic area of Unani medicine was influenced by Galen's studies on pulse, which were translated and expanded upon by scholars such as Jurjani and Hakeem Zillur Rahman. There is a correlation between pathological and temperamental states and pulse types such as Nabd-e-Ghazali, Nabd-e-Doodi and Nabd-e-Namli. These classifications, still in use in conventional diagnostics, foreshadowed contemporary ideas of cardiovascular abnormalities.

Comparative insights with modern physiology

Despite their reliance on observation and deductive reasoning, early Greek physicians' views remarkably match contemporary understandings:

- According to what is now understood about hepatic function, the liver is the site of metabolism.
- The pulse as a systemic health indicator (now confirmed by cardiovascular physiology)
- Metabolic rate and nerve impulse are in harmony with ideas of innate heat and living spirit.
- Galenic capabilities mirror endocrine and autonomic processes.

Despite its philosophical packaging, ancient medicine's empirical foundation is highlighted by this historical continuity.

Conclusion

The foundation of what eventually developed into the complex framework of Unani medicine was the incorporation of physiological knowledge from ancient writings. IBN Sina's improvements were built upon a thorough foundation established by the intellectual contributions of Hippocrates, Aristotle, Galen, and Erasistratus. These philosophers discussed the anatomy and physiology of organs. They placed them in humoral, temperamental, and environmental contexts, many of which are still relevant in modern medical and physiological theories. A greater grasp of the historical foundations of medical knowledge can be gained by revisiting these pre-IBN Sina texts, which also demonstrate the continuity between early empirical observations and contemporary scientific understandings.

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