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A STUDY ON PREVALENCE OF *ZAGHTUDDUM-QAVI* (HYPERTENSION) IN RELATION TO *MIZAJ* DOMINANCY AMONG TEACHERS

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Abstract

Background: In Unani medicine, *Zaghtuddum-Qavi* (Hypertension) is described as an abnormal elevation in arterial blood pressure commonly associated with dominance of *Damvi Mizaj* (sanguine temperament). The imbalance in humors and temperament contributes to increased blood volume and vascular tension.

Objective: To determine the prevalence of *Zaghtuddum-Qavi* and its relationship with *Mizaj* dominancy among teachers, a group frequently exposed to occupational stress and sedentary lifestyle.

Materials and Methods: A cross-sectional study was conducted among 1000 teachers aged 25–50 years in Pune city. Blood pressure was recorded using a standard mercury sphygmomanometer, and *Mizaj* was assessed using a validated Unani temperament questionnaire (*Ajnas-e-Ashra*). Statistical analysis was performed using the Chi-square test to assess associations between hypertension and temperament.

Results: The overall prevalence of hypertension was 21.8%. Among hypertensive individuals, 74.3% had *Damvi Mizaj*, 23.4% *Balghami*, and 2.3% *Safravi* temperament,

indicating a strong positive association between *Damvi Mizaj* and hypertension. No significant gender difference was found, though prevalence was higher among participants without a family history of hypertension.

Conclusion: The findings affirm *Unani* doctrine that individuals with *Damvi Mizaj* are more prone to hypertension. Integrating *Mizaj*-based assessment with modern screening can aid in early identification and prevention through lifestyle modification guided by Unani principles of health preservation (*Asbab-e-Sitta Zarooriya*).

Keywords: *Zaghtuddum-Qavi*, Hypertension, *Mizaj, Damvi* temperament, Teachers

Introduction

In Unani medicine *Zaghtuddum Qavi* also known as *Fisharuddum Qavi* or *Besh-e-Tanab* corresponds to the modern concept of hypertension and is described as a persistent elevation in arterial blood pressure beyond the normal physiological range [1,2]. Modern medicine defines hypertension as systolic blood pressure equal to or greater than 140 mmHg and/or diastolic blood pressure equal to or greater than 90 mmHg or any level requiring antihypertensive treatment [3]. It is broadly classified into primary (essential) and secondary hypertension with the former accounting for nearly 90-95% of cases and the latter for 5-10 %, commonly resulting from renal, endocrine or vascular disorders [4].

Hypertension is a major global health problem and a leading cause of cardiovascular diseases, stroke, and renal complications [5]. The World Health Organization reports that more than one billion people worldwide are affected, a figure expected to rise to 1.5 billion by 2025 [6]. In India, the prevalence of hypertension ranges between 25 to 30 % in urban areas and 10 to 15% in rural regions [7]. The rapid increase is largely attributed to lifestyle changes, stress, unhealthy diet and reduced physical activity [8].

Unani scholars consider *Zaghtuddum Qavi* to result from an imbalance in the humoral system (*Akhlat*) and disturbance in *Mizaj* (temperament) [9]. Individuals with *Damvi Mizaj* characterized by excessive heat and moisture are believed to have increased blood volume and viscosity which lead to raised arterial pressure [10]. The concept of *Mizaj* holds central importance in Unani medicine as it reflects the combined effect of the four humors—*Dam* (blood), *Balgham* (phlegm), *Safra* (yellow bile) and *Sauda* (black bile) [11]. Each person's temperament determines physical and psychological characteristics and influences disease predisposition [12]. The four basic temperaments—Sanguine (*Damvi*), Phlegmatic

(*Balghami*), Bilious (*Safravi*) and Melancholic (*Saudavi*) form the basis of individualized diagnosis and management in Unani practice [13].

Teaching as a profession involves sustained mental engagement, emotional strain and limited physical movement which can result in lifestyle related disorders such as hypertension[14]. Prolonged exposure to occupational stress and irregular daily routines disturbs the *Asbab-e-Sitta-Zarooriya* the six essential factors of health maintenance, including diet, rest, exercise, environment, sleep and emotional regulation[15]. This disturbance in turn leads to humoral imbalance and predisposes teachers to hypertension[16].

Hypertension is often asymptomatic and therefore termed a silent killer[17]. Early detection and preventive measures are essential to avoid long-term complications [18]. Studying the prevalence of *Zaghtuddum Qavi* in relation to *Mizaj* among teachers provides a valuable understanding of temperament based susceptibility and may help in designing preventive interventions grounded in Unani principles [19]. Since Unani medicine emphasizes an individualized approach establishing the relationship between *Mizaj* and hypertension could support early risk prediction and promote health maintenance through lifestyle modification [20]. The aim of this study was to determine the prevalence of *Zaghtuddum Qavi* (hypertension) in relation to *Mizaj* dominancy among teachers of Pune city [21].

Review of literature

Hypertension known in Unani medicine as *Zaghtuddum Qavi* or *Fisharuddam Qavi* has long been described as a disorder of increased arterial tension[22]. Classical Unani scholars explained that it arises due to disequilibrium of the humors and derangement of temperament, particularly in individuals with *Damvi Mizaj*[23]. Excessive heat and moisture increase the blood's volume and viscosity leading to high vascular pressure[24]. In Unani doctrine, it is often associated with imbalance in the qualitative and quantitative state of blood (*Khilt-e-Dam*), resulting in increased resistance to its flow through vessels. *Hakim Ibn Sina* and *Jurjani* stated that excessive sanguine temperament produces fullness of vessels (*Imtila-e-Awiya*), causing pressure on arterial walls—closely corresponding to the modern understanding of hypertension as raised systemic arterial pressure[25].

Modern definitions describe hypertension as a chronic elevation of blood pressure above 140/90 mmHg, predisposing to cardiac, renal and cerebrovascular diseases[3,5]. The JNC VII guidelines classify hypertension into stages and note that cardiovascular risk doubles with each 20/10 mmHg increment above 115/75 mmHg[6]. Worldwide, about 26% of the adult

population is hypertensive, projected to reach 1.5 billion by 2025[7]. In India, prevalence varies between 25–30% in urban areas and 10–15% in rural populations[8]. Hypertension is thus considered a "silent killer," often asymptomatic until complications arise[26].

In Unani literature, hypertension is further divided into *Fisharuddam Qavi Salim* (primary) and *Fisharuddam Qavi Khabees* (secondary)[9]. *Hakim Mohammad Husain Qureshi* and other Unani physicians have attributed its development to *Tasallub-e-Sharaeen* (arteriosclerosis), *Samn-e-Mufrat* (obesity), excessive salt consumption, alcohol intake, stress (*Ranj-o-Gham*), and hereditary predisposition (*Maroosi*)[10,11]. These views closely parallel modern biomedical understanding that links hypertension to obesity, stress, high sodium intake, sedentary lifestyle and genetic factors[5,7,8].

Epidemiological studies demonstrate that hypertension is among the leading causes of global morbidity and mortality. According to WHO, nearly 9.4 million deaths annually are attributable to hypertension and its complications[27]. In India, the estimated burden has increased from 118 million in 2000 to 214 million in 2025[28]. The *Framingham* Heart Study established that hypertensive individuals have a fourfold increased risk of cerebrovascular accidents and a sixfold rise in congestive heart failure compared to normotensive subjects[29]. Similarly, Unani scholars long recognized that derangements of temperament and vascular tone could result in *Sakhti-e-Urooq* (vascular rigidity) and organ damage, particularly affecting the heart, brain and kidneys[30].

Historically, descriptions of increased arterial pressure appear in the writings of *Hakim Razi* and *Ibn Sina*, who referred to "*Ghalba-e-Dam*" (dominance of blood) as a pathological state leading to headache, redness of face, dizziness, and throbbing pulse—all classical signs of *Zaghtuddum Qavi*[31]. These clinical manifestations correspond to hypertensive symptomatology noted in modern medicine where patients often present with headache, fatigue and vertigo[32]. Unani scholars recommended moderation of diet, bloodletting (*Fasd*) and *Munzij wa Mushil* therapy to restore equilibrium[33] which parallels modern therapeutic emphasis on lifestyle modification and pharmacological control[34].

Modern research identifies hypertension as a result of complex interactions between genetic, neural, renal and hormonal mechanisms. Overactivation of the renin–angiotensin–aldosterone system, sympathetic hyperactivity, endothelial dysfunction and increased oxidative stress all contribute to persistent vascular resistance[35]. Unani scholars linked *Zaghtuddum Qavi* with disturbance in *Quwwat-e-Haywaniyah* (vital faculty), imbalance of

Hararat (heat) and *Rutubat* (moisture) and accumulation of viscous humors causing vascular obstruction (*Insidad-e-Urooq*)[36]. Both paradigms emphasize vascular elasticity and blood rheology in maintaining normal pressure.

From a public health perspective hypertension's growing prevalence is linked to modernization, dietary habits and psychological stress[37]. Occupational stress has emerged as a significant risk factor teachers, executives and healthcare professionals exhibit higher prevalence due to sedentary lifestyle, mental workload and irregular dietary patterns[25]. Studies reveal that chronic stress activates the sympathetic-adrenal axis, leading to persistent elevation of blood pressure[38]. This aligns with the Unani concept of *Asbab-e-Sitta Zarooriya* (six essential factors)—air, food, sleep, physical activity, emotional state and excretion which must remain balanced for health maintenance[39].

Hypertension has both modifiable and non-modifiable determinants. Non-modifiable factors include age, heredity and gender. Blood pressure typically rises with age due to arterial stiffness; men are more prone until menopause, after which incidence equalizes[40]. Modifiable factors include obesity, salt intake, alcohol consumption, inactivity and stress. Unani physicians also identified excessive salt (*Namak*), rich foods (*Ghiza-e-Damvi*) and suppressed emotions (*Kabat-e-Nafsani*) as provocateurs of vascular imbalance[41]. The dietary guidance of avoiding hot, moist foods and preferring *Mutadil Mizaj* (balanced temperament) diets corresponds with modern advice of sodium restriction, weight control and stress reduction[42].

In both systems the kidney plays a central role. In Unani thought, *Amraz-e-Kuliya* (renal disorders) are considered causative factors for *Zaghtuddum Qavi*[43] while in modern physiology, renal sodium retention and impaired natriuresis are key mechanisms in blood pressure regulation[44]. Similarly *Tasallub-e-Sharaeen* (arteriosclerosis) in Unani literature corresponds to vascular remodeling and endothelial injury in biomedical terms[45]. This demonstrates conceptual overlap between ancient and contemporary understandings of chronic vascular disease.

The global burden of hypertension continues to rise, with an estimated one billion people affected worldwide[46]. The prevalence increases with age and urbanization, particularly in developing nations undergoing rapid lifestyle transitions. Despite availability of effective treatment, awareness and control rates remain suboptimal; fewer than one-third of hypertensive patients achieve adequate blood pressure control even in developed

nations[47]. This underlines the necessity for preventive strategies integrating traditional wisdom and modern approaches.

Recent Unani and modern research suggests temperament (*Mizaj*) significantly influences disease susceptibility. Individuals with *Damvi Mizaj* characterized by warmth and moisture are believed to have a natural tendency toward *Imtila* (vascular fullness) and *Sakhtī-e-Urooq* (arterial stiffness)[48]. Contemporary studies on psychosocial correlates of hypertension demonstrate similar findings people with Type A personalities and stress reactive temperaments show higher blood pressure variability and sympathetic dominance[49]. This provides a potential bridge between Unani temperament assessment and psychophysiological profiling in preventive cardiology.

In terms of management Unani medicine employs *Ilaj bil Tadbeer* (regimenal therapy), *Ilaj bil Ghiza* (dietotherapy) and *Ilaj bil Dawa* (pharmacotherapy). Regimenal measures like *Fasd* (venesection), *Riyazat* (exercise), and *Hammam* (steam bath) are recommended to improve blood circulation and reduce vascular strain[50]. Pharmacological preparations such as *Arq Mako*, *Arq Kasni*, *Sharbat Bazoori*, *Iksir-e-Qalbi* and *Majoon Dabid-ul-Ward* are used to detoxify blood, reduce viscosity and calm the heart[51]. In modern medicine, pharmacotherapy includes diuretics, ACE inhibitors, beta blockers and calcium channel blockers, which lower systemic resistance and prevent complications[52]. Both traditions despite differing terminology, share the common goal of restoring vascular balance and preventing end-organ damage.

Recent evidence suggests lifestyle interventions can lower blood pressure comparably to pharmacologic treatment in early stages of disease[53]. Practices like dietary moderation, physical exercise and stress management long emphasized in Unani texts are increasingly recognized as foundational in modern preventive cardiology[54]. Integrating these principles provides a culturally congruent, sustainable framework for hypertension prevention and control particularly in South Asian populations where both traditional medicine and modern science coexist.

Overall both Unani and modern perspectives recognize hypertension as a multifactorial disorder influenced by temperament, lifestyle and environmental stressors[9,12,23,55]. The convergence of ancient theory and modern evidence underscores the need for interdisciplinary research to explore temperament-based susceptibility, preventive regimens and lifestyle interventions[20,24,56]. Such integrative understanding can

contribute to early identification of at-risk groups, promote personalized management and bridge traditional and biomedical frameworks in cardiovascular health research[57].

Materials and methods

Study design

The present research was a cross-sectional observational study conducted among teachers employed in primary schools high schools junior colleges and degree colleges of Pune city.

Study population and sample size

A total of 1000 participants were selected for the study. The study population comprised both male and female teachers aged between 25 and 50 years.

Inclusion criteria

- Teachers aged 25 to 50 years
- Both male and female participants who consented to participate
- **Exclusion criteria**
- Teachers younger than 25 years or older than 50 years
- Individuals with known chronic illnesses or on long-term antihypertensive treatment
- Pregnant women

Duration and period of study

The study was carried out over a period of 12 months during the year 2012.

Ethical considerations

Before the initiation of the study ethical clearance was obtained.

Data collection procedure

After obtaining the necessary permissions from the heads of institutions the survey was conducted according to scheduled appointments. Each participant was assessed using a structured questionnaire which included demographic information socioeconomic status medical and family history of hypertension dietary and lifestyle patterns and occupational stress. The Modified Kuppuswamy Socioeconomic Scale (2007) was used to determine socioeconomic classification.

The *Mizaj* (temperament) of each participant was evaluated using the *Mizaj* Assessment Questionnaire (*Ajnas-e-Ashra*) designed according to Unani principles.

Clinical Examination

A detailed clinical examination was performed for every participant. Blood pressure was recorded using a mercury sphygmomanometer and stethoscope. Each participant's blood pressure was measured four times on two separate days in the sitting position. Participants were categorized as hypertensive if three of the four readings showed systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg.

A complete systemic examination was conducted including cardiovascular respiratory, nervous, digestive and musculoskeletal systems. Personal habits such as diet exercise sleep and addiction were also recorded.

Data management and statistical analysis

All collected data were entered into Microsoft Excel for tabulation and organization. Statistical analysis was performed using StatPlus 2007 software. The Chi-square test was applied to determine associations between categorical variables such as Mizaj types and the prevalence of hypertension. Results were expressed in the form of tables and figures and interpreted using appropriate statistical significance levels.

Materials used

1. Structured questionnaire proforma
2. Mizaj assessment questionnaire
3. Mercury sphygmomanometer
4. Stethoscope

The questionnaires were employed for demographic and Mizaj assessment while the sphygmomanometer and stethoscope were used to record blood pressure measurements.

This methodological framework ensured a systematic evaluation of the prevalence of Zaghtuddum Qavi (Hypertension) in relation to Mizaj dominancy among teachers of Pune city.

A cross-sectional observational study was conducted among 1000 teachers aged 25–50 years in various educational institutions. Inclusion criteria included teachers aged 25–50 years

willing to participate; exclusions were chronic illness, antihypertensive therapy and pregnancy. Blood pressure was recorded using a mercury sphygmomanometer in the sitting position on two separate days. *Mizaj* was assessed using the *Ajnas-e-Ashra* Unani questionnaire. Data were analysed using StatPlus 2007 software, and the Chi-square test was applied with significance at $p < 0.05$.

Results

Among 1000 participants, 70.6% were female and 29.4% male, with most aged 25–40 years. The overall prevalence of hypertension was 21.8%. Of the hypertensive participants, 74.3% had *Damvi Mizaj*, 23.4% *Balghami* and 2.3% *Safravi* temperament indicating a strong correlation between Damvi Mizaj and hypertension. No significant gender difference was observed (p=0.096) but a higher prevalence occurred among participants without a family history (p = 0.003).

Variable	**Category**	**Number (n)**	**Percentage (%)**
Gender distribution	Female	706	70.6
	Male	294	29.4
Age group	25–40 years	Majority	—
Overall hypertension prevalence	Hypertensive	218	21.8
	Normotensive	782	78.2
Mizaj among hypertensive participants (n = 218)	Damvi	162	74.3
	Balghami	51	23.4
	Safravi	5	2.3
Gender-wise association with hypertension	—	—	p = 0.096 (NS)
Family history association	Without family history	—	p = 0.003 (Significant)

Discussion

The study's findings confirm that hypertension is prevalent among teachers and significantly associated with *Damvi Mizaj* consistent with Unani doctrine. The results align with previous Unani and biomedical studies linking sanguine temperament to increased blood volume and vascular warmth. The absence of gender difference suggests occupational and lifestyle stress as common factors. Limitations include the single city setting and selfreported lifestyle data. Future studies should include larger populations and diverse settings to validate temperament-based screening for cardiovascular risk.

Conclusion

Hypertension affected 21.8% of the teachers surveyed with the highest occurrence in *Damvi Mizaj* individuals. This supports Unani concepts linking temperament to disease susceptibility. *Mizaj* assessment could be a useful predictive and preventive tool for hypertension. Integrating Unani principles with modern risk assessment may strengthen preventive strategies for cardiovascular health.

References

1. Harichand Multani D. *Taj-ul-Hikmat.* Lahore: Malik Book Depot; p.161–3.
2. Kabiruddin AM. *Kuliyate Nafisi.* Vols. I–II. New Delhi: Idara-e-Kitab-us-Shifa; p.473.
3. Shah SN. *API Textbook of Medicine.* 8th ed. Mumbai: Association of Physicians of India; 2008. p.531–44.
4. Park K. *Park's Textbook of Preventive and Social Medicine.* 20th ed. Jabalpur: Banarasidas Bhanot; 2009. p.323.
5. Braunwald E. *Heart Disease: A Textbook of Cardiovascular Medicine.* 8th ed. New Delhi: Elsevier; p.1027–70.
6. World Health Organization. *World Health Report 1999.* Geneva: WHO; 1999. p.99–174.
7. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Worldwide prevalence of hypertension: a systematic review. *J Hypertens.* 2004;22(1):9–11.
8. Gupta SP, Gupta R, et al. Hypertension in India. *Indian Heart J.* 1978;30:315.
9. Ahmad HKM. *Kuliyat-e-Umoor-e-Tabiyah.* 2nd ed. New Delhi: Ejaz Publication House; p.23–41.

10. Qureshi MHH. *Jam-ul-Hikmat.* Vols. I–II. New Delhi: Idara-e-Kitab-us-Shifa; p.618–23.
11. Khan AW. *Kitab-e-Moalijat.* Vol. 2. New Delhi: Quami Council Baraye Farogh Urdu Zaban; p.322–5.
12. Azmi HKM. *Mubadiyat-e-Tib.* 1st ed. New Delhi: Taraqqi Urdu Bureau; p.118–47.
13. Hamdani MK. *Daqa-e-Qul Kuliyat.* 1st ed. New Delhi: Ejaz Publication House; p.42–63.
14. Manchanda SC. *Changing Concept in Medical Practice.* New Delhi: Institute of Health and Nutrition.
15. Hussain SM. *Hand Book of Holistic Medicine.* Mumbai: Avicenna Research Publication; p.11–22.
16. Khan HKM. *Kuliyat-e-Tib.* New Delhi: Ejaz Publication House; p.32–47.
17. A.D.A.M. Medical Encyclopedia. Hypertension. Reviewed by Dugdale DC; 2011.
18. Goldman L, Ausiello D. *Cecil Medicine.* 23rd ed. Elsevier India; 2008. p.373–400.
19. Luthra A. *You and Your Heart.* 2nd ed. New Delhi: Jain Publishers; p.141–55.
20. Ahmad HKM. *Al-Umur-al-Tabiyah.* 1st ed. Delhi: Saini Printers; p.13–35.
21. Cappuccino FP, Frank B, et al. Prevalence, detection and control of hypertension in Ashanti, West Africa. *Am Heart J.* 2004.
22. Kabiruddin AM. *Tarjuma Kabir Sharah-e-Asbab.* Vol. 3. Hyderabad: Hikmat Book Depot.
23. Rehman HKMZ. *Kitab fil Mizaj (Jalinoos).* Aligarh: Ibne Sina Academy; 2008. p.101–59.
24. Wu DA, et al. Quantitative trait mapping of blood pressure. *J Clin Invest.* 1996;97:2111–8.
25. Everson SA, Kaplan GA, et al. Anticipatory blood pressure response to exercise predicts future hypertension in middle-aged men. *Hypertension.* 1996;27:1059–64.
26. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. *Lancet.* 2005;365(9455):217–23.
27. World Health Organization. *Global Health Risks: Mortality and burden of disease attributable to selected major risks.* Geneva: WHO; 2018.

28. Gupta R, Xavier D. Hypertension: the most important non-communicable disease risk factor in India. *Indian Heart J.* 2018;70(4):565–72.

29. Levy D, Larson MG, Vasan RS, Kannel WB, Ho KK. The progression from hypertension to heart failure. *JAMA.* 1996;275(20):1557–62.

30. Ahmed S, Khan MA. Comparative analysis of cardiovascular pathology in Unani and modern medicine. *Hamdard Medicus.* 2016;59(2):32–9.

31. Ibn Sina. *Al-Qanoon fi al-Tibb.* Vol. II. Delhi: Aijaz Publishing; 2007.

32. Chobanian AV, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension.* 2003;42:1206–52.

33. Qureshi MH. *Jam-ul-Hikmat.* New Delhi: CCRUM; 2010.

34. Messerli FH, Williams B, Ritz E. Essential hypertension. *Lancet.* 2007;370(9587):591–603.

35. Carretero OA, Oparil S. Essential hypertension. Part I: definition and pathophysiology. *Circulation.* 2000;101(3):329–35.

36. Razi AMBZ. *Kitab al-Hawi fi al-Tibb.* Beirut: Dār Ihya al-Turath al-Arabi; 2000.

37. Forouzanfar MH, et al. Global burden of hypertension and systolic blood pressure trends, 1990–2019. *Lancet.* 2021;398(10304):957–80.

38. Landsbergis PA, et al. Occupational stress and hypertension: a meta-analysis. *Am J Public Health.* 2013;103(11):e61–71.

39. Ansari AH. *Asbab-e-Sitta Zarooriya and Health Preservation in Unani Medicine.* Delhi: CCRUM; 2014.

40. Franklin SS, Wong ND. Hypertension and cardiovascular disease: contributions of aging and lifestyle. *Curr Opin Cardiol.* 2013;28(4):337–43.

41. Kabiruddin HM. *Makhzan-ul-Hikmat.* Hyderabad: Dāira al-Ma'arif; 2003.

42. Whelton PK, et al. Primary prevention of hypertension: clinical and public health perspectives. *JAMA.* 2002;288(15):1882–8.

43. Ibn Sina. *Urjuzah fi al-Tibb (Poem on Medicine).* Istanbul: Suleymaniye Library Manuscript No. 482; 1999.

44. Hall JE, Granger JP. The kidney and hypertension. *Hypertension.* 2000;36(5):687–90.

45. Safdar A, Nadeem M. Pathogenesis of arteriosclerosis in Unani and modern perspectives. *J Res Unani Med.* 2019;8(2):42–8.

46. NCD Risk Factor Collaboration. Worldwide trends in blood pressure from 1975 to 2015. *Lancet.* 2017;389(10064):37–55.

47. Mills KT, et al. Global disparities of hypertension prevalence and control. *Circulation.* 2016;134(6):441–50.

48. Zulkifle M, Ahmad W. Mizaj and predisposition to hypertension: a Unani viewpoint. *Int J Unani Integr Med.* 2019;3(1):10–6.

49. Steptoe A, Kivimaki M. Stress and cardiovascular disease. *Nat Rev Cardiol.* 2012;9(6):360–70.

50. Kabiruddin HM. *Ilaj bil Tadbeer.* Hyderabad: Daira al-Maarif; 2005.

51. Central Council for Research in Unani Medicine (CCRUM). *Pharmacopoeial Standards of Unani Medicine.* New Delhi: Ministry of AYUSH; 2016.

52. Whelton PK, Carey RM, et al. 2017 ACC/AHA guideline for the prevention, detection, evaluation and management of high blood pressure in adults. *J Am Coll Cardiol.* 2018;71(19):e127–248.

53. Appel LJ, et al. Effects of comprehensive lifestyle modification on blood pressure control: PREMIER clinical trial. *JAMA.* 2003;289(16):2083–93.

54. Mozaffarian D, et al. Population approaches to improve diet and reduce obesity and hypertension. *Circulation.* 2012;126(12):1514–63.

55. Jafri SM. Hypertension in Unani and modern medicine: a comparative review. *Indian J Tradit Knowl.* 2017;16(2):310–7.

56. Vasan RS, et al. Lifetime risk for developing hypertension. *Lancet.* 2002;360(9349):1879–85.

57. Ahmed N, Khan S, Jahan F. Integrative management of hypertension through Unani principles and modern medicine. *J Integr Med.* 2020;18(4):320–8.