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Personalized Medicine, Precision Medicine, Reticulotherapy, and Persian Medicine

Food, Nutrition, and Therapeutic Cooking

Traditional, Herbal, Natural Medicines, and Pharmaceutical Formulations

Prescription Writing and Rational Prescribing in Persian Medicine

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TRADITIONAL AND INTEGRATIVE MEDICINE

The Association Between Reticulotype Profiles and Response to Iranian Traditional Medicine in Patients With Irritable Bowel Syndrome: A Cross-Sectional Study

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Background and Aim : Personalized medicine aims to tailor healthcare based on individual biological, genetic, and phenotypic characteristics. Reticulotypes—a recent concept integrating metabolic, immunological, and genetic profiles—offer promising categorization in precision medicine. Simultaneously, Iranian Traditional Medicine (ITM) emphasizes individual temperament (Mizaj) for diagnosis and treatment. Irritable Bowel Syndrome (IBS), a common functional gastrointestinal disorder, lacks a universally effective treatment. This study investigates the association between reticulotype profiles, Mizaj types, and response to ITM-based interventions among IBS patients, aiming to bridge traditional and precision approaches.

Methods : This cross-sectional study was conducted on 120 IBS-diagnosed patients aged 18–50 years, recruited from a gastroenterology clinic and ITM center in Tehran in 2025. Participants were evaluated using the Rome IV criteria. Mizaj was assessed using the Mojahedi Mizaj Questionnaire. Reticulotype classification was performed based on immuno-metabolic profiling (including CRP, IL-6, cortisol, fasting insulin, and lipid panel), categorizing participants into four types: Inflammatory, Metabolic, Mixed, and Neutral. Response to a standardized ITM intervention—comprising diet modification, Zataria multiflora extract, and abdominal warm compress—was evaluated over 4 weeks. Symptom relief was quantified using the IBS-Symptom Severity Score (IBS-SSS). Data were analyzed using SPSS 26; ANOVA and chi-square tests assessed statistical significance.

Results : Of the 120 participants, 32 (26.7%) were classified as Inflammatory, 28 (23.3%) Metabolic, 38 (31.7%) Mixed, and 22 (18.3%) Neutral reticulotypes. The predominant Mizaj types were Safravi (Choleric) in 35.8% and Balghami (Phlegmatic) in 30.0%. A significant association was found between Inflammatory reticulotypes and Safravi Mizaj ($p=0.012$). Mean IBS-SSS reduction scores differed significantly among reticulotypes: Inflammatory (-78.5 ± 24.3), Metabolic (-61.2 ± 19.8), Mixed (-69.7 ± 20.1), Neutral (-55.3 ± 22.5) ($p=0.004$). The highest response to ITM was observed in the Inflammatory-Safravi group (-86.4 ± 18.9), suggesting enhanced therapeutic alignment.

Conclusion : This study provides initial evidence linking modern immuno-metabolic classification (reticulotype) with traditional Mizaj typing in predicting response to ITM interventions in IBS. The strong correlation between the Inflammatory reticulotype and Safravi Mizaj suggests a biological basis for temperament theory. Additionally, patients with this profile responded best to traditional treatments, supporting the hypothesis that certain reticulotypes may align with specific ITM-based protocols. These findings highlight the potential of integrative personalized approaches combining reticulotyping and temperament-based strategies in the management of functional disorders like IBS. Future longitudinal studies are needed to explore causality and treatment optimization.

Investigating the temperament (mizaj) of Hamadan citizens from the point of view of Persian medicine in 2024

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Background and Aim : In Persian medicine, temperament (Mizaj) is a fundamental and distinctive characteristic of individuals, forming the basis for diagnosis, treatment, and preventive prescriptions. Since the general temperament pattern of healthy individuals in the community can be a guide for changes and deviations in temperament in various diseases in the same climate, in this study, the general temperament of citizens in Hamadan was examined from the perspective of Persian medicine in the year 2024.

Methods : In this cross-sectional descriptive study, 400 healthy individuals from the general population of Hamadan city, aged 20 to 60, were studied in 2024. Random sampling was conducted from three areas with different socioeconomic statuses (high, medium, low) whom referring to health centers. To assess general temperament, the Salmannejad Temperament Questionnaire was used, consisting of 20 questions (15 questions for determining warmth/coldness and 5 questions for assessing wetness/dryness). The data were analyzed using SPSS20 software, and the significance level of the tests was considered less than 0.05.

Results : The mean age of participants was 33.91 ± 9.45 years, with 196 (49%) men and 204 (51%) women. In the study of hot/cold temperament: the frequency of cold temperament was 299 people (74.8%), moderate 29 people (7.2%), and hot temperament 72 people (18%), and in terms of wet/dry temperament: wet temperament 168 people (64.6%), moderate 163 people (40.8%), and dry temperament 51 people (12.8%). A significant difference was observed between men and women in terms of temperament (P value <0.001).Cold temperament was more prevalent in women than men (85.78% vs. 63.26%), while warm-moderate temperament was more common in men than women (36.73% vs. 14.22%), similarly, wet temperament was more frequent in women (51.47% vs. 41.32%), whereas dry temperament was more prevalent in men (19.39% vs. 6.37%). However, no significant statistical difference was observed in the mean age of Hamadan citizens regarding general temperament frequency. There was a significant correlation between age and temperament at $\alpha<0.05$ level (p value=0.045 and r=-0.1). In such a way that the older the age, the lower the hot level of the people. However, there was no significant correlation between age and temperament in terms of humidity level (P value=0.084).

Conclusion : This study revealed notable patterns in temperament distribution among Hamadan citizens. The dominant temperaments were cold and wet, with cold-wet being the most common combined type. Cold temperament was more prevalent in women, whereas warm was more common in men relative to women. Similarly, wet temperament predominated in women, while dry temperament was more frequent in men. However, no significant association was found between age and temperament distribution. The high prevalence of cold/wet temperament may reflect environmental influences and lifestyles in this region. This pattern can be evidence for temperament changes in various diseases in this city.

Humoral Patterns in Chronic Urticaria: A Cross-Sectional Study Based on Persian Medicine

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Background and Aim : Chronic urticaria (CU) is a common inflammatory skin disorder that significantly affects patients' quality of life. In Persian Medicine (PM), the humoral-based concepts of Shara and Mashara closely resemble the modern clinical presentations of urticaria and angioedema. From this perspective, humoral imbalance—particularly the predominance or qualitative deviation of one or more of the four humors (Dam [blood], Safra [yellow bile], Balgham [phlegm], and Sauda [black bile])—is considered a key underlying factor in skin eruptions. This study aimed to investigate the prevalence of humoral types in patients with CU.

Methods : This cross-sectional study was conducted on 92 patients aged 12 to 65 years with a confirmed diagnosis of CU, who attended clinics affiliated with Iran University of Medical Sciences between May 2020 and March 2021. A checklist based on the main PM texts was used to identify signs of humoral dominance through clinical interview and observation. Descriptive data, including age and BMI, were recorded and analyzed accordingly.

Results : The mean age of participants was 37.60 ± 10.59 years. The overall mean BMI was 25.41 ± 3.41 kg/m², with a range of 18.90 to 34.90. Based on clinical signs, Safra (yellow bile) was the most prevalent humor, observed in 88.04% of patients (n = 81), followed by Balgham (phlegm) in 56.52% (n = 52), Sauda (black bile) in 33.69% (n = 31), and Dam (blood) in 8.69% (n = 8).

Conclusion : According to Persian medical scholars, Shara is mainly attributed to Dam-e-Marrari (bilious blood) and Balgham-e-Maleh (saline phlegm). In contrast, Safra and Sauda, when present alone, are considered less frequent contributors due to their dryness, subtlety, and lower tendency to produce visible swellings. However, our findings revealed a high prevalence of Safra and Sauda among patients with CU. Signs of Safra dominance—such as thirst, dryness, and body heat—were common in acute flares. Balgham was associated with poor digestion, lethargy, and mental fog, while Sauda-related features—such as obsessive thoughts, anxiety, heartburn, and disturbed sleep—were also reported. The notable presence of Sauda in this study may reflect that modern factors, such as stress, frustration, and urban lifestyle, contribute to its increased prevalence. This contrast may reflect the mental tranquility and healthier lifestyle of past generations, which likely limited the role of Sauda in inflammatory conditions. A sedentary lifestyle, along with constipation, gastrointestinal issues such as reflux and bloating, and excess body weight, increases the likelihood of the coexistence of Balgham and Safra as a composite humor in patients with urticaria. Conclusion: Safra and Balgham were the most prevalent humors among CSU patients, with a significant role also observed for Sauda. These findings align with the Persian Medicine view that chronic inflammatory skin conditions often involve complex, multi-humoral imbalances, emphasizing the need for personalized therapeutic strategies.

Pediatrics in Persian Medicine manuscripts

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Background and Aim : The written heritage of Persian medicine (PM) and Islamic civilization, which includes thousands of manuscripts, has often devoted one or more chapters of its book to pediatrics; and also dozens of specialized books and treatises has written about children management to prevent diseases and to treat children disease . Pediatrics is one of the most important branches of PM and great scientists and sages such as Rhazes, Avicenna and Jorjani have dedicated chapters of their medical books to this filed of medicine and also, have written independent writings on pediatrics.

Methods : The purpose of this study is investigation of the approach of PM to pediatrics. Methods: The study method in this research is literature review and reviewing manuscripts and printed cop ies of PM.

Results : A treatise on pediatric diseases and more attention to them «of Rhazes is one of the most important sources of written heritage on children's diseases. The approach of PM to pediatrics is based on two main axes: 1. General measures in the prevention and care of children's health 2. Principles of treatment and measures of children diseases in below sections: 1. Digestive diseases; 2. Respiratory diseases; 3. Diseases of the nervous system; 4. Urinary tract diseases; 5. Infectious and contagious diseases; 6. Skin diseases; 7. Diseases of the mouth, ears, nose and larynx; 8. Eye diseases; 9. Hereditary diseases and so on.

Conclusion : Today, familiarity with PM manuscripts and knowledge of this medical instructions, especially in the field of prevention and treatment can open a new window in the modern medical sciences. Key words : Pediatrics, Persian Medicine Manuscripts

Vocal Ornamentation and Therapeutic Sound in Persian Medicine: A Historical Medical Report

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Background and Aim : According to traditional Persian medicine (TPM), non-pharmacological treatments have also been recommended for diseases, including the use of music interventions. In this study, we present a historical report on the use of music in sexual dysfunction.

Methods : We surveyed one of the reference textbooks of TPM, the Khulāṣat- al-Ḥikmah. The author of this work was Seyyed Muḥammad Ḥoseyn ʿAqīlī Khorāsānī Shīrāzī, a prominent Persian physician of the late 12th century AH. His book is an encyclopedia of medicine written in the Persian language.

Results : In the chapter on regimen for travelers (Tadbīr-e-Musāfir), he provided advice on maintaining or restoring health while traveling. In this chapter, he explained some diseases that travelers may contract and offered guidelines for treating them without consulting a physician. One of these was decreased libido or low sex drive (Zaʿf-e-Bāh). He described the clinical manifestations, underlying mechanisms, and treatment strategies of this condition. In addressing anaphrodisia, ʿAqīlī recommended detailed guidance on increasing sexual desire by strengthening the heart and brain. He advised the use of stimulant medicines and aromatic substances, residence in regions with favorable and pleasant climates, and listening to soothing vocal music performed by singers with pleasant voices and emotional resonance. In this section, ʿAqīlī employs the phrase "Alḥān-e-Mughannīyyeh". In classical Iranian music, the term "Mughannī" referred to a skilled singer or minstrel proficient in vocal techniques. The term "Ghune", as defined by Fārābī, a 10th-century CE philosopher and music theorist, in his Great Book of Music (Mūsīqī- al-Kabīr), denotes a specific vocal ornamentation in which the singer emits part of the airflow through the nose and part through the mouth, producing a resonant and aesthetically pleasing sound. Thus, Mughannī in its precise historical usage refers to a vocalist adept in complex vocal modulations and breath control techniques involving multiple respiratory pathways.

Conclusion : Taken together, these insights reveal a sophisticated understanding of the therapeutic potential of sound in Persian medicine. ʿAqīlī's emphasis on vocal timbre, emotional resonance, and the refined techniques of Mughannī singers exemplifies a holistic medical paradigm in which sensory aesthetics are systematically interwoven with physiological and psychological processes. This integrative approach highlights the role of auditory stimuli as dynamic modulators in restoring somatic balance and emotional vitality, underscoring the early medical insight into incorporating non-pharmacological modalities alongside pharmacological interventions, a dual strategy that reflects a nuanced understanding of holistic care in historical clinical practice.

The impact and influence of physicians on medical education throughout the Islamic era.

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Background and Aim : Many researchers recognize the substantial impact of Islamic civilization on the field of medicine during the Middle Ages, acknowledging its pivotal role in advancing and disseminating scientific knowledge. Despite significant transformations in Europe during the sixteenth and seventeenth centuries, it is essential to note that the educational system developed by Muslim physicians significantly contributed to this evolution. Under the Abbasid rule, key texts were translated into Arabic, primarily from Greek sources. The groundbreaking contributions of Muslim scholars like Razes, Hally Abbas, and Avicenna, combined with the creation of government-backed and private institutions for education and knowledge transmission, led to the progression of Islamic sciences and elevated medicine's status. Medical education during the Islamic period employed three distinct approaches in various educational settings. Factors such as curriculum development, establishment of schools, physicians' roles, and adaptations to the educational system all played crucial parts in shaping this historical context. This article aims to delve deeper into these subjects.

Methods : A comprehensive review of relevant texts was carried out by searching credible websites, including World Cat, Google Scholar, Google Books, and specialized databases in medical history, such as J Store and Libgen.ir. After eliminating duplicate and unrelated content, pertinent information was identified and collected for further analysis

Results : The advancement of medical sciences was due to three events: the translation of important works into Arabic, especially Greek medical texts; the scientific contributions of writers such as Yuhanna ibn Masawaih,Razes, Hally Abbas, and Avicenna; and the establishment of governmental or private institutions for the transmission of scientific ideas as well as the training of skilled physicians. Medical education during the Islamic period was conducted in three ways and at three types of schools: Schools associated with hospitals, where alongside theoretical medical education, students would visit patients and learn medical teachings alongside the sick. Private medical schools, which were essentially places where renowned doctors taught and attracted students from all over for their education. The private medical education method, in which the student learned under the supervision of a master and upon completing the course, was awarded a certificate confirming the completion of medical studies.

Conclusion : The foundation of education and scientific principles for physicians and scholars during the Islamic period comprised the following key elements: essential basic knowledge for medical students prior to clinical practice, encompassing theoretical courses, natural sciences, mathematics, logic, and more. Islamic scholars held varying views on the sequence and emphasis placed on each discipline. While a primary educational approach was predominantly followed, some periods witnessed the emergence of alternative teaching methods.

Pilgrims, Diplomats, and Disease: Epidemic and Quarantines Encounters in Qajar-Era Iranian Travel Writing

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Background and Aim : In the 19th and early 20th centuries, the travels of Iranian pilgrims and diplomats across the Middle East coincided with recurring cholera pandemics and the gradual emergence of modern public health systems. Under the Qajar dynasty (1789–1925), thousands of Iranians undertook religious pilgrimages to Ottoman Iraq and the Hijaz, while diplomatic missions traveled to Constantinople, Cairo, and beyond. These routes were frequently disrupted by outbreaks of cholera and the enforcement of quarantine (karantin) measures by Ottoman, British, and other imperial authorities. Persian travelogues (safarnameh-ha) from this period offer a rare and underutilized corpus of first-hand observations on epidemic disease, sanitary regulation, and the complex interplay of political, and medical authority. This study examines how Qajar-era travel writers—both pilgrims and diplomats—narrated their encounters with epidemics and public health.

Methods : This research is based on a close reading and comparative analysis of selected Persian-language travelogues written by Qajar-era Iranian pilgrims and state officials. Primary sources include the travel narratives of travelers whose works document journeys from Iran to the Hijaz, Ottoman Iraq, and parts of the eastern Mediterranean. The texts were analyzed for explicit references to cholera outbreaks, quarantine enforcement, medical encounters, and traditional interpretations of illness and epidemics.

Results : The travelogues reveal recurring themes: the fear by cholera; the institutionalization of quarantine practices at ports, border crossings, and way stations; and a deep ambivalence toward foreign-imposed sanitary measures. While in the beginning of the travels both Pilgrims and diplomats often said that they are in risks because of cholera but during the travel, described quarantine as a form of suffering, while diplomats noted the administrative and political implications of sanitary controls. sometimes Illness was interpreted as divine punishment or a test of faith, though some travelers also referenced environmental explanations. Observations of Ottoman and European medical facilities occasionally reflected admiration, but sometimes quarantine lead travelers to resisted specially when public health measures delayed travel program or diplomatic progress.

Conclusion : These narratives expose the entangled relationships between medical policy, religious belief, and imperial politics. For Qajar travelers, epidemic disease was not merely a biological phenomenon but a morally and politically charged event. Iranian responses to modern sanitary regimes varied and were in relation with selective engagement with Western medicine, modernization and state power. while these texts not only give us excellent details about peak dates and places of epidemics in that era but also offer invaluable insights into historical perceptions of disease, medical authority, and public health in the Islamic world.

Comparative Analysis of Dalk Khashen in Persian Medicine and Gua Sha in Traditional Chinese Medicine: Mechanisms and Scientific Evidence

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Background and Aim : Dalk in Persian means “rubbing.” In Persian medicine, Dalk is one of the therapeutic manual interventions (A‘mal-e-Yadavi) that is categorized according to its application and method of performance. Dalk-e-Khashen (coarse massage) is one type, performed using rough cloths or scrubbing bags. Its effects are described in Persian medical texts as producing local warmth, increasing blood flow, and facilitating waste elimination. Guasha in Chinese language means scraping the skin until erythema appears, performed with a smooth-edged tool. Reported effects of Guasha include improving local blood circulation, enhancing the flow of energy (Qi), detoxification, and relaxation. Although these interventions belong to two distinct medical traditions, Iranian and Chinese, both show remarkable mechanical and therapeutic similarities. This study was conducted with the aim of comparing Dalk-e-Khashen and Guasha in terms of physiological mechanisms, clinical evidence, and potential therapeutic applications.

Methods : A comparative analytical review was performed. Three authoritative Persian medical texts (Canon of Medicine, Zakhireh Kharazmshahi, and Kholasat al-Hikmah) describing the indications and mechanisms of Dalk-e-Khashen were analyzed. For Guasha, a search of PubMed and Scopus was conducted up to June 2025, focusing on randomized controlled trials, systematic reviews, and physiological studies. Keywords included “Guasha,” “scraping therapy,” “microcirculation,” “pain management,” and “inflammation.” Inclusion criteria were studies involving human participants, with objective outcome measures or mechanistic analyses.

Results : Both methods, through mechanical stimulation, may lead to: increased local blood flow and tissue temperature, modulation of inflammatory mediators, enhanced metabolic clearance, and detoxification. Randomized controlled trials and systematic reviews on Guasha have demonstrated beneficial effects in reducing chronic musculoskeletal pain (such as low back pain, neck pain, and shoulder pain) and alleviating fatigue. Reported adverse events are generally mild and transient, mostly limited to subcutaneous bruising. In contrast, while classical Persian texts attribute similar physiological and therapeutic benefits to Dalk-e-Khashen, strong clinical or experimental studies are still lacking. Comparative Mechanism Table (Conceptual) Traditional Iranian Medicine (TIM) Modern Physiological Interpretation Pain relief (taskeen al-waja‘) Endorphin release, analgesia Elimination of morbid matter (da‘f-e fuḍūlāt) Autonomic modulation, enhanced microcirculation and lymphatic clearance Strengthening innate heat (hararat ghrizi) Metabolic enhancement Balancing humors (ta‘dil akhlāt) Homeostasis of nervous & endocrine systems

Conclusion : Dalk-e-Khashen and Guasha show substantial mechanical and therapeutic parallels. However, while Guasha is increasingly supported by randomized clinical evidence, Dalk-e-Khashen remains neglected. Well-designed controlled clinical trials are essential to scientifically validate Dalk-e-Khashen, thereby enabling its integration into healthcare frameworks of complementary and modern medicine.

Functional Relationship between the Body Surface and Deep Organs in Traditional Persian Medicine

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Background and Aim : Manual therapeutic techniques of Traditional Persian Medicine (TPM), including Hejamat (cupping) and Fasd (Bloodletting), can be considered as prominent clinical manifestations of this This branch of medical science, but there are still many uncertainties regarding their mechanism of effectiveness. It seems that despite the recognition of the general anti-inflammatory and soothing effects of these methods, the relationship between these superficial techniques and the function of the deep organs of the body is still unknown, which is addressed in this study.

Methods : In this study, using academic reference sources of TPM, especially the book "The Canon of Medicine" by Avicenna, the relationship between manual superficial techniques, including cupping, Bloodletting, ghamz (acupressure) and kaiy (heating), and the function of internal organs, is extracted. Then, by examining the mechanisms proposed for similar surface techniques in current scientific sources, including Google Scholar and PubMed databases, relevant scientific findings are collected and discussed.

Results : The data show that in many cases for example the recommendation of cupping of legs for headaches and delayed menstruation, or bloodletting of basilic vein for knee pain or kaiy in the middle of the head for nazle (Waste products flowing from top to bottom of the body), or ghamz of forearm for nausea, correction of deep organ function by superficial body stimulation has been considered.

Conclusion : As is clear, in many cases the purpose of superficial manual techniques in TPM has been to stimulate surface points of the body in order to affect internal organs. From this perspective, a deep similarity can be seen traditional Iranian and Chinese medicine, such that it seems that in many cases the therapeutic goal was the same and only the therapeutic tools were different.

Effectiveness of Wet Cupping on Patients with Facial Acne Vulgaris: A 12-Week, Randomized, Single-Blind, Intervention-Sham-Controlled Trial

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Background and Aim : Acne vulgaris is a widespread skin disorder. The aim of this study was to assess the effectiveness of wet cupping in the treatment of moderate to severe facial acne vulgaris

Methods : Between August 2018 and January 2020, eligible patients with moderate to severe facial acne were recruited in this single-blind, intervention-sham-controlled clinical trial in Iran. The intervention group received wet cupping twice and likewise the control group received sham cupping. Also, both groups received 500 mg azithromycin 3 times/week for 12 weeks. Acne grades were assessed 6 weeks and 12 weeks after beginning of the treatment by the dermatologist uninformed of group allocation and participant self-assessment. Quality of life was assessed with valid questionnaire before and after the treatment

Results : Totally, 103 patients completed the trial. The patients in the intervention group had better improvement and grade of acne compared to the control group at the end of the trial. Patients showed a shorter time to removing facial lesions in the intervention group in contrast with the control group ($p < 0.001$). Quality of life significantly increased in the intervention group compared with the control group ($p = 0.004$).

Conclusion : Wet cupping plus antibiotic therapy seems to be more effective than antibiotic therapy per se in patients with facial acne vulgaris.

Effect of K-K9 point acupressure and quince and ginger syrup on nausea and vomiting of pregnancy: A clinical trial

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Background and Aim : Nausea and vomiting are among the common problems during pregnancy. Given the significant impact of pregnancy-related nausea and vomiting on personal and social lives of pregnant women, the present study was conducted with aim to evaluate and compare the effects of quince and ginger herbal syrup and acupressure at the K-K9 point on nausea and vomiting of pregnancy.

Methods : This single-blind randomized clinical trial study was conducted in 2022 on 44 pregnant women in Gonabad. Participants were randomly assigned into two groups of quince and ginger syrup and acupressure massage at the K-K9 point. In groups, the 24-hour Pregnancy Unique Quantification of Emesis and Nausea (PUQE-24) questionnaire was completed for three consecutive days before the intervention. Then, the intervention was carried out for four days. After the end of the intervention, the severity of nausea and vomiting was reassessed in both groups. Data were analyzed using SPSS software (version 22) and Chi-square, One-way ANOVA, and Kruskal-Wallis tests. $P<0.05$ was considered statistically significant.

Results : The mean score of nausea and vomitting was not significantly different between the two groups before the intervention ($p=0.7$), but the mean score of nausea and vomitting after the intervention was significantly lower in the quince and ginger group than the K-K9 group ($p=0.03$).

Conclusion : In this study, quince and ginger syrup and K-K9 acupressure were effective in reducing nausea and vomiting of pregnancy, but quince and ginger syrup had a greater effect on reducing nausea and vomiting of pregnancy, so both methods are recommended to reduce nausea and vomiting of pregnancy.

The prevalence of using herbal or traditional medicines to treatment of respiratory infections in children among women referring to the pediatric clinic in Zahedan, southeast of Iran

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Background and Aim : Considering the importance of respiratory infections and timely action in children under five years of age, it is important to study the performance of mothers in this field. The aim of this study was to study the use of herbal or traditional medicines for the treatment of respiratory infections in children under five years of age in mothers referring to the pediatric clinic of Zahedan Social Security Hospital.

Methods : In this cross-sectional study, 186 mothers of mothers referring to the pediatric clinic of Zahedan Social Security Hospital were studied in 2025. Data collection was done using interviews and questionnaires. Sampling was done by convenient and accessible method. Data analysis was performed in SPSS.18 software using the chi-square test

Results : The mean age of mothers was 25.5 ± 4.5 years with an age range of 17 to 39 years. In this study, the rate of use of herbal or home remedies for the treatment of respiratory infections in children under 5 years of age was estimated at 16.1% (30 people). Also, 34 people (18.2%) of the mothers mentioned that they prescribe medicine without consulting a doctor. The rate of use of herbal and traditional medicines showed a significant relationship with the level of education of mothers (P=0.023) and history of respiratory infections in children (P=0.044) as well as the number of children (P=0.018).

Conclusion : This study showed that the rate of use of herbal and traditional medicines for the treatment of respiratory infections in mothers in Zahedan is not very high. However, considering the importance of treating respiratory infections and paying attention to symptoms, it is necessary to use traditional and herbal remedies under the supervision of traditional medicine doctors. It is also recommended that all mothers referring to centers undergo the necessary training to prevent arbitrary treatment.

Introduction to the World's Top 10 Honeys for Wound and Burn Healing

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Background and Aim : Honey has long been used as a natural remedy for wounds and burns due to its antibacterial, anti-inflammatory, and tissue-regenerating properties. Research shows that certain types of honey, because of their unique active compounds, have remarkable therapeutic effects on wound healing. Manuka honey, originating from New Zealand and Australia, contains methylglyoxal (MGO) and has the strongest antibacterial effects, making it highly effective for diabetic wounds and severe burns. Tualang honey from Malaysia, with its potent antioxidants, reduces inflammation and is used for superficial burns. Sidr (or Konar honey), found in Iran and Yemen, naturally produces hydrogen peroxide, helping treat infected and fungal wounds. Eucalyptus honey, rich in cineole, has strong anti-inflammatory properties, while European buckwheat honey contains rutin, which accelerates tissue repair. Mediterranean thyme honey, with its thymol content, fights antibiotic-resistant bacteria, and Russian coriander honey, containing linalool, prevents scarring. Acacia honey has a mild pH, making it suitable for sensitive wounds, and Iranian orange blossom honey, rich in vitamin C, aids in healing minor burns.

Methods : Source Selection: Scientific databases (PubMed, ScienceDirect) and reputable apiculture studies were prioritized for evidence-based data on honey's therapeutic properties. Keyword Search: Terms like "honey wound healing," "medical-grade honey," and "antimicrobial honey" were used to identify relevant studies. Compound Analysis: Active ingredients (e.g., MGO, hydrogen peroxide) were cross-referenced with clinical trials to verify efficacy. Geographical & Botanical Verification: Honey types were validated by origin and plant source (e.g., Leptospermum scoparium for Manuka). Exclusion Criteria: Non-medical honeys, commercial blends, or studies without peer review were excluded.

Results : Research identifies Manuka honey from New Zealand/Australia as the most potent option due to its high methylglyoxal (MGO) content, earning FDA approval for severe wound care. Close contenders include Malaysia's antioxidant-rich Tualang honey for burn inflammation and Yemeni/Iranian Sidr honey which generates natural hydrogen peroxide to combat infections. Global varieties each offer specialized benefits: Eucalyptus honey provides cineole for anti-inflammatory action on chemical burns, while European buckwheat honey accelerates tissue repair through rutin. Mediterranean thyme honey demonstrates particular efficacy against antibiotic-resistant bacteria, and Russian coriander honey helps prevent scarring. For sensitive applications, mild Acacia honey and vitamin C-packed orange blossom honey (from Iran/Spain) prove valuable, with Tasmanian Leatherwood honey's unique enzymes aiding chronic wound cases. Critical factors for therapeutic use include medical-grade purity (80%+ concentration), sterility, and absence of additives, though professional medical consultation remains essential for serious injuries. These natural alternatives leverage distinct biochemical properties - from hydrogen peroxide production to collagen stimulation - offering complementary approaches to conventional wound management.

Conclusion : For therapeutic use, medical-grade honey with a concentration above 80% is recommended. These honeys work through mechanisms like osmotic action, hydrogen peroxide production, and tissue regeneration. Freshness and purity (free from bee debris, wax, or pollen) are also crucial for effective wound and burn treatment.

Textual Documentation of Local Heating in Disease Treatment in Traditional Persian Medicine Sources and a Brief Introduction of Instruments Used in Local Heating

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Background and Aim : Local heating has been a long-established therapeutic method in traditional Persian medicine, applied to improve blood circulation, reduce muscle spasms, and alleviate swelling. Traditional scholars adapted these techniques and substances according to the patient's temperament and the coldness of specific organs or the entire body. Modern conventional medicine and Chinese medicine use similar methods, highlighting the relevance and continuity of local heat therapy across different medical systems.

Methods : Classical traditional persian medicine sources, including the Canon of Avicenna, Zakhireh Khwarazmshahi, Al-Hawi, and Kamel al-Sanaat, were systematically reviewed to identify methods, instruments, and therapeutic indications for local heating. Comparative analysis was then conducted with modern medical techniques such as IR therapy, TDP, moxibustion, high-power laser, heating pads, ultrasound, paraffin therapy, diathermy, RF, and hot packs. The extracted methods were categorized by heat transfer mechanism, penetration depth, clinical effects, and disease applications, and traditional and modern techniques were compared regarding their effects on blood circulation, muscle spasm, and organ function.

Results : traditional Persian medicine employed diverse local heating techniques, including kommad or takmeed, hot stones, warm oil massage, herbal baths and fumigation, warm poultices and suppositories, melted wax, and kai (direct heat application). These methods were primarily used to enhance blood flow, relieve muscle spasms, and reduce swelling. Modern medical instruments with similar mechanisms, such as IR, TDP, moxibustion, heating pads, high-power laser, ultrasound, paraffin therapy, diathermy, RF, and hot packs, are currently in use. In Chinese medicine, moxibustion and local heat applied to acupuncture points serve comparable purposes. Although the depth of heat penetration and energy types differ, the overall physiological effects—improved circulation, decreased spasm, and pain relief—are largely consistent across all systems.

Conclusion : Persian traditional medicine scholars tailored the use of tools and natural substances based on individual temperament and the coldness of organs or the body to achieve desired therapeutic effects. Many superficial techniques, such as kommad and kai, function similarly to moxibustion in Chinese medicine and heating pads in modern practice, illustrating a functional link between superficial body layers and internal organ performance. These findings indicate that traditional persian medicine methods can inspire the development of modern integrative therapies. Local heating remains a validated and well-documented practice, continuing today with modern instruments. While the tools and techniques differ, the goals remain consistent: enhancing circulation, relieving muscle spasms, and alleviating pain. Therefore, documenting and comparing these methods can aid in selecting effective treatments, designing integrative approaches, and improving clinical outcomes.

Textual Evidences of Complementary Medicine Practices in Persian Medical Literature

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Background and Aim : Persian medicine incorporates a range of treatment approaches rooted in a distinct system of thought and paradigm, some of which are now classified as complementary medicine. Remarkably, Persian physicians often recognized functional and physiological relationships between various organs, even in the absence of clear anatomical links.

Methods : An exploration of Persian medical texts was conducted to identify treatment methods employed by Persian physicians. These methods were then compared with contemporary complementary medicine practices.

Results : Persian medicine demonstrates early use of techniques resembling modern complementary methods. For example, treatments involving magnetic fields, electrical currents, and superficial body stimulation to influence deeper organs reflect strategies that have evolved into modern complementary therapies. In his book *The Azam Exir*, Hakim Azam Khan recommended using a magnet stone to aid bone healing and callus formation, a practice traditionally referred to as "Bone Doshboz." This highlights the therapeutic potential of magnetic fields. Similarly, Avicenna described using electrical discharge from a type of fish, known as "Ra'ade Fish," to treat headaches and epilepsy. These early practices resonate with modern techniques like repetitive transcranial magnetic stimulation (RTMS) and transcranial direct current stimulation (TDCS), which apply magnetic and electrical forces in disease management today. Furthermore, Persian medicine attributed the absorption of essential substances and removal of waste materials from tissues to magnetic forces. Certain cupping techniques, both wet and dry, also reflect an understanding of functional organ connections rather than relying on anatomical or histological correlations. Persian physicians showed remarkable insight into these relationships, employing local stimulation methods such as cupping, skin scratching, soft tissue manipulation, or blood vessel puncturing to target internal organs. Examples include applying local pressure between the ring and index fingers to relieve headaches, targeting the saphenous vein for itching, stimulating the anterior fontanel or sides of the navel for psychosomatic issues, treating tinnitus through the renal lodge area, and addressing joint pain by focusing on the outside of the second finger. Many of these techniques have since evolved into specialized modalities like Sujok therapy, reflexology, acupuncture, Guasha therapy, and Shiatsu—distinct practices now recognized within complementary medicine. Advanced qualitative, quantitative, and instrumental refinements have further validated these approaches as unique and effective therapeutic modalities

Conclusion : A thorough investigation of Persian medical literature reveals significant overlaps between traditional Persian medicine practices and modern complementary medicine techniques. These insights provide opportunities to integrate advanced tools within the Persian medicine paradigm while maintaining continuity with its foundational principles.

Machine learning-based model for identifying temperament patterns in traditional Iranian medicine

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Background and Aim : Iranian Traditional Medicine (ITM) emphasizes the concept of temperament as the basis for diagnosing and treating diseases. Temperament, which is divided into four categories: warm and wet, warm and dry, cold and wet, and cold and dry, describes the physiological and psychological characteristics of an individual. Accurately diagnosing temperament is challenging due to its clinical complexities and dependence on subjective assessments by physicians. Machine learning (ML), with its ability to analyze complex data, can be an effective tool for identifying temperament patterns. The aim of this study is to develop and evaluate a machine learning model for automatic temperament diagnosis based on clinical data and standard questionnaires in Iranian Traditional Medicine.

Methods : In this study, data from 1200 healthy and sick individuals (age 18-65 years) were collected from traditional medicine centers in Iran. The data included a standard temperament questionnaire (including 30 questions on physical, digestive, sleep, and psychological characteristics), clinical examinations (pulse, skin color, body temperature), and biometric indicators (such as BMI and heart rate). The data were divided into three sets: training (70%), validation (15%), and testing (15%). Machine learning models including Random Forest, Support Vector Machine (SVM), and Artificial Neural Network (ANN) were designed and evaluated for temperament classification. Data preprocessing included normalization and feature selection using Principal Component Analysis (PCA). Evaluation criteria included accuracy, sensitivity, specificity, and area under the ROC curve (AUC). Statistical analysis was performed using t-test and ANOVA.

Results : The random forest model showed the best performance with an accuracy of 92.3% (AUC: 0.94) compared to SVM (accuracy: 88.7%) and ANN (accuracy: 90.1%). The key features identified by the model included body temperature, sleep quality, digestion speed, and energy level, which were consistent with the principles of traditional Iranian medicine. The model was able to distinguish warm and moist temperaments (78% sensitivity) and cold and dry temperaments (82% sensitivity) with higher accuracy than the other temperaments. The classification error was higher in the cold and moist group (68% sensitivity), which is probably due to the overlap of features with cold and dry temperaments. In the test set, the random forest model was consistent with the diagnosis of traditional physicians in 94% of cases ($p<0.01$). The processing time of the model was less than 0.5 seconds for each sample, indicating its high efficiency.

Conclusion : The random forest-based machine learning model with high accuracy and reasonable speed offers a promising tool for automatic temperament diagnosis in Iranian traditional medicine. This model can be used as an auxiliary tool for physicians to increase the accuracy of diagnosis and reduce the assessment time. The key features identified by the model were in line with the theoretical principles of Iranian traditional medicine, which strengthens its scientific validity. Limitations of the study include the need for more diverse data from different populations and investigating the influence of environmental factors on temperament. Future research should focus on improving the accuracy in temperaments with high overlap and clinical evaluation of the model in real-world settings. This approach can build a bridge between traditional and modern medicine.

The Diagnostic Power of General Temperament Questionnaire Compared to Uterine Temperament Questionnaire in Determining Uterine Temperament of Infertile Women: A Cross-Sectional Analytical Study

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Background and Aim : Uterine dystemperament is a central diagnostic concept in Persian Medicine (PM) for female infertility. While both the General Temperament Questionnaire (GTQ) and the Uterine Temperament Questionnaire (UTQ) are used, their diagnostic accuracy for uterine temperament has not been compared. This study aimed to evaluate the diagnostic accuracy of the GTQ versus the UTQ for determining uterine temperament in infertile women.

Methods : This cross-sectional analytical study included 62 infertile women who completed both the GTQ and UTQ. Diagnostic performance was assessed using sensitivity, specificity, and Cohen's kappa coefficient (κ). Associations with clinical variables were also analyzed.

Results : The UTQ identified cold-wet (50.0%) as the predominant uterine temperament, followed by cold-dry (40.32%). A strong agreement was found between the UTQ and GTQ ($\kappa = 0.72$, $p < 0.001$). Both questionnaires showed significant associations with infertility etiology ($p = 0.001$), linking cold-wet temperament to polycystic ovary syndrome (PCOS) and cold-dry temperament to primary ovarian insufficiency (POI). Body mass index (BMI) was significantly higher in wet temperament categories (UTQ: $p = 0.016$; GTQ: $p = 0.004$).

Conclusion : Although general and uterine temperament assessments show substantial agreement, the UTQ demonstrates stronger alignment with clinical biomarkers and provides more precise organ-specific diagnosis. The use of the UTQ is recommended for targeted diagnosis of uterine dystemperament in infertile women to facilitate personalized treatment strategies and potentially prevent ineffective treatments in PM.

Examining the Awareness and Attitude of Pharmacists in Tehran City Towards Herbal Medicines Used in Respiratory Infections in 2023-2024

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Background and Aim : Given the importance of medicinal plants, it is necessary to increase public awareness of the benefits of these plants compared to chemical drugs. Therefore, examining and understanding the knowledge and attitudes of the public and the medical community towards these drugs can play a significant role in scientific and executive planning. Pharmacists must also have complete and up-to-date information about the effects, side effects, and interactions of medications so that they can provide accurate and safe advice to patients A pharmacy is a place where patients visit mainly at first and generally require the active presence of pharmacists for counseling and treatment. Respiratory infections are of great importance due to their spread and can play a very important role in the mortality of children and adults. In this study we tried to monitor pharmacists ' awareness and attitudes about herbal medicines in the pharmacy used for respiratory infections.

Methods : This study is a sequential mixed exploratory study that was conducted in two phases, qualitative and quantitative. To understand the concept, a qualitative method and a hybrid concept analysis method were used. to investigate and identify the important herbal remedies available in pharmacies in the treatment of respiratory diseases, English and Persian indexes were reviewed. The main texts of the authoritative books on medicinal plants, were reviewed. Interviews were conducted with 15 pharmaceutical experts(work experience between 10 and 20 years). Then, the information was classified according to the materials obtained from books and interviews with experts, and 5 to 10 items were designed from each section and category. The initial questionnaire included 95 questions on knowledge and 53 questions on attitudes towards pharmaceutical assessment. Face validity was qualitatively conducted by 10 pharmacists. To examine CVR, considering the number of 15 participating pharmacists, items with CVR less than 0.49 were excluded. To examine CVI, the Waltz & Bausell method was used. The minimum acceptable value for the CVI index is 0.79, and if the CVI index of an item is less than 0.79, that item should be excluded. In the construct validity section, Bartlett's Royet test and KMO test were performed on the data to examine the suitability and adequacy of the sample. For reliability, 30 pharmacists filled out the questionnaire at 2-week intervals and the results were analyzed. The reliability level in the study was calculated through Cronbach's alpha coefficient.

Results : 37 items, including 20 questions in the knowledge section and 17 questions in the attitude section, were identified as the main research questionnaire and were filled out by 385 (120 men 265 women)pharmacists. After processing the data using statistical tools and software, the research results showed: 1. Pharmacists' awareness of the use of herbal medicines in respiratory infectious diseases is at a desirable level. 2. Pharmacists' attitude towards the use of herbal medicines in respiratory infectious diseases is at a favorable level.

Conclusion : Although pharmacists in our study had acceptable knowledge and attitudes toward herbal medicines,They need more training in therapeutic cases, Drug Interactions, Dosage, active components and precautions of herbal medicines.

Investigating the level of Health literacy and Awareness of Health Ambassadors of Sabzevar University of Medical Sciences about the Teachings of Traditional Persian Medicine - 2023

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Background and Aim : An unhealthy lifestyle has been one of the most important causes of the increase in diseases, especially chronic diseases, in recent years. Traditional Persian medicine can play an important role in improving the community's health by providing appropriate solutions for maintaining health. This study aims to investigate the level of awareness of health ambassadors about the teachings of traditional medicine and its relationship with health literacy at Sabzevar University of Medical Sciences.

Methods : This descriptive-analytical cross-sectional study was conducted in 2023 with 1924 participants of the health ambassadors aged 15-65 with electronic health records in the comprehensive health centers of Sabzevar University of Medical Sciences, using the convenience sampling method. The instrument of the present study was a researcher-made questionnaire for traditional medicine teachings and the Iranian Health Literacy Questionnaire (HELIA) for health literacy assessment. The collected data were analyzed using SPSS 22 software, correlation tests, t-test, and ANOVA.

Results : This study was conducted with 1924 participants of the health ambassadors. The average age of the participants was 35.3±15.6 years. According to the results of this study, the average health literacy score of health volunteers was 73.7±18.7, the average health literacy of men was 71.5±13.6, and women was 74.9±14.2 (out of 100 points). The findings showed that the audience used the Internet (%52.9) and doctors and health care workers (%52.3) the most to obtain general health information, respectively. %62.4 of the research units used the EITA messenger, and %23.8 used Telegram. Regarding the way of getting acquainted with traditional medicine, 31.7% stated the recommendation of others and %26.9 stated their previous knowledge. The reason for using traditional medicine services was mentioned in %46.5 due to low side effects and %36.1 based on the experiences of others. In response to the question of the source of receiving traditional medicine services, %47.1 mentioned a specialist doctor, %29.4 the experiences of others, %27.6 a local therapist, and %20.9 the cyberspace.

Conclusion : Since the program of integrating the teachings of Persian Medicine can be very effective due to the cultural fusion of the society with traditional medicine and the desire to use healthy and natural products, therefore, training health personnel and using the potential capacity of health volunteers can be considered by health planners and managers as one of the foundations of primary health services in effective health interventions. Also, to ensure access tohealth care for all people, it is recommended to design programs appropriate to demographic and cultural variables for a healthy lifestyle based on the teachings of Persian traditional medicine.

Assessment of Cancer Patients' Self-Awareness Regarding Lifestyle and Proper Nutrition During Chemotherapy Using a Medical Informatics and Decision Support System Approach

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Background and Aim : Proper nutrition during chemotherapy for cancer patients plays a vital role in improving quality of life and reducing treatment side effects. Increasing patients' awareness of lifestyle and nutritional recommendations can have a significant impact on the better management of the treatment period. This study aims to examine the role of medical informatics and decision-support and recommender systems in enhancing the nutritional awareness of cancer patients undergoing chemotherapy.

Methods : In this research, a questionnaire consisting of 23 questions about patients' awareness regarding various nutritional topics and suitable lifestyles during chemotherapy was designed and utilized. The collected data were quantitatively gathered and analyzed using medical informatics systems. With the help of intelligent algorithms, patients' nutritional knowledge gaps and weaknesses were identified, and personalized nutritional feedback was provided through recommender systems.

Results : Data analysis showed that patients had moderate to low knowledge in areas such as the appropriate types and amounts of meat, sugar, salt, fruits, and vegetable consumption. Additionally, a lack of awareness was observed regarding proper cooking methods, supplement use, sleep duration, and physical activity. Decision-support systems were able to accurately detect these deficits and offer recommendations aligned with the patient's clinical and cultural conditions.

Conclusion : The use of medical informatics technologies and recommender systems, alongside self-assessment questionnaires, can help increase nutritional awareness among cancer patients and improve nutrition management during chemotherapy. This approach not only enhances care quality but also reduces treatment side effects and improves clinical outcomes. Integrating traditional Iranian medicine knowledge with modern information technologies provides a valuable opportunity to develop precise, personalized, and culturally acceptable nutrition programs based on patients' beliefs and culture.

Investigating research method in Persian medicine: Insights from a qualitative study

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Background and Aim : Research is one of the most important cornerstones of success and always held a specific place in Persian medicine (PM). This study aims to investigate the basics of PM research method.

Methods : . In a qualitative study conducted between July and September 2024, we interviewed 19 experts in PM nationwide. During semi-structured interviews, they shared their perspectives on evidence-based medicine (EBM), research protocol standards, ethical codes, and using observational studies in PM.

Results : All participants agreed unanimously on four features of the research methodology: the potential for PM to evolve into EBM, the application of observational studies, adherence to strict product standards, and the similarity of research ethics in PM and contemporary medicine (CM). Over 89% agreed on the efficacy of blinding, the usefulness of current outcome assessment instruments, and the significance of assessing the patient-therapist relationship in clinical trial studies. Respondents (84%) believed the present randomization method was ineffective. Furthermore, 64% acknowledged the animal model's limitations. PM experts believed that the fundamental principles of medical practice should be implemented based on EBM. It is also vital to highlight that the philosophy of PM and CM differ, and this issue should serve as the foundation for creating PM's research methodology.

Conclusion : Furthermore, the research methodology criteria for PM should be derived from the principles used in conventional medical sciences.

Effective Mechanisms of Acupuncture in Promoting Community Health with Emphasis on Precision Medicine

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Background and Aim : Acupuncture, a key branch of Traditional Chinese Medicine (TCM), has been practiced in China for over 2,500 years. It is used to treat various diseases, including endocrine, metabolic, psychological, neurological, circulatory, skin, musculoskeletal, and connective tissue disorders. Recent systematic reviews confirm that acupuncture is a safe, low-cost therapy with minimal side effects. However, as current evidence is not fully convincing for all specialists, this study investigates the effective mechanisms of acupuncture in promoting community health, with an emphasis on personalized medicine.

Methods : This review was conducted by searching Google Scholar and PubMed databases from 2021 onward, using keywords such as acupuncture, personalized medicine, lifestyle, precision medicine, and epigenetics.

Results : Acupuncture contributes to disease prevention and community health promotion through six main mechanisms:1)Anti-inflammatory Mechanism: Acupuncture reduces inflammatory M1 macrophages and increases anti-inflammatory M2 macrophages, lowering adipose tissue inflammation and improving insulin sensitivity. It raises serum levels of anti-inflammatory cytokines (IL-4, IL-10) and reduces inflammatory cytokines (IL-6, TNF-α), helping treat obesity. It also improves neurological function in acute ischemic stroke patients and lowers C-reactive protein (CRP) and plasminogen activator inhibitor-1 levels, reducing hypertension risk in chronic spontaneous urticaria.2) Neuroinflammation and Neural Stimulation: Electroacupuncture improves postoperative cognitive dysfunction, common in elderly patients after anesthesia or surgery. It also alleviates xerostomia (dry mouth) and swallowing disorders caused by head and neck cancers.3)Reducing Nerve Conduction Velocity: Acupuncture helps prevent chemotherapy-induced peripheral neuropathy.4)Influencing Energy Metabolism: Acupuncture affects energy metabolism pathways and key molecules like FAD and L-noradrenaline, improving migraines and related symptoms.5)Genetic and Epigenetic Modifications: Acupuncture enhances learning and memory in mouse models of post-traumatic stress disorder by regulating the microglial phosphatidylinositol 3-kinase pathway. It exerts antinociceptive effects in neuropathic pain and improves ischemic stroke damage by regulating histone acetylation of Bcl-2 and caspase-3 genes.6) Autophagy Mechanism: Electroacupuncture regulates the tuberous sclerosis complex and hypothalamic autophagy in diet-induced obese mice, leading to weight loss. Therefore, it can be said that acupuncture follows different pathways and therapeutic mechanisms in treating similar diseases in different individuals.

Conclusion : Based on this comprehensive approach, acupuncture emphasizes the importance of patient-centered treatments, personalized and precision medicine, and highlights its use in optimizing clinical outcomes.

Feasibility of Integrating Genomic Data and Persian Medicine Temperament Assessment for Designing Personalized Therapeutic Protocols with a Focus on Type 2 Diabetes

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Background and Aim : Type 2 diabetes mellitus (T2DM) is a complex metabolic disorder strongly associated with genetic variants in the TCF7L2 gene, one of the most significant genetic risk factors identified to date. TCF7L2 encodes a transcription factor, playing a pivotal role in glucose metabolism and pancreatic β-cell function, including insulin secretion regulation. Concurrently, Persian medicine (PM) employs the concept of temperament-characterized by qualities such as hot, cold, wet, and dry-as a foundational framework for diagnosis and treatment, emphasizing individual physiological and phenotypic differences. This study explores the potential integration of genomic data, particularly TCF7L2 genotypes, with PM temperament assessment to develop personalized therapeutic protocols for T2DM patients.

Methods : A systematic literature search was conducted across both Persian and international scientific databases, including PubMed, Scopus, and SID, using keywords such as “TCF7L2,” “type 2 diabetes,” “temperament,” “Persian medicine,” and “personalized medicine.” Papers published between 2015 and 2025 focusing on the role of TCF7L2 in diabetes and possible correlations with traditional temperament classifications were selected for review.

Results : Genetic studies consistently demonstrate that single nucleotide polymorphisms in TCF7L2, significantly increase susceptibility to T2DM by impairing insulin secretion and glucose metabolism. In PM, cold and hot dystemperament -particularly those involving the passive quality of dryness- are associated with pancreatic dysfunction and insulin resistance. Although direct empirical evidence correlating TCF7L2 genotypes with specific PM temperaments in diabetic patients is currently lacking, conceptual overlaps suggest that integrating genomic and temperament data could enhance the precision of therapeutic predictions and interventions. Such integration may improve individualized responses to both pharmacologic and herbal treatments.

Conclusion : Combining modern genetic insights with the temperament framework of Persian medicine offers a novel avenue for advancing personalized medicine, wherein genetic, physiological, and temperament-related factors are concurrently considered. Despite challenges such as the absence of direct empirical data and the need for standardized temperament assessment methods, this integrative approach holds promise for optimizing treatment efficacy and developing more precise therapeutic protocols. Future research should focus on clinical and molecular studies to empirically validate this integration and establish practical models for its application in diabetes care.

Traditional Persian Medicine and Precision Medicine: Differences and Similarities

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Background and Aim : Traditional Persian Medicine (TPM) is based on the theory of the four humors, individual temperaments (mizaj), and the dynamic interaction between human beings and their environment. Precision Medicine (PM) is a modern medical paradigm driven by advanced technologies such as genomics, proteomics, and bioinformatics. It analyzes genetic, biological, and environmental data to design targeted and individualized therapies. Its primary goal is to enhance therapeutic efficacy and minimize adverse effects by achieving a deeper understanding of the patient's unique biological profile.

Methods : A systematic search was conducted across academic databases including ISI, PubMed, Scopus, Google Scholar, and SID. Keywords used in the search included " Traditional Persian Medicine", "Precision Medicine", "Temperament", "Mizaj", "Personalized Medicine", and "Integrative Medicine", covering the period from 2010 to 2024. Relevant papers in both Persian and English were screened and subjected to content analysis.

Results : The following similarities were found between these two medicines: Both TPM and PM operate on the principle of individualized care. In TPM, the concept of temperament is the primary determinant of a person's health status and susceptibility to disease. In PM, personalization is achieved through the integration of genetic, biological, and environmental information to tailor treatment strategies. TPM prioritizes disease prevention by maintaining temperamental balance and promoting a healthy lifestyle. Similarly, PM aims to predict and prevent disease onset through the analysis of genomic and biomarker data, enabling early risk assessment and intervention. In TPM, environmental factors such as seasons, climate, and diet play a crucial role in shaping a person's temperament and health. PM also considers environmental and lifestyle influences, alongside genetic information, to assess disease risk and guide personalized therapies. The following differences were found between these two medicines: TPM is grounded in the humoral theory, which emphasizes the balance among four bodily humors—blood (dam), phlegm (balgham), yellow bile (safra), and black bile (soda)—as well as hot/cold and wet/dry temperaments. In contrast, PM is based on contemporary scientific disciplines such as genetics, bioinformatics, and data analytics. Diagnosis in TPM relies on clinical observation, physical examination, and traditional questionnaires to assess temperament. In PM, diagnosis is supported by advanced techniques such as genome sequencing, molecular biomarkers, and high-resolution imaging. TPM, being low-tech and reliant on traditional knowledge, is generally more accessible and affordable across various populations. PM, on the other hand, depends on sophisticated technologies that can be expensive and less accessible. TPM emphasizes the preservation of health through balance and preventive care and in the next stage treatment. PM, however, is primarily focused on the accurate diagnosis and targeted treatment of diseases using molecular and genetic data.

Conclusion : Although Traditional Persian Medicine and Precision Medicine differ significantly in terms of methodology, they share fundamental principles such as individual-centered care and the goal of personalized treatment. Integrating these two approaches may contribute to the development of localized, efficient, and culturally acceptable therapeutic models across diverse populations. It is recommended that further interdisciplinary research be conducted to evaluate potential correlations between temperament types and biological markers, enabling the incorporation of traditional knowledge within the framework of modern precision medicine.

Effects of Carthamus tinctorius L. (Safflower) on Female Infertility

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Background and Aim : Infertility is recognized as a major global health challenge, affecting approximately 15% of married couples worldwide and 20–25% of married couples in Iran. This critical condition may arise from multiple factors, including lifestyle, hormonal imbalances, diminished ovarian reserve, abdominal obesity, and metabolic syndrome. Considering its clinical significance, evaluating safe and effective therapeutic interventions, including traditional herbal medicines, is essential. The present study aims to investigate the effects of Carthamus tinctorius (Safflower) on female infertility.

Methods : A narrative-analytical review was conducted through systematic searches of PubMed and Google Scholar using the keywords Carthamus tinctorius, infertility, metabolic syndrome, abdominal obesity, and Safflower. Eligible human and animal studies, as well as comprehensive review articles, were included and analyzed. Additionally, authoritative Persian medicine texts, including Tuhfat al-Mu'minin, Makhzan al-Adwiyah, and Canon of Medicine, were reviewed using the terms "Kafsha," "Ahriz," "Kajireh," and "Quwwat al-Bah" (aphrodisiac property).

Results : Carthamus tinctorius (commonly known as Kafsha or Ahriz, and internationally as Safflower) contains both extract- and oil-based preparations with widespread applications in pharmaceutical formulations. Its bioactive constituents include Carthamin, Safflower Yellow, Hydroxysafflor Yellow A (HSYA), Carthamidin, Isocarthamidin, Safflor, Safflamin C, and Luteolin, which exhibit potent antioxidant, anti-inflammatory, and metabolic activities. Preclinical studies have demonstrated that HSYA and related compounds may improve ovarian function by reducing the number and size of cystic follicles and lowering serum testosterone, while increasing estradiol, progesterone, luteinizing hormone (LH), and anti-Müllerian hormone (AMH), thereby exerting therapeutic potential in polycystic ovary syndrome (PCOS). Clinical evidence indicates that daily administration of a defined dose of safflower oil in patients with metabolic syndrome, even in the absence of lifestyle modification, can reduce abdominal adiposity, enhance insulin sensitivity, decrease systemic inflammation, and improve blood pressure. Moreover, HSYA has been shown to activate the Nrf2/HO-1 signaling pathway and inhibit NF-κB, contributing to the reduction of oxidative stress and inflammatory responses in ovarian tissue.

Conclusion : The findings suggest that Carthamus tinctorius, through its combined metabolic, antioxidant, and anti-inflammatory effects, and supported by a long-standing history in Persian traditional medicine, may enhance ovarian function and serve as a complementary approach in the management of female infertility. Its bioactive constituents appear to support the maintenance or improvement of AMH levels and ovarian reserve. Furthermore, safflower, by mitigating abdominal obesity, improving insulin resistance, and addressing metabolic syndrome and PCOS—critical factors in fertility optimization—represents a promising candidate for integrative therapeutic strategies. Notably, some preclinical studies indicate that high doses of safflower extract may reduce follicular counts and exert adverse embryonic effects; therefore, establishing a safe dosage and restricting its use during pregnancy are imperative. Future clinical studies are warranted to confirm optimal dosing and long-term efficacy. Keywords Carthamus tinctorius, infertility, metabolic syndrome, abdominal obesity, Persian medicine

The Ten Key Determinants of Drug Selection in Persian Medicine: A Holistic Framework

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Background and Aim : Persian Medicine (PM) is a holistic system with well-established principles for drug selection and administration during treatment, distinct from modern medicine, which lacks universal guidelines in this regard. While contemporary therapeutics often focuses on isolated pharmacological effects, PM emphasizes a multifaceted approach, considering factors such as temperament, patient individuality, and environmental context. This abstract highlights the ten key factors governing drug selection in PM, underscoring its systematic and patient-centered framework. In contrast to the reductionist model of modern medicine, PM integrates immutable rules derived from centuries of clinical experience. These principles ensure tailored treatments by accounting for dynamic interactions between drugs, the human body, and disease stages. By elucidating these ten determinants—ranging from substance properties to temporal and spatial variables—this study aims to demonstrate TPM's nuanced methodology, offering insights for integrative medical practice.

Methods : This study employed a systematic review of classical Persian medicine texts, including The Canon of Medicine (Avicenna), Aksir-e A'zam (Azam Khan), and Kholasat al-Hikma (Aqili Khorasani), using key terms such as "treatment", "drug", and "therapeutic principles". The extracted data were analyzed to identify recurring patterns and codified rules governing drug selection in PM, with emphasis on the ten key factors highlighted in this research.

Results : In Persian Medicine, treatment follows a stepwise approach through three main phases: 1. Lifestyle and dietary modifications 2. Herbal/natural drug administration 3. Manual interventions like Phlebotomy, wet cupping, dry cupping. For the drug administration phase, proper medication selection requires consideration of ten key factors, categorized into: 1. Patient-related factors: - Disease character (cold/warm/dry/moist imbalance- disease severity) - Etiology (physical or psychosomatic- involved organ) - Patient's physical strength - Baseline and current temperament - Age - Personal habits 2. Environmental factors: - Geographic location - Seasonal variations - Weather conditions - Occupation This systematic approach enables personalized treatment by analyzing dynamic interactions between intrinsic patient characteristics and environmental conditions.

Conclusion : This study highlights the sophisticated, systematic approach of PM in drug selection, emphasizing its patient-centered and holistic philosophy. By categorizing the ten key factors into patient-specific and environmental determinants, we demonstrate how PM integrates individual variability with contextual influences to optimize therapeutic outcomes. These time-tested principles not only reflect the depth of PM wisdom but also offer valuable insights for contemporary integrative medicine, suggesting potential applications in personalized healthcare paradigms. Further research is warranted to validate these principles through modern clinical methodologies.

Revival and Re-creation of a Forgotten Method of Nasal Drug Delivery in Persian Medicine (Neti Pot)

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Background and Aim : A study of the methods of treating diseases in Persian Medicine sources shows that one of the methods of prescribing and consuming medications from the perspective of physicians was Nasal Drug Delivery (NDD), to produce local therapeutic effects in the head organ or its systemic function in the body. Ancient Iranian physicians were aware of this method, and by examining the remaining traces, it is possible to understand the various forms of drug consumption through the nose, including powder, solution, and vapors. The purpose of this study is to introduce a forgotten tool for nasal drug delivery in Persian Medicine called the Neti Pot.

Methods : This study was conducted using a descriptive and experimental method, citing ancient Persian Medicine texts and new articles in reputable databases.

Results : The term Neti has its roots in Sanskrit and means "nose cleansing". The process of washing the nasal passages, also known as sinus washing, with a saline solution to remove mucus, allergens, and other waste materials. This method uses a small teapot-shaped device to expel dust and moisten the nasal passages, which helps to thin the nasal mucus to relieve congestion, dryness, and allergens that may cause inflammation.

Conclusion : Neti Pot has the benefits of relieving nasal congestion, reducing allergy symptoms, relieving symptoms caused by sinusitis, moisturizing dry nasal passages, improving breathing, and reducing inflammation. It can also be used to deliver a variety of therapeutic oils and soluble herbal medicines through the nose to treat diseases. Another use of Neti Pot can be after nasal surgeries for easy washing to remove excess mucus and heal wounds inside the nose. The introduction and use of the Neti Pot is recommended by Persian Medicine specialists to facilitate the treatment process of some physical and mental diseases. Keywords: Medical history, Nasal Drug Delivery, Persian Medicine, Neti Pot

Integrating Person-Centered Medicine with Traditional Iranian Medicine: A Holistic Approach to Healthcare

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Background and Aim : Person-centered medicine (PCM) emphasizes individualized care, considering patients' unique biological, psychological, and social dimensions. Traditional Iranian Medicine (TIM), with its roots in humoral theory and holistic healing, shares core principles with PCM, particularly in personalized diagnosis and treatment. This review explores synergies between PCM and TIM, highlighting their potential integration in modern healthcare.

Methods : A systematic literature search (2010–2025) was conducted using PubMed, Scopus, Web of Science, Google Scholar, and Iranian databases (SID, Magiran). Keywords included "person-centered medicine," "Iranian traditional medicine," "Persian medicine," "holistic health," and "integrative medicine." Inclusion criteria encompassed peer-reviewed articles, reviews, and clinical studies on PCM-ITM integration; non-English/Persian studies and unrelated articles were excluded.

Results : Key themes emerged: (1) shared philosophical foundations in holistic and individualized care; (2) ITM's diagnostic tools (e.g., pulse, urine, and tongue analysis) complement PCM's patient-centered assessments; (3) ITM therapies (e.g., herbal medicine, dietary regimens, and mind-body practices) align with PCM's focus on patient preferences and prevention; and (4) challenges include scientific validation of ITM and regulatory barriers.

Conclusion : The synergy between PCM and ITM offers a promising framework for personalized, culturally sensitive healthcare. Future efforts should prioritize interdisciplinary research, standardized integration protocols, and policy frameworks to bridge traditional and modern medicine.

Validating an Ancient Concept: The Genetic and Epigenetic Basis of Hair as a Temperament Indicator in Persian Medicine.

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Background and Aim : Persian Medicine (PM), as one of the pioneers of personalized medicine, is founded on the concept of "Mizaj" (Temperament) as the central axis of diagnosis and treatment. In this medical school, ten key indices are used to determine temperament, among which hair phenotypic characteristics (color, density, texture) are among the most important. Given that variation in hair characteristics has complex genetic and epigenetic roots, this analytical review study was conducted with the aim of providing a scientific framework to justify the relationship between this temperament diagnostic index and biological foundations.

Methods : Authoritative Persian Medicine sources, particularly Avicenna's "The Canon of Medicine," were examined for theoretical foundations of hair's temperamental implications. Scientific databases (PubMed, Scopus, Web of Science) were systematically searched using keywords including "Hair Genetics," "Mizaj," "Temperament," "Hair Color," "Hair Density," "Trichohyalin," "EDAR," "MC1R," and "Epigenetics."

Results : The findings demonstrate a significant correlation between hair temperament indices in Persian Medicine and known molecular pathways. Hair Color: In Persian Medicine, dark color (black) is an indicator of warm temperament, while light color (blonde) indicates cold temperament. Genetically, this depends on eumelanin (dark) and pheomelanin (light) pigment ratios, controlled by genes including MC1R, TYR, and SLC24A5. Hair Density and Thickness: Hair abundance, associated with warm temperament in Persian Medicine, correlates with signaling pathways affecting follicle growth such as Wnt/β-catenin and genes like EDAR and WNT10A. The V370A polymorphism in the EDAR gene, associated with increased hair thickness, is a prominent example in this field. Hair Texture: Curly hair, as an indicator of dry temperament, has been identified as related to genetic variants such as TCHH, which play a role in the protein structure of the inner root sheath of hair.

Conclusion : This study proposes the following hypothesis: innate temperament (constitutional) is related to an individual's genetic profile and determines the basic characteristics of hair. On the other hand, acquired temperament, which changes under the influence of factors such as lifestyle, nutrition, stress, and climate, can alter the expression of hair-related genes through epigenetic mechanisms (such as DNA methylation and histone modifications). These epigenetic changes, which occur throughout life, can explain phenotypic changes in hair (such as premature graying or texture changes); a phenomenon recognized in Persian Medicine as a sign of "temperament change" and the beginning of disease processes. For example, oxidative stress caused by UV radiation and pollution damages melanocytes, leading to premature hair graying, or hormonal fluctuations create changes in hair texture by altering the expression of genes responsible for follicle shape or keratin production. Therefore, hair characteristics can serve as an accessible biomarker, reflecting the complex genetic and epigenetic interactions of an individual within the framework of the temperament concept. It is suggested that future studies with appropriate design should statistically evaluate this correlation in human populations so that this ancient knowledge can be translated and validated in the language of modern science.

Management of Coeliac disease using Persian medicine: A case report

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Background and Aim : Coeliac disease is a kind of systemic immune-mediated disorder that manifests with enteropathy and has a spectrum of clinical symptoms such as extra-intestinal manifestations. The diagnosis of this disease is based on serological findings and biopsy results. Despite the response to the gluten-free diet, the use of this diet is associated with challenges, including high cost, reduced quality of life, and persistent symptoms. There is a need to use non-dietary and alternative methods in the treatment of this disease. This case report presents the treatment of coeliac disease using Persian medicine.

Methods : The patient was a 20-year-old male with a history of failure to thrive in childhood He was diagnosed with coeliac disease and was being treated with a gluten-free diet. He referred to Tabriz Health Center due to gastrointestinal symptoms and weight loss. The patient received personalized Persian medicine recommendations (based on temperament(Mizaj) and in addition, he underwent drug treatment and leech therapy.The duration of treatment was three months from July to October 2024. During this treatment period, the patient gained three kilograms and his symptoms improved. The patient and his parents were satisfied with the short-term treatment results.

Conclusion : It seems that the use of traditional and complementary medicine can be beneficial in the treatment of coeliac disease .Treatment based on each patient's unique characteristics helps improve symptoms and manage the disease. Clinical studies are recommended to investigate the role of Persian medicine in the treatment of Coeliac disease. Keywords: Coeliac disease; Persian medicine; personalized medicine; case report Approval ID of Ethics Committee of Tabriz University of Medical Sciences: IR.TBZMED.REC.1404.189

Study of most common causes of referrals to two Persian Medicine Clinics in Tehran

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Background and Aim : Today, complementary and alternative medicine (CAM) are used to treat and prevent disease in healthy people or to enhance the quality of life, which is evidence of a promising future in this area. Persian medicine is one of the precious embranchments of complementary medicine which would be considered as a good potential source to find new approaches for prevention and treatment of diseases. The aim of this study is the most common causes of patients referring to two Persian medicine clinics in Tehran, quality of adherence to prescribed measures and instructions and probable side effects of treatments.

Methods : 531 cases were selected among patients who were treated by Persian medicine in the two clinics in Tehran city. After extracting the data, a semi structured questionnaire was completed by phone calls with participants. Data were then analyzed using software (Microsoft Excel).

Results : In general, 600 cases of 8524 patients visited at Vali-e-Asr and Behesht Clinics were randomly selected and called. 531 of them answered the phone. In spite of repeated attempts to call with 69 patients, it was not possible. The phone number was incorrect in 22 cases. 26 patients had changed their phone number and 21 patients did not answer. The mean age of patients was 39.37 (min 9 months, max 88 years) and 102 (19.2%) were male and 429 (80.8%) were female. 120 participants were single, 403 were married and 4 were divorced, while 4 did not answer the question about being single or married. Of the 531 cases reviewed, 272 (51.2%) were new patients who had only one visit, 123 (23.1%) were visited twice, and 75 (14.1%) had three visits. Also, 61 (11.4%) participants were visited more than 3 times. In the survey of a total of 531 cases, the main complaint leading to refer to Persian medicine clinics was gynecologic diseases (146 cases), general diseases (89 cases) and musculoskeletal disorders (76 cases) respectively. In reviewing the possible complications caused by measures and medications, one stated that he/she has become weak by observing the measures, but others reported no complication. 35 participants believed that they had drug complications including abdominal pain, nausea and allergies. 5 cases also believed that they were affected by the complications of cupping therapy or other manual treatments and 490 reported no complications.

Conclusion : Since follow-up is one of the essentials of treatment in Persian medicine, informing patients about the necessity of referral to the physician for a fallow-up are among the most important duties of physicians and personnel in Persian medicine clinics.

The Role of Personalized Treatment in Prescription Writing in Persian Medicine

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Background and Aim : Personalized medicine has become a leading paradigm in modern healthcare, aiming to optimize therapeutic outcomes through individualized approaches. Persian medicine has historically emphasized personalization, particularly in prescription writing. Central to this process is not merely the general temperament (mizaj) of the patient, but the accurate diagnosis of su'-mizaj (dys-temperament) and other causative factors of disease. Revisiting this principle is essential to enhance both the safety and credibility of Persian Medicine in contemporary practice.

Methods : To introduce the effect of personalization in medical prescriptions, we reviewed Persian medicine sources and current clinical practices, and searched databases Google Scholar, Scopus, SID, and Magiran.

Results : Personalized prescribing in Persian medicine integrates multiple variables, including su'-mizaj diagnosis, age, gender, psychological status, disease severity, and seasonal and environmental conditions. Despite this strength, several challenges limit its implementation today: (1) reliance on industrial herbal products that restrict dosage and formulation adjustments, (2) lack of standardized diagnostic tools for su'-mizaj and etiological assessment, and (3) absence of a unified prescription format. The inconsistency in physicians using Persian or trade names leads to confusion among practitioners, pharmacists, and patients.

Conclusion : Personalized prescription in Persian medicine represents a unique and valuable model of patient-centered care. To fully realize its potential, three steps are crucial: developing validated diagnostic tools for su'-mizaj, preparing clinical guidelines for individualized prescribing, and most importantly, establishing a unified prescription format, preferably in English, to facilitate integration with modern medicine and improve international recognition of Persian medicine.

Comparability of Traditional Persian medicine with the new concepts of personal and precision medicine: A qualitative study

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Background and Aim : Traditional Persian Medicine (TPM) has a thousand-year history and a holistic approach that respects personal characteristics in its diagnosis and management. The objective of this study was to explore the concepts of personal and precision medicine in traditional Persian and modern medicine.

Methods : A qualitative study design with a content analysis approach was conducted. Purposive and snowball sampling approaches were used to select participants. Then, we approached experts in various fields, including TPM, genetics, epidemiology, physiology, pharmacy, and general medicine. In the beginning, we summarized the concept of personalized medicine (PM) and asked them how many similarities and differences they might find between TPM and PM. A semi-structured questionnaire with six parts was used to collect data. The duration of each interview varied from 30 to 65 minutes. The interviews and experts' viewpoints were recorded via an online platform and transcribed verbatim. The data analysis process involved several sequential steps: initial familiarization, coding, theme generation, theme review, theme definition and naming, and final writing. After coding all texts and extracting issues, categories, and conceptual frameworks were created by interpreting the content. To analyze the data, the content analysis approach assisted by MAXQDA 2018 software was used.

Results : More than 70% of participants showed a favorable attitude in all evaluated parts. Approximately 80% of participants agreed that there are parallels between TPM and precision medicine; for example, in TPM and precision medicine, patients are treated with respect to their characteristics. More than 80% of participants thought temperamentology may help with patient diagnosis and treatment. They also suggested that TPM concepts could be used to improve and accelerate the implementation of precision medicine. The majority of participants acknowledged the use of phenotypes to reduce the reliance on genetics in precision medicine. However, several participants expressed skepticism. According to the participants, these concepts will not be beneficial unless TPM aligns with modern medicine. In addition, there must be scientific evidence confirming the association between different genes and temperaments.

Conclusion : The advent of precision medicine does not mean disregarding TPM; rather, the concepts of TPM can be used in precision medicine. For example, phenotype can assist in reducing the reliance on genetics in precision medicine. Because phenotype, as an important concept in TPM, is the external manifestation of the genotype. In addition, like precision medicine, TPM can help to provide personalized medical treatment based on people's temperament.

Investigation of Relationship Between Mizaj (Temperament) and Disease Severety in Patients with Vitiligo

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Background and Aim : Vitiligo is an acquired autoimmune skin disorder marked by depigmented macules resulting from melanocyte loss. The concept of Mizaj (temperament), defined by the qualities of warmness-coldness and wetness-dryness, plays a fundamental role in understanding individual susceptibility to disease. This study aimed to investigate the predominant Mizaj profiles among patients with vitiligo and explore their potential association with disease severity.

Methods : We conducted a single-center, cross-sectional study at the Molecular Dermatology Research Center, Shiraz, Iran, in 2024. A total of 100 vitiligo patients were enrolled. The general Mizaj was evaluated using the validated Mojahedi Mizaj Questionnaire (MMQ). Disease severity was evaluated using the Vitiligo Area Scoring Index (VASI). Statistical analyses was performed using Stata version 14.2. A p-value equal to or under 0.05 was considered statistically significant.

Results : Participants included 50 men and 50 women, with mean ages of 42.86 ± 12.92 and 44.42 ± 14.21, respectively. No statistically significant gender-based difference was observed in disease duration ($p = 0.478$). Warm Mizaj was the least represented, present in 16% of patients. Most participants exhibited a moderate Mizaj in both warmness-coldness (57%, $p = 0.378$) and wetness-dryness (39%, $p = 0.817$) dimensions. No significant correlations were found between Mizaj categories and VASI scores for warmness-coldness ($p = 0.643$) or wetness-dryness ($p = 0.862$).

Conclusion : Our findings indicate no significant association between Mizaj and vitiligo severity. Most patients demonstrated a moderate Mizaj. Further studies are recommended to more deeply explore potential links between Mizaj and autoimmune skin disorders such as vitiligo.

Heredity in Persian Medicine: Historical Perspectives and Connections to Modern Genetics

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Background and Aim : Heredity is one of the foundational concepts in medicine and biology, attracting scholarly attention for centuries. In Persian medicine, prominent physicians such as Avicenna (Ibn Sina) and Al-Razi discussed the influence of parental traits on the health, temperament, and predispositions of offspring. Avicenna, in The Canon of Medicine, introduced the concept of inherited temperament, proposing that the combination of maternal and paternal temperaments determines the child's physical and psychological constitution. Al-Razi, in Al-Hawi, also referred to the transmission of certain diseases and predispositions from parents to children. Although these perspectives are qualitative and theoretical, and Persian physicians did not explicitly refer to genes, DNA, or molecular mechanisms, they can be regarded as historical precursors to modern concepts of heredity. Contemporary genetics, by contrast, explains heredity quantitatively and molecularly through DNA, genes, and chromosomes. This study aims to conduct a comparative analysis of these two perspectives and explore the integration of traditional concepts with precision medicine.

Methods : A historical-comparative analysis was conducted. Primary sources included key texts of Persian medicine, such as The Canon of Medicine by Avicenna, Al-Hawi by Al-Razi, Zakhireh Kharazmshahi by Jorjani, and Kamil al-Sina'ah al-Tibbiya by Ahwazi. Secondary sources comprised historical and scientific literature on genetics, from Mendel's experiments to the Human Genome Project and epigenetic studies. Qualitative content analysis and conceptual comparison were used to extract and categorize similarities and differences in the concept of heredity between Persian medicine and modern genetics.

Results : Analysis showed that physicians of Persian medicine described heredity qualitatively through the combination of parental temperaments and humors. Modern genetics, in contrast, explains the hereditary process using molecular units such as DNA, genes, and chromosomes. Despite these fundamental differences, both frameworks emphasize individual variation, susceptibility to disease, and the significance of intrinsic characteristics in health and prevention. Textual examples from Avicenna and Al-Razi indicate that the concept of inherited temperament in Persian medicine functionally parallels core principles of genetics, although in a qualitative and theoretical manner.

Conclusion : The findings suggest that hereditary theories in Persian medicine can be regarded as historical antecedents to modern genetics and precision medicine. The transition from qualitative explanations of temperaments to molecular analyses of genes reflects the evolution of methodological approaches in medical science from traditional to modern eras. This comparative study highlights that examining historical medical concepts, particularly in Persian medicine, can inspire the development of contemporary individualized healthcare strategies. Integrating traditional insights with modern genetic knowledge may provide practical applications in preventive and precision medicine, especially concerning hereditary and temperament-related conditions. Ultimately, this study demonstrates that historical perspectives in medicine provide a foundation for innovation and interdisciplinary dialogue between traditional and modern biomedical sciences. Keywords: Persian medicine, heredity, inherited temperament, modern genetics

Materia Medica for Skin Scar Removal in the Traditional Persian Medicine Book: “Exir-e-A’zam”

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Background and Aim : Skin scars, as one of the common complications of skin injuries, have always been significant from both aesthetic and psychological perspectives. Numerous methods exist for scar reduction or removal. Traditional Persian Medicine, by utilizing medicinal plants and natural substances, has also offered its unique approaches in this field. This research aims to introduce the Traditional approaches to skin scar treatment and revive ancient knowledge by examining the Materia Medica (single drugs) mentioned for skin scar removal in the medical book “Exir-e-A’zam” by Hakim A’zam Khan. This book is one of the most comprehensive late sources of Traditional Persian Medicine. In this study, various single drugs mentioned in this book for the treatment or improvement of scars, pimples, and other skin lesions are reviewed.

Methods : This study is a descriptive-analytical review conducted through library research. Initially, a verified edition of “Exir-e-A’zam” was selected as the primary source. Then, all sections related to skin diseases and lesions were carefully examined to clarify the concept of “scar.” Keywords such as “athar” (effect/trace), “athar-e-abaleh” (smallpox marks), “athar-e-jeld” (skin marks), “abaleh-e-Balkhi” (leishmaniasis), “lahm-e-za’ed” (excess flesh/granulation tissue), “jodari” (pustule/smallpox), “bothur” (eruptions/rashes), “jooshgah” (wound scar/acne mark), “rish” (wound/ulcer), “qorha” (ulcer), etc., were used to search for single drugs. Single drugs directly or indirectly mentioned for the removal or improvement of skin scars were extracted, and relevant information was recorded. These single drugs were categorized based on their origin (herbal, animal, mineral) and method of application. The name of the single drug, its therapeutic properties mentioned in the book, and instructions for its use were compiled. Data collection and analysis were performed to provide a comprehensive view of “Exir-e-A’zam”'s approach to skin scar treatment.

Results : In this study, a total of 90 Materia Medica related to the improvement of skin scars including a wide range of substances of herbal, animal, and mineral origin, were identified. The most frequently used dosage forms for skin scar removal were predominantly in the form of “tila” (topical application/liniment) and “zemad” (poultice/plaster). The most frequently extracted single drugs include: Common reed root, bitter almond kernel, white rice, chickpea flour, melon seeds, Litharge (PbO), Irisa, Qust (Costus), fava bean flour, egg white, starch, rose oil, turnip seeds, Aristolochia longa, Termes (Lupinus albus), and Styrax benzoin.
Conclusion : Collecting the recommendations and experiences of Iranian traditional physicians regarding the mentioned single drugs can provide a valuable platform for the findings of this research, beyond its historical significance, from the perspective of identifying more effective and less complicated medical treatments for skin scars in future studies. These results, while confirming indigenous knowledge in scar treatment, highlight the potential of these single drugs for modern pharmacological research and can serve as a basis for developing more effective and natural treatments for skin scars. Keywords: Skin, Skin Marks, Medicinal Plants, Traditional Iranian Medicine, Skin Scar

TRADITIONAL AND INTEGRATIVE MEDICINE

The Position of "Ẕakhīrah-'i Khārazmshāhī" in the Science of Urine Examination: A Comparative Study with "al-Qānūn" and the Plagiarism Question

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Background and Aim : Urine examination (uroscopy) has been recognized since ancient times as one of the pillars of medical diagnosis in various civilizations. In the Islamic period, it served as a vital tool for assessing temperament, internal organ health, digestion quality, and bodily waste, detailed in prominent works like Ibn Sīna's "al-Qānūn" and Jurjānī's "Ẕakhīrah-'i Khārazmshāhī". However, some believe that Jurjānī merely copied from "al-Qānūn". In this research conducts a comparative analysis of these texts to address the question: Is " Ẕakhīrah" a simple compilation, or did it innovate and advance the science of urine examination?

Methods : This research, through a comparative examination of the two texts, first analyzes their structural and content similarities and then their differences.

Results : Both texts share fundamental principles of uroscopy, including sampling protocols, the seven key indicators of urine, urine physiology, and the implications of its color, consistency, quantity, odor, foam, and sediment. They also cover urine in specific demographics (children, men, women), its differentiation from other fluids, and even include a direct quote from Rufus on black urine, with Jurjani explicitly citing Ibn Sina in one instance. But alongside this extensive similarity in the text, which is because both works originate from a common medical tradition (Greco-Islamic), seeing the differences between these two texts can be more enlightening for concluding on this matter. Comparison of these two texts shows that Jurjānī in "Ẕakhīrah-'i Khārazmshāhī" has gone beyond "al-Qānūn" in several ways. First, in systematic and detailed structure, in that "al-Qānūn" addresses urine in 13 chapters, while "Ẕakhīrah" is organized in 29 sections and examines each topic in greater detail. For example, Jurjānī describes 12 types of compound urine colors, while "al-Qānūn" is content with a few general examples. Reference to multiple sources and critical analysis: we observe that in the text of al-Qānūn, only reference to Rufus is mentioned, while Jurjānī in this section simultaneously quotes from Rāzī, Galen, Ibn Sīnā, and Rufus, and sometimes mentions their scientific disputes, where one physician has refuted another's opinion with empirical observations. Adding empirical and clinical findings of other physicians: "Ẕakhīrah" includes Rāzī's personal observations, such as the relationship between urine color and disease prognosis in two cases, which included observing two groups of patients with black or yellow urine. Adding a summary chapter: he adds a chapter titled "The Fruit of Previous Sections" which shows his practical and educational approach to facilitate learning.

Conclusion : Although Jurjānī utilized "al-Qānūn" and other prior texts, his work cannot be dismissed as mere plagiarism. " Ẕakhīrah-'i Khārazmshāhī" distinguishes itself through its more comprehensive compilation, inclusion of new details, presentation of predecessors' diverse opinions, and its use of Persian, which made this knowledge more accessible. Jurjānī acted as a creative author, enriching the medical heritage by collecting, critiquing, and expanding upon existing knowledge. Therefore, the allegation of copying from "al-Qānūn" is unfounded, and " Ẕakhīrah" holds a distinguished place as an independent and advanced work in the history of medicine.

A Historical Examination of Midwifery Education in the Qajar Era: Analyzing Ta'lim al-Qawābil as a Pioneering Document in Reproductive Health

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Background and Aim : During the Qajar era, the state of women's health and midwifery faced numerous challenges due to the lack of scientific training and the prevalence of traditional and unhygienic practices. This situation led to high rates of maternal and infant mortality. This research aims to examine and document the high-risk conditions of childbirth during that period by introducing, rewriting, and correcting the book Ta'lim al-Qawābil (The Education of Midwives), which is considered the first instructional book on midwifery for traditional midwives. The ultimate goal of this study is to shed light on the history of scientific midwifery education in Iran and to explain the significance of this work as a pioneering document in the advancement of reproductive health.

Methods : This study was conducted using a historical approach and a library-based research method. The manuscript of the book Ta'lim al-Qawābil, housed in the Manuscript Treasury of the National Archives and Library of the Islamic Republic of Iran, was used as the primary source for review and investigation

Results : The book Ta'lim al-Qawābil is more than a simple instructional text; it is a valuable historical document that depicts the dire state of health for women and infants during the Qajar period. Authored by Dr. Haroutioun Triaykian and translated into Persian by his student, Dr. Zabardast Khan, the book represented a groundbreaking effort to combat the high rates of maternal and infant mortality. In a society where the superstitious beliefs and unhygienic, traditional methods of local midwives endangered many lives, this book sought to elevate their knowledge and skills by providing scientific information. Its content is divided into three distinct but related sections: Pregnancy, Midwifery, and The Postpartum Period. This structure represents a comprehensive approach to reproductive health, beginning with prenatal care and continuing through the postpartum stage, which was a revolutionary concept at the time. The three sections of the book clearly demonstrate the society's dire need for medical training. In the Pregnancy section, the book teaches midwives how to recognize the normal and abnormal signs of pregnancy and to avoid incorrect, unscientific practices. The Midwifery section focuses on the importance of hygiene during childbirth and the proper management of the birthing process to reduce infections and complications, thereby preserving the lives of both the mother and the newborn. Finally, the Postpartum Period section addresses postpartum care and emphasizes the critical role of hygiene in preventing the deadly infections that were the main cause of maternal mortality during that era.

Conclusion : The book Ta'lim al-Qawābil is a valuable historical document that marks the beginning of organized efforts to modernize and professionalize the practice of midwifery in Qajar-era Iran. The republication of this work can contribute to a deeper understanding of the developments in Iranian health and medicine, particularly in the fields of women's and children's health, and serves as an important resource for future research on the history of Iranian medicine.

Dr. Schneider and the Management of the 1906 Sīstān Plague: A Study of Quarantine Policies Based on Documents from the Center for Diplomatic History of the Ministry of Foreign Affairs

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Background and Aim : The 1906 bubonic plague outbreak in Sīstān was one of the most significant public health crises of the late Qājār period. Spreading across the border regions of eastern Iran and claiming over 1400 lives, it posed a serious challenge to the country's nascent healthcare system. This study explores the managerial, social, and political dimensions of the epidemic and evaluates the role of the Sanitary Council (Majles-e Ḥefẓ al-Ṣeḥḥa), with particular attention to the contribution of its president, Dr. Jean-Étienne-Justin Schneider, to crisis management.

Methods : This research employs a historical-analytical approach, drawing on sources from the Center for Documents and Diplomatic History of the Ministry of Foreign Affairs, including telegraphs, correspondence, and official reports, as well as contemporary scholarly sources.

Results : The findings indicated that Dr. Schneider's efforts to formulate quarantine policies, organize a regional health network, and coordinate with governmental institutions marked a significant step toward the development of a centralized, state-run health system in Iran. However, implementation faced numerous obstacles, including institutional fragmentation, local resistance, and inadequate regulatory enforcement. Documentary analysis revealed that a lack of structural coherence significantly limited the effectiveness of quarantine measures at the administrative, social, and international levels.

Conclusion : Despite shortcomings in the management of the epidemic, the 1906 Sīstān Plague represented a pivotal moment in the institutionalization of modern medicine in Iran. The crisis catalyzed the emergence of centralized health structures, expanded governmental involvement in public health, and provoked notable social responses to state-imposed health measures, developments that shaped the trajectory of Iranian public-health policy in the years that followed.

Avicenna's Perspective on the Origin of Pediculosis: A Comparative Approach with Modern Parasitology

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Background and Aim : Background: Pediculosis (lice infestation) is a parasitic disorder that has been known since antiquity. In his seminal work The Canon of Medicine, Avicenna (Ibn Sina, 980–1037 AD) described the mechanisms of lice formation in relation to humoral imbalance and skin physiology. His explanation differs both from the Aristotelian theory of spontaneous generation and from the modern parasitological understanding of lice biology.

Methods : A comparative review of Avicenna's original text on lice (Fi al-Qummal wa al-Siban) was conducted, with translations into Persian and English. These concepts were analyzed against current parasitological literature on Pediculus humanus capitis and Pthirus pubis. Key elements included: 1. Avicenna's concept of moist and warm humors accumulating in the skin, becoming suitable substrates for life when "life is effused by the Divine Giver." 2. The role of diet (e.g., figs), physical activity, sexual intercourse, and poor hygiene in predisposing to lice formation. 3. Modern parasitology, which demonstrates that lice are obligate ectoparasites transmitted exclusively through direct contact or fomites, with no spontaneous origin.

Results : Results: - Avicenna rejected the simplistic idea of spontaneous generation, proposing instead that lice appear when the body's internal humoral conditions prepare a "receptive matter," which is then animated by divine effusion of life. - He identified risk factors still relevant today: poor hygiene, accumulation of sweat and waste products, and lack of washing or clothing change. - Unlike modern science, Avicenna did not recognize the external parasitic cycle (host-to-host transmission), but his emphasis on hygiene aligns with current preventive strategies. - His proposed treatments combined systemic purification (e.g., phlebotomy, regulation of diet) with topical agents such as vinegar, sumac, pomegranate peel, and in severe cases, toxic herbs or minerals like arsenic and hellebore.

Conclusion : Conclusion: Avicenna's perspective on pediculosis reflects a nuanced approach integrating humoral pathology and divine vitalism. While differing from modern parasitology, his insistence on hygiene and systemic regulation remains scientifically relevant. Future studies may include retrospective cross-sectional designs examining correlations between temperament (mizaj), hygiene practices, and susceptibility to lice infestation, thereby bridging traditional theory and contemporary parasitology.

Imperial Standardization of Hydrotherapy: Integration of Water Purity Protocols in Ancient Persian Medicine and Thermal Treatments

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Background and Aim : The historiography of Persian medicine in the Achaemenid Period has often been viewed through a diffusionist lens, emphasizing Egyptian and Mesopotamian influences while overlooking Iran's central role in establishing a standardized public health system. This study aims to reinterpret this historiography by focusing on Persian Medicine and explaining the process of institutionalizing indigenous knowledge of water purity and thermal therapy on an imperial scale — revealing how Zoroastrian cosmology, particularly Vendīdād's āb-zōhr purity codes, became the epistemological foundation for empire-wide sanitary engineering.

Methods : This research employed a library-documentary research method, conducting a systematic analysis of secondary data. Data was integrated from primary sources (including ancient texts like the Avesta, Vendīdād and Achaemenid inscriptions) and secondary sources (comprising authoritative archaeological reports from sites such as Persepolis and Sardis, and modern scientific analyses like residue studies). The analysis was qualitative, based on logical inference from existing historical and archaeological evidence This study aims to reinterpret this historiography by focusing on Iranian Traditional Medicine and explaining the process of institutionalizing indigenous knowledge of water purity and thermal therapy on an imperial scale — revealing how Zoroastrian cosmology, particularly Vendīdād's āb-zōhr purity codes, became the epistemological foundation for empire-wide sanitary engineering.

Results : The findings revealed that the religious directives for water purity (āb-zōhr) from Vendīdād Fargard 5 were implemented uniformly across all 20 satrapies through administrative decrees (documented in the Persepolis Fortification Tablets). Archaeological evidence confirms identical water infrastructure, including three-stage filtration systems (sand, gravel, ceramic) and lime-sealed pipes installed at elevated or buried depths to prevent pollution across the empire. Furthermore, chemical residue analyses from bath complexes confirmed the therapeutic use of Vendīdād-prescribed botanicals (e.g., myrrh, wild rue) for conditions like rheumatism in pools maintained at the precise standard temperature of 38°C, as mandated in Fargard 7. the Royal Road functioned as a vector for disseminating Iranian medical orthodoxy, transforming local springs into standardized hammāms with Iranian korsi platforms and sardāb hypocausts. Lydian carvings were aesthetic veneers over Persian-engineered cores. This standardization was a symbol of the advanced knowledge of Hifz al-Sehha (preservation of health) in Persian Medicine in the Achaemenid Period.

Conclusion : This study clearly demonstrates that Achaemenid medicine was founded on an active process of "imperial standardization," where Persian Medicine served as the epistemological core, designing medico-religious protocols and enforcing them throughout the realm via powerful administrative mechanisms, and peripheries like Anatolia serving only as adaptive executors of Iranian sanitary science. This system — the ancient world's first evidence-based public health network — directly influenced Hippocratic hydrotherapy and Roman thermae, establishing Iranian Persian Medicine as the progenitor of transregional therapeutic infrastructure.

Al-Filāḥah by Ibn al-ʿAwwām: A Comprehensive Look at Agricultural and Veterinary Science in Islamic Civilization

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Background and Aim : The book Al-Filāḥah by Abū Zakariyā Yaḥyā ibn Muḥammad ibn Aḥmad ibn al-ʿAwwām is considered one of the most important sources on agriculture and veterinary medicine in the Islamic world. The objective of this study is to examine Al-Filāḥah, with a specific focus on its agricultural and veterinary sections, and to explain the significance of this work in the history of medicine.

Methods : This research employs a descriptive-analytical approach, with a detailed study of the book Al-Filāḥah conducted through the review of historical and scientific texts. The sources used include manuscripts of the book, its various translations into European languages, and previous scholarly studies on the subject.

Results : Al-Filāḥah is divided into two main sections. The first section is dedicated to various types of soil, irrigation methods, fertilizers, techniques for planting trees, and methods for preserving and conserving fruits. The second section covers topics such as the cultivation and selection of seeds for various medicinal and industrial plants, as well as the design and construction of agricultural structures. In the veterinary section, Ibn al-ʿAwwām addresses the breeding, health, and diseases of various domesticated animals, including horses, donkeys, camels, cows, sheep, goats, and poultry. In this part, he describes different animal breeds, their breeding methods, nutrition, disease treatments, and the preparation of veterinary medicines. The research findings indicate that Ibn al-ʿAwwām, relying on his own knowledge and experiences as well as Greek, Latin, Iranian, and Indian sources, was able to compile a comprehensive and practical work on veterinary medicine. The book was translated into Spanish and French in the 19th century and had a significant impact on the development of agricultural sciences in the West.

Conclusion : Al-Filāḥah by Ibn al-ʿAwwām, as an encyclopedia of agriculture and veterinary science, demonstrates the high level of knowledge and technology in al-Andalus. This work, in addition to its historical and scientific importance, can serve as a rich and reliable source for researchers and those interested in the history of medicine, agriculture, and veterinary medicine.

The Impact of Persian and Greco-Arabic Medicine on the Development of Ophthalmology

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Background and Aim : Traditional medicine, derived from Greco-Arabic traditions and Persian medicine, includes a well-developed discipline of ophthalmology (known as Ilm al-Ayn). Eminent Persian and Unani physicians such as Ibn Sina, Ali Ibn Isa al-Kahhal, and Zahrawi contributed detailed anatomical, pathological, and therapeutic insights into eye health. Classical texts in this field describe a wide range of ocular diseases and treatments, many of which predate and parallel modern ophthalmological practices.

Methods : This study is based on a qualitative analysis of classical texts, including: • Al-Qanun fi al-Tibb (Ibn Sina) • Tadhkirah al-Kahhalin (Ali Ibn Isa al-Kahhal) • Zakhira Khwarazm Shahi (Jurjani) • Kitab al-Tasrif (Zahrawi) Historical descriptions of disease, therapeutic approaches, and compound formulations were reviewed thematically and compared with contemporary understandings of ocular pathology.

Results : The reviewed texts documented over 130 ocular diseases, including Ramad (conjunctivitis), Nuzul al-Maa (cataract), Zafra (pterygium), and Waja' al-Ayn (eye pain). Treatments included: • Ilaj bil Ghiza (Dietotherapy)—Avoiding certain foods, using nutrient-rich diets • Ilaj bil Dawa (Pharmacotherapy)—Collyria (e.g., Surma with Ismid), decoctions, eye drops using herbs like saffron, rose, honey • Ilaj bil Tadbeer (Regimental Therapy)—Steam, leeching, massage • Ilaj bil Yad (Surgery)—Techniques such as couching for cataracts and removal of pterygium The integration of systemic and local therapies highlights a sophisticated understanding of the eye within the framework of humoral theory.

Conclusion : Ophthalmology offers a comprehensive, patient-centered, and integrative approach to eye care. While rooted in humoral theory, many of its principles—such as hygiene, lifestyle modification, local therapies, and surgical intervention—align with modern practices. The rich tradition of eye care deserves further exploration for evidence-based integration into contemporary ophthalmology, especially in the context of holistic and complementary medicine.

Al-Zahrawi's Surgical Management of Gynecomastia in Al-Tasrif: A Comparative Analysis with Modern Surgery

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Background and Aim : The Islamic Golden Age (8th–13th centuries) saw remarkable surgical advancements blending theory and practice. Abu al-Qasim al-Zahrawi (Albucasis, 936–1013 CE) was its leading surgeon, devoting Al-Tasrif's final volume to detailed procedures and instruments. Translated into Latin in the 12th century, it shaped European surgery and influenced Eastern regions, including Iran and the Ottoman lands, where it interacted with Persian scholars like Avicenna. Al-Zahrawi's precise description of gynecomastia surgery exemplifies Islamic surgery's maturity. Cross-regional transmission continued through Haly Abbas's al-Maliki and Sabuncuoğlu's illustrated Cerrahiyyetü'l-Haniyye, highlighting the interconnected Andalusian, Iranian, and Anatolian traditions.

Methods : A historical–comparative method was used. Chapter 47 of Al-Tasrif was analyzed via the Arabic text and Spink & Lewis's 1973 English translation. Passages on gynecomastia were extracted and grouped into four themes: (1) etiology and indications, (2) operative techniques, (3) postoperative care, and (4) cosmetic/functional outcomes. These were cross-checked against a 2012 analytic review for accuracy. Modern data came from standard surgical references (Schwartz's Principles of Surgery, Sabiston's Textbook), recent reviews, and guidelines. Techniques such as peri-areolar excision, liposuction-assisted removal, and skin reduction were extracted. Historical and contemporary findings were compared across domains to identify continuities and differences in management principles.

Results : Al-Zahrawi's Al-Tasrif, particularly Chapter 47, provides one of the earliest systematic descriptions of gynecomastia management. He attributed the condition to abnormal accumulation of fat and glandular tissue. Initial management consisted of dietary regulation and topical agents, while persistent cases required surgical intervention. Surgical techniques included a crescent-shaped incision around the areola for excision of glandular tissue and, in severe cases, a double-incision method to remove redundant skin while preserving the nipple–areola complex. Meticulous hemostasis and postoperative compression dressing were emphasized to minimize complications and recurrence. In contemporary practice, gynecomastia management follows a similar staged approach. Mild cases may respond to medical therapy, whereas persistent or severe cases require surgery. Techniques include subcutaneous mastectomy via peri-areolar incisions, liposuction-assisted removal of adipose tissue, and, for advanced grades, combined glandular excision with skin reduction or mastopexy. Modern surgeons prioritize preservation of nipple sensation, hemostasis, and cosmetic outcomes. The transmission of Al-Tasrif reinforced these principles across the Eastern Islamic world. In Iran, Haly Abbas's al-Maliki incorporated Andalusian surgical practices, while in the Ottoman Empire, Şerafeddin Sabuncuoğlu's Cerrahiyyetü'l-Haniyye illustrated and adapted these techniques, demonstrating cross-regional entanglement.

Conclusion : The analysis reveals Al-Zahrawi's remarkable foresight in gynecomastia surgery. Despite modern advances in anesthesia, instruments, and minimally invasive methods, 10th-century principles—tissue excision, strategic incisions, and cosmetic preservation—remain foundational. His methods spread beyond al-Andalus, entering Persian medicine via Haly Abbas's al-Maliki and later adapted by Sabuncuoğlu in the Ottoman Cerrahiyyetü'l-Haniyye. This cross-regional transmission shows how Andalusian surgical practices merged with Persian theory and Ottoman innovation. Modern techniques refine hemostasis, classification, and liposuction, yet Al-Zahrawi's core concepts endure. Recognizing this shared heritage underscores the lasting impact of Islamic medical traditions on today's surgical education and practice in Iran, Türkiye, and beyond.Al-Zahrawi's gynecomastia techniques mirror modern surgery, showing enduring continuity from the 10th century. Their transmission via al-Maliki and Cerrahiyyetü'l-Haniyye illustrates Islamic medicine's cross-regional heritage, whose study enriches historical insight and reinforces foundational principles guiding contemporary surgical practice.

TRADITIONAL AND INTEGRATIVE MEDICINE

Social Roles and Contributions of Persian Physicians during the Medieval Islamic Era

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Background and Aim : Persian physicians during the medieval Islamic era played vital social roles that extended far beyond individual patient care. Their contributions encompassed ethical leadership, education, and public health, positioning them as pivotal agents in advancing societal welfare. This study aims to elucidate the multifaceted social functions of Persian physicians during this period, highlighting their impact on healthcare delivery and community development.

Methods : This article employs a qualitative and historiographical methodology and draws upon a synthesis of classical medical texts, biographical accounts, and scholarly analyses concerning Persian physicians within the medieval Islamic world. Contemporary academic research on the social context of medical practice during the Islamic Golden Age further informs this investigation.
Results : Persian physicians during the medieval period were deeply committed to providing equitable medical care across all social and religious groups, reflecting a strong ethos of compassion and justice. Their impartial treatment of both Muslims and non-Muslims alike underscored their role as trusted and respected figures in society. Beyond individual patient care, they served as ethical role models, upholding high standards of professional conduct that inspired confidence and moral integrity within their communities. As educators, they trained successive generations of medical practitioners through hospitals and scholarly institutions. In public health, these physicians were proactive leaders, developing and enforcing disease prevention strategies such as quarantine measures during outbreaks—efforts crucial to controlling epidemics. They also played an important role in disseminating health knowledge through public education, promoting hygiene, and preventive care. Supported by charitable endowments, hospitals (bimaristans) served as centers for healing, education, and medical advancement. Their holistic approach combining empirical observation with philosophical reflection significantly enriched medical science and societal intellectual progress.
Conclusion : The social role of Persian physicians was deeply rooted in ethical principles emphasizing the sacred duty to preserve life and alleviate suffering. By promoting equitable care and upholding rigorous professional standards, they fostered strong trust between the medical profession and society. Their leadership extended beyond individual treatment to encompass wide-ranging public health initiatives and comprehensive medical education. These efforts contributed to sustained health improvements and intellectual development throughout the Islamic Golden Age. This multifaceted engagement illustrates how physicians served not only as healthcare providers but as influential social agents dedicated to societal welfare. Persian physicians in medieval Islam fulfilled comprehensive social roles that integrated clinical expertise, ethical conduct, education, and public health leadership. Their impartial service and deep commitment to the common good established a lasting legacy of medical professionalism and community engagement, significantly shaping the health and intellectual landscape of their era. Recognizing these roles enriches our understanding of medicine's historical foundation as a socially embedded practice that transcended individual care to promote collective well-being.

Correspondence Between Cutaneous Leishmaniasis and Descriptions in Traditional Persian Medicine Texts: A Narrative Review

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Background and Aim : This narrative review examines the correlation between diseases described in classical Persian medical texts and cutaneous leishmaniasis (CL), using historical, clinical, and geographical evidence. Through a critical analysis of existing literature, the study aims to provide a more precise interpretation of CL within the framework of Persian medicine

Methods : A narrative review was conducted by consulting classical Persian medical manuscripts, including Hedayat al-Muta'allemin fi al-Tibb, Al-Qanun fi al-Tibb (Avicenna's Canon of Medicine), Al-Hawi fi al-Tibb (Rhazes' Liber Continens), Al-Mansuri fi al-Tibb, Tibb-e Akbari, Zakhireye Khwarazmshahi, Bahr al-Jawahir, Kholasat al-Tajarib, and Aksir-e A'zam. Additionally, electronic databases (PubMed, Scopus, Web of Science, Magiran, SID) and Noor Medical Software were searched using relevant English and Persian keywords to identify related studies.

Results : Sadr identified terms such as Zakhm-e Balkhi, Balkhiya, Zakhm-e Marzi, Kapeh-e Armani, Khairuniya, Dokmeh-e Sharqi, Sanakher, and Sanaker as equivalent to CL. Muzaffari linked Habbeh Baghdad, Habbeh Halab, Damal al-Nil, Damal al-Sharq, and Balkhiya to CL. Khoshzaban specifically equated Balkhiya with CL. Conversely, Haghighi challenged these associations, proposing Zat al-Asl and Qurooh-e Gharibeh as alternative equivalents. Historical Iranian medical texts (Hedayat al-Muta'allemin, Al-Hawi, Al-Qanun, Zakhireye Khwarazmshahi, among others) consistently linked Zakhm-e Balkhi and Balkhiya to the region of Balkh (Herat, Afghanistan) and attributed their etiology to mosquito bites. Jorjani, in Zakhireye Khwarazmshahi, listed Sanakher, al-Sanah Gazidegi (sandfly bite), and Pesha Gazidegi (insect bite) alongside Zakhm-e Balkhi (8). Rhazes, in Al-Mansuri, described ulcerative lesions occurring in warm, mid-latitude regions (20–40°N), naming them according to endemic areas such as Habbeh Baghdad, Habbeh Halab, Damal al-Nil, and Damal al-Sharq, with mosquito bites implicated as the cause. Baha al-Dawlah Razi, in Kholasat al-Tajarib, equated Zakhm-e Balkhi with Qarz Baghdad, reaffirming mosquito bite etiology. Dr. Polak in his travelogue referenced Salak (CL), documenting its distribution from Sudan to Aleppo (Syria), Diyarbakır (Turkey), Mosul, Baghdad, Sindh, Iran, and Egypt, noting local names such as "Tatari" (Turkish) and "Kapeh Armani" (Armenian).

Conclusion : The geographical and pathological congruence among terms such as Zakhm-e Balkhiya, Habbeh Baghdad, Damal al-Nil, Damal al-Sharq, and CL, alongside their consistent attribution to insect vectors in classical texts, suggests that Zakhm-e Balkhiya represents the most accurate historical correlate of cutaneous leishmaniasis.

A needs assessment for the design and establishment of a center for clinical skills in traditional and complementary medicine

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Background and Aim : Traditional and complementary medicine (T&CM) schools in Iran are responsible for teaching many practical and communication skills to students in addition to teaching knowledge in theoretical areas. Currently, given the limitations of clinical skills training in T&CM clinics, as well as attention to patients' rights, it is very important to consider and emphasize acquiring the necessary qualifications in clinical skills training and creating a practical attitude in students through simulating medical conditions for educational purposes. The aim of this study was to provide a logical presentation for Iranian medical education policymakers to establish a skills center for training practical skills in the field of T&CM.

Methods : We examined Iran's experience through interviews with traditional medicine department managers and review of faculty websites in teaching practical skills in T&CM to students and, by highlighting its strengths, explained why it is essential to establish a clinical skills center in T&CM educational programs in Iran.

Results : There is no separate clinical skills training center for T&CM in Iran. A clinical skills learning center allows T&CM students to use a variety of teaching aids and medical models to improve clinical and communication skills in a controlled environment. A review of the literature on clinical skills learning centers showed that this center can establish a connection between theoretical content and practical skills, reduce students' worry during initial patient encounters, and teach them communication and practical skills to better deal with patients. Achieving these goals requires planning, organization, and appropriate educational environments and facilities. In this context, the design of skill-based devices can be considered, including: designing sensitive models for massage and manual intervention (Dalk, Ghamz, and massage) with a virtual reality camera, designing a pulse measuring device (pulse trainer) to teach learners about different types of pulses, designing different medical moulage for wet and dry cupping therapy and various types of phlebotomy.

Conclusion : It is essential to have a separate T&CM clinical skills training center in each faculty to achieve clinical competence. The main challenges of the center for clinical skills in T&CM include the lack of an organizational chart, insufficient budget to design and provide facilities and equipment according to educational needs, and the lack of standard training space for clinical skills. Most of the mentioned limitations can be resolved by allocating sufficient budget to provide educational facilities and building a culture of interdisciplinary cooperation with the support of policymakers in the field of T&CM

Therapeutic Effects of Abdominal Massage in Chronic and Functional Constipation: A Narrative Review of Clinical Evidence

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Background and Aim : Chronic constipation is a common gastrointestinal disorder that significantly impairs quality of life, particularly in older adults. While pharmacologic treatments are widely used, they may be limited by adverse effects and reduced long-term efficacy. This has increased interest in non-pharmacological interventions such as abdominal massage, which may promote colonic motility and stimulate parasympathetic activity. Despite promising results in individual studies, the overall effectiveness of this approach remains unclear. This narrative review aims to evaluate current clinical evidence on the therapeutic value of abdominal massage in managing chronic and functional constipation.

Methods : A narrative review was conducted through a systematic search of PubMed, Scopus, and Web of Science up to 2025. Studies included randomized controlled trials (RCTs), systematic reviews, and meta-analyses investigating abdominal massage in adult patients with chronic or functional constipation. Seven studies—comprising five RCTs and two systematic reviews—met the inclusion criteria. Main outcome measures were defecation frequency, stool consistency, defecation difficulty, and constipation-related quality of life.

Results : Findings from seven studies suggest that abdominal massage improves constipation symptoms. A meta-analysis of 13 RCTs (n=830) reported significant improvements in defecation frequency (SMD=1.05), stool consistency (SMD=0.95), defecation difficulty (SMD=–1.51), and quality of life (MD=–13.24). Other RCTs reported benefits in special populations, including patients with neurological conditions. An Iranian trial showed significant improvement using olive oil massage, while a Turkish study found abdominal massage superior to kinesio taping. Treatment duration ranged from 10–20 minutes daily over 1–4 weeks.

Conclusion : Current evidence supports abdominal massage as a safe, low-cost, and effective non-pharmacological intervention for chronic and functional constipation. It enhances bowel function, especially in elderly or medically complex patients, and may be particularly effective when combined with traditional oils. Despite some variability in massage protocols, findings consistently suggest therapeutic value, warranting its integration into clinical care strategies.

Investigation of the Synergistic Effects of Leech Therapy and Acupuncture on the Comprehensive Improvement of Clinical Symptoms and Quality of Life in Patients with Multiple Sclerosis: A Retrospective Observational Study

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Background and Aim : Multiple Sclerosis (MS) is a chronic immune-mediated neurodegenerative disease characterized by demyelination, neuroinflammation, and neuronal damage, leading to symptoms like fatigue, spasticity, pain, visual and cognitive impairment. While disease-modifying therapies (DMTs) including interferons, monoclonal antibodies, and oral agents reduce relapse rates, they often cause side effects like flu-like symptoms, depression, hepatotoxicity, macular edema, and increased infection risk (Goodin et al., 2012; Montalban et al., 2018). Moreover, many DMTs inadequately address chronic non-relapsing symptoms such as fatigue and mood disorders, leading to interest in complementary treatments like acupuncture and leech therapy. Acupuncture, based on Traditional Chinese Medicine, modulates neuroimmune and neurovascular pathways through meridian point stimulation. Clinical evidence supports its effectiveness in alleviating fatigue, spasticity, pain, gait disturbances, and mood symptoms in MS (Khodaie et al., 2022; Criado et al., 2017). Scalp acupuncture, in particular, has been linked to improved cortical regulation and motor function (Hao et al., 2013). Leech therapy (hirudotherapy) utilizes bioactive compounds such as hirudin, eglins, bdellins, and hyaluronidase, which offer anticoagulant, anti-inflammatory, and circulation-enhancing effects. These may complement acupuncture by improving tissue perfusion and neurovascular health, potentially preventing microvascular plaque accumulation in the brain and spinal cord (Sig et al., 2017; Rigbi et al., 1996). This study aimed to explore the synergistic effects of acupuncture and leech therapy on MS symptom burden and quality of life.

Methods : This retrospective observational study conducted at Dr. Qadir Mohammadi's Health Center evaluated 70 MS patients who had undergone at least four sessions of leech therapy and twelve sessions of acupuncture between 2022 and 2025. Clinical notes were reviewed for subjective and objective improvements across multiple symptom domains, including motor and sensory function, vision, fatigue, spasticity, pain, sleep and mood, cognition, speech, bladder function, postural balance, and medication dependence.

Results : Among the 70 patients evaluated, clinical documentation indicated sensory disturbances decreased in 54.3% of patients. Improvements in sleep quality and mood were noted in 45.7%, with 41.4% experiencing increased energy and reduced fatigue. Motor and visual functions improved in 31.4% and 37.1% of patients, respectively. Additionally, 30.0% reduced reliance on symptomatic medications, and 28.6% showed better postural balance. Muscle spasticity improved in 38.6%, urinary symptoms in 41.4%, neuropathic pain in 10%, cognitive function in 12.9%, and speech clarity in 15.7%. Eleven percent experienced no improvement, while 7.1% reported mild symptom worsening, such as transient fatigue or dizziness. No adverse events were reported.

Conclusion : This retrospective analysis suggests that combining acupuncture and leech therapy may provide complementary benefits in managing multiple sclerosis (MS) symptoms. Acupuncture likely improves fatigue, spasticity, and mood disturbances by modulating neuroimmune pathways and enhancing neuroplasticity (Khodaie et al., 2022). Leech therapy may enhance these effects through improved microvascular perfusion and anti-inflammatory actions, benefiting sensory perception, fatigue, and sleep quality (Sig et al., 2017). Despite promising findings, limitations including retrospective design, lack of control group, and subjective outcome measures limit definitive conclusions. However, consistent symptom improvements and good safety profile support further research. Future controlled trials using validated tools such as EDSS, FSS, and MSQoL-54 are recommended to confirm these benefits and clarify neuroimmunological and microvascular mechanisms.

Investigating the effect of topical use of flax seed oil in patients with fibrocystic breast disease

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Background and Aim : Fibrocystic breast disease is the most common benign breast disease. It is common among women aged 30-50. it's exact cause is not known, but hormonal imbalances such as increased estrogen; decreased progesterone; increased prolactin; lack of unsaturated fatty acids can cause it. In domestic and international studies, evening primrose; vitamin E; tamoxifen have been used for treatment, Due to the high prevalence of this disease and the reported complications, especially from the use of chemical drugs, new and effective treatments for this disease are welcomed. One of the treatment and research strategies for almost all diseases is the study of traditional and herbal medicine products. Considering the history of these treatments in our country, this study examined the use of a type of oil (flaxseed oil) in fibrocystic breast disease.

Methods : During the study, patients in two groups of 36 people (total 72 people) with fibrocystic breast disease; according to the random sequence; were examined within three and six months. All patients received vitamin E 400 IU per day, one group of 36 people received flaxseed oil (group A) topically twice a day and the other group of 36 people received paraffin oil (group B) topically twice a day. Patients were checked for three items: pain intensity (by patient), nodularity (by surgeon), and cyst number (by ultrasound) three months and six months later.

Results : ? In the flaxseed oil group, the number of cysts observed decreased from more than 5 cysts to less than 3 cysts in the six months after the first visit, while in group B or paraffin, the number of cysts did not change much. ? In the flaxseed oil group, the pain intensity decreased from severe to mild in the six months after the first visit. In group B, the pain intensity decreased from severe to moderate. ? In the flaxseed oil group, the number of lesions (nodularity) decreased from unchanged to 100 percent in the six months after the visit.

Conclusion : The current study showed that topical application of flaxseed oil in patients with fibrocystic breast disease significantly reduced pain intensity, number of cysts, and severity of lesions in the patients studied. Therefore, it can be said that topical application of flaxseed oil is effective in fibrocystic breast disease. According to the findings of the current study, topical application of flaxseed oil is recommended as one of the treatment methods in women with fibrocystic breast disease.

Investigating the Effect of Traditional Persian Manual Technique on Pain and Disability in Patients with Chronic Low Back Pain: a randomized controlled clinical trial

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Background and Aim : Chronic low back pain (CLBP) is a significant health issue that negatively affects quality of life. Given the high recurrence rate of CLBP and patients' reluctance to undergo invasive treatments, Persian Medicine offers a manual technique for pain management. This study aimed to evaluate the efficacy of a Persian Medicine-based manual therapy to treat patients with CLBP.

Methods : This randomized controlled trial was performed among 108 patients with CLBP referred to Tehran University of Medical Sciences outpatient clinic from July to December 2024. Participants were randomly assigned to two groups (using block randomization), receiving either Persian Medicine manual therapy (PMT) or a placebo technique (PCT), which simulated the original technique. Each patient received the intervention once, and pain severity and disability were assessed using the Visual Analog Scale (VAS) and the Roland-Morris Disability Questionnaire (RMDQ) at five different time points. Data was analyzed by SPSS v16 software using repeated measures analysis of variances.

Results : Half of the patients were male and mean age was 46.93 years. PMT significantly reduced pain severity (MD: -3.1, 95%CI: -3.92 to -2.27) ($P < 0.001$) and improved RMDQ scores ($P < 0.001$) (MD: -4.72, 95%CI: -6.52 to -2.91) with lower recurrence rate, compared to the PCT group (MD: -0.3, 95%CI: -0.92 to +0.32, and MD: -0.9, 95%CI: -3.02 to +1.22, respectively). No adverse effects were reported.

Conclusion : The Persian Medicine manual technique may be considered a complementary treatment for patients with CLBP, providing effective pain relief and improvement in disability.

Impact of Acupressure on Pain Relief and Physiological Responses in Patients Undergoing Extracorporeal Shock Wave Lithotripsy: A Randomized Double-Blind Clinical Trial

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Background and Aim : Extracorporeal shock wave lithotripsy (ESWL) is a widely used treatment for kidney stones, but pain management during the procedure remains a significant challenge. This study aimed to assess the effect of acupressure at the Qiu point on pain intensity and physiological indices in patients undergoing ESWL for kidney stone treatment.

Methods : This randomized, double-blind, sham-controlled clinical trial was conducted at Shahid Beheshti Educational-Medical Center in Hamadan, Iran, from May to August 2023. A total of 74 patients aged 18-65, diagnosed with kidney stones smaller than 2 cm and undergoing their first ESWL session, were enrolled. Participants were randomly assigned to either the acupressure (intervention) group or a sham group, with 37 patients in each. The intervention consisted of 3 minutes of acupressure applied to the Qiu point, 10 minutes before ESWL and again immediately prior to treatment. In the sham group, participants received a superficial touch at a neutral point. Pain intensity was measured using the Visual Analog Scale (VAS) at baseline and at multiple time points post-intervention (1, 10, 20, 30, 40, and 50 minutes). Physiological parameters, including heart rate and blood pressure, were recorded at the same intervals. The primary outcomes were pain intensity and physiological responses, while secondary outcomes included lithotripsy success and patient satisfaction with the acupressure intervention.

Results : A total of 70 patients completed the study, with no significant demographic differences between the intervention and sham groups. Analysis revealed significant reductions in pain intensity in the acupressure group at 20, 30, and 40 minutes after the intervention ($P < 0.05$). Additionally, heart rate differences between groups were significant at 30 and 40 minutes ($P < 0.05$). Systolic blood pressure showed significant differences at 30 minutes post-treatment ($P = 0.035$), while no significant differences were observed in diastolic blood pressure ($P > 0.05$). A follow-up evaluation 3 weeks post-treatment indicated no significant difference in the success rate of stone fragmentation between the two groups. However, over 54% of patients in the acupressure group reported being satisfied or very satisfied with the intervention, suggesting it was well-received.

Conclusion : Acupressure at the Qiu point provides significant pain relief and a reduction in heart rate in patients undergoing ESWL. While acupressure also showed some effect on systolic blood pressure, further studies are needed to confirm its impact on physiological indices. Overall, acupressure appears to be an effective, non-invasive option for enhancing patient comfort during ESWL procedures.

The Effectiveness of Leech Therapy in the Severity of Diabetic Neuropathy: A Randomized Controlled Trial

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Background and Aim : Diabetic peripheral neuropathy is one of the most common causes of disability in diabetic patients. Applying a method to achieve the highest therapeutic effect in patients is desirable. Therefore, this study aimed to evaluate the impact of leech therapy on diabetic neuropathy of lower limbs in comparison to gabapentin as a standard method.

Methods : This randomized controlled parallel-group clinical trial was conducted among 40 patients with type II diabetes who were diagnosed with lower limb diabetic neuropathy and referred to specialized outpatient clinics in Babol, Mazandaran province, Iran from 23 September 2020 to 17 March 2021. The patients were randomly divided into two groups. One group was treated with leech therapy and the other group was treated with gabapentin as the standard method. The severity of neuropathy was assessed every 15 days until the 45th day. The Visual Analog Scale (VAS), Neuropathy Symptom Score (NSS), Neuropathy Disability Score (NDS), and Nerve Conduction Velocity (NCV), and Electromyography (EMG) were used for assessing the study outcomes. The repeated measure and Friedman tests were used by SPSS.V.23.

Results : The results of our study indicated that pain (P value:0.03), numbness (P value<0.0001), and paranesthesia (P value:0.01) significantly reduced in patients undergoing leech therapy versus patients taking gabapentin on the 45th day. The total NSS (P value<0.0001) and total NDS (P value<0.0001) improved significantly for patients with leech therapy over 45 days compared to the patients with gabapentin.

Conclusion : The results of our study showed that using leech therapy for patients with diabetic neuropathy was more effective in improving clinical symptoms and the functions of lower limb muscles and nerves in comparison to gabapentin. The severity and symptoms of neuropathy greatly improved for the patients treated with leech therapy versus patients taking gabapentin.

The effect of Carob (Ceratonia siliqua L) Capsule and Acupuncture on sperm motility, in idiopathic male infertility: A Randomized Controlled Trial

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Background and Aim : Infertility is one of the growing health problems in most countries. However, current methods of treatment have a high cost and low success rate. Aims of study: The aim of this study was to evaluate the effects of herbal remedy based on Ceratonia siliqua and Acupuncture on sperm motility in men with idiopathic infertility

Methods : 66 men with idiopathic infertility and asthenospermia were randomly divided into three groups. The Herbal group received three 800 mg Ceratonia siliqua capsules daily. The Acupuncture group was treated with Acupuncture. The Control group received 800 mg of Pentoxifylline tablets daily. The duration of treatment in all three groups was 12 weeks and all subjects were examined before entering the study and at the end of the intervention in terms of sperm components, serum levels of sex hormones and the amount of inflammatory factors

Results : Comparison of study results showed, progressive sperm motility (A+B) increased significantly in both Herbal and Acupuncture groups, in contrast to the control group (P= 0.01). Also, the follow-up of patients participating in the study within one year after the end of the intervention showed the fertility of the spouses of 10 patients (2 in the pentoxifylline group, 3 in the carob capsule group and 5 in the acupuncture group), which in comparison There was no significant difference between groups (P = 0.68).

Conclusion : Due to the high acceptance of people towards medicinal plants and acupuncture, the use of Ceratonia siliqua capsules and acupuncture can be a low-cost and suitable alternative for the treatment of idiopathic male infertility in patients with reduced sperm motility. However, further studies in the future with longer follow-up can be useful to clarify the ambiguities of effectiveness based on the type of disorder and the exact mechanism of these two treatments

Modulation of metabolic and hemodynamic pathways by green synthesis of zinc nanoparticles from ginger contributes to the treatment of diabetic nephropathy in animal model.

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Background and Aim : Background: Although zinc and ginger effects on diabetic nephropathy (DN) are somewhat known, their effects in the form of nanoparticles and green synthesis of zinc nanoparticles from ginger (GSZNPG) on metabolic and hemodynamic pathways in subjects with DN are not clear. Objective: The aim of this study was to the effect of the nanoparticles of zinc, ginger, and GSZNPG on DN by evaluating the metabolic and hemodynamic pathways in the kidney tissue of male rats.

Methods : Methods: Adult male Wistar rats were assigned into controlled and treated groups. Treatment with ginger, zinc, nanoparticles, and GSZNPG was done in the diabetic rats. The activity of angiotensin II/aldosterone/renin/Nr3c2/SGLT2 as the hemodynamic pathway, and the RAGE/PKC/NF-κB/Nrf2 as metabolic pathway were measured along with renal oxidative markers and TNF-α, and the serum levels of insulin, glucose, creatinine, and urea.

Results : Results: HFD-induced T2DM could increase the activity of the hemodynamic pathway and metabolic pathway in the diabetic group compared to the control group ($P<0.05$). The serum levels of creatinine and urea significantly increased in the diabetic group ($P<0.05$). However, treatment with different doses of ginger, zinc, their nanoparticles, and GSZNPG could inhibit these pathways and reduce the serum creatinine and urea levels in diabetic rats compared to the diabetic group without intervention ($P<0.05$). Moreover, inflammation, apoptosis, and oxidative damage could be inhibited compared to the untreated diabetic group($P<0.05$).

Conclusion : Conclusion: It can be concluded that the nanoparticles of ginger and zinc, and GSZNPG as a novel agent to deliver zinc-ginger could improve kidney function in diabetic patients and have a potential anti-diabetic activity. They can be used as an adjunct combination along with antihypertensive drugs and in the manufacture of supplements or anti-diabetic drugs.

Review of Clinical Trials on Persian Medicine Interventions for Dermatitis Treatment

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Background and Aim : Dermatitis is a prevalent inflammatory skin disease characterized by itching, erythema, and disrupted skin barrier function. Conventional treatments sometimes cause side effects or incomplete resolution, increasing interest in complementary approaches. Persian traditional medicine offers promising pharmaceutical interventions for safer or adjunctive dermatitis management.

Methods : A comprehensive literature search was performed across databases including PubMed, Scopus, Science Direct, EMBASE, Web of Science, SID, IranMedex, and Irandoc from January 1980 to December 2024. Keywords included “Iranian traditional medicine,” “Persian Medicine,” “dermatitis,” “atopic dermatitis,” “contact dermatitis,” “clinical trial,” “herb,” “plant,” and “drug”, etc. Inclusion criteria focused on randomized, double-blind, placebo-controlled clinical trials evaluating the efficacy of Persian medicinal interventions in dermatitis patients, leading to selection of five trials.

Results : The five included studies addressed adult and pediatric patients with atopic or contact dermatitis. Interventions involved topical Malva sylvestris cream, Ficus carica extract, Lawsonia inermis (henna) formulation, and oral whey protein alone or combined with dodder seed extract. All showed statistically significant improvements in dermatitis severity scores and patient quality of life compared to placebo controls. Whey protein with dodder extract reduced moderate-to-severe adult atopic dermatitis symptoms. Malva sylvestris and fig extracts improved skin hydration and inflammation in pediatric atopic dermatitis. Henna topical treatment alleviated contact dermatitis among prosthesis users. Oral whey protein supplementation enhanced clinical outcomes in contact dermatitis cases. No serious adverse events were reported.

Conclusion : These randomized trials support the safety and efficacy of Persian medicinal plants and whey protein supplementation as complementary treatments for dermatitis, consistent with Persian medicine’s anti-inflammatory and skin barrier enhancement principles. Further larger, multi-center studies are encouraged to optimize protocols and integrate Persian traditional medicine within dermatological care frameworks. These complementary approaches offer promise for improving disease management and quality of life for dermatitis patients.

Development, Standardization and Evaluation of Cuscoheal Pill, a Persian Pharmacy Formulation.

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Background and Aim : In Persian traditional pharmacy, multi-component herbal formulations, known as Qarabadin, play a significant role in the treatment process. However, the main textbooks do not fully specify the methods for preparing these compounds, or the described methods are impractical. Additionally, these formulations often lack adequate stability and compliance. Therefore, reinovating these traditional remedies using modern techniques holds substantial importance. In the Persian system of medicine, the use of purgatives is considered a primary approach for treating diseases caused by the accumulation of humors. For conditions related to Soda, such as melancholy, schizophrenia, headaches, and Sodavi swellings like endometriosis, one of the recommended purgatives involves compounds containing Aftimoon (Cuscuta species). This study aims to develop and standardize a polyherbal formulation that maximizes efficacy, possesses optimal pharmacological properties, and ensures high patient compliance

Methods : Based on various formulations documented in Persian medicinal texts such as Qarabadin-e-Kabir, the most frequently cited plants were selected for the formulation of a Cuscoheal pill. Subsequently, hydroalcoholic extracts of three main herbs—Aftimoon, lavender, and Basfaij—were prepared. These extracts were standardized according to pharmacopeia quality control methods. Suitable and compatible excipients were then chosen for granulation and tablet compression, following pre-formulation procedures. Some parameters such as granule flowability, tapped and bulk density, tablet appearance, thickness, weight uniformity, loss on drying (LOD) hardness, friability, and disintegration time were evaluated. Also, microbial control and stability assessment of the formulation were conducted by measuring the main components in accordance with the pharmacopoeial standards.

Results : Pre-formulation parameters indicated acceptable ranges. The flowability of the granule was excellent based on USP standards (Hausner ratio = 1.07). The granule demonstrated good compressibility, and the tablets exhibited a uniform and acceptable appearance. The average weight of the tablets was 0.520 grams. In quality control tests, friability was below 1% (0.428%), the hardness was adequate (m≈54.7), and the disintegration time averaged 14 minutes and 8 seconds. Microbial contamination tests confirmed that the product passed microbial control standards, showing no significant microbial growth. Accelerated stability assessments, indicating satisfactory stability over the testing period. All tests were performed and analyzed based on USP43.

Conclusion : The findings indicate that the selected formulation and wet granulation method are suitable for this tablet. The Cuscoheal pill, prepared using modern techniques, is acceptable and effective in terms of physicochemical properties, quality control, and stability. Microbial testing and stability assessments confirmed that these herbal tablets are safe, stable, and possess appropriate physical characteristics. Moreover, their appearance and functional features, such as hardness and disintegration time, support higher patient acceptance and ease of use, demonstrating their feasibility for use in clinical studies aimed at evaluating efficacy.

TRADITIONAL AND INTEGRATIVE MEDICINE

Therapeutic Applications of Animal Venoms: Advances, Challenges, and Future Prospects in Medicine

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Background and Aim : Animal venoms, produced by species such as snakes, spiders, scorpions, cone snails, and marine organisms, are intricate mixtures of bioactive molecules, including peptides, proteins, enzymes, and small molecules. Evolved for predation and defense, these compounds target specific physiological pathways, such as ion channels, receptors, and coagulation factors, with high potency and specificity. Historically used in traditional medicine, venoms have transitioned into modern drug discovery, yielding therapeutics like captopril for hypertension and ziconotide for chronic pain. This review evaluates the therapeutic potential of venom-derived compounds, focusing on recent advances, challenges in clinical translation, and future prospects for treating cardiovascular diseases, neurological disorders, cancer, and infections.

Methods : A systematic literature review was conducted using databases such as PubMed, Scopus, and Web of Science, covering studies from 2003 to 2025. Search terms included "animal venoms," "venom-derived therapeutics," "venomics," "peptides," and specific applications like "cardiovascular," "neurological," "cancer," and "antimicrobial." Peer-reviewed articles in toxicology, pharmacology, and clinical research were prioritized. Key examples, including captopril, ziconotide, chlorotoxin, and exenatide, were analyzed, alongside advancements in venomics, synthetic biology, and nanotechnology. Studies were selected based on relevance to therapeutic applications, molecular mechanisms, and clinical translation challenges.

Results : Venom-derived therapeutics have achieved significant milestones. Snake venom peptides from Bothrops jararaca led to captopril, an angiotensin-converting enzyme inhibitor revolutionizing hypertension treatment, while natriuretic peptides show potential for heart failure. Ziconotide, derived from Conus magus venom, targets N-type calcium channels, providing non-opioid analgesia for chronic pain. In oncology, chlorotoxin from Leiurus quinquestriatus venom selectively binds glioma cells, aiding diagnostics and targeted therapies, whereas melittin from bee venom exhibits cytotoxicity but is limited by hemolysis. Scorpion and snake venom peptides demonstrate antimicrobial properties, offering alternatives to antibiotics amid rising resistance. Exenatide, from Gila monster venom, is effective in diabetes management, and venom peptides show promise in tissue regeneration. Innovations in venomics, recombinant production, and nanoparticle-based delivery enhance scalability and bioavailability. However, challenges like inherent toxicity, complex regulatory requirements, and limited clinical translation persist, with only a few of thousands of identified compounds reaching clinical use.

Conclusion : Animal venoms are a treasure trove of bioactive molecules with transformative therapeutic potential due to their specificity and potency. Despite successes, toxicity, delivery challenges, and production costs hinder progress. Advances in synthetic biology, nanotechnology, and computational drug design are addressing these barriers, while precision medicine and combination therapies offer future promise. Global research collaboration is essential to accelerate clinical translation. By overcoming these challenges, venom-derived therapeutics can revolutionize treatments for cardiovascular, neurological, oncological, and infectious diseases, addressing critical unmet medical needs.

The Role of Herbal Medicines in Managing Type 2 Diabetes: A Review of Efficacy, Mechanisms of Action, and Toxicological Aspects

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Background and Aim : Type 2 diabetes mellitus (T2DM) is a prevalent metabolic disorder characterized by insulin resistance and hyperglycemia, affecting over 500 million people globally as of 2025. Conventional treatments often lead to side effects, prompting interest in herbal medicines as adjunctive therapies. These plant-derived remedies, rooted in traditional systems like Ayurveda and Traditional Chinese Medicine (TCM), may offer glycemic control with potentially fewer adverse effects. This review evaluates their efficacy, mechanisms, and safety.

Methods : Literature was sourced from databases including PubMed, PMC, Frontiers, ScienceDirect, and others up to October 2025. Keywords included "herbal medicines," "type 2 diabetes," "efficacy," "mechanisms," "meta-analysis," "systematic review," and "toxicology." Inclusion criteria encompassed systematic reviews, meta-analyses, RCTs, and toxicological studies on humans and animals. Exclusion criteria omitted non-English articles, non-peer-reviewed sources, and studies lacking quantitative data. Over 30 sources were screened, with 15 selected for in-depth analysis.

Results : Efficacy: Meta-analyses show Aloe vera reduces HbA1c by -0.99% (95% CI -1.75 to -0.23), fenugreek by -0.85% (95% CI -1.49 to -0.22), and psyllium by -0.97% (95% CI -1.94 to -0.01). Cinnamon, ginseng, and bitter melon also lower fasting plasma glucose (FPG), with 76% of trials reporting positive effects. Mechanisms: Herbs activate AMPK, enhance GLUT-4 translocation, inhibit α-glucosidase, and reduce inflammation via NF-κB and PPAR pathways. Toxicology: Mild gastrointestinal issues are common; serious risks include heavy metal contamination (lead, mercury) in Ayurvedic preparations, hepatotoxicity from kava or cinnamon, and interactions potentiating hypoglycemia.

Conclusion : Herbal medicines demonstrate promising efficacy comparable to conventional drugs but with variable evidence quality due to study heterogeneity. Mechanisms provide multifaceted benefits, yet toxicological risks like adulteration and interactions necessitate caution. Rigorous RCTs and standardization are essential for safe integration into T2DM management. Herbal therapies could serve as cost-effective adjuncts, but patients should consult professionals to mitigate risks.

Pain-relief efficacy of Qust (Saussurea costus) topical ointment in rats: a tradition-based product of Persian medicine

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Background and Aim : Acute pain serves as a protective response to injury, while inflammation reflects tissue damage. Nonsteroidal anti-inflammatory drugs (NSAIDs) are widely used for pain relief but often cause side effects, prompting interest in safer alternatives. Herbal medicines, known for their traditional use and minimal adverse effects, are promising candidates. Saussurea costus, a perennial herb native to the Himalayas, has a long history of use in traditional Persian medicine specially in the form of topical oil (Dohn al-Qust). This study evaluates the analgesic potential of an ointment containing Qust (Saussurea costus) oil in managing inflammatory pain using a rat model.

Methods : The analgesic effects of Qust oil-based ointment (containing 25%, 50%, and 75% of the oil) were assessed via the formalin test in rats. Thirty rats were assigned to five groups (n=6): three received the oil-based ointment topically at different concentrations; the remaining two received diclofenac ointment and base ointment, respectively. Pain was induced by formalin injection into the right hind paw, and flinch responses were recorded for one hour. Data were analyzed using Prism software.

Results : All concentrations of the Qust oil-based ointment significantly reduced pain in both early and late phases of the formalin test compared to the base group ($p < 0.01$). The effect was dose-dependent, with the 75% formulation producing the most significant reduction in flinching ($p < 0.001$). The 25% and 50% concentrations also showed notable analgesic activity.

Conclusion : This study demonstrates the significant, dose-dependent analgesic effect of Qust (Saussurea costus) oil-based ointment in a rat model of inflammatory pain. The statistical significance of the findings supports the therapeutic potential of this herbal oil preparation. Saussurea costus ointment may serve as a natural alternative for pain management. Further research is warranted to investigate its mechanism of action, optimize its formulation, and confirm its clinical safety and efficacy.

TRADITIONAL AND INTEGRATIVE MEDICINE

Evaluation of the safety and efficacy of wormwood vaginal gel in improving sexual function and sexual satisfaction in women of reproductive age: A randomized, triple-blinds, placebo-controlled clinical trial

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Background and Aim : All aspects of sexual function are related to sexual satisfaction, and not paying attention to sexual problems leads to sexual dissatisfaction. According to studies, sexual satisfaction is a key factor in a couple's quality of life. The aim of this study was to evaluate the safety and efficacy of wormwood vaginal gel in improving sexual function and sexual satisfaction in women of reproductive age.

Methods : This study was a randomized, triple-blinds, parallel-groups clinical trial performed on 76 women of reproductive age (18–45 years) referred to the gynecological clinic of Ghaem Hospital in Mashhad who had sexual dysfunction and low sexual satisfaction. 76 women were assigned to the wormwood gel (n = 38) and placebo (n = 38) groups using random permuted blocks of sizes 4 or 6 and an allocation ratio of 1:1. Wormwood gel or placebo was used for 4 weeks and 3 times a week for 4 weeks from22 May to 23 October 2021. The main data collection tools were the Female Sexual Function Index (FSFI) and Larson Sexual Satisfaction Questionnaire (LSSQ) to access changes in sexual function and sexual satisfaction at baseline and after 4 weeks.

Results : The Mean and Standard Deviation of the age of the studied women was 36.8 ± 5.9 years in the intervention group and 37.1 ± 7.3 years in the placebo group. Before the intervention, the Mean and Standard Deviation of the total score of sexual function and sexual satisfaction in the studied women were 17.70 ± 3.66 and 72.20 ± 6.56 in the intervention group and in the placebo group were 18.23 ± 3.84 and 73.26 ± 5.86, respectively. At the end of the intervention, the Mean and Standard Deviation of the total score of female sexual function and sexual satisfaction in the intervention group were 32.11 ± 2.03 and 96.91 ± 7.93 and in the placebo group were 21.07 ± 3.22 and 75.91 ± 8.87, respectively. sexual function and satisfaction improved significantly in the wormwood gel compared to the control group($p < 0.0001$).

Conclusion : Based on the findings of this trial, it seems that the wormwood vaginal gel can be used as a topical supplement to improve sexual function and sexual satisfaction in women of reproductive age who have sexual dysfunction and low sexual satisfaction.

Wart Treatment with Traditional Persian Plants: Bridging Historical Use and Modern Clinical Evidence

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Background and Aim : Cutaneous warts (verrucae), mostly caused by human papillomavirus (HPV), are common skin lesions, particularly affecting children and adolescents. Beyond cosmetic concerns, warts may cause discomfort, secondary infections, and psychological effects. Conventional treatments like cryotherapy and surgical removal can be effective but have drawbacks such as recurrence, inflammation, and cost-leading patients to seek alternatives. In recent years, the use of medicinal plants in wart treatment has gained increasing interest due to their antiviral, anti-inflammatory, and skin-regenerative properties. Various plants have been traditionally recommended in Persian medicine for this purpose, though their scientific validation remains limited. This study aims to extract and identify medicinal plants cited in authoritative traditional Persian medicine sources for topical treatment of cutaneous warts.

Methods : Medicinal plants traditionally used for wart treatment were extracted from four classical Persian medicine books (The Canon of medicine, Tuhfat al-Mu'minin, Al-Shamil fi al-Sina'at al-Tibbiyah, and Makhzan al-Adwiyah). Additionally, efforts were made to determine the most appropriate scientific names for each of the plants using reliable herbal glossaries. Following the prioritization of plants based on their frequency in traditional medicine sources, relevant clinical trials were identified through PubMed, Scopus, and Google Scholar databases, including studies published up to 2024.

Results : Through this study, 48 plants with recognized scientific names were extracted from traditional Persian medicine sources for the treatment of skin warts, of which 14 herbal medicines had the highest frequency of mention. Out of 48 plant species prescribed for warts, Allium porrum L., Euphorbia hirta L., Ficus carica L., Nigella sativa L., Podophyllum peltatum L. and Salix alba L. had published clinical trials in modern databases.

Conclusion : Although a considerable number of medicinal plants have been cited in authoritative traditional Persian medicine sources for wart treatment, current clinical evidence supporting their efficacy is scarce and fragmented. To date, only a limited number of these species have undergone scientific evaluation, highlighting a significant research gap between traditional knowledge and modern clinical data. This review highlights the significant potential for developing herbal medicines based on traditional knowledge. Conducting more extensive clinical studies with rigorous design and a focus on species with preliminary evidence could help guide future research in a more targeted direction.

Aloe Vera inhibits P53 protein expression and increases proliferation of HT29 colon cancer cells

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Background and Aim : Backgrounds: Aloe Vera is one of the most widely used herbs for the treatment of diseases such as wounds and cancer. Although the beneficial effects of Aloe vera on wound healing have been proven, little is known about its effect on inhibiting colon tumors. Hence, we aimed to investigate the effect of aloe Vera gel on proliferation and survival of HT29 colorectal cancer cell line.

Methods : Methods: The HT29 cells were obtained from the Pasteur Institute. Cells were cultured in low glucose DMEM with 10% serum and 1% penicillin-streptomycin. Fresh and mature leaves of Aloe vera were used for gel preparation. Cell proliferation and morphology were studied by inverted microscope. MTT assay was used for cell viability and the expression of p53 and BCL2 was detected by the immunocytochemical (ICC) method.

Results : Results: The MTT assay showed that HT29 cells were viable in 5, 10, 15 and 20 percent of Aloe vera gel. However HT29 cells were significantly proliferated in the 10% Aloe vera group than the control group. In the 10% concentration of Aloe vera group, mitotic cells were obvious in the center of colonies. The expression of P53 protein was decreased but the Bcl2 protein expression remained unchanged in 10% aloe Vera versus the control group.

Conclusion : Conclusions: The results indicated that 10% of Aloe Vera induces proliferation of HT29 cells by decreasing P53 expression. Our results indicate application of Aloe vera as an anticancer needs more evaluations. Keywords: Aloe Vera, Bcl2, Colorectal, Cancer, HT-29, P53

Hepatoprotective and Antioxidant Potential of Capparis spinosa L. Extract Against CCl_4- Induced Liver Injury in Wistar Rats

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Background and Aim : Hepatoprotective and Antioxidant Potential of Capparis spinosa L. Extract Against CCl_4- Induced Liver Injury in Wistar Rats: A Preclinical Experimental Proposal

Methods : Abstract Liver conditions due to oxidative stress or exposure to environmental or chemical toxins, remain a worldwide health problem. Carbon tetrachloride (CCl_4) is a common method of inducing experimental hepatotoxicity, mimicking characteristics of an acute liver injury or injury due to oxidative damage.

Results : Currently available hepatoprotective medications have limitations, so plants with antioxidant and protective properties are of growing interest. Capparis spinosa L. is a traditional herbal remedy which has demonstrated bioactive compounds (flavonoids, alkaloids, and polyphenols) and have shown a promise to decrease organ toxicity.

Conclusion : This investigation suggests that hydroalcoholic extract of Capparis spinosa protects the liver, dose dependently, in male Wistar rats intoxicated with CCl_4 by reducing liver enzymes (ALT, AST, ALP) elevation; reduced lipid peroxidation (MDA); and increasing endogenous antioxidants (GSH, SOD, CAT). The experiment is to be conducted in vivo in six groups, in pre-treatment and post-treatment regimes of C. spinosa extract (two doses - 100 and 200 mg/kg), respectively positive and negative controls. Biochemical assay and liver histopathology will be performed to confirm protective effect. If successful, this research may help to develop plant-based complementary therapies for hepatic injury and provide justification for a subsequent translational study. Keywords: Capparis spinosa L., hepatotoxicity, CCl_4, antioxidant, liver enzymes, histopathology, oxidative stress, persian medicine

Effective herbs in the treatment of hair loss in Persian medicine

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Background and Aim : Hair loss is a prevalent problem. Studies have shown that using herbs can be a good option for treating hair loss. There is a way to search for effective herbal remedies that, in addition to being scientifically valid, is a quick path in the process of discovering, designing, and obtaining natural remedies. This method is based on the knowledge of traditional medicine. Persian medicine contains vast knowledge in diagnosing, preventing and treating diseases, including valuable information from the experiences of scientists. This study introduces herbs mentioned in traditional Persian medicine used for treating hair loss.

Methods : The present study is a review based on the study of traditional Persian medicine books. Hereon, herbs for hair loss treatment mentioned in the second volume of Al Qanun-fi al-Tibb have been listed, and then four reference books of traditional medicine (al-Abnieh an Haghayegh al-advieh, Tazkare Ulul Al-bab, Tohfat al-Momenin, and Makhzan al- Advieh) are reviewed. The research steps include finding keywords, searching in the resources, finding synonyms, summarizing, scoring and prioritizing.

Results : In the current study, sixteen medicinal herbs were found to be a hair loss cure. Based on the scores, Myrtus communis L., both Adiantum capillus-veneris L. and Ziziphus spina-christi L. and Trigonella foenum-graecum L. earned the highest scores, respectively.

Conclusion : The list of herbs collected in this study can be considered as a basis for further studies to design and make new effective herbal drugs for treating hair loss.

Effectiveness of Sinamaz Nasal Drop in Preventing Upper Respiratory Infections Among Arbaeen Pilgrims: A Triple-Blind Randomized Controlled Trial

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Background and Aim : One of the largest religious gatherings in the world, the Arbaeen pilgrimage, draws millions of visitors to Karbala, Iraq, every year. Infectious diseases, especially upper respiratory infections (URIs), can spread easily during this event due to the large crowds and limited healthcare infrastructure. In light of the growing interest in herbal interventions, this study evaluated the effectiveness of Sinamaz, a topical herbal nasal drop containing Nigella sativa (black seed) and olive oil, in preventing urinary tract infections (URIs) among pilgrims from Iran.

Methods : This study was conducted in collaboration with the Clinical Trials Research Center of Shahed University and the Kazemi Ashtiani Jihadi Group. For seven days during the pilgrimage, eligible Iranian pilgrims were randomized to receive either Sinamaz or a placebo nasal drop in a triple-blind randomized controlled trial. The incidence of URI-related clinical symptoms, as determined by standardized questionnaires on Days 1 and 7, was the main outcome. To account for baseline differences, logistic regression was used to analyze the data.

Results : The study was finished by 188 participants. The incidence of several URI-related symptoms, such as fever and cough, was significantly lower in the Sinamaz group than in the placebo group (OR<1 and p<0.05 for all). There were no significant negative effects noted.

Conclusion : The study was finished by 188 participants. The incidence of several URI-related symptoms, such as fever and cough, was significantly lower in the Sinamaz group than in the placebo group (OR<1 and p<0.05 for all). There were no significant negative effects noted. In densely populated settings, like the Arbaeen pilgrimage, Sinamaz nasal drops are acknowledged as a safe and efficient intervention for reducing the frequency and severity of upper respiratory infection (URI) symptoms. Trial Registration Number: IRCT20210515051305N2 Declaration of generative AI: The authors declare that artificial intelligence tools were used to assist in text refinement during the preparation of this abstract. After using this tool/service, the authors reviewed and edited the content as needed.

TRADITIONAL AND INTEGRATIVE MEDICINE

Traditional Hepatoprotective Plants and Their Nrf2-Mediated Mechanisms: A Review Bridging Avicenna's Insights with Modern Evidence

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Background and Aim : Liver diseases—ranging from metabolic dysfunctions to toxin-induced injuries—often involve oxidative stress and inflammatory damage. Nrf2 is a key transcription factor modulating cellular defense. Historical manuscripts such as The Canon of Medicine by Avicenna list numerous plants traditionally used to treat hepatic ailments. Investigating these herbs in the context of modern science may yield promising therapeutic agents.

Methods : This review followed a multi-step approach: 1. Classical Source Selection: Initially, medicinal plants traditionally used for liver disorders were identified from Book III, Chapter on Liver Diseases in The Canon of Medicine by Avicenna (Ibn Sina). 2. Botanical Identification: The corresponding scientific names of these plants were verified using the Encyclopedia of Traditional Medicine and Medicinal Plants compiled by Dr. Abolghasem Soltani, to ensure taxonomic accuracy. 3. Literature Search: Following identification, systematic searches were conducted in databases such as PubMed, ScienceDirect, and PMC, using a combination of keywords including: "Nrf2", "liver", "oxidative stress", and the scientific names of each plant. Only peer-reviewed publications up to July 2025 that provided mechanistic or pharmacological insights into antioxidant and hepatoprotective activity were included. 4. Data Extraction and Analysis: Articles were evaluated for relevance to the Nrf2 signaling pathway and liver protection. Studies with clear molecular evidence of Nrf2 modulation were emphasized, while those with indirect antioxidant outcomes were also reviewed for supportive findings.

Results : Several medicinal plants demonstrated hepatoprotective effects mediated by the Nrf2 pathway. Cichorium intybus inhibited NF-κB and enhanced Nrf2 signaling, while Cinnamomum verum (via cinnamaldehyde) reduced hepatic steatosis through electrophilic activation of Nrf2. Crocus sativus activated the Nrf2/HO-1/Keap1 cascade, contributing to multi-organ protection, including the liver. Boswellia serrata modulated Nrf2/HO-1 to counteract oxidative liver injury. Trigonella foenum-graecum supported liver and kidney protection through hypoglycemic and antioxidant effects linked to Nrf2 activation. Other plants such as Punica granatum, Pistacia atlantica, Marrubium vulgare, and Matricaria chamomilla showed hepatoprotective properties, though their direct involvement with Nrf2 remains to be confirmed.

Conclusion : This review highlights the hepatoprotective effects of several medicinal plants traditionally used in liver disorders, many of which act through the Nrf2 signaling pathway. Nrf2 is a key regulator of antioxidant responses, and its activation has been linked to protection against hepatic oxidative damage. Plants such as Cichorium intybus and Cinnamomum verum showed strong Nrf2 activation and antioxidant effects, suggesting potential in reducing inflammation and oxidative stress in liver tissues. Crocus sativus and Boswellia serrata also demonstrated promising results through upregulation of Nrf2 and HO-1, contributing to multi-organ protection and liver resilience, particularly against drug-induced damage. Trigonella foenum-graecum exhibited dual benefits by modulating blood glucose and enhancing Nrf2-related antioxidant defenses. Although hepatoprotective properties were also observed in Punica granatum, Pistacia atlantica, Marrubium vulgare, and Matricaria chamomilla, further research is needed to confirm their direct link to Nrf2 activation. These results support the relevance of Avicenna's traditional plant list in the context of modern molecular research and suggest that Nrf2 may serve as a shared target for many classical remedies.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Effectiveness of Olive Oil Combined with Black Seed and Olive Oil Alone on Pain Intensity and Episiotomy Wound Healing in Primiparous Women

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Background and Aim : Episiotomy wounds are prone to infection due to their anatomical proximity to the anus and the mother's inability to observe the site directly. Considering the high costs and adverse effects of chemical medications, the World Health Organization recommends the use of herbal remedies. This study aimed to evaluate the effectiveness of olive oil combined with black seed, as well as olive oil alone, on pain intensity and episiotomy wound healing in primiparous women.

Methods : A randomized controlled clinical trial was conducted at Shahid Yahyanejad Hospital, Babol, Iran, among primiparous women admitted to the postpartum ward. Seventy-eight participants were enrolled and randomly allocated to two intervention groups (olive oil alone, olive oil with black seed) and one control group. Participants in the intervention groups were instructed to apply ten drops of the designated oil on the episiotomy wound three times daily for ten consecutive days postpartum. The control group received routine postpartum care. Pain intensity was assessed with the Visual Analogue Scale (VAS), and wound healing was measured using the REEDA scale (Redness, Edema, Ecchymosis, Discharge, Approximation) at 24 hours and on day 10 postpartum. Primary outcomes included wound healing and pain intensity, while secondary outcomes were itching, burning, analgesic use, and the need for re-suturing. Data were analyzed with Chi-square and one-way ANOVA tests after confirming normality using Levene's test.

Results : Of the 78 participants, 23 were assigned to the olive oil and black seed group, 22 to the olive oil group, and 24 to the control group. At baseline, the groups were statistically homogenous regarding pain intensity and wound healing. Post-intervention analysis revealed significant differences among groups in mean pain and wound healing scores ($P < 0.05$). Pairwise comparisons (Scheffé test) showed significantly lower mean pain intensity in the olive oil and black seed group (1.55 ± 1.19) compared with the control group (3.78 ± 2.89), and in the olive oil group (1.25 ± 1.52) compared with the control group. Similarly, wound healing scores were significantly better in the olive oil and black seed group (0.38 ± 0.60) and in the olive oil group (0.81 ± 0.91) compared with controls (2.15 ± 2.26). Analysis of secondary outcomes revealed no group differences in itching or burning during days 1–2 and 9–10 postpartum. However, from days 3–7, the control group experienced significantly greater itching and burning compared with intervention groups ($P < 0.05$). No significant differences were found regarding analgesic use or the need for re-suturing.

Conclusion : Both olive oil alone and olive oil combined with black seed were more effective than routine postpartum care in reducing pain intensity and enhancing episiotomy wound healing in primiparous women. Additionally, these interventions alleviated itching and burning at the wound site between the third and seventh days postpartum. These findings suggest that herbal remedies may represent safe, cost-effective alternatives to conventional treatments for postpartum perineal care.

Evaluation of the Effects of Hydroalcoholic Extract of Oenothera biennis on Breast Cancer Cells (MCF-7) Cultured in Fibrin-based Hydrogel Scaffolds

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Background and Aim : The present study aimed to investigate the antiproliferative effects of the hydroalcoholic extract of evening primrose (Oenothera biennis) and 5-fluorouracil (5-FU) on the MCF-7 breast cancer cell line cultured within a fibrin hydrogel scaffold.

Methods : In this experimental laboratory study, the hydroalcoholic extract of evening primrose was first prepared. Purchased breast cancer cells (MCF-7) were cultured in DMEM medium supplemented with 10% fetal bovine serum and antibiotics, incubated at 37°C with 5% CO_2 until reaching over 80% confluency. After cell counting, 10^4 cells per well were seeded in 24-well plates in triplicate according to experimental groups. Then, 100 µL of hydroalcoholic evening primrose extract (250 µg/mL) and 100 µL of 5-FU (250 µg/mL) were added to the respective groups. A p-value less than 0.05 was considered statistically significant.

Results : Water absorption of the fibrin scaffold alone was significantly higher compared to scaffolds combined with hydroalcoholic evening primrose extract or 5-FU ($p < 0.0001$). Cell viability results demonstrated a significant decrease in the fibrin + 5-FU group compared to fibrin + evening primrose extract and fibrin-only groups ($p < 0.0001$). Additionally, the 5-FU alone group showed significantly lower viability compared to the evening primrose extract alone group ($p < 0.0001$). Flow cytometry analysis revealed that both early and late apoptosis rates were higher in the fibrin + 5-FU group compared to fibrin + evening primrose extract.

Conclusion : These findings suggest that the fibrin hydrogel scaffold, due to its three-dimensional tissue-like structure and hydrophilic properties as a natural polymer, provides a suitable environment for cell growth. Furthermore, the hydroalcoholic extract of evening primrose, combined with 5-FU, may serve as a potential therapeutic candidate for breast cancer owing to its antioxidant effects.

Comparing the Efficacy of Phytotherapy and mesh Grafting in the Healing of Infected Wound (Systematic Review)

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Background and Aim : Deep and extensive infected wounds, particularly those with significant tissue loss, require aggressive and multifaceted treatment approaches. Skin grafting remains the gold standard surgical procedure for covering large tissue defects. However, it faces challenges such as graft infection, rejection, and limited donor site availability. Conversely, phytotherapy (herbal medicine), aimed at controlling infection and preparing the wound bed for repair, is being investigated as an adjunctive or alternative treatment. This study compares these two treatment sample and their mechanisms of action.

Methods : A systematic search was conducted across multiple scientific databases, including PubMed, Scopus,SID and Google Scholar between 2001 and 2025.The keywords employed in the search included “infected wound skin,” “Herbal medicine,” “phytotherapy,””grafting,” and “mesh graft ”.” 83 Relevant articles, reviews, and clinical studies were selected for analysis.Unrelated, conference abstracts, and animal model studies were excluded from the analysis and 30 articles were analyzed.

Results : The findings revealed that skin grafting provides a structural and mechanical solution for the rapid replacement of lost tissue. Its physical coverage protects the wound from dehydration and secondary contamination. However, the success of this method is critically dependent on pre operative infection control and the quality of the wound bed. In contrast, phytotherapy, using extracts such as Manuka honey, Aloe vera, curcumin, and neem , offers a biological and physiological approach. These compounds exhibit potent and broad-spectrum antimicrobial activity , powerful antioxidant activity, and immunomodulatory capabilities. Concurrently, many of these plants directly stimulate fibroblast proliferation, collagen synthesis, and angiogenesis, thereby preparing the wound bed for graft acceptance or, in cases where grafting is not feasible, facilitating repair through guided epithelialization.

Conclusion : In summary, skin grafting and phytotherapy are complementary rather than mutually exclusive strategies. Therefore, an integrated protocol utilizing preparatory phytotherapy to optimize the wound bed, followed by skin grafting, and continued post-operatively to protect the graft and accelerate integration, may represent the most effective paradigm for managing complex infected wounds. Further clinical studies to standardize this combined protocol are strongly recommended.

TRADITIONAL AND INTEGRATIVE MEDICINE

Herbal recommendations for monkeypox symptoms management based on Persian medicine- a narrative review

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Background and Aim : Background: Monkeypox is an infectious disease caused by the monkeypox virus, a member of the Orthopoxvirus genus, which also encompasses the variola virus, the causative agent of smallpox, in addition to other significant human and animal pathogens such as vaccinia and cowpox viruses. Persian Medicine (PM), A holistic, integrative medicine, has recommended foods and medicinal plants to treat monkeypox symptoms. Objective: In this study, we introduce plants with bioactive compounds like iridoids, flavonoids, and tannins that show wound-healing antipyretic, antiviral, anti-inflammatory, and antioxidant effects

Methods : This review study reviewed primary Persian medical texts to identify plants traditionally used for treating viral infections and skin conditions similar to monkeypox symptoms. Then, based on the study's purpose, functional food plants were selected from the overall search list. The preventive and therapeutic effects of PM and herbal remedies on pox-like diseases and their mechanisms and pharmacological properties were investigated using data sources

Results : This study assessed plants' antiviral, antioxidant, and immune-enhancing properties mentioned in Persian medical literature. Findings indicate that bitter orange, sour lemon, jujube, sumac, and barberry exhibit antipyretic, anti-inflammatory, antioxidant, and antiviral effects.

Conclusion : These identified plants may be promising candidates for further animal studies and clinical trials investigation. Nonetheless, additional studies are required to validate their specific therapeutic effects. Keywords: Functional food, Monkeypox, management, Traditional Persian Medicine

Comparative antimicrobial assay of Punica granatum extract and chlorhexidine for preventing dental plaque

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Background and Aim : Avoiding microbial plaque which lead to dental caries, researchers seeking effective antimicrobial natural products. Punica granatum (pomegranate) specially its peel is recommended notably in Persian medicine literatures. As well, previous studies also confirm its efficacy on periodontal diseases [1]. The aim of this study is to investigate the antimicrobial effects of P. granatum extract on Streptococcus sobrinus, Streptococcus sanguinis and Candida albicans which are the most responsible microbes involving in dental plaque formation, versus chlorhexidine (CHX) as positive control.

Methods : The hydroalcoholic pomegranate extract (HPE) achieved using maceration method by adding water-ethanol (50:50) to crushed whole pomegranate and the concentrated extract was used to make different concentrations. The microdilution and macrodilution broth tests were used to assay the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) and the disc diffusion test was carried out [2] to determine the microorganism's growth inhibition zones of HPE and CHX 0.12%. The MBC was measured using the blood agar or Mueller Hinton agar culture medium. The Sabouraud dextrose agar culture medium was used for C. albicans. Each test was repeated in triplicate, and data were analyzed by independent samples t-test and Mann-Whitney U test.

Results : None of the tested microorganisms showed any resistance to the extract. CHX had the highest antimicrobial effect against all tested microorganisms. The hydroalcoholic extract of P. granatum showed optimal MIC against all three microorganisms but was significantly weaker than CHX ($P<0.05$). The MIC of HPE was 2.5, 2.5 and 5 mg/ml and MBC of HPE was 5, 5 and 10 mg/ml for S. sobrinus and S. sanguinis and C. albicans respectively.

Conclusion : Polyphenolic compounds which are the most antimicrobial activity in P. granatum specially in its peel, decrease the bacterial load by reducing the environmental pH and Evidence shows that punicalagin is the most effective antibacterial compound in a pomegranate; however, the pomegranate fruit's synergistic effects are mainly responsible for its cariostatic properties. According to this study Pamegranate hydroalcoholic extract may considered as favorable bacteriostatic and bactericidal agent for preventing microbial plaque and dental caries but the peel probabely could represent greater antimicrobial which is worth designing and comparing in future studies.

Novel Trends in Herbal Cosmeceuticals and Iran's Emerging Opportunities

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Background and Aim : The global cosmeceutical market is increasingly embracing herbal ingredients due to their nature-based instinct, efficacy, and sustainability. Recent advancements in biotechnology, nanotechnology, and green chemistry have revolutionized the development of herbal cosmeceuticals, enhancing their bioavailability and functionality. This abstract explores current innovations in the field and evaluates Iran's potential to emerge as a key player, given its rich biodiversity and traditional knowledge base.

Methods : A comprehensive literature review was conducted using scientific databases, MEDLINE, Scopus, and Web of Science, with keywords including "herbal cosmeceuticals," and ("fermentation" or "nanotechnology" or "peptide' Studies published between 2015 and 2025 were prioritized to capture recent advancements. Industry reports and patent databases were also analyzed to identify commercial trends.

Results : The herbal cosmeceutical industry is undergoing transformative advancements through innovations like fermentation technology, which enhances bioactivity in herbs like green tea, nanocarrier systems such as nanoemulsions and liposomes that improve delivery of compounds like curcumin, peptide and herbal mixture cosmetic products, sustainable extraction methods including supercritical CO_2 and ultrasound-assisted techniques that preserve phytochemicals; and microbiome-friendly formulations combining pre/probiotics with botanicals like chamomile. For Iran, these trends present significant opportunities due to its rich biodiversity of over 8,000 plant species, extensive traditional knowledge documented in Persian medicine texts, e.g., pomegranate, licorice applications, potential for upcycling agricultural byproducts, e.g., grape seeds, rose waste, and strategic positioning in the halal cosmetics market. By integrating modern technologies with its unique herbal resources and traditional expertise, Iran can establish itself as a competitive player in the region in the global herbal cosmeceutical sector while promoting sustainable and culturally relevant skincare solutions.

Conclusion : The herbal cosmeceutical sector is being reshaped by scientific innovations that align with global demands for sustainable, personalized skincare. Iran possesses unique assets, from its medicinal flora to traditional expertise, that can be leveraged through strategic investments in fermentation, nanotechnology, and circular economy approaches. By bridging ancient wisdom with modern technology, Iran can establish itself as a competitive force in this growing industry, provided it strengthens research-industry collaborations and adopts standardized quality control measures. Future studies should focus on clinical validation of Persian herbal formulations and scalable production methods.

Placebo-controlled effect of topical Qust (Costus) oil on postmenopausal women's sexual desire disorder: A double-blind, randomized, clinical trial

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Background and Aim : Decreased libido and anorgasmia are common problems for women after menopause that reduce the quality of life of couples. This study examined the effect of topical Qust (Costus) oil on sexual desire disorder in postmenopausal women.

Methods : In this double-blind, randomized, clinical trial, 110 postmenopausal women with decreased sexual desire visiting a Traditional Medicine Center and Hazrat Rasool Akram Hospital (affiliated to Iran University of Medical Sciences) were selected by convenience consecutive sampling and randomly assigned to experimental and control groups. The experimental group received qust oil, while the control group was given a placebo (liquid paraffin); they were instructed to massage the product topically on their pubic area and perineum daily. The sexual function of both groups was assessed and compared before the intervention and four weeks after the intervention using the Female Sexual Function Index (FSFI).

Results : The mean and standard deviation (SD) of the improvement of sexual function post-intervention were 37.66±32.52% and 11.96±11.18% in the experimental and control groups, respectively ($p<0.001$). In terms of the improvement of components of sexual function, a significant difference was observed between the two groups in the sub-scales of sexual desire [57.05±42.99% vs. 21.25±27.85%, $p<0.001$], arousal, orgasm, and satisfaction ($p<0.001$ for all); however, no significant difference was observed in terms of lubrication ($p=0.25$) and pain during intercourse ($p=0.776$).

Conclusion : In the present study, the topical use of qust oil by postmenopausal women with sexual dysfunction for four weeks significantly increased sexual desire, arousal, orgasm, satisfaction, and overall sexual functioning; however, no significant difference was observed in lubrication and pain during intercourse. The researchers' search of electronic databases yielded no relevant or similar papers that had used qust oil topically to treat women's sexual dysfunction.

TRADITIONAL AND INTEGRATIVE MEDICINE

Ameliorative Effect of Polypodium vulgare L. Rhizome on Anxiety and Depressive-Like Behaviors in Restraint-Subjected Mice: Involvement of Inflammatory, Oxidative and Apoptotic Pathways

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Background and Aim : Depression is a potentially life-threatening mental condition and will rank as the second global burden of disease by 2030. Developing drugs with higher efficacy and fewer side effects for psychological disorders has always been of interest. The rhizome of Polypodium vulgare L. (common polypody) has been used as a mood stabilizer in Persian Medicine (PM). The present study evaluates the anxiolytic and antidepressant effects of the hydroethanolic extract of common polypody rhizome (PEE) and the possible underlying mechanisms in mice subjected to chronic restraint stress (CRS).

Methods : Hydroethanolic extraction (Ethanol: Distilled Water; 70:30), phenolic and flavonoid contents as well as physicochemical analyses were assessed (Voucher No.: SSU0063). Sixty NMRI male mice were randomly divided into eight groups. One group was considered as the non-stressed control group. Six groups were exposed to CRS and received either a vehicle (Tween 80 - 1%), fluoxetine, or PEE (at doses of 250, 500, 1000, and 1500 mg.kg-1) by gavage. One group underwent CRS without any treatment. The forced swim test (FST), tail suspension test (TST), open-field test (OFT), and elevated-plus maze (EPM) were conducted to evaluate depressive-like and anxiety-like behavior. Inflammatory, and apoptotic markers, as well as brain-derived neurotrophic factor (BDNF), were measured in the prefrontal cortex (PFC) and hippocampus (HIP) using ELISA and Western Blotting methods. Oxidative parameters were analyzed in above tissues according to the following manufacturer's protocol. Corticosterone levels were also assessed in serum samples. One-way or two-way analysis of variance (ANOVA) followed by a post-hoc Tukey test was conducted. Graph Pad Prism (version 5.00) was used for statistical evaluation. (Ethical Approval No. IR.SSU.REC.1400.092)

Results : The total phenolic and flavonoid contents were 93 mg GAE.g-1 and 173 mg QE.g-1 of plant weight, respectively (Yielded Extraction: 27.55%). Moreover, the total and acid-insoluble ash were 3.91% and 0.01 mg.g-1 of plant weight, respectively. The moisture value was 1.03% as the index of material weight loss. Polypody rhizome increased the time spent in the central zone of the OFT, as well as the time spent and the number of entries into the open arms of the EPM, while it decreased the immobility time in the FST and TST. Administration of PEE caused a significant decline in serum levels of corticosterone, as well as tissue levels of malondialdehyde (MDA) as a biomarker of lipid peroxidation and pro-inflammatory cytokines including tumor necrosis factor-alpha (TNFα) and interleukin-1 beta (IL-1 β). Additionally, it increased superoxide dismutase (SOD) activity as an antioxidant enzymatic scavenger in the PFC and HIP. Polypody rhizome also restored total antioxidant capacity (TAC), glutathione peroxidase (GPx) activity, and BDNF expression in the HIP. Moreover, the anti-apoptotic factor Bcl-2 was promoted in the PFC, and Bax and caspase-3 expressions as pro-apoptotic factors were downregulated in both regions with PEE administration.

Conclusion : Polypody rhizome exerted anxiolytic and antidepressant effects in behavioral tests and reversed CRS-induced oxidative, inflammatory, and apoptotic alterations which may be associated with its phenolic and the considerable amount of flavonoid contents.

The effect of Nigella sativa extract on Leishmania major: An in vitro study

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Background and Aim : Leishmaniasis is wide range, worldwide, without drug, vaccine, secticide and has not sterile immunity and efforts in this field have not been successful. The disease affects the poorest people on the planet, and is associated with malnutrition, population displacement, poor housing, a weak immune system and lack of resources. Leishmaniasis is linked to environmental changes such as deforestation, building of dams, irrigation schemes and urbanization. Herbaceous plants tomentose perennial official Siah Daneh and scientific name Nigella sativa. Nigella sativa L. is an annual dicotyledonous of Ranunculaceae family known commonly as "Siah Daneh" (Persian) and "Black Cumin" (English). Many therapeutic effects of Nigella sativa, such as: antibacterial, Antifungal, anti- helminthes, antiprotozoal, anti- inflammatory, antioxidant is reported. The present study was carried out to the effect of Nigella sativa extract on Leishmania major: An in vitro study.

Methods : Amastigote was isolated from mice spleens and then transformed to promastigotes in Novy-Nicolle-Mac Neal (NNN medium supplemented with penicillin (100 U/ml), streptomycin (100µg/ml) and 20% heat-inactivated fetal calf serum (FCS) at 25°C. A fixed initial density of the parasites was transferred to screw-capped vials containing 5 ml of RPMI1640 media to which different concentrations of 0.8, 4, 20 and 100 µg NSE were added and each concentration was done in triplicates. Each run also included control. The mortality of parasitoids was measured by the enzyme-linked assay (ELISA) methods. After 72 hour, the percent inhibition was supper in all doses in stationary and logarithmic phases. As shown, after 48hour, viability of parasites in PMs significantly decreased in NSE 0.8, 4, 20 and 100 µg treatment compare to control group.

Results : The percentage inhibition of NSE and stationary and logarithmic phases of Leishmania major [MRHO/IR/75/ER] showed that the % inhibition is density in time (hour). After 72 hours, the %inhibition was excellent in all doses in stationary and logarithmic phase. As shown, after 48h, viability of parasites in PMs significantly decreased in NSE 0.8, 4, 20 and 100 µg treatment compare to control group (P=0.001).

Conclusion : Our result indicated that NSE could increase mortality of L. major and this effect was dependent to time. The time dependent effect of these plant products may be due to the uptake of the active moiety which progressively increases the amount of active component in Leishmania body with increase in exposure period or it may be possible that the active component (s) could change into more toxic forms in the Leishmania body by the action of different enzymes. Cytotoxicity activity of NSE was researched in several different studies. Recently, antiviral activity of asafoetida was assessed against some human rhinovirus serotypes. The results show that NSE could prevent from growth and viability of parasites and this can be useful for treatment of Leishmaniasis.

TRADITIONAL AND INTEGRATIVE MEDICINE

A systematic review of medicinal plants used in the treatment of postpartum pain

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Background and Aim : Postpartum pain or uterine contractions are one of the common problems in the postpartum period that significantly affects the quality of life of mothers. Given the side effects of chemical drugs, as well as mothers' anxiety and concern about the pharmacological effects of drugs for themselves and their babies, today, mothers' tendency to use herbal medicines to relieve postpartum pain has increased. In recent years, with the need for evidence-based clinical practice becoming clear, there is a need for quality and appropriate information, so the present review study was conducted with the aim of examining clinical trial studies conducted on medicinal plants used in the treatment of postpartum pain.

Methods : In this study, a systematic review of information related to the effect of medicinal plants on postpartum pain was conducted from the databases Scopus, MedLib, Science Direct, Magiran, Google scholar, Iran Medex, SID, PubMed, Cochranelibra, science of Web with the English keywords, Herbal medicine, Pain, Postpartum program, Postpartum care, Postnatal care plants Medicinal and Clinical trial and without time limit. Based on the jaded scale, articles that received a score of 3 or more were included in the study. Data analysis was qualitative

Results : In this study, 16 clinical trials including medicinal herbs (lavender, black cumin, cumin, ginger, anise, celery, saffron, dill, wheat germ, purslane, Shirazi thyme, Salvia hydrangea, valerian, fennel, and chamomile) were examined. All herbs had a favorable effect on relieving postpartum pain. Most of these herbs had no or minimal side effects. Because the methodology of the studies was heterogeneous in terms of quality, it was not possible to conduct a meta-analysis.

Conclusion : Various studies have shown that medicinal herbs can be effective in reducing postpartum pain and in some cases are even more effective than chemical drugs such as mefenamic acid and ibuprofen and are associated with fewer side effects. These plants relieve pain and reduce anxiety through mechanisms such as cyclooxygenase inhibition, reduction of prostaglandin production, antispasmodic effects, sedative effects, and cortisol regulation. In general, all medicinal plants used (lavender, black cumin, cumin, ginger, anise, celery, saffron, dill, wheat germ, purslane, Shirazi thyme, Salvia hydrangea, valerian, fennel, and chamomile) reduced postpartum pain, but the number of these studies for each plant is small, so there is not enough clinical evidence for practical use for each plant and more studies are needed in this field.

Potential Role of Viola Odorata (Sweet Violet) in Cancer Care

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Background and Aim : Viola odorata (sweet violet) has been used for centuries in traditional Persian and European medicine to manage respiratory, inflammatory, and neurological conditions. Its phytochemical composition includes flavonoids, anthocyanins, alkaloids, and saponins, compounds known for their antioxidant and anti-inflammatory activities. These properties have drawn attention to the potential application of V. odorata in oncology, both as a preventive agent against carcinogenesis and as an adjuvant therapy to improve patient well-being.

Methods : By searching in some databases, including PubMed, Google Scholar, Web of Science, and Magiran, a narrative review of published studies was conducted, focusing on the pharmacological properties of V. odorata relevant to cancer. Evidence was gathered from both in vitro and in vivo experimental models, as well as initial clinical observations. Particular emphasis was placed on antioxidant, anti-inflammatory, immunomodulatory, and cytotoxic mechanisms.

Results : Preclinical investigations provide several lines of evidence supporting the anticancer potential of V. odorata. In vitro studies have shown that ethanolic and aqueous extracts can suppress proliferation and induce apoptosis in various cancer cell lines, including breast and liver cancers. Animal models corroborate these findings, demonstrating reduced tumor growth following administration of violet extracts. Mechanistically, the plant appears to mitigate oxidative stress, prevent DNA damage, downregulate inflammatory pathways, and enhance apoptotic signaling in malignant cells. Limited pilot studies in clinical data suggest that violet-based formulations may offer benefits in managing respiratory issues and decreasing inflammatory discomfort in patients undergoing chemotherapy. No large-scale randomized controlled trials have specifically assessed the efficacy of V. odorata in cancer prevention or treatment, and its role in oncology remains exploratory.

Conclusion : The available evidence indicates that Viola odorata possesses promising antioxidant, anti-inflammatory, and pro-apoptotic activities that could contribute to cancer care. Preclinical models consistently demonstrate antitumor effects, while preliminary human studies point toward improvements in quality of life. Nonetheless, the absence of robust clinical trials prevents definitive recommendations for its use in oncology. Future research should prioritize well-designed randomized studies to evaluate both the efficacy and safety of V. odorata as an adjunctive therapy in cancer patients.

TRADITIONAL AND INTEGRATIVE MEDICINE

A Review of the Effect of Herbal and Complementary Medicine in Managing Chemotherapy-Induced Hand-Foot Syndrome

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Background and Aim : Hand-Foot Syndrome (HFS) is a common side effect of chemotherapy drugs like capecitabine and liposomal doxorubicin. It manifests as redness, swelling, itchiness, and pain, affecting quality of life and treatment adherence. Traditional treatments include reducing chemotherapy dosage and using topical emollients or corticosteroids, but these are effective in only 30–50% of cases, with frequent recurrences. As a result, integrative medicine approaches, including herbal and complementary therapies, are being explored.

Methods : A literature review was performed using PubMed, Scopus, and SID databases up to 2025. Clinical trials, randomized controlled studies, and systematic reviews assessing herbal, nutritional, and complementary interventions for chemotherapy-induced HFS were included in this analysis.

Results : Based on the results of some research, Topical herbal preparations with anti-inflammatory and antioxidant properties (e.g., aloe vera, chamomile, and Viola odorata) applied 2–3 times daily for 2–4 weeks have demonstrated a reduction in erythema and inflammation. Viola odorata (sweet violet), used as an oil or ointment applied twice daily to affected areas for at least 14 days, has shown beneficial effects in alleviating inflammation, pruritus, and xerosis. Nutritional supplements such as vitamin B6 (50–150 mg/day) and omega-3 fatty acids (1–3 g/day) during chemotherapy have been associated with symptomatic improvement. Complementary practices, including gentle massage with herbal oils or cold compresses, applied daily or at symptom onset, are supportive measures with positive outcomes.

Conclusion : Integrative medicine offers valuable supportive options for managing chemotherapy-induced hand-foot syndrome (HFS). Viola odorata is particularly noteworthy because of its anti-inflammatory and antipruritic (itch-relieving) properties when used both topically and orally. However, larger controlled trials are needed to standardize the dosage, duration, and methods of administration.

Teucrium orientale as a promising candidate for complementary medicine in breast cancer treatment

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Background and Aim : Plants have served as an important vital source of natural remedies in traditional medicine. With the increasing mortality from cancer and drug's side effects, there is a growing interest in investigating plant compounds as potential anticancer agents. In contrast to conventional chemotherapy, herbal remedies often have fewer side effects and exhibit less toxicity to normal cells. Moreover, herbal medicines may enhance the efficacy of conventional treatments while improving patients' quality of life. Therefore, further investigation into medicinal plants holds promise in cancer prevention and treatment. Iran has a rich and diverse vegetation, but most of these plants have not yet been investigated. The integration of ethnobotanical knowledge with advanced scientific research accelerates the development of effective and sustainable cancer therapies. In the present study, Teucrium orientale collected from Ilam Province of Iran were evaluated for cytotoxic effects.

Methods : T. orientale collected from Ilam Province, were authenticated by botanists. Voucher number were properly assigned and voucher specimens deposited in the herbarium of Traditional Medicine and Materia Medica Research Center (TMRC), Shahid Beheshti University of Medical Sciences, Tehran, Iran. Extraction from the aerial part was obtained by maceration with methanol. The dried extract was dissolved in DMSO and serial dilutions were prepared to reach the final concentrations 100, 50, 25, 12.5, 6.25, and 3.125 µg/mL. Cytotoxicity was evaluated by MTT assay against MCF-7 (human breast adenocarcinoma), HEPG-2 (human hepatocellular carcinoma), HT-29 (human colon adenocarcinoma), and A-549 (human non-small cell lung carcinoma) and MDBK (Madin-Darby Bovine Kidney) cell lines. According to Mosmann method, Absorbance for each well was measured at 570 nm, and the Percentage of cell growth inhibition and IC50 were calculated.

Results : The extract exhibited potent cytotoxic activity against MCF7 cell line with IC50=42.5 µg/mL. But, it had no significant effect on reducing the growth of other cell lines, up to a final concentration of 100 µg/mL.

Conclusion : T. orientale demonstrated selective cytotoxicity effects against MCF-7 cells. So far, there have been no reports about cytotoxic effects of T. orientale on MCF-7. Given the importance of breast cancer treatment, this plant could be a proper candidate for bioassay guided fractionation and isolation of active ingredients with cytotoxic effects. Due to the existence of multiple bioactive compounds in this plant, additional studies are necessary to discover new substances with anticancer properties. Therefore, further studies about these species are recommended.

Evaluation of Traditional Persian Medicinal Herbs for Menopause-associated Depression and Cognitive Decline: An Evidence-Supported Review of the Persian Medicine Textbooks

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Background and Aim : Menopause is a hormonal transition characterized by declining estrogen levels and commonly linked to depression, anxiety, memory deficits, and reduced cognitive performance. In Persian Medicine (PM), these symptoms are addressed holistically through the concept of a functional axis between the uterus (rahem) and brain (demagh). This paradigm has informed the traditional use of herbal remedies, which are intended to act on both systems concurrently. This study aimed to identify such plants documented in PM texts and assess their contemporary scientific evidence related to menopausal depression and cognitive dysfunction.

Methods : This study employed a two-phase approach combining traditional and modern data sources. First, a thematic qualitative review was conducted using the Noor Traditional Medicine Library. Major classical Persian texts were reviewed. Over 350 medicinal plants were initially identified, and 32 herbs were selected based on their consistent mention across multiple sources as agents affecting both the uterus and the brain. In the second phase, a structured literature review was performed using PubMed, Scopus, and Google Scholar. Articles were screened for modern scientific evidence, including clinical trials and preclinical studies (both in vivo and in vitro).

Results : Out of the 32 selected medicinal herbs, three showed strong clinical evidence for dual effects on both cognitive and reproductive axes. These included Vitex agnus-castus, Crocus sativus, and Matricaria chamomilla, each supported by multiple human trials demonstrating improvements in menopausal symptoms, mood, and cognitive function. An additional three herbs, Asarum europaeum, Artemisia absinthium, and Olea europaea, exhibited strong clinical evidence specifically for cognitive or neuropsychological benefits, although reproductive effects were less consistently documented. Three more herbs, namely Acorus calamus, Teucrium polium, and Ruta graveolens, had supportive preclinical evidence for dual actions on both uterine and neurocognitive functions in animal models. Another group of nine herbs, including Jasminum officinale, Calendula officinalis, Capparis spinosa, Piper nigrum, Laurus nobilis, Cyperus rotundus, Zingiber zerumbet, Cinnamomum zeylanicum, and Peganum harmala, showed promising preclinical neurocognitive effects. However, evidence on reproductive function was either lacking or inconsistent. A subset of three herbs, Ferula assa-foetida, Melilotus officinalis, and Artemisia vulgaris, displayed preclinical or in vitro effects on reproductive parameters, but limited or no evidence on neurocognition. Finally, the remaining nine herbs had limited or no documented scientific evidence for either axis in modern literature, despite their recurrent mention in traditional Persian medical sources.

Conclusion : This review highlights a subset of Persian medicinal plants with validated or promising evidence for managing menopausal cognitive and emotional symptoms. The convergence of traditional insights with modern neuroendocrine research underscores the therapeutic potential of several herbs, while also identifying neglected candidates for future investigation.

A Systematic Review of Clinical Evidence on the Efficacy of Traditional Persian Medicinal Plants in the Management of Obesity and Metabolic Syndrome

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Background and Aim : Obesity and metabolic syndrome represent global health burdens with rising prevalence and limited long-term therapeutic options. In Traditional Persian Medicine (TPM), humoral imbalances—particularly cold-wet dystemperament—are closely associated with obesity pathogenesis. This systematic review aimed to evaluate the clinical efficacy of TPM-based herbal formulations in the management of obesity and its related cardiometabolic outcomes.

Methods : This systematic review was conducted according to PRISMA guidelines. Electronic databases (PubMed, Scopus, and SID) were searched using the following search terms: "Traditional Persian Medicine", "herbal", "obesity", "overweight", "metabolic syndrome", and "randomized clinical trial". Studies were included if they were randomized controlled trials (RCTs) or systematic reviews assessing TPM-based herbal formulations for weight management in adults. Exclusion criteria included non-clinical studies, protocols, and single-herb trials outside TPM context. Risk of bias was assessed using the Cochrane Risk of Bias tool.

Results : From 143 records, five studies met the inclusion criteria: three RCTs and two reviews. A double-blind RCT of the Komouni formulation (Bunium persicum, Pimpinella anisum, Foeniculum vulgare, Trachyspermum ammi) in overweight women demonstrated significant improvements in body weight (-4.8 vs. -3.2 kg; P=0.0001), BMI, LDL cholesterol, and fasting glucose. Another RCT assessing a TPM herbal candy containing Portulaca oleracea, Plantago ovata, and peanut oil showed significant appetite suppression and reductions in anthropometric indices (P<0.001). No severe adverse events were reported. All interventions adhered to TPM's humoral principles aimed at reducing cold and moist imbalances.

Conclusion : Clinical evidence supports the potential efficacy and safety of TPM-based herbal formulations in managing obesity and related cardiometabolic risks. These interventions, particularly when tailored to individual temperamental profiles, may serve as effective complementary therapies. Further well-designed, large-scale trials are needed to substantiate their role in evidence-based obesity management.

TRADITIONAL AND INTEGRATIVE MEDICINE

Edible Fig (Ficus carica) in Female Fertility and Pregnancy: A Nutritional and Therapeutic Perspective

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Background and Aim : The edible fig (Ficus carica) is among the oldest cultivated fruits globally, revered both in traditional medicine and modern nutritional science for its broad therapeutic properties. Native to Iran, particularly the Fars Province's Estahban County—with some fig trees exceeding 400 years—this region is notable for producing the renowned dryland variety known as "Sabz Estahban." In Persian Medicine, figs have long been used to treat digestive disorders, serve as natural laxatives, act as kidney tonics, and provide essential nutritional support. They are also believed to raise overall body vitality and support reproductive health and fertility, particularly in women. This study offers a unique insight into the role of the fig in fertility, menstruation, and pregnancy.

Methods : An extensive literature review was conducted using scientific databases, PubMed, ScienceDirect, Google Scholar, and SID. Keywords such as "Ficus carica," "female reproductive health," "fertility," "Iranian traditional medicine," and "Persian Medicine" guided the search. Accordingly, the primary Persian medical texts—including Avicenna's Canon of Medicine, Tankabani's Tuhfat al-Mu'minin, and Aqili Khorasani's Makhzan al-Adwiya were also analyzed to integrate classical knowledge with contemporary scientific findings.

Results : Figs are nutrient-dense, rich in water, carbohydrates, natural sugars, dietary fiber, vitamins A and K, and essential minerals such as magnesium, potassium, and calcium. Clinical and traditional data suggest that daily consumption of figs, particularly when paired with milk on an empty stomach, may mitigate pregnancy complications such as premature rupture of membranes (PROM). Additionally, fig syrup or fig-walnut combinations effectively alleviate functional constipation—a common pregnancy complaint—thereby enhancing maternal well-being. Consuming dried figs during menstruation has been associated with reduced dysmenorrhea, associated symptomatology, and stress. Mechanistically, figs enhance ovarian follicle quality, increase endometrial thickness, and regulate estrogen-progesterone balance, supporting improved ovulation and fertility in both sexes. Experimental studies highlight bioactive compounds, especially flavonoids and terpenoids, with antimicrobial and antiviral properties that aid in treating vaginal infections and maintaining reproductive tract health. Additionally, figs show potential in managing menopause-related hormonal imbalances in women.

Conclusion : Current evidence highlights the potential of figs to support women's reproductive health by lowering risks such as premature rupture of membranes and constipation, alleviating menstrual discomfort, and enhancing fertility. Its antimicrobial effects further aid in managing infections. As a natural and culturally valued food, fig offers a promising complementary approach in integrative reproductive care. Further clinical trials are needed to confirm these benefits.

Effect of rosa damascene aromatherapy on anxiety and sleep quality in patients hospitalized in Critical Care Unit

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Background and Aim : Anxiety and sleep disorders are the most common disorders of patients admitted to the cardiac care units. The purpose of this study is to investigate the effect of Rosa damascene fragrance on anxiety and sleep quality of hospitalized patients in the cardiac care units.

Methods : In this Randomized clinical trial, 60 patients who had the inclusion criteria were conveniently sampled and randomly allocated to the experimental and control groups. Patients were enrolled in the study 24 h after hospitalization. Those diagnosed with dysrhythmia, ACS, and CHF were included. Patient recruitment lasted from October 2018 to December 2019. In these groups, in addition to the routine care, the intervention was performed for three consecutive nights from 22:00 to 06:00. In the experimental group, patients inhaled five drops of Rosa damascene essence 40% in distilled water, while in the control group, patients inhaled five drops of distilled water as placebo. In both groups, anxiety and sleep quality were examined before and after three consecutive nights using the St. Mary's Hospital Sleep Quality Questionnaire (SMHSQ) and the Spiel Berger State-Trait Anxiety Inventory (STAI) questionnaire.

Results : The results of this study showed that the use of Rosa damascene aroma in patients hospitalized in the cardiac care unit significantly reduces anxiety and increases the improvement of sleep quality in the experimental group compared to the control group ($P < 0.05$). The significance level for anxiety and sleep quality was ($P = 0.001$).

Conclusion : Aromatherapy with Rosa damascene reduces anxiety and increases the sleep quality of patients hospitalized in the cardiac care unit. Therefore, along with other treatment measures, Rosa damascene can be used as a complementary method to reduce anxiety and improve sleep quality.

Excipients in Traditional Persian Pharmacy and Current Pharmaceutical Sciences: A Critical Comparison

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Background and Aim : Introduction: Excipients are essential components of pharmaceutical formulations that play vital roles such as carriers, stabilizers, solubility enhancers, and drug absorption and taste modifiers to increase stability, efficacy, and patient acceptance. This study examined the complex use of excipients in traditional Persian medicine and shows that historical formulations have had multifunctional components, often playing dual therapeutic and adjuvant roles.

Methods : Methods: A systematic analysis was conducted by examining Persian medicine pharmacopoeias to extract traditional pharmaceutical formulations and excipients. These findings were critically evaluated through the lens of current pharmaceutical sciences and historical practices with contemporary knowledge.

Results : Results: This research revealed that traditional Iranian pharmacy used a wide range of natural materials as functional excipients. The study identified and categorized excipients based on their technical roles. The use of natural emulsifiers such as polysaccharide gums and sterol-rich compounds; antimicrobial preservatives such as cinnamon and honey; antioxidants, pH modifiers including vinegar and borax, and viscosity-increasing agents using gums and mucilage demonstrates a sophisticated understanding of formulation stability and control in traditional Persian pharmacy. It is worth noting that the use of penetration enhancers such as camphor, which are explicitly described as facilitators of drug delivery to the depths of the body, demonstrates an empirical understanding of increasing bioavailability.

Conclusion : Conclusion: This study confirmed that traditional Persian pharmacy is based on a broad set of principles, including the use of multi-functional excipients, providing valuable insights for contemporary drug design and highlighting the potential for rediscovery and optimization of forgotten traditional formulations. Keywords: Excipient, Persian Medicine, Pharmaceutics, Traditional Medicine, Natural

The effect of lavender aromatherapy with and without music on the reactivity time of the non-stress test and basal fetal heart rate in primiparous women: A randomized clinical trial

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Background and Aim : NST is the most common used test for assessment of fetal well-being. One of the things that is less investigated in studies is the reactivity time of the NST. Therefore, this study was designed with aim to whether lavender oil aromatherapy with and without music is effective on the reactivity time of NST and the basal fetal heart rate in primiparous women.

Methods : This randomized clinical trial was conducted on 195 primiparous women with a gestational age of 32-41 weeks who referred to the prenatal clinic of Shahid AkbarAbadi educational and medical center in Tehran for an NST. Participating mothers were randomly divided into three groups (n=65 each): lavender aromatherapy, lavender aromatherapy-music, and control. This means that fetal heart rate reacts to movement. It must react two times within a 20-minute testing period to get a reactive result. The reactivity time of the NST means the time from the start of NST until the first fetal movement. Before the NST, interventions were carried out for 20 minutes. In the lavender aromatherapy group, four drops of 10% lavender oil was inhaled. In the lavender aromatherapy-music group, participants also listened to music (nature sounds) in addition to inhaling lavender oil. In the control group, to eliminate ambient noise, earphones were placed without playing music and distilled water was used as a placebo. After the intervention, NST was performed in all three groups. The time between the start of the NST and the end of the second acceleration in the NST strip was considered as the reactivity time. The data were analyzed by statistical software (version 16), one-way analysis of variance, Tukey's post hoc, paired t-test, chi-square, and Fisher's exact tests. A p-value <0.05 was considered statistically significant.

Results : In the two intervention groups (lavender aromatherapy and the combination of lavender aromatherapy-music), the mean reactivity time of the NST was statistically lower than the control group (7.05 ± 4.11 minutes, 6.04 ± 3.59, 10.43 ± 5.32 minutes, $p<0.001$, respectively). There was no significant statistical difference between the two intervention groups in reactivity time of the NST. 98.5% of the cases within both intervention groups and 80% in the control group, the NST results were reactive. The basal fetal heart rate was not statistically significant in all three groups.

Conclusion : This study results showed that the lavender aromatherapy and music did not have a more effect on shortening the reactivity time of the NST when compared to lavender oil use alone. Therefore, lavender aromatherapy alone can be used to reduce the reactivity time of the NST. Key words: lavender aromatherapy, music, reactivity time of the non-stress test, primiparous women

TRADITIONAL AND INTEGRATIVE MEDICINE

Validating Persian Medicine: Cuscuta epithymum Extract Preserves Reproductive Health in Pre-Gestational Stress Exposure

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Background and Aim : Pre-gestational stress impairs reproductive function by disrupting sex hormone balance and gamete quality. This study evaluated Cuscuta epithymum (CE), a traditional medicinal plant, for mitigating stress-induced reproductive dysfunction in rats and transgenerational impacts on offspring

Methods : Animals & Design: 64 female/36 male Wistar rats were allocated to: • Control (no stress/extract) • CE Extract (100 mg/kg/day orally) • Stress (2h/day immobilization) • Stress+CE (concomitant treatment) Stress duration: 50 days (males; spermatogenesis cycle), 15 days (females; 3 estrous cycles). Assessments: • Parents: Sperm count/motility/morphology (epididymal sampling); vaginal epithelium thickness (H&E staining); vaginal pH; serum testosterone/estradiol (ELISA). • Offspring: Litter size, sex ratio, postnatal day (PND) 25 hormone levels. Statistical Analysis: One-way ANOVA (SPSS v22); *p*<0.05 significant.

Results : Parental Reproductive Parameters: • Sperm: Stress reduced count (1.68±0.42 vs. Control 3.78±0.9 million/mL; *p*=0.002), progressive motility (7.26±1.21% vs. 33.88±11.25%; *p*=0.001), and viability (44.75±5.78% vs. 65.04±12.43%; *p*=0.000). CE co-administration restored motility (33.22±9.65%; *p*=0.001 vs. Stress) and viability (69.6±5.49%; *p*=0.001). • Vaginal Epithelium: Stress reduced thickness (1696.2±182.74 vs. Control 2593.12±277.88 µm; *p*=0.005). CE reversed this (2503.37±205.6 µm; *p*=0.000). • Hormones: Stress lowered testosterone (males: 0.82±0.15 vs. 2.12±0.48 ng/dL; *p*=0.002) and estradiol (females: 26.8±3.18 vs. 44.2±36.77 pg/mL; *p*=0.048). CE increased testosterone (3.08±0.57 ng/dL; *p*=0.001) and estradiol (72.26±13.15 pg/mL; *p*=0.027). Offspring Outcomes: • Sex Ratio: Stress reduced male offspring (6 vs. Control 12; *p*=0.018). CE increased males (25; *p*=0.002). • Litter Size: Stress reduced offspring (20 vs. Control 29; *p*=0.041 with CE). • Hormones: Stress lowered testosterone in male offspring (0.24±0.09 ng/dL; *p*=0.031). CE restored levels (1.37±0.18 ng/dL; *p*=0.009).

Conclusion : CE extract counteracted pre-gestational stress effects by: 1. Restoring sperm quality via antioxidant flavonoids (quercetin, myricetin). 2. Normalizing vaginal histology/pH and serum sex hormones. 3. Preventing male-biased offspring loss, likely by protecting Y-chromosome-bearing sperm. Mechanistically, CE mitigates glucocorticoid-induced HPA axis dysregulation and oxidative damage to reproductive tissues. Our findings align with traditional use of CE for infertility and stress-related reproductive disorders. CE extract counteracted pre-gestational stress effects by: 1. Restoring sperm quality via antioxidant flavonoids (quercetin, myricetin). 2. Normalizing vaginal histology/pH and serum sex hormones. 3. Preventing male-biased offspring loss, likely by protecting Y-chromosome-bearing sperm. Mechanistically, CE mitigates glucocorticoid-induced HPA axis dysregulation and oxidative damage to reproductive tissues. Our findings align with traditional use of CE for infertility and stress-related reproductive disorders.

A Comprehensive Multidisciplinary Overview of Silybum marianum (Milk Thistle): Phytochemistry, Therapeutic Prospects, Clinical Evidence, and Economic Perspectives

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Background and Aim : Silybum marianum (L.) Gaertn., commonly known as milk thistle, is a member of the Asteraceae family with a long-standing history in traditional medicine and a growing body of modern scientific support for its therapeutic potential. Its principal bioactive fraction, silymarin—a complex of flavonolignans including silybin, silychristin, and silydianin—has demonstrated hepatoprotective, antioxidant, anti-inflammatory, antidiabetic, anticancer, neuroprotective, nephroprotective, immunomodulatory, and dermatological effects. This review provides a broad, narrative synthesis of the plant's botanical characteristics, historical uses, chemical constituents, mechanisms of action, clinical relevance, economic value, and agronomic considerations.

Methods : Extensive searches were conducted across PubMed, Scopus, Web of Science, ScienceDirect, and Google Scholar for the years 2000–2024. Experimental, clinical, and review studies addressing phytochemistry, pharmacology, therapeutic applications, and agricultural aspects were critically assessed and integrated into a descriptive analysis.

Results : Preclinical investigations and clinical trials support the utility of S. marianum in chronic liver disorders, metabolic conditions, and other oxidative stress–related diseases. Nonetheless, variations in study design and the absence of standardized silymarin formulations complicate dose–response evaluation and clinical translation. Beyond healthcare, milk thistle contributes significantly to the global nutraceutical industry and is incorporated into functional foods, cosmetic formulations, and veterinary products. Agronomically, the plant is hardy and environmentally adaptable, making it suitable for cultivation in marginal lands and offering potential for sustainable agricultural and economic development.

Conclusion : Silybum marianum serves as a bridge linking traditional herbal medicine, contemporary pharmacotherapy, and eco-friendly agriculture. To fully harness its therapeutic and commercial promise, well-designed clinical trials, deeper mechanistic studies, and harmonized cultivation and regulatory standards are urgently needed.

TRADITIONAL AND INTEGRATIVE MEDICINE

Evaluation of the Effect of Pistacia atlantica Oleoresin on Blood Sugar, Blood Pressure and Lipids in Patients With Type 2 Diabetes

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Background and Aim : Diabetes mellitus (DM) is a chronic metabolic disorder characterised by high blood sugar (BS) levels due to impaired insulin production or insulin resistance. It is a global health concern with significant implications for morbidity and mortality. Persian medicine has long utilised natural remedies, such as Pistacia atlantica Desf., for various diseases. In this randomized clinical trial, the effects of P. atlantica oleoresin in the improvement of lipid profiles, glucose indices and blood pressure (BP) were assessed in patients with Type 2 DM.

Methods : In this randomised, single-blind, placebo-controlled study, 42 patients with Type 2 DM were randomly allocated to receive either P. atlantica oleoresin or placebo capsule for 3 months. Patients were evaluated prior to and 12 weeks after the beginning of the intervention, in terms of changes in lipid profiles, glucose indices and BP.

Results : After 3 months, the mean BP in patients with DM receiving P. atlantica oleoresin was significantly reduced compared with the baseline ($p = 0.001$). Also, these changes were significantly higher than those of the control group. The mean of total cholesterol ($p = 0.89$), low-density lipoprotein (LDL) ($p = 0.43$) and triglyceride (TG) ($p = 0.98$) in the intervention group after 3 months was lower than that in the control group, but this difference was not statistically significant.

Conclusion : After 3 months, there was no significant difference between the P. atlantica and control groups in terms of blood sugar and lipid profiles. The mean BP in patients with DM receiving P. atlantica oleoresin was significantly reduced compared with that in the beginning of the study. Also, these changes were significant compared with the control group.

The Effectiveness of Persian Herbal Medicines in the Management of Type 2 Diabetes: A Systematic Review

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Background and Aim : Type 2 diabetes mellitus (T2DM) is a prevalent metabolic disorder characterized by insulin resistance, hyperglycemia, and long-term complications. Conventional therapies may be limited by side effects, cost, or patient adherence issues. Persian medicine (PM), as a rich traditional system, offers a wide array of herbal remedies that have historically been employed to manage blood sugar levels. This review aims to systematically evaluate the clinical evidence on the efficacy of Persian medicinal plants in the management of T2DM.

Methods : A systematic search was conducted in PubMed, Scopus, Web of Science, Cochrane Library, SID, and IranMedex for studies published up to April 2025. Keywords included combinations of "Persian medicine," "herbal," "medicinal plants," "type 2 diabetes," and names of specific herbs (e.g., Trigonella foenum-graecum, Berberis vulgaris). Inclusion criteria were: (1) human studies; (2) randomized controlled trials (RCTs) or quasi-experimental designs; (3) use of herbs rooted in Persian medicine tradition; and (4) outcomes related to glycemic control. Exclusion criteria included animal studies, reviews, duplicate publications, and studies with unclear interventions or outcomes. PRISMA guidelines were followed, and study quality was assessed using the Cochrane Risk of Bias Tool.
Results : Out of 2,163 articles initially retrieved, 32 studies met the inclusion criteria. The final analysis included 26 RCTs and 6 quasi-experimental trials conducted in Iran and other countries. The most commonly studied herbs were Trigonella foenum-graecum (fenugreek), Berberis vulgaris (barberry), Cinnamomum verum (cinnamon), and Olea europaea (olive leaf). Fenugreek was associated with a mean reduction in fasting blood glucose (FBG) of 28.6 mg/dL (95% CI: 24.1–33.2) and HbA1c of 0.71% across 8 studies. Barberry extract showed significant reduction in FBG (24.9 ± 5.3 mg/dL) and postprandial glucose in 5 trials. Cinnamon demonstrated a pooled HbA1c reduction of 0.52% in 6 RCTs. Combination formulations, such as traditional multi-herb decoctions, also showed additive effects in glycemic control, with minimal reported side effects. The heterogeneity among studies was moderate ($I^2 = 47\%$), and publication bias was not significant.
Conclusion : The findings of this review suggest that several Persian herbal medicines have beneficial effects in lowering blood glucose levels in patients with T2DM. These herbs, particularly fenugreek and barberry, demonstrate statistically significant and clinically relevant improvements in glycemic markers. Their mechanisms of action likely involve enhancement of insulin sensitivity, antioxidant effects, and modulation of glucose metabolism enzymes. Although the results are promising, variation in dosage forms, treatment duration, and study quality highlight the need for standardized protocols and larger multi-center RCTs. Integrating validated Persian herbal treatments into modern diabetes care may provide a culturally acceptable, cost-effective adjunct for glycemic control, particularly in populations familiar with traditional medicine.

Herbal Approaches in the Management of Dry Eye and Conjunctivitis

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Background and Aim : Dry eye disease and conjunctivitis are among the most common ocular surface disorders, causing symptoms such as discomfort, redness, and foreign body sensation. Conventional management includes artificial tears, anti-inflammatory or antibiotic drops, and eyelid hygiene. However, these treatments often provide only temporary relief, and many patients experience recurrent symptoms, prompting interest in complementary and herbal therapies.

Methods : In this literature review a systematic search strategy was applied in PubMed, Scopus, and Google Scholar databases, including, covering studies published between 1990 and 2025. Search terms included combinations of “dry eye” “conjunctivitis,” “ocular surface disorders,” “herbal medicine,” and “medicinal plants”. Titles and abstracts were screened independently, followed by full-text assessment for eligible studies.

Results : Several medicinal plants demonstrate anti-inflammatory, antimicrobial, and antioxidant properties relevant to ocular health. Turmeric (curcumin) has potent anti-inflammatory effects, while neem (Azadirachta indica) exhibits broad-spectrum antibacterial activity suitable for ocular cleansing. Aloe vera and Tulsi possess antimicrobial and soothing properties, whereas chamomile is widely recognized for inflammations due to its anti-inflammatory and anti-irritant effects. Other plants, including viola odorata, fennel, guava leaves, licorice, coriander oil, castor oil, and curry leaves, have shown potential roles in reducing ocular inflammation, supporting tear film stability, and improving visual comfort. These herbal agents are traditionally used as diluted decoctions for eye washing or warm compresses. Despite extensive ethnomedical use, systematic clinical studies on efficacy, safety, and standardized formulations remain limited. The lack of controlled trials and variability in preparation methods hinder their integration into evidence-based ophthalmology.

Conclusion : In conclusion, herbal remedies may offer promising complementary strategies for the management of dry eye and conjunctivitis. Further well-designed clinical studies are essential to validate their therapeutic potential, ensure safety, and develop standardized ophthalmic formulations. This review highlights opportunities for integrating traditional knowledge with modern research to address unmet needs in ocular surface disease management.

Medicinal plants for Pemphigus Vulgaris viewpoint in Persian Medicine

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Background and Aim : Pemphigus vulgaris is a chronic autoimmune blistering disorder characterized by painful mucocutaneous erosions. Conventional treatments often have significant side effects, prompting interest in complementary therapies. Persian medicine has historically utilized various botanicals with anti-inflammatory and wound healing properties to manage such lesions. This review aims to evaluate the therapeutic potential of Plantago ovata, Plantago major, Portulaca oleracea, Curcuma longa, Cassia fistula, and Glycyrrhiza glabra in the context of pemphigus wound management.

Methods : A comprehensive literature search was conducted through databases including PubMed, Scopus, and traditional medicine texts focusing on the pharmacological properties and clinical applications of the selected botanicals. Emphasis was placed on their anti-inflammatory, immunomodulatory, antioxidant, and wound healing activities relevant to pemphigus lesions.

Results : Plantago ovata and Plantago major exhibit mucilaginous properties and promote epithelial regeneration, facilitating wound healing. Portulaca oleracea has demonstrated anti-inflammatory and antioxidant effects, aiding lesion repair. Curcuma longa (turmeric) is renowned for its potent anti-inflammatory and immunomodulatory effects, beneficial in autoimmune conditions. Cassia fistula, highlighted in Persian medicine, shows promising wound healing and antimicrobial properties. A double-blind clinical trial on Cassia fistula fruit gel showed that the epithelization index was significantly higher than the placebo group both on day 10 ($p=0.001$) and at the end of the study ($p=0.003$). The main biologically active compounds are found in the fruit of Cassia fistula include, flavonoids, anthraquinones and triterpenoids. They have antioxidant and immunosuppressive effects that promote wound healing and reduce edema and inflammation. They also decrease cellular infiltration and free radicals in the wound healing process in mice in vivo and in vitro. Glycyrrhiza glabra possesses anti-inflammatory and soothing effects that may alleviate lesion severity. These botanicals' synergistic properties potentially offer a complementary approach to conventional therapies in pemphigus management.

Conclusion : Botanicals traditionally used in Persian medicine, including Plantago species, Portulaca oleracea, Curcuma longa, Cassia fistula, and Glycyrrhiza glabra, exhibit wound healing and anti-inflammatory effects that may benefit patients with pemphigus vulgaris. Integrating these natural agents with modern treatments could improve clinical outcomes and reduce side effects. Further clinical studies are warranted to validate efficacy and safety.

The Histopathological protective Effects of Capparis spinosa Seed Extract on Cisplatin- induced-Nephrotoxicity in Rats

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Background and Aim : Capparis spinosa is an important medicinal plant in Persian medicine that encompasses high amounts of bioactive antioxidant components. Despite some therapeutic effects, cancer chemotherapy has side effects, including severe renal complications and renal failure in some cases and medications. The current study aimed to evaluate the histopathological nephroprotective effects of Capparis spinosa seed hydroalcoholic extract against cisplatin induced nephrotoxicity in rat model.

Methods : Forty Sprague Dawley rats weighing within the range of 220±20 gr were randomly divided into eight groups including control, a single-dose cisplatin intraperitoneally (IP) injected group (7 mg/kg), toxic dose of extract (200 mg/kg) group, and groups with cisplatin 7mg/kg IP and different doses of extract. Histopathological changes in the kidney tissues were quantified by the image-J program and analyzed by One-way ANOVA statistical methods.

Results : Infiltration of inflammatory cells in the kidney tissue and two categories of the histopathological changes (glomerular and tubular changes) were evaluated. cisplatin-induced tubular and glomerular injuries in the kidney tissue. A single-dose cisplatin decreased the glomerular area and Bowman's capsule area, increased Bowman's space, and induced tubular loss of brush borders, tubular dilatation, tubular cast formation and tubular necrosis. All of the changes were reversed by extract of plant significantly.

Conclusion : The accumulation of cisplatin in the proximal tubules leads to kidney toxicity, tubular injury, and cell death in a dose and time- dependent manner. Post administration of extract (doses 50 and 100 mg/kg) could significantly preserve kidney histology against cisplatin-induced kidney injury and indicated renoprotective effects. The previous report has shown anti-oxidative and anti-inflammatory effects and renoprotective effects of Capparis spinosa. These activities of Capparis spinosa are supported by ancient therapeutic effects of this plant Due to the significant protective effects of Capparis spinosa seeds hydroalcoholic extract in our study in that doses, more studies and clinical trials are recommended.

The Role of Cinnamaldehyde and Curcumin in Mitigating Hippocampal Injury Following Global Cerebral Ischemia: A Stereological Analysis

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Background and Aim : Global cerebral ischemia (GCI), often resulting from cardiac arrest, leads to a drastic reduction in cerebral blood flow, depriving brain tissue of oxygen and glucose. This results in neuronal damage, particularly in the hippocampal CA1 region, which is highly vulnerable to ischemic injury due to its sensitivity to oxidative stress and metabolic demands. Mechanisms such as caspase-3 activation, mitochondrial dysfunction, and the excessive generation of reactive oxygen species (ROS) contribute to apoptosis and necrosis. Naturally occurring compounds like cinnamaldehyde (CI), the principal bioactive component of cinnamon, and curcumin (CUR), a polyphenol found in Curcuma longa, have shown neuroprotective effects through antioxidant and anti-inflammatory pathways. This study aimed to investigate and compare the individual neuroprotective efficacy of CI and CUR in a rat model of transient GCI using stereological methods.

Methods : 20 adult male Wistar rats were randomly assigned into four groups (n=5 each): Sham, GCI, GCI+CUR, and GCI+CI. GCI was induced by a 20-minute bilateral occlusion of the common carotid arteries under anesthesia. CUR and CI groups received 100 mg/kg of the respective compound via oral gavage 15 minutes post-reperfusion. Twenty-four hours after GCI, rats were anesthetized, perfused, and their brains extracted. Serial sections of the hippocampus were stained with Cresyl Violet. Stereological analysis was performed using the Cavalieri and optical disector methods to estimate the volume of the CA1 region. as well as the total number and numerical density of pyramidal neurons.

Results : The Sham group exhibited the highest CA1 volume, neuron numbers, and numerical density. The GCI group showed significant reductions in all stereological parameters. Both CUR and CI groups demonstrated statistically significant preservation of hippocampal structure compared to the untreated GCI group. Among the two, the CI group showed greater neuroprotective efficacy, with higher values for CA1 volume and pyramidal neuron counts. The difference in efficacy may be related to bioavailability. This pharmacokinetic disparity could account for the more robust stereological improvements observed in the CI group.

Conclusion : Both CI and CUR, when administered individually, provided significant neuroprotection against GCI-induced damage in the hippocampal CA1 region. Cinnamaldehyde showed a greater protective effect than curcumin, likely due to its higher bioavailability. These findings support the potential of natural plant-derived compounds in mitigating neuronal injury following ischemic events. Further studies are warranted to optimize dosing and administration strategies to enhance their therapeutic efficacy.

Investigation of the Effects of Polygonatum orientale Desf. Rhizome on Learning, Spatial Memory, and Avoidance Memory in Adult Male Syrian Mice

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Background and Aim : Cognitive disorders, particularly Alzheimer's disease, are characterized by progressive impairments in memory and learning and impose a considerable burden on public health. Existing therapeutic options are largely symptomatic and fail to modify the underlying disease course, underscoring the urgent need for safe, multitarget interventions. Polygonatum orientale (Iranian "Shaghaghol"), traditionally recognized as a brain tonic in Iranian medicine, is rich in bioactive compounds with reported antioxidant and memory-enhancing properties. Nevertheless, its cognitive effects have not been experimentally validated. The present study is designed to investigate the effects of the extract of P. orientale rhizome on learning, spatial memory, and avoidance memory in adult male Syrian mice, thereby providing a scientific basis for its potential therapeutic application.

Methods : In this experimental study, adult male Syrian mice will receive rhizome extract of P. orientale at graded doses. Cognitive performance will be assessed using a battery of validated behavioral paradigms, including the T-maze, Novel Object Recognition test, Passive Avoidance (Step-Down) test, and Open Field test. Data will be subjected to appropriate statistical analyses to determine dose-dependent effects on learning and memory indices.

Results : It is anticipated that P. orientale extract will improve cognitive outcomes, potentially through mechanisms involving oxidative stress reduction and modulation of neurotrophic pathways. Treated animals are expected to demonstrate superior performance in spatial and avoidance memory tasks compared to controls, reflecting enhanced behavioral indices of learning and memory.

Conclusion : This study represents the first experimental evaluation of the cognitive effects of P. orientale and may contribute to the identification of plant-derived neuroprotective agents with translational potential for managing cognitive impairments and neurodegenerative disorders.

Potentiality of Morus Nigra Against Radio- or Chemotherapy-Induced Oral Mucositis: An Integrative Review from Persian Medicine to Modern Evidence

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Background and Aim : Oral mucositis (OM) is a frequent and debilitating complication of chemotherapy and radiotherapy, particularly in patients with head and neck cancers. It manifests as painful ulcerations that impair nutrition, reduce treatment adherence, and diminish quality of life. In Persian medicine, Morus nigra (black mulberry) has long been prescribed for oral ulcers and inflammatory conditions. Contemporary research has increasingly explored its bioactive compounds and therapeutic potential in managing OM.

Methods : A comprehensive narrative review was conducted through searches in PubMed, Scopus, Web of Science, Embase, and Google Scholar from inception to August 2025, using both MeSH and free-text terms related to Morus nigra, oral mucositis, chemotherapy, radiotherapy, and Persian medicine. Classical Persian medicine texts, including the Canon of Medicine, Al-Hawi, Makhzan al-Advia, Zakhireye Kharazmshahi, and Tohfat al-Mu'minin, were also analyzed. Preclinical and clinical studies were included if they examined Morus nigra or its compounds in relation to OM or related mechanisms such as oxidative stress, inflammation, and wound healing.

Results : In Persian medicine, M. nigra is described as having a cold and moist temperament, traditionally applied for "hot swellings" and oral ulcers. Phytochemical studies reveal high levels of anthocyanins, flavonoids, and phenolic acids with strong antioxidant and anti-inflammatory activity. In vitro and in vivo models demonstrate free radical scavenging, inhibition of NF-?B signaling, enhanced collagen deposition, and accelerated mucosal repair. Liposomal formulations of M. nigra extract achieved superior wound closure (99.7% at 48 h) compared to crude extract. Clinical trials, though limited, report significant reductions in OM severity, pain, and healing duration among patients receiving black mulberry syrup, molasses, or extract during chemotherapy or radiotherapy. Some studies also indicated improved weight maintenance and oral hydration.

Conclusion : Morus nigra exhibits promising antioxidant, anti-inflammatory, antimicrobial, and wound-healing properties relevant to the prevention and treatment of oral mucositis. Evidence from Persian medicine aligns with biomedical findings. However, current clinical studies remain small, heterogeneous, and methodologically limited. Future large-scale, standardized trials are warranted to confirm efficacy, define optimal formulations, and establish safety profiles. Integration of M. nigra into supportive oncology care holds potential as a natural, non-toxic adjunct for improving patient outcomes.

TRADITIONAL AND INTEGRATIVE MEDICINE

Pharmacokinetic interaction of Allium sativum L. by Cytochrome P450 in adult disease: A Scoping review

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Background and Aim : Nowadays, a variety of medicinal plants are used in complementary and alternative medicine for the prevention and treatment of various diseases. Garlic (Allium sativum L.), known as "Thom" in Persian medicine, is characterized by a warm and dry temperament and is widely used worldwide as a commonly consumed medicinal herb and dietary supplement. Organosulfur compounds such as diallyl sulfide (DAS) and allicin found in garlic have significant potential effects on various isoforms of cytochrome P450 (CYP450), which play a vital role in phase I drug metabolism. Therefore, this study aimed to investigate the precautions and drug interactions between garlic and CYP450 enzymes.

Methods : This study was conducted as a review of selected Persian medicine manuscripts as well as a scoping review of all articles and documents related to the precautions and drug interactions of garlic with CYP450, published in databases, including PubMed, Web of Science, Scopus, and Google Scholar search engines, from 2015 until the end of July 2025. Review and quality assessment were performed using the PRISMA-ScR guideline. Ultimately, a total of 47 articles were included in the study.

Results : A review of Persian medicine texts indicated that excessive garlic consumption can be harmful to patients with warm and moist temperaments, as well as those suffering from hemorrhoids, biliary disorders, neurological conditions, and headaches. Additionally, recent studies show that garlic's active compounds affect CYP450 enzymes through various biochemical pathways, including direct enzyme inhibition, gene transcription regulation, and modulation of drug transporters like P-glycoprotein. Among CYP450 isoforms, CYP2E1 experienced the most significant inhibition from sulfur compounds. Other isoforms such as CYP3A4, CYP1A2, and CYP2C9 showed variable responses-from inhibition to mild induction or no effect-depending on the garlic product type, dosage, and experimental model. Clinical evidence suggests garlic consumption interacts with drugs that have a narrow therapeutic index, including anticoagulants, antihypertensives, and certain antivirals primarily metabolized by CYP2E1 and CYP3A4. There are also scattered reports advising caution when using garlic alongside NSAIDs, lisinopril, and isoniazid.

Conclusion : The results of this study suggest that higher concentrations of garlic produce more significant effects, while long-term consumption at lower doses might reduce enzymatic inhibition. Additionally, variations in garlic product types and their compound profiles can influence CYP450 activity, especially CYP2E1, thereby affecting the pharmacokinetics of certain drugs. Due to limited evidence, careful clinical monitoring is advised when garlic is used alongside drugs metabolized by CYP450 enzymes. Keywords: Allium sativum L., Cytochrome P450, Interactions, Persian Medicine.

Efficacy of Azaraqi Majoon in Opioid Use Disorder: Evidence from Preclinical and Clinical Studies

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Background and Aim : Opioid Use Disorder (OUD) presents a formidable public health challenge in Iran, where opium remains the predominant abused opioid. Current pharmacotherapies are often hindered by relapse rates, limited efficacy, or adverse reactions. Traditional Persian medicine, particularly Azaraqi Majoon (commonly sold as Rahayesh), provides a compelling complementary approach. This 14-herb, honey-based remedy is quantified by strychnine and brucine concentrations and contains potent antioxidants, anti-inflammatories, and neuromodulators. This abstract integrates results from animal and human studies to directly evaluate the efficacy and safety of Rahayesh for OUD.

Methods : During the animal phase, 120 male rats underwent induction of opium dependence. Withdrawal was measured by naloxone-precipitated symptoms, and craving was assessed using the conditioned place preference (CPP) paradigm. Rats received intraperitoneal opium (50 mg/kg) and oral Rahayesh at doses of 50, 100, or 150 mg/kg for eight days. In the clinical phase, a randomized, double-blind, placebo-controlled trial was conducted in patients with OUD. Participants received either Rahayesh or a placebo for four weeks. Primary outcomes included drug craving and withdrawal manifestations, while secondary outcomes assessed depression, anxiety, stress, sexual function, and sleep quality. Adverse events were systematically monitored.

Results : attenuated withdrawal symptoms, including jumping, diarrhea, rearing, and grooming. In clinical participants, Rahayesh significantly reduced drug craving scores compared to placebo ($P < 0.01$). It also improved depression, anxiety, stress, sexual function, and sleep quality (all $P < 0.01$). No serious adverse effects or exacerbation of withdrawal symptoms were observed during treatment.

Conclusion : The convergence of animal and human findings suggests that Rahayesh acts on both physical and psychological dimensions of opioid dependence. Likely mechanisms include reduction of neuroinflammation, oxidative stress, and neurotransmitter imbalances, mediated by herbal constituents such as Strychnos nux-vomica, Echium amoenum, Lavandula angustifolia, Eugenia caryophyllata, and Santalum album. Preclinical data confirm its efficacy in reducing withdrawal and craving, while clinical results highlight broader improvements in psychological well-being, sleep, and sexual health. Importantly, Rahayesh demonstrated a favorable safety profile. Conclusion: Rahayesh, a traditional Persian multi-herbal formulation, shows promising efficacy in reducing craving, alleviating withdrawal symptoms, and improving psychological and functional outcomes in patients with OUD. Its favorable safety and multi-targeted therapeutic effects support its consideration as an adjunctive treatment in OUD management. Larger, long-term clinical trials are recommended to confirm these findings and further define their therapeutic role.

Effect of soy isoflavones supplementation on migraine characteristics, mental status and calcitonin gene-related peptide (CGRP) levels in women with migraine: results of randomised controlled trial

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Background and Aim : Literature suggests a relationship between estrogen levels and migraine headache pathogenesis. However, the effect of soy isoflavones on migraine characteristic remains unclear. This study aimed to investigate the effect of soy isoflavones on migraine characteristics and calcitonin gene-related peptide (CGRP) levels in women with migraine.

Methods : Eighty-three participants completed a randomized double-blind controlled trial, receiving 50 mg per day soy isoflavones or placebo supplementation for 8 weeks. Migraine severity, migraine days per month, frequency and duration of attacks, mental status, quality of life and serum CGRP levels were measured at baseline and the end of the intervention. Bivariate comparison and intention-to-treat (ITT) were used for analysis.

Results : Soy isoflavones intake resulted in a significant decrease in mean frequency (-2.36 vs -0.43, $P < 0.001$), duration (-2.50 vs -0.02, $P < 0.001$) of migraine attacks and CGRP level (-12.18 ng/l vs -8.62, $P = 0.002$) in compared to placebo group. Also, a significant improvement was found in quality of life (16.76 vs 2.52, $P < 0.001$). Although, reduction in the migraine severity and mental status did not reach a statistically significant level ($P > 0.05$).

Conclusion : soy isoflavones supplementation may be considered as a complementary treatment for women with migraine to improve migraine characteristics and reduce the burden of disease.

Effect of oral capsule of Peganum harmala seeds on bone density in menopausal women prone to osteoporosis

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Background and Aim : Osteoporosis is one of the most common metabolic bone diseases with systemic involvement of the body skeleton. The Peganum harmala seed contains high amounts of carboline alkaloids, which have been shown to have positive effects on bone formation in animal studies. In the present study, the effect of an oral capsule of P. harmala seed on bone density was evaluated in menopausal women prone to osteoporosis.

Methods : In this randomized controlled clinical trial, 100 women referring to the orthopedic clinic with a diagnosis of osteoporosis were included and divided into the intervention group treated with calcium D (500 mg) twice a day, Osteofos (70 mg) per week, and P. harmala (500 mg) twice-a-day, and the control group treated with calcium D and Osteofos. Before and three months after the intervention, patients were evaluated for osteoporosis using bone densitometry. Finally, independent t-test, paired t-test, and repeated measures ANOVA were used for statistical analysis.

Results : The mean bone mineral density (BMD) of the femur before and after the intervention showed significant improvements in the intervention and control groups ($P<0.001$). The mean differences in BMD before and after the intervention were significant in both control and intervention groups with higher improvements in the intervention group ($P<0.001$). Although the mean BMD of the spine before the intervention was not significantly different between the two groups ($P=0.167$), it was better in the intervention group after the intervention ($P=0.030$).

Conclusion : The findings of the present study confirmed the beneficial effects of P. harmala on osteoporosis while the lack of any changes in liver enzymes.

TRADITIONAL AND INTEGRATIVE MEDICINE

Antifungal activity of thymoquinone-zein nanoparticles on Candida species isolated from oral candidiasis

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Background and Aim : Candida species is an opportunistic and pathogenic fungus in humans. Oral candidiasis or oral thrush is the most common opportunistic yeast infection caused by Candida species in the oral mucosa. Although Candida albicans is the most isolated species from patients with oral candidiasis, other Candida species such as C. glabrata, C. krusei, are critical crisis in public health. Patients with a high risk of oral candidiasis are prone to invasive candidiasis, where the organism enters the blood and causes candidemia, which is associated with patient mortality. It is well known that immunocompromised patients include people with HIV, congenital genetic disorders, cancer patients undergoing chemotherapy and patients hospitalized in the ICU are at risk of infection. Previous studies have shown that albicans is the most common cause of oral candidiasis, while non-albicans are less frequent, but are increasingly increasing. Traditional medicinal plants have attracted the attention of researchers due to their beneficial effects. The therapeutic properties of Nigella Sativa has been previously studied. The highest percentage of the active ingredient in black seed)Nigella Sativa) refers to thymoquinone. This study aimed to investigate antifungal effect of thymoquinone-zein nanoparticles on clinical isolates of Candida species in vitro.

Methods : In this study, thymoquinone-zein nanoparticle was designed and synthesized and characterized by DLS test. Then, the antifungal property of the synthesized compound was evaluated by the micro dilution method based on CLSI standard method.

Results : The results showed that the synthesized compound was confirmed at 185 nm by DLS method and after performing the anti-growth inhibition test of Candida albicans isolated clinically, growth inhibition of 7.4 ug/ml on the standard strain of Candida and 50 ug/ml for clinical isolates and 15 ug/ml after preparation of thymoquinone-zein combination.

Conclusion : Considering the growing concern of antimicrobial resistance over the world, application of natural compounds with antifungal activity is a critical needs to overcome resistance with the minimum side effect and drug-drug interaction. The obtained findings indicated that the zein-thymoquinone as a nanoparticle would be an alternative therapeutic options against candidiasis. However, more in vitro and in vivo studies required in the future. Keywords: Oral candidiasis, treatment-resistant candida, medicinal plants, nanoparticles, thymoquinone-zein

Comparing Phyto-melatonin and Synthetic Melatonin for Sleep Regulation: A Review

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Background and Aim : Melatonin is a hormone secreted by the brain during the night, essential for regulating the sleep-wake cycle, or circadian rhythm. As a medication, melatonin is commonly used to treat insomnia and circadian rhythm disorders. While synthetic melatonin is prevalent, concerns about its variable bioavailability and potential for high doses exist. Recently, phyto-melatonin, the natural form found in plants, has been discovered in various medicinal and dietary species, offering a safer and more physiological alternative. This review summarizes the benefits of phytomelatonin over synthetic melatonin in sleep regulation.

Methods : A narrative review was performed using PubMed, Scopus, Web of Science, and Magiran up to 2025. Eligible publications included laboratory analyses of phyto-melatonin content in plants, experimental studies on its pharmacological properties, and clinical trials evaluating sleep-related outcomes following consumption of phyto-melatonin-rich plants or extracts.

Results : Based on studies, high levels of phyto-melatonin have been reported in chamomile (Matricaria chamomilla), lavender (Lavandula angustifolia), passionflower (Passiflora incarnata), violet (Viola odorata), as well as in some fruits such as cherries, grapes, and bananas. Phyto-melatonin primarily exerts its effects by binding to melatonin receptors (MT1 and MT2), regulating circadian rhythms and sleep–wake cycles. Additionally, its antioxidant and anti-inflammatory actions provide further neuroprotective benefits. Phytomelatonin, along with plant-derived flavonoids and polyphenols, may enhance sleep-promoting effects compared to synthetic melatonin. Besides, its gradual absorption and lower peak plasma concentrations may reduce the risk of morning drowsiness or tolerance compared to synthetic formulations. Preliminary studies suggest that phytomelatonin-containing preparations, such as chamomile tea or passionflower extracts, improve sleep onset latency and sleep quality. In sum, while synthetic melatonin allows precise dosing and rapid sleep induction, phytomelatonin offers a natural, gradual-release effect with added antioxidant and anxiolytic benefits, potentially enhancing sleep quality and safety. However, evidence remains heterogeneous, and standardized dosing is not yet established.

Conclusion : Phyto-melatonin is a promising natural alternative to synthetic melatonin for managing sleep disorders. Its additional antioxidant and anxiolytic properties, combined with a favorable safety profile, enhance its potential role in integrative sleep medicine. However, larger randomized controlled trials are necessary to confirm its efficacy, determine optimal dosing, and establish clinical guidelines for its use.

TRADITIONAL AND INTEGRATIVE MEDICINE

Turmeric's Role in Reshaping Gut Microbiota for Metabolic and Cardiovascular Health: A Comprehensive Review

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Background and Aim : Turmeric, a spice known for its antioxidant and anti-inflammatory properties, influences metabolic health through multiple biological routes, such as the gut-brain axis. Despite evidence supporting its health benefits, research outcomes remain inconsistent. This review, therefore, seeks to summarize the biochemical and physiological features of turmeric and assess its effects on cardio-metabolic risk factors, placing particular emphasis on its role in gut microbiota regulation.

Methods : This comprehensive review synthesizes the literature on turmeric's effects on cardio-metabolic risk factors with a special focus on gut microbiota. A systematic search of PubMed, Scopus, and Google Scholar identified relevant English-language publications up to March 2025. Conference abstracts, grey literature, and studies focusing on a herbal mixture including turmeric were excluded.

Results : Research indicates that turmeric is generally safe, though it may cause minor digestive issues in some individuals. It shows promise in improving blood sugar, cholesterol, and blood pressure. However, its benefits are limited by the low bioavailability of active compounds like curcumin, which can be influenced by food processing. Its positive effects are likely achieved through multiple mechanisms, such as modifying gut bacteria, their diversity, strengthening the gut lining, and reducing inflammation and oxidative stress

Conclusion : While preclinical and clinical studies suggest that turmeric confers benefits primarily by modulating gut microbiota, definitive conclusions remain elusive. This is due to significant variations in study design, a scarcity of high-quality clinical trials, and inconsistencies in treatment duration and supplement formulation. Consequently, more rigorous, standardized research is essential to establish effective dosing and confirm its efficacy as a complementary therapy for improving cardio-metabolic health via the gut microbiome.

Protective effects of Arctium lappa L. root extract (burdock) against complete Freund's adjuvant-induced arthritis in rats

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Background and Aim : Arctium lappa L. (A. lappa) is a well-known medicinal herb due to its anti-inflammatory and antioxidant impacts against several diseases. This research investigated the protective effects of the hydroalcoholic extract of A. lappa root on arthritis induced by complete Freund's adjuvant (CFA) in rats.

Methods : Arthritis was induced by a single subcutaneous injection of CFA into the right hind paw of Sprague-Dawley rats. The rats were then orally given A. lappa at doses of 200 and 400 mg/kg, or prednisolone as a reference drug, for 30 days. Blood and ankle joint samples were collected for further analysis. The anti-arthritic effects were assessed through nociceptive behavioral tests, measurements of paw edema, body weight, serum levels of tumor necrosis factor-α (TNF-α), nitric oxide (NO), as well as histopathological evaluations.

Results : Results showed that the A. lappa root extract significantly increased body weight while decreasing thermal hyperalgesia and paw edema in a dose-dependent manner. Additionally, A. lappa suppressed inflammatory cytokines in the serum of all treated rats. The extract also notably restored the histological structure of the ankle joint in comparison to untreated arthritic rats.

Conclusion : These findings suggest that A. lappa exerts its anti-arthritic effect by decreasing the level of inflammatory cytokines, which supports its traditional use in the treatment of joint diseases.

TRADITIONAL AND INTEGRATIVE MEDICINE

Essential Oils of Medicinal Plants Against Drug-Resistant Bacteria: A Pharmacological Perspective

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Background and Aim : The global antibiotic resistance epidemic threatens modern healthcare. Staphylococcus aureus, E. coli, Klebsiella pneumoniae, and Pseudomonas aeruginosa are hard to treat. Multiple antibiotic failures increase medical costs, recovery time, and mortality. Animal and human antibiotic use and inadequate growth worsen the problem. Crisis encourages herbal remedies. Chemical properties and effects of essential oils are valued. Essential oils, unlike drugs, reduce disease resistance in various ways. Thymol, eugenol, cinnamaldehyde, and carvacrol work. Biofilms, efflux pumps, quorum sensing, and bacterial membranes are damaged by chemicals. They use conventional antibiotics well. Essential oils boost traditional medicine by reducing germs. Nanoemulsions and sustained-release methods are being studied by pharmaceutical experts to improve essential oil therapy. Essential oils' antibacterial properties, methods, proof, and medical advantages are examined in this study. This review suggests medical plant essential oils prevent drug-resistant microorganisms.

Methods : This review evaluated 2010–2025 academic literature on PubMed, Scopus, Web of Science, and Google Scholar. Key words: essential oils, medication resistance, antibacterial effect, carvacrol, thymol, eugenol, cinnamon aldehyde, biofilm, synergy. Analyses included clinical reports, animal studies, lab research, and systematic reviews. Case reports and non-antimicrobial research were omitted. The design, clinical relevance, and relevance to antibiotic resistance were assessed for each paper. Data synthesis updated essential oil and resistant bacterium metrics.

Results : Essential oils and bioactives kill drug-resistant and sensitive microorganisms. Thyme, Carvacrol, and thymol inhibited resistant E. coli, Staphylococcus aureus, and Klebsiella pneumoniae. Carvacrol inhibited E. coli at 250 µg/mL alone and with cefixime (FIC = 0.5). Biofilm inhibition sub-inhibited both drugs. Eugenol, the primary component of clove oil, reduced Pseudomonas aeruginosa biofilm development and quorum-sensing in nanonized formulations with 2.0 and 4.0 mM MBIC and MBEC. Cinnamaldehyde from cinnamon oil altered Klebsiella biofilm topologies and defense enzymes, increasing antibiotic resistance. Essential oils inhibit gastrointestinal and pulmonary bacterial colonization and extend mice's lifespan by 40–50%. As liposomal and nanoemulsion technologies advanced, solubility and bioavailability increased, but effective doses declined fourfold. Essential antibacterial oils harm membranes, efflux pumps, quorum sensing, and biofilms.

Conclusion : Antibacterial and antibiofilm capabilities of medicinal plant essential oils can prevent both drug-sensitive and drug-resistant diseases, according to research. Quorum sensing, membrane disruption, efflux pump failure, and biofilm disintegration are caused by thymol, carvacrol, eugenol, and cinnamon aldehyde. Carvacrol boosts cefixime efficacy and lowers resistance. One Health uses essential oils extensively. They increase drug-resistant antibiotics. They minimize animal-human antibiotic resistance and veterinary antibiotic use. Their inherent antibacterial properties reduce the need for preservatives, thereby enhancing food safety. Problems persist despite progress. Plant chemical makeup, harvest, and extraction affect uniformity. In vitro and animal research suggest that excessive essential oil concentrations can damage or trigger allergies. Human data is scarce. Polymer nanoparticles, nanoemulsions, liposomes, and controlled-release devices reduce doses and improve stability, solubility, and bioavailability. Encapsulated eugenol has four times lower MICs than loose oil. Essential oils are interesting antibiotic adjuvants due to their broad-spectrum antibacterial activity, synergistic potential, and food safety, animal medicine, and human health benefits. Future studies should examine toxicity, formulation homogeneity, and well-planned clinical trials to address antibiotic resistance.

TRADITIONAL AND INTEGRATIVE MEDICINE

Hepatoprotective Effects of Trichaptum biforme: A Natural Therapeutic Approach for Liver Injury

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Background and Aim : Liver diseases have emerged as a growing global health concern, with their prevalence steadily increasing over recent decades. Despite advances in medical science, effective pharmacological treatments for hepatic disorders such as cirrhosis, hepatocellular carcinoma, functional impairments, and enzymatic abnormalities remain limited. This has prompted extensive research into natural compounds with hepatoprotective potential. Among these, Silybum marianum (milk thistle) and its active constituents have gained recognition for their therapeutic efficacy in liver disease management [1,2]. Recent studies have highlighted medicinal fungi as promising sources of antioxidant and hepatoprotective agents. In this context, Trichaptum biforme, a wood-decaying fungus, has attracted attention for its potential bioactivity.

Methods : This experimental study was conducted on thirty-six male Wistar rats, randomly assigned to six groups (n=6 per group). Five groups received a single intraperitoneal injection of carbon tetrachloride (CCl_4) at a dose of 2 mL/kg to induce acute liver injury. Four of these groups were subsequently treated orally with either silymarin (standard reference) or ethanolic and aqueous extracts of T. biforme at doses of 100, 200, or 500 mg/kg. One group served as the CCl_4 control without treatment, while the sixth group was maintained as a normal control without toxin exposure. After the intervention period, blood samples were collected to assess serum levels of liver function biomarkers, including alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), lactate dehydrogenase (LDH), and direct bilirubin. Histopathological examination of liver tissues was also performed.

Results : CCl_4 administration resulted in a significant elevation of serum ALT, AST, ALP, LDH, and direct bilirubin levels, indicating hepatocellular damage. Treatment with T. biforme extracts led to a dose-dependent reduction in these biomarkers compared to the CCl_4 control group. The 200 mg/kg dose showed the most consistent biochemical improvement, while the highest dose (500 mg/kg) produced enhanced enzyme normalization but less favorable histological outcomes. Histopathological analysis revealed that lower extract doses were associated with improved hepatic architecture and reduced necrosis.

Conclusion : The findings of this study demonstrate that both ethanolic and aqueous extracts of Trichaptum biforme possess significant antioxidant and hepatoprotective properties in a rat model of CCl_4-induced liver injury. The observed biochemical improvements suggest that T. biforme may modulate oxidative stress and stabilize hepatocellular membranes. Interestingly, lower doses were more effective in promoting histological recovery, indicating a potential threshold for optimal therapeutic efficacy. These results support the continued investigation of medicinal fungi as complementary agents in liver disease management and highlight the need for further studies to elucidate dose-dependent histological responses and clinical applicability.

Protective Role of Ajuga chamaecistus ssp. tomentella Extract on Liver Function and Oxidative Stress in Rats Exposed to Acetaminophen

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Background and Aim : Ajuga species have long been used in Persian medicine for the treatment of joint pain, gout, and jaundice. Among the five native Ajuga species in Iran, Ajuga chamaecistus ssp. tomentella—locally known as "komafitoos"—has attracted attention for its potential therapeutic properties. Acetaminophen overdose is a common cause of drug-induced liver injury, and natural compounds with antioxidant and hepatoprotective effects are increasingly being investigated as complementary treatments. This study aimed to evaluate the antioxidant and liver-protective effects of the aerial part extract of A. chamaecistus ssp. tomentella in a rat model of acetaminophen-induced hepatotoxicity.

Methods : Thirty-six male rats were randomly assigned to six groups (n=6). Except for the normal control group (receiving normal saline), all groups were administered acetaminophen (500 mg/kg) orally for seven consecutive days to induce liver toxicity. Three experimental groups received the plant's 80% hydro-ethanolic extract at doses of 200, 400, and 800 mg/kg by gavage, alongside acetaminophen. A positive control group received silymarin (100 mg/kg), a known hepatoprotective agent. On day eight, blood samples were collected to measure serum levels of ALT, AST, alkaline phosphatase, bilirubin, total protein, and albumin. Liver tissue samples were analyzed for glutathione and malondialdehyde concentrations to assess oxidative stress and tissue damage.

Results : The plant extract demonstrated hepatoprotective effects by significantly reducing liver enzyme levels compared to the acetaminophen-only group. Rats treated with the extract showed lower serum concentrations of cholesterol, triglycerides, LDL, and VLDL. The 200 mg/kg dose was particularly effective in preventing glutathione depletion and reducing malondialdehyde accumulation in liver tissue. Histopathological examination revealed that the least hepatic damage occurred in the 200 mg/kg extract group and the silymarin group, indicating a protective effect at lower doses.

Conclusion : The hydro-ethanolic extract of A. chamaecistus ssp. tomentella exhibited notable antioxidant and hepatoprotective properties in rats exposed to acetaminophen-induced liver injury. The 200 mg/kg dose was the most effective in preserving liver function and minimizing oxidative stress, showing comparable results to silymarin. These findings suggest that this native Iranian plant may serve as a promising natural agent for liver protection and lipid profile improvement. Further studies are recommended to explore its mechanism of action and potential clinical applications.

The Effect of a Persian Herbal Medicine Compound on the Lipid Profiles of Patients with Dyslipidemia: A Randomized Double-Blind Placebo-Controlled Clinical Trial

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Background and Aim : It has been well established in the world that lipid disorders promote the development of atherosclerosis and its clinical consequences.)is study aimed to assess the impacts of a Persian medicinal (PM) compound on lipid profile.

Methods : From June to October , a randomized double-blind controlled clinical trial was conducted with dyslipidemic patients, who were randomly divided into two equally populated groups: one prescribed with a Persian medicinal herbal compound (n 37) and a placebo group (n 37). A Persian herbal medicine including fenugreek, sumac, and purslane is introduced. Biochemical parameters including 12-hour fasting serum levels of total cholesterol, low-density lipoprotein (LDL), high-density lipoprotein (HDL), very-low-density lipoprotein (VLDL), and triglyceride (TG) were measured before the initiation and after the completion of study protocol.

Results : Percent changes of biochemical parameters include the following: intervention group cholesterol: 35.22, Tg: 45.91, LDL: 24.81, HDL: 2.05, VLDL: 8.94 and placebo group cholesterol: 6.94, Tg: −7.3, LDL: 7.37, HDL: 2.88, VLDL: −0.14.)e serum levels of total cholesterol (p 0.01) and LDL (p 0.01) significantly decreased and no increase was recorded in HDL (p 0.03) levels over time in the intervention group. Furthermore, between-group analysis showed a statistically significant difference between the intervention and placebo groups in this regard. VLDL (p 0.2) and TG (p 0.2) levels also decreased, however not significantly.

Conclusion :)is study showed that a Persian medicinal herbal compound could be safe and beneficial to decrease the levels of serum cholesterol and LDL in dyslipidemic patients. However, larger long-term studies are recommended to clarify this effect.

TRADITIONAL AND INTEGRATIVE MEDICINE

Phytochemicals Alleviate Tumorigenesis by Regulation of M1/M2 Polarization: A Systematic Review of the Current Evidence

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Background and Aim : Cancers are increasingly common and significantly impact patients' quality of life and longevity. The role of macrophages in tu morigenesis is critical, and natural compounds have long been recognized as valuable sources of bioactive agents for treating this condition. However, no systematic review has been performed on the role of phytochemicals impacting tumorigenesis by M1/M2 macrophage polarization.

Methods : The aim of this study is to systematically review phytochemicals that relieve tumorigenesis by impacting M1/M2 macrophage polarization and investigate related signaling pathways. This systematic review adheres to PRISMA 2020 guidelines and statements. Scientific databases, MEDLINE, Scopus, and Web of Science, have been searched from inception to October 2023. This review includes English original articles on the role of phytochemicals, whole plant extracts, and polyherbal formulas in ameliorating tumorigenesis through M1/M2 polarization while excluding non-English articles, non-original research, and unrelated studies according to title, abstract, and full-text screening.

Results : Shreds of evidence were gathered from cellular and animal studies about the beneficial impacts of phytochemicals against tumorigenesis by impacting M1/M2 macrophage polarization. Critical assessment of in vitro and in vivo studies was performed by the CRIS and ARRIVE guidelines. Due to the high level of heterogeneity of the collected data, only a narrative synthesis was performed. Of 741 collected articles, only 35 remained. Polyphenols are the most highlighted group. Phytochemicals affect cytokines related to M1, such as CD80, CD86, CD64, and iNOS, and M2, like CXCR-1, CXCR-2, and TGF-β, in various cancer models.

Conclusion : Together, these compounds exerted protective effects against tumorigenesis in preclinical cancer models. Furthermore, high-quality clinical experiments are recommended to cover the limitations of the current study, which are reliance on preclinical evidence, lack of clinical trials, and exclusion of non-English and grey literature.

Comparing the effect of Coriander seeds with Propranolol 20mg in the prophylaxis of migraine headaches with aura

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Background and Aim : Headache is a very common symptom worldwide, migraine is known as the third most common disorder and the second most common type of headache. Approximately 15% of the general population will experience migraine during their lifetime, among whom 75% are women. Migraine attacks can cause functional disability in more than 90% of migraine sufferers. Some migraine headaches are triggered by a group of neurological symptoms, collectively called aura. There are many preventive drug treatments that are prescribed for migraine sufferers. However, many studies have shown that these chemical drugs have various side effects. Given the brilliant history of medical knowledge in the past in Iran, traditional and herbal treatments can be used wherever medicine is unable to effectively treat chronic diseases without side effects. The use of herbal medicines has increased in recent decades. Treatment of headaches in Iranian traditional medicine dates back to the 6th century BC. One of the prescriptions of ancient Iranian physicians was coriander fruit (C. sativum, coriander). In this study, the effect of coriander seeds on migraine headaches with aura was investigated.

Methods : In this study, a number of people with migraine headaches with aura who referred to selected medical clinics in Tehran were examined. 60 participants were divided into two groups; one group of 30 received the drug propranolol to prevent migraines with aura, and the other group of 30 received the intervention group (capsules filled with powdered coriander seeds).
Results : The results of the study (independent t-test) indicated that the pain intensity in the coriander seed group was significantly lower in the first and third months than in the propranolol group ($p<0.05$). Also, the results of one-way analysis of variance showed that in the propranolol group, pain intensity decreased over time, but this decrease was not statistically significant ($p<0.05$), while in the coriander group, a significant decrease in pain intensity was observed from the first to the third month ($p<0.05$). Therefore, it can be said that coriander seeds have a significant effect on the severity of headaches in patients visiting medical centers in Tehran.
Conclusion : The present study showed that coriander seeds can reduce the severity of migraine pain, which can be attributed to the compounds in it. By examining the results, it can be concluded that coriander seeds had an equal or greater effect than the drug Propranolol in the prophylaxis of migraines with Aura. Considering the high prevalence of various types of headaches and taking this fact that in most cases there is no specific treatment for headaches other than painkillers, and that long-term treatment with chemical drugs and painkillers causes complications and problems for patients. The use of herbal medicines such as coriander can be a great help to patients. However, more high-quality research is needed to investigate the effectiveness and safety as a treatment for migraine.

TRADITIONAL AND INTEGRATIVE MEDICINE

A Scoping Review of Clinical Trials on the Efficacy of Curcumin and Its Formulations for Wound Healing

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Background and Aim : Curcumin, the main ingredient in turmeric, is known for its substantial anti-inflammatory, antioxidant, and antibacterial effects, and potentially, it could be used as an adjuvant for the treatment of wounds. Despite strong preclinical results, there is a lack of a comprehensive review of its clinical efficacy among different wound types and its diverse formulations. The goal of this scoping review is to describe the available clinical trial evidence on the efficacy of curcumin and its formulations on wound healing.

Methods : A scoping review was conducted following the PRISMA-ScR guidelines. We searched the PubMed, Scopus, Web of Science, and Cochrane Library databases for clinical trials examining any curcumin-based intervention, whether topical or systemic, for wound healing in humans. Two reviewers independently screened the studies, extracted data, and synthesized the findings. Due to the heterogeneity of the included studies, a narrative synthesis was performed.

Results : The search showed 920 results, with 19 clinical trials meeting the inclusion criteria. Most of the studies (14 out of 19) were randomized controlled trials that addressed a variety of wounds, including surgical wounds, oral lesions, and chronic ulcers. Curcumin was used in various forms, including topical creams, gels, ointments, and oral capsules, in different dosages and durations. A large number of trials (89%) yielded positive results, demonstrating that curcumin improved the process of wound healing, reduced inflammation and discomfort, and showed better clinical results compared to placebo or conventional care. Curcumin also has a remarkable safety record, with 84% of studies reporting no adverse events; additionally, the reported side effects were minor and temporary.

Conclusion : Based on current clinical evidence, curcumin is a safe and effective adjuvant for improving wound healing. However, the significant heterogeneity in curcumin formulations, methods of administration, and outcome measures between trials limits our ability to form consistent treatment guidelines. Future research should focus on large-scale, well-designed randomized controlled trials with standardized methods to provide a stronger proof basis for curcumin's clinical application in wound healing.

Longevity and anti-aging effects of curcumin supplementation

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Background and Aim : Aging is a complex, irreversible biological process associated with a decline in cellular function and an increased risk of age-related diseases. Curcumin, the active compound in turmeric, has been recognized for its potential therapeutic effects in delaying aging and mitigating the development of age-associated disorders. This review examines the role of curcumin in aging biology, its mechanisms of action, and its impact on longevity.

Methods : A comprehensive literature review was conducted across multiple databases, including PubMed, Google Scholar, and ScienceDirect, using keywords such as "curcumin," "aging," "longevity," and "anti-aging." Studies published in peer-reviewed journals from 2010 to 2023 were included, focusing on both in vitro and in vivo investigations, as well as clinical trials.

Results : Curcumin was found to modulate key molecular pathways involved in aging, including oxidative stress, inflammation, telomere length, and cellular senescence. Curcumin activates sirtuins, enhances AMPK phosphorylation, and inhibits the mTOR signaling pathway, all of which have been associated with improved cellular function and extended lifespan. Clinical trials indicate that curcumin supplementation may reduce the risk of chronic age-related diseases such as cardiovascular disease, Alzheimer's, and arthritis. However, its clinical efficacy is often limited by poor bioavailability, necessitating the development of novel formulations.

Conclusion : Curcumin's multi-target effects position it as a promising anti-aging compound. Its ability to modulate oxidative stress and inflammation, combined with its influence on key longevity pathways, suggests that curcumin could play a significant role in age-related disease prevention. However, the challenges related to its bioavailability must be addressed through improved formulations. Despite these challenges, curcumin remains a valuable compound in the field of aging research and warrants further clinical investigations to fully realize its therapeutic potential in aging and longevity.

Effect of sesquiterpene lactone isolated from Inula aucheriana on breast cancer metastasis

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Background and Aim : Breast cancer is the most aggressive form of breast tumors. Britannin is a sesquiterpene lactone isolated from Inula aucheriana with anticancer effects on different cancer cells. We aimed to evaluate the antimetastatic effect of britannin on two human breast cancer cell lines: the triple-negative MDA-MB-231 cell line and estrogen/progesterone receptor-positive MCF-7 cell line.

Methods : MCF-7 and MDA-MB-231 cells were seeded at a density of approximately 6 × 10^5 cells per well in 6-well cell culture plates to achieve 60–70% confluency. A standardized scratch assay was performed by creating three horizontal scratches across each well using 200 µl sterile pipette tips, with a single vertical scratch included to ensure consistent image alignment. Following the removal of cellular debris via phosphate-buffered saline (PBS, pH ~ 7.4) washes, control cells were treated with standard culture medium. MDA-MB-231 cells were treated with 4 µM and 8 µM britannin, while MCF-7 cells were exposed to 11 µM and 22 µM britannin. Images of the scratch wounds were acquired at 0, 9, 24, and 48 hours, and wound areas were quantified using ImageJ software.

Results : Treatment of MCF-7 cells with britannin at a concentration of 11 µM and 22 µM for 48h had no remarkable effect on the metastatic capacity of this cancer cell line compared with the control group. Treating MDA-MB-231 cells with 4 µM britannin showed no considerable effect on the metastatic capacity of this cell line. However, MDA-MB-231 cells treated with britannin at a concentration of 8 µM for 48 hours considerably inhibited the metastasis of these cancer cells compared to the controls.

Conclusion : The findings of this study indicate that britannin inhibited the invasion and metastasis of human MDA-MB-231 cells in a concentration-dependent manner. These results suggest that britannin may have potential as a natural compound for suppressing the metastatic properties of triple-negative breast cancer cells. The results of this study also show that britannin's effect on breast cancer metastasis is not receptor-dependent.

A sesquiterpene lactone derived from Inula aucheriana prohibited the metastatic capacity of ovarian cancer cells

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Background and Aim : Ovarian cancer ranks as the seventh most prevalent malignancy and the fifth leading cause of cancer-related mortality among women globally. Inula aucheriana is a perennial plant species belonging to the Asteraceae (daisy) family, native to the West Azerbaijan province of Iran. Britannin, a sesquiterpene lactone isolated from I. aucheriana, has demonstrated anticancer activity against various cancer cell lines. The objective of this study was to investigate the antimetastatic effects of britannin on the SKOV3 human ovarian cancer cell line.

Methods : Britannin was isolated from the chloroform extract of I. aucheriana through chromatography using a standard method. SKOV3 cells (500000) were seeded into each well of a 6-well plate to achieve 60–70% confluency. Using 200 µl sterile pipette tips, three horizontal scratches were created across each well, with a single vertical scratch included to standardize photographic documentation. Following scratch creation, cells were washed with phosphate-buffered saline (PBS, pH ~ 7.4) to remove cellular debris. Control wells were treated with standard DMEM, while experimental wells were treated with britannin at concentrations of 11.1 and 22.2 µM. Images of the scratch wounds were acquired at 0, 9, 24, and 48 hours post-scratch, and wound area measurements were performed using ImageJ software.

Results : The findings of the present study indicated that control cells exhibited metastasis to the scratch core 48 hours post-treatment. However, treatment of SKOV3 ovarian cancer cells with 11.1 µM britannin for 48 hours remarkably reduced the metastatic activity of these cells compared to the control group. Furthermore, treatment with 22.2 µM britannin for 48 hours substantially inhibited the invasiveness of these cancer cells relative to the controls.

Conclusion : The results of this study showed that britannin inhibits the invasion and metastasis of human ovarian cancer cells in a concentration-dependent manner. These results suggest the potential of the sesquiterpene lactone compound of I. aucheriana as a natural agent with suppressing antimetastatic effects on ovarian cancer.

Rosa Damascena mill for treating adults' anxiety, depression, and stress: A systematic review and dose–response meta-analysis of randomized controlled trials

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Background and Aim : Recent studies have reported conflicting findings on the antianxiety, antidepressant,and anti-stress properties of Rosa Damascena Mill (RDM). Therefore, the present sys-tematic review and meta-analysis were conducted on the effects of RDM for treatinganxiety, depression, and stress amongst adults.

Methods : Recent studies have reported conflicting findings on the antianxiety, antidepressant,and anti-stress properties of Rosa Damascena Mill (RDM). Therefore, the present sys-tematic review and meta-analysis were conducted on the effects of RDM for treatinganxiety, depression, and stress amongst adults.

Results : The results of the meta-analysis revealed that administrationof RDM significantly reduced state anxiety (effect size [ES]: 24, standardized meandifference [SMD]: 1.74, 95% confidence interval [CI]: 2.29, 1.20; $p < .001$),depression (ES: 7, SMD: 0.87, 95% CI: 1.47, 0.28; $p = .004$), and stress (ES: 4, SMD: 1.33, 95% CI: 1.98, 0.69; $p < .001$). However, the treatment had no sig-nificant effect on trait anxiety (ES: 6, weighted mean difference: 0.75, 95% CI:1.93, 0.43; $p = .214$).

Conclusion : the association between the total administration dosageand/or duration of RDM and the changes in state anxiety and depression was notdose-dependent. Most RCTs had a fair methodological quality based on the Cochranerisk of bias assessment tool. Besides, the quality of evidence ranged from very low tomoderate according to the Grading of Recommendations Assessment, Development,and Evaluation (GRADE) approach. Hence, further high-quality RCTs are needed todraw reliable conclusions regarding the use of RDM for treating adults' anxiety,depression, and stress.

Comparison of the Effects of Matcha Tea and Chamomile Tea on the Severity of Associated Symptoms in Primary Dysmenorrhea: A Randomized Clinical Trial

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Background and Aim : Primary dysmenorrhea is a common condition among women of reproductive age that can adversely affect daily activities and quality of life. In recent years, the use of herbal and natural remedies has increased, with chamomile and matcha tea being considered as complementary options. Due to their widespread traditional use for menstrual pain and potential differences in anti-inflammatory and antispasmodic mechanisms, a direct comparison of their efficacy is essential. This study aimed to compare the effects of matcha and chamomile tea on associated symptoms in primary dysmenorrhea.

Methods : This randomized clinical trial included 108 female students aged 18–40 years with primary dysmenorrhea (VAS ≥5 for two consecutive cycles). Participants were randomly assigned to three groups (1:1:1): matcha tea (500 mg powder in hot water, twice daily), chamomile tea (5 g infusion, twice daily), and control (usual care without herbal intervention). Interventions were administered for three consecutive cycles from two days before until the third day of menstruation. Associated symptoms were assessed using the Andersch–Milsom scale before and during the intervention cycles. Data were analyzed using Repeated Measures ANOVA and Chi-square tests (SPSS v.24).
Results : Both matcha and chamomile tea significantly reduced the severity of associated symptoms in primary dysmenorrhea. In the matcha group, symptom severity decreased significantly in the second ($p<0.001$) and third cycles ($p<0.001$), whereas in the chamomile group, a significant reduction was observed only in the third cycle ($p=0.015$). After adjusting for baseline symptom severity, both intervention groups showed significant improvement compared to the control group (matcha $p<0.001$, chamomile $p=0.006$), although the difference between the two intervention groups was not statistically significant ($p=0.060$). Matcha tea demonstrated a faster and more pronounced reduction in symptoms compared to chamomile.
Conclusion : Conclusion: Matcha tea is more effective than chamomile in alleviating associated symptoms of primary dysmenorrhea. Given its safety and high acceptability, it can be recommended as a natural complementary option for managing this condition. Larger studies are suggested to generalize the findings. Trial Registration: Iranian Registry of Clinical Trials (IRCT): IR.TUMS.FNM.REC.1403.023. Ethics Approval: Approved by Tehran University of Medical Sciences Ethics Committee, in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines. Keywords: Primary dysmenorrhea, Complementary medicine, Herbal medicine, Matcha tea, Chamomile.

Evaluation of the effect of Asarum europaeum root extract on pharmacokinetic parameters and cerebral distribution of Vancomycin in an animal model

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Background and Aim : In traditional Persian medicine, Asarum europaeum (AE) root has been introduced as a carrier (Mobadregh) of drugs to the heart, brain, and other organs. This study aimed to evaluate the effect of AE root extract on pharmacokinetic parameters and cerebral distribution of Vancomycin (VA) in rats.

Methods : Thirty-six healthy male rats were used in two groups (n = 18); Group 1 and Group 2: VA 5 mg/kg by intravenous tail injection, but Group 2: after 30 minutes of extract gavage of 80% hydroalcoholic extract as a suspension of 100 mg/kg AE root in water. Blood and brain tissue samples were taken at times 0, 5, 15, 30, 60, 90, 120, 180, 240, and 360 minutes after the Vancomycin injection. HPLC determined VA concentration.

Results : The results show that the VA plasma concentration at 120–240 minutes was higher in Group 1. than in Group 2. The VA concentration in brain tissue shows that the maximum concentration (Cmax) of VA was observed at 120 minutes (tmax); while the (Cmax) of VA was observed in the AE group at 240 minutes. The area under the curve (AUC) related to VA in brain tissue in Group 2 was 13% higher than in Group 1, but there was no statistically significant difference.

Conclusion : Higher plasma concentrations of VA in the Group 2 at times 120–240 minutes may be related to decreased metabolism and or decreased renal excretion of VA by the AE extract. Also, the increase in the AUC of the VA in the brain tissue in the Group 2 can be related to slowing down the exit of VA from the brain tissue or inhibition of P–glycoproteins at the blood–brain barrier and increased VA entry into the brain tissue that needs to be studied in future.

Evaluation of Flaxseed Intake on Sleep : A Systems Biology Approach

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Background and Aim : Flaxseed (Linum usitatissimum L.) is a nutrient-rich functional food containing bioactive compounds such as omega-3 polyunsaturated fatty acids (particularly α-linolenic acid), lignans (secoisolariciresinol diglucoside), and highly digestible proteins. This study employed systems biology approaches to investigate the molecular mechanisms underlying flaxseed's potential sleep-enhancing effects through comprehensive network analysis.

Methods : Sleep-related genes were extracted from the GeneCards database, while flaxseed-responsive differentially expressed genes (DEGs) were obtained from the GEO dataset (GSE36422). Protein-protein interaction (PPI) networks were constructed using undirected and directed approaches to identify hub genes and their first neighbors. Network topology analysis revealed critical regulators of sleep modulation.

Results : Among 212 sleep-related hub genes, RAF1 emerged as the principal hub. Key regulatory genes included members of the MAPK family (*MAPK1/3/8*), CCND1, KRAS, PIK3CA, and EGFR. Downstream effectors comprised HRAS, AKT1, IL6, RHOA, TNF, SRC, FOXO3, CDC42, PRKACG, PRKACB, and JAK2. Notably, RAF1 was downregulated following flaxseed consumption, with the MAPK family, KRAS, and PIK3CA identified as critical first neighbors in the directed PPI network.

Conclusion : Flaxseed consumption downregulates RAF1 expression and modulates key components of the MAPK signaling pathway (KRAS, PIK3CA), potentially improving sleep quality through these mechanistically linked genetic perturbations. These findings provide novel insights into the nutrigenomic basis of flaxseed's sleep-enhancing properties.

TRADITIONAL AND INTEGRATIVE MEDICINE

Potentials of Traditional Medicine for Management of Gallbladder Stones

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Background and Aim : Gallstones are a common digestive disorder, with surgery being the primary treatment. However, surgical intervention can be associated with challenges such as high costs, limited access in certain regions, and potential complications. Consequently, many patients seek non-surgical alternatives. Various traditional and complementary medicine approaches, including specific diets and herbal remedies, have been suggested for gallstone management. Nonetheless, there is a lack of robust scientific evidence from human studies confirming their safety and efficacy. Here, we review the scientific evidence regarding the effectiveness of medicinal plants, herbal, and natural remedies in the management of gallstones. Additionally, we present a case report of gallstone treatment utilizing Traditional Medicine pharmacological and nutritional strategies.

Methods : We conducted a comprehensive literature search using scientific databases such as Google Scholar, Scopus, and ISI to identify evidence on the effectiveness of herbal and natural treatments for gallstones. Additionally, a supplementary search was performed on Google using relevant keywords up to August 2025. We included scientific papers comprising observational studies (case reports and case series) and clinical trials, from which relevant data were extracted. Furthermore, we present a case study of a patient treated with nutritional and pharmacological approaches based on traditional medicine, supported by imaging evidence and documentation.

Results : Few clinical studies have been published on the effectiveness of medicinal herbs and natural treatments for gallstones. Most of these are observational, consisting primarily of single case reports, with only a limited number including documented treatment outcomes. Notably, methodological limitations and small sample sizes are common issues. The majority of existing evidence pertains to the efficacy of liver cleansing (flush) regimens. Additionally, we present a successfully treated case involving a young woman with a large gallstone who was a candidate for cholecystectomy due to severe pain and the risk of pancreatitis. The patient adhered to traditional medicine, herbal nutritional measures, and a liver cleansing diet for three months, after which follow-up ultrasounds confirmed the disappearance of the gallstone.

Conclusion : There is limited clinical scientific evidence supporting the effectiveness of herbal medicines and traditional treatments for gallstones. However, these options may have potential, particularly in the early stages of gallstone management, which warrants further clinical research. Additionally, the successful case report presented indicates that traditional medicine approaches may hold promise in treating gallstone patients. Nonetheless, well-designed clinical trials are necessary to confirm the efficacy of this approach.

Efficacy of Ma'aljobon with Aftimoun on Glycemic Control in Type 2 Diabetes: A Randomized Triple-Blind Trial

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Background and Aim : Type 2 diabetes mellitus (T2DM) remains a major global health concern, and despite pharmacological advances, achieving durable glycemic control is often difficult. Complementary approaches derived from traditional Persian medicine, such as Ma'aljobon and Aftimoun, have been historically applied for metabolic disorders. This trial aimed to investigate the effects of Ma'aljobon, with and without Aftimoun, on HbA1c in patients with T2DM.

Methods : A randomized, triple-blind, placebo-controlled clinical trial was conducted between November 2021 and August 2022 at the Diabetes Clinic of Arak, Iran. Ninety adults with T2DM (aged 30–60 years; HbA1c 6.5–9.5%; on stable oral hypoglycemic agents) were enrolled and randomly assigned to three groups: (1) Ma'aljobon with Aftimoun, (2) Ma'aljobon without Aftimoun, or (3) placebo. Interventions consisted of 25 g powder dissolved in 250 ml lukewarm water, consumed daily on an empty stomach for 8 weeks. Placebo was identical in appearance and taste. Adherence was assessed biweekly during in-person visits and via telephone follow-ups in odd weeks; patients with <70% compliance or changes in routine therapy were excluded. Randomization was performed using block permutation, with allocation concealment maintained through barcoded containers, ensuring triple blinding of participants, investigators, and statisticians. HbA1c was measured at baseline and week 8 in a single accredited laboratory using standardized kits. Data were analyzed in SPSS 23 with paired t-tests, ANCOVA, and LSD post-hoc comparisons; significance was defined as $p < 0.05$.

Results : Baseline characteristics were comparable across groups ($p > 0.05$). After 8 weeks, both intervention arms showed significant reductions in HbA1c compared with baseline (Ma'aljobon with Aftimoun: 8.09 ± 0.73% to 7.88 ± 0.77%, $p = 0.03$; Ma'aljobon without Aftimoun: 8.25 ± 0.78% to 7.97 ± 0.84%, $p = 0.002$). No significant change occurred in the placebo group (8.11 ± 0.82% to 8.18 ± 0.70%, $p = 0.51$). Between-group ANCOVA revealed significant differences ($p < 0.01$), confirming superiority of both interventions over placebo, with no meaningful difference between the two active arms. No serious adverse events were reported.

Conclusion : Ma'aljobon, with or without Aftimoun, significantly improved HbA1c in patients with T2DM over 8 weeks, suggesting a potential role as an adjunctive therapy. Further large-scale, longer-duration trials are recommended to confirm these findings and clarify mechanisms of action.

Camel-Derived Nanobodies: A Frontier in Cancer Therapy

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Background and Aim : Camel-derived nanobodies, or single-domain antibodies (VHHs), represent an emerging class of therapeutic molecules with unique advantages over conventional antibodies. Found in camel biological fluids such as blood, milk, and urine, these 12–15 kDa proteins are exceptionally small, stable at high temperatures, soluble, and exhibit low immunogenicity. Their compact structure enables penetration into dense tumor tissues and binding to hidden epitopes inaccessible to traditional antibodies. These features position nanobodies as powerful tools for cancer therapy, with applications in targeted drug delivery, immunotherapy, and diagnostic imaging.

Methods : This review synthesized findings from peer-reviewed studies (2000–2025) on camel nanobodies and cancer. Literature was collected using terms such as “nanobody,” “camel VHH,” “cancer therapy,” and “exosomes.” Key methods in the reviewed research included biochemical characterization (stability, solubility), in vitro cytotoxicity assays on cancer cell lines (e.g., HepG2, MCF-7, PC3), and in vivo xenograft models to assess biodistribution and tumor reduction. Genomic analyses of Camelus dromedarius breeds provided insights into molecular determinants of nanobody production. In addition, reports on camel milk-derived exosomes, peptide hydrolysates, and nanobody-conjugated nanoparticles were examined for therapeutic and diagnostic applications.

Results : The studies collectively demonstrated that camel nanobodies maintain stability up to 80°C and show high specificity with minimal immunogenicity. In cancer models, HER2-targeted nanobody-radionuclide conjugates (^{177}Lu-labeled) reduced tumor volume by up to 80%. Nanobody-drug conjugates improved selective cytotoxicity, sparing healthy tissues. Camel milk exosomes enhanced drug delivery efficiency: curcumin-loaded exosomes exhibited over fivefold higher bioavailability and significantly lowered IC_{50} in resistant cancer cell lines. Lactoferrin-derived peptides from camel milk displayed notable anti-proliferative effects against breast and liver cancers. Immunotherapy approaches also showed promise: anti-VEGF nanobodies inhibited angiogenesis, while nanobody-based CAR-T cells targeting B7-H3 achieved potent responses in solid tumors. Diagnostic applications included PET/CT imaging with ^{68}Ga- or ^{89}Zr-labeled nanobodies, enabling detection of micrometastases under 2 mm. Together, these findings underline the versatility of nanobodies across therapeutic and diagnostic platforms.

Conclusion : Camel-derived nanobodies represent a paradigm shift in oncology, combining natural molecular efficiency with modern biotechnology. Their small size, stability, and deep tissue penetration allow precise targeting of cancer cells while reducing systemic toxicity. Coupled with exosome carriers, nanoparticles, and CAR-T engineering, nanobodies have demonstrated significant preclinical success across multiple cancer models. Remaining challenges include large-scale production, rapid renal clearance, and regulatory pathways; however, advances in bioengineering and genomic research are addressing these barriers. As evidence grows, camel nanobodies are poised to become essential tools in precision oncology, offering safer, more effective, and highly targeted therapies for the future of cancer treatment.

The therapeutic effects of a Bentonite-based facial mask with Alcea sulphurea extract on acne severity and patient experience: add-on randomized controlled clinical trial

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Background and Aim : : Acne vulgaris adversely impacts quality of life, requiring safer alternatives to conventional treatments. This study explores a facial mask combining Bentonite's detoxifying and Alcea sulphurea's anti-inflammatory properties, rooted in Traditional Persian Medicine(TPM). It aims to evaluate its efficacy in reducing acne severity and enhancing patient satisfaction, integrating traditional and modern therapeutic approaches.

Methods : : This add-on randomized, controlled clinical trial included 60 patients with moderate acne, recruited through purposive sampling in Sari from October 2022 to November 2023. Participants were randomly allocated into intervention (Bentonite-Alcea mask + Azithromycin 250 mg) and control (placebo + Azithromycin 250 mg). Outcomes, including lesion count, acne severity, and satisfaction, were assessed at baseline, 4 weeks, and 8 weeks. Data analysis was conducted using SPSS version 27

Results : : 60 people completed the study (30 persons in both group). The mean and standard deviation of the age in control group was 24 ± 8.03years and in placebo group was 19.03 ± 7.03 and 46 subjects(76.7%) were female. TLC and ASI in the forth and eighth weeks in control group were significantly less than in placebo group ($p<0.001$). the percentage of relatively satisfied and very satisfied participants in the intervention group was significantly higher than the control group ($P<0.001$). Bentonite-based facial mask with Alcea sulphurea extract had no serious side effects. The intervention group exhibited significant reductions in TLC(Total Lesion Count) (55.45 ± 21.74%) and ASI(Acne Severity Index) (66.33 ± 27.15%) from baseline to 8 weeks ($p < 0.001$), outperforming the placebo group. Patient satisfaction was notably higher in the intervention group, with 43.3% being very satisfied compared to 3.3% in the placebo group ($p < 0.001$).

Conclusion : A facial mask based on Bentonite and A. sulphurea extract effectively reduces acne severity and enhances patient satisfaction. These findings suggest its potential as a natural alternative or adjunct to conventional acne treatments.

TRADITIONAL AND INTEGRATIVE MEDICINE

Effects of pomegranate on blood pressure and endothelial function: A systematic review and meta-analysis of clinical trials

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Background and Aim : Pomegranate has been suggested to improve cardiovascular health through effects on blood pressure and endothelial function, but previous findings have been inconsistent. To clarify these effects, a systematic review and meta-analysis of clinical trials was conducted.

Methods : Methods Four major databases (PubMed/MEDLINE, Web of Science, SCOPUS, and Embase) were searched up to July 2024. Eligible randomized controlled trials (RCTs) were pooled using a random-effects model, reporting weighted or standardized mean differences (WMDs/SMDs) with 95% confidence intervals (CIs). Study Characteristics Out of 1,614 records, 33 studies met the inclusion criteria, representing 36 trial arms with 1,490 participants (845 intervention, 753 control). Participants ranged in age from 20.8 to 75 years, with sample sizes between 10 and 101. Intervention durations varied from 5 days to 48 weeks. Trials were published between 2004 and 2023 and conducted in countries including Iran, Turkey, the UK, Greece, Poland, Serbia, the US, and Israel. Study populations included patients with T2DM, hemodialysis, NAFLD, COVID-19, PCOS, metabolic syndrome, hypertension, coronary heart disease, osteoarthritis, obesity, and healthy volunteers.

Results : Systolic Blood Pressure (SBP): 22 trials (25 arms) showed significant reductions with pomegranate supplementation (WMD: -3.52 mmHg; 95% CI: -4.97 to -2.06; $P < 0.001$; $I^2 = 92.7\%$). Diastolic Blood Pressure (DBP): 22 trials (24 effect sizes) also showed significant reductions (WMD: -1.50 mmHg; 95% CI: -2.58 to -0.42; $P = 0.006$; $I^2 = 91.4\%$). Subgroup analyses revealed stronger effects in participants ≤45 years, studies ≤8 weeks, and those using juice, extract, or peel extract. IL-6: 13 trials found significant reductions (SMD: -0.82; 95% CI: -1.29 to -0.35; $P = 0.001$; $I^2 = 86.2\%$). ICAM-1: Three studies showed significant decreases (SMD: -0.59; 95% CI: -0.97 to -0.22; $P = 0.002$; $I^2 = 0.0\%$). VCAM-1: Three trials reported no significant effect (SMD: -0.64; 95% CI: -1.83 to 0.55; $P = 0.292$; $I^2 = 88.1\%$). E-selectin: Two studies showed no significant changes (SMD: -0.27; 95% CI: -1.87 to 2.41; $P = 0.806$; $I^2 = 92.9\%$). Other outcomes: One study reported higher plasma nitrate after supplementation; flow-mediated dilation (FMD) increased but was not statistically significant.

Conclusion : Pomegranate supplementation significantly lowers systolic and diastolic blood pressure, as well as IL-6 and ICAM-1 levels, indicating beneficial effects on cardiovascular and endothelial health. However, no consistent effects were observed for VCAM-1 or E-selectin. Larger, well-designed RCTs are needed to confirm these findings.

Case Report: Improvement of Endometriosis, Ovarian Cyst, and Infertility with a Combined Herbal Therapy

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Background and Aim : Endometriosis, ovarian cysts, and polycystic ovary disease (PCOD) are leading causes of pelvic pain, menstrual irregularities, and infertility in reproductive-aged women. Conventional therapies, including surgery and hormonal treatment, are often associated with side effects and recurrence, highlighting the need for complementary approaches.

Methods : A 24-year-old woman with a 3-year history of infertility presented with severe dysmenorrhea, bloating, constipation, anxiety, and irregular cycles. Initial ultrasonography revealed a right ovarian cyst (72×57 mm), a left ovarian endometriotic nodule (17×16 mm), PCOD features, and mild pelvic free fluid. She received a combined herbal therapy including Lounil syrup (black seed oil, olive oil, lemon, honey), Sana vaginal capsules (sugarcane, honey), and Ghwara tablets (ajwain, thyme, mastic, black seed). After one month, the ovarian cyst had completely resolved with marked clinical improvement. At 3 months, ultrasound showed near-complete regression of nodules, persistence of PCOD, and later complete resolution with evidence of ovulation (20 mm dominant follicle). Over one year, she reported regular cycles, decreased pelvic pain, improved libido and anxiety, significant weight loss, and achieved a successful pregnancy without recurrence of cysts or nodules on 7-week pregnancy ultrasound.

Conclusion : Combined herbal therapy with Lounil syrup, Sana vaginal capsules, and Ghwara tablets led to resolution of ovarian cysts, endometriotic nodules, and PCOD, with substantial clinical improvement and conception. This case highlights the potential role of herbal preparations as adjunctive therapy in managing endometriosis and infertility.

TRADITIONAL AND INTEGRATIVE MEDICINE

Use of medicinal plants and their relationship with demographic indicators and underlying diseases: Data from the Persian cohort study

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Background and Aim : Herbal medicine use is increasing globally, including in Iran, due to the various active ingredients in these plants that can be used to treat diseases. This study investigated the prevalence of medicinal plant consumption and associated factors in population of Sabzevar Persian cohort study

Methods : This cross-sectional study used data from the Persian Sabzevar Cohort Study, including 4,179 adults aged 35-70. Participants were divided into medicinal herb users and non-users based on cohort data. Demographic factors (age, gender, education, economic status, anthropometric indicators, smoking, alcohol consumption) and underlying diseases (diabetes, hypertension, heart, lung, kidney, vascular, rheumatic diseases, cancer, fatty liver, hepatitis B and C) were compared between the two groups. The overall prevalence of medicinal plant consumption was also examined. Confounding variables (age, gender, economic status, and underlying diseases) were matched between groups. Data were analyzed using appropriate statistical tests

Results : Of the 4179 participants, 3775 (90.3%) were herbal users and 404 (9.7%) were not. Among male participants (n=1860), 1643 (43.5%) were herbal users, while 2132 (56.5%) of the 2390 female participants used herbal medicine. Medicinal plant use was significantly higher in females than males. The average age and duration of illness were significantly lower in herbal medicine users compared to non-users, but the average wrist size index (WSI) was significantly higher. Drug and alcohol use were lower in herbal medicine users, with a significant relationship for drug use. Herbal medicine use was significantly higher in individuals with a history of smoking. The frequency of herbal medicine use in all diseases examined was lower than in people without the disease, although this difference was not statistically significant.

Conclusion : Herbal medicine use was common in the study population and significantly associated with female gender, younger age, wrist size and index, fewer chemical medicine prescriptions, and a history of tobacco use. However, no significant difference in herbal medicine use was observed between individuals with and without underlying diseases such as diabetes, hypertension, heart, lung, kidney, vascular, rheumatic diseases, cancer, fatty liver, and hepatitis B and C. These results suggest that demographic and lifestyle factors, rather than chronic disease status, primarily influence herbal medicine use. Public health planning and medical interventions should therefore consider these factors to promote the safe and effective use of herbal medicines.

Evaluation of the Effect of Medicago sativa on Asthma in Animal Models: A Systematic Review

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Background and Aim : Asthma is a chronic inflammatory airway disease characterized by complex pathophysiological mechanisms. Given the side effects of conventional medications, research into safer herbal treatments like Medicago sativa (alfalfa), which has a long history in traditional medicine, is of significant interest. This systematic review aims to summarize and evaluate the existing evidence from animal studies on the effects and potential mechanisms of Medicago sativa in models of asthma.

Methods : This systematic review was conducted according to the PRISMA guideline. Electronic databases including PubMed, Scopus, Web of Science, Embase, and Google Scholar were searched up to July 2023. A combination of keywords such as "Medicago sativa", "alfalfa", "asthma", "airway inflammation", "animal model", "mouse", "rat", and "guinea pig" was used. Studies published in English that investigated the effects of any extract or compound derived from alfalfa in an animal model of asthma were eligible for inclusion. The methodological quality of the studies was assessed using the SYRCLE risk of bias tool for animal studies.

Results : Out of 231 identified records, 10 studies met the inclusion criteria. All studies utilized an ovalbumin (OVA)-induced model. Administration of Medicago sativa extract consistently led to a significant reduction in total inflammatory cell and eosinophil count in bronchoalveolar lavage fluid (BALF). It also decreased levels of key inflammatory cytokines, including IL-4, IL-5, and IL-13, and reduced serum IgE levels. Histopathological improvements showed reduced peribronchial inflammatory cell infiltration, decreased goblet cell hyperplasia, and reduced airway smooth muscle hypertrophy. Proposed mechanisms included the inhibition of NF-κB signaling pathways and immunomodulation by shifting the immune response towards a higher T helper 1 (Th1) response, evidenced by increased interferon-gamma (IFN-γ). No major adverse effects were reported at effective doses.

Conclusion : Strong evidence from animal studies indicates that Medicago sativa possesses potent anti-inflammatory and immunomodulatory effects in experimental asthma models, effectively targeting several key pathological markers of the disease. These findings provide a robust scientific basis for further investigation, including the isolation of active compounds, pharmacokinetic studies, and ultimately, controlled clinical trials to evaluate its efficacy and safety in humans.

TRADITIONAL AND INTEGRATIVE MEDICINE

A Systematic Review of Clove's Effects on Female Reproductive System with Insights from Persian Medical Texts

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Background and Aim : Clove (Syzygium aromaticum (L.) Merr. & L.M. Perry), known as "Qaranful" in Traditional Persian Medicine (TPM), has been extensively documented for its multifaceted therapeutic properties in both traditional medical texts and contemporary scientific studies. This study presents a comprehensive review of TPM perspectives with conventional evidence regarding clove's effects on female reproductive health, highlighting its potential as a bridge between traditional wisdom and evidence-based medicine.

Methods : The review about clove and its related indication, dosage, and formulation on the Female Reproductive System was conducted on TPM texts including Makhzan al-Adviyah, Qarabadin Kabir, Tuhfat al-Muminin, al-Qanun fit-Tibb, Eksir Azam, and Tibb Akbari. In order to review recent researches, a search was conducted on all kinds of studies in the English language using the keywords including “Syzygium aromaticum” or other synonyms or “clove” or its main phytochemicals (eugenol, eugenyl acetate, aceteugenol, beta-caryophyllene, astragalin, and eugenin) in combination with reproductive system-related keywords including reproductive, fertility, infertility, fertilization, intercourse, coitus, insemination, orgasm, implantation, pregnancy, gestation, conception, contraception, offspring, labor, obstetric, birth, uterus, ovary, endometrium, fallopian tubes, cervix, ovulation, vagina, luteinization, FSH, LH, progesterone, estrogen, prolactin, menstruation, menorrhea, menarche, embryo, fetal, ovum, ovule, gamete, oogenesis, endometriosis “polycystic ovarian syndrome” in PubMed and Scopus databases from the beginning to 2025.

Results : Reviewing 32 obtained studies demonstrates clove's dose- and duration-dependent influences on: (1) hypothalamic-pituitary-gonadal axis modulation, affecting LH, FSH, estrogen, and testosterone levels; both positive and negative effects depending on dose and duration; (2) menstrual cycle regulation through prostaglandin modulation; (3) antimicrobial activity against common gynecological pathogens; and (4) antiproliferative effects on reproductive cancer cell lines. Mechanistic studies reveal these actions are mediated through antioxidant pathways (Nrf2 activation), anti-inflammatory effects (NF-κB inhibition), and endocrine modulation (aromatase activity alteration). A survey of the clove’s properties in TPM texts reveals the clove's prominent role in managing female reproductive disorders. TPM scholars prescribed clove for uterine strengthening and treatment of uterine coldness and flatulence. In TPM texts, in addition to the therapeutic applications, precise dosage recommendations as well as duration of administration have also been documented. Compound formulations, which combined clove with other medicinal substances, were specifically developed for uterine disorders and fertility enhancement. TPM also recognized clove's aphrodisiac qualities, employing both oral and topical preparations to enhance sexual function, often attributing these effects to its essential warmth and dryness.

Conclusion : Both TPM texts and scientific studies on clove highlight the crucial importance of dosage and treatment duration in its therapeutic applications. Evidence demonstrates that short-term administration of low doses, particularly in pathological conditions, can effectively improve female reproductive system disorders and may enhance fertility outcomes. However, prolonged use at high doses has been associated with adverse effects, including potential contraceptive properties. This dose- and duration-dependent duality underscores the necessity of precise guidelines for administering medicinal plants affecting the female reproductive system, including clear indications and precise doses. The findings emphasize the value of herbal medicine while simultaneously highlighting the importance of responsible, evidence-based application to maximize therapeutic benefits and minimize potential risks. Such an approach aligns with both traditional wisdom and modern pharmacological principles in women's health management.

TRADITIONAL AND INTEGRATIVE MEDICINE

Evaluating of Clove (Syzygium aromaticum (L.) Merr. & L.M.Perry) in Letrozole-Induced Polycystic Ovarian Syndrome in rat

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Background and Aim : Polycystic ovary syndrome (PCOS) affects 5-15% of reproductive-aged women, characterized by imbalanced reproductive hormones and metabolic disturbances. Current treatments have limited efficacy and side effects, creating demand for alternative therapy. Clove (Syzygium aromaticum (L.) Merr. & L.M. Perry), used in Traditional Persian Medicine (TPM) for female reproductive health, contains bioactive compounds with demonstrated hormonal, antioxidant, and metabolic benefits. However, its specific effects on PCOS remain unstudied. This study investigates the impact of clove aqueous extract (CAE) on different profiles of PCOS in animal model induced by letrozole, bridging traditional knowledge with modern validation.

Methods : To obtain dried powder of CAE, clove buds (authenticated, voucher PMP-583) were macerated in distilled water (24 h, repeated twice), filtered, and lyophilized. For standardization, the eugenol content was quantified via Gas chromatography (GC), as well as phenolic and flavonoid levels using the Folin-Ciocalteu and aluminum chloride methods, respectively. The animal study was conducted in compliance with the animal ethics guidelines of the Tehran University of Medical Sciences (IR.TUMS.MEDICINE.REC.1400.1154). Thirty-six female Wistar rats (initial weight: 180±20g) were included in the study. Seven rats were left as the control group and PCOS was induced for 30 other rats via gavaging letrozole (1 mg/kg/day, 21 days), confirmed by vaginal cytology showing disrupted estrous cycles. The PCOS group was subdivided into: group 1: PCOS+Vehicle (carboxymethylcellulose 1%), group 2: PCOS+Clomiphene citrate (1 mg/kg/day), and group 3-6: PCOS+CAE at doses 50, 100, and 200 mg/kg/day. The TPM-based dose was calculated by converting the human dose to the animal equivalent dose using the conversion factor, with other doses representing half and double this value. Treatments continued for 30 days with assessments of: Body weight, Hormonal profiles (LH, FSH, testosterone, estradiol, progesterone), Ovarian oxidative markers (MDA (malondialdehyde), TOS (Total Oxidant Status), SOD (Superoxide Dismutase), TAC (Total Antioxidant Capacity) and OSI (TOS/TAC)) and Ovarian histopathology (cystic follicles, corpora lutea).

Results : GC analysis revealed 7100 µg/g eugenol in CAE, with total phenols (153.018 mg/g) and flavonoids (29.234 mg/g). Letrozole induction significantly altered all measured parameters versus the control group. Body weight increased post-PCOS induction ($p<0.001$), and reduced by CAE (50 mg/kg: $p\leq0.05$). CAE decreased ovarian cysts at all doses ($p<0.01$) and increased Graafian follicles ($p\leq0.005$). Hormonally, CAE reduced testosterone (100 & 200 mg/kg: $p<0.01$), LH (50 & 200 mg/kg: $p<0.01$), LH/FSH ($p<0.001$), and estradiol (100 & 200 mg/kg: $p<0.05$) while increasing progesterone (100 & 200 mg/kg: $p<0.01$) and FSH ($p>0.05$). Oxidative stress improved with reduced MDA ($p<0.01$), TOS ($p<0.001$), and OSI ($p<0.001$), while increased SOD (200mg/kg: $p<0.01$) and TAC ($p>0.05$).

Conclusion : CAE treatment dose-dependently ameliorated PCOS manifestations, with 200 mg/kg showing optimal effects: hormonal normalization, oxidative balance, and ovarian tissue restoration. Notably, all CAE doses restored estrous cyclicity. Related mechanisms appear to be multifaceted: (1) antiandrogenic action via modulation of the hypothalamic-pituitary-ovarian axis, (2) antioxidant activity through flavonoid and phenolic compounds, and (3) metabolic regulation via the AMPK/ACC pathways. Importantly, CAE outperformed clomiphene in cystic follicle reduction, suggesting superior ovarian protection. These findings validate TPM's historical use of clove for gynecological disorders while providing evidence for its multi-target mechanisms in PCOS.

TRADITIONAL AND INTEGRATIVE MEDICINE

Efficacy Comparison of Tragacanth and Chlorhexidine Mouthwashes on Gingivitis and Dental Plaque in Intubated ICU Patients: A Clinical Trial

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Background and Aim : Mouthwashes are effective in reducing plaque and gingivitis. People on ventilators have poorer oral hygiene than those who are not on ventilators. This study was conducted to compare the effects of tragacanth and chlorhexidine mouthwash on gingivitis and dental plaque index in intubated patients admitted to the intensive care unit.

Methods : This study was a randomized clinical trial study in which, based on the inclusion criteria, 36 patients admitted to the intensive care unit were divided into two groups of patients receiving care with tragacanth and chlorhexidine mouthwash. The study collected demographic and clinical characteristics, dental plaque index, and gingivitis using a questionnaire. The data were analyzed using SPSS16 software.

Results : The mean age of the subjects in the intervention and control groups was 40.25 ± 13.19 and 39.80 ± 13.08, respectively. The results of the study showed that at the end of the study, the gingivitis index and dental plaque index in the intervention group had a greater decrease compared to the control group, which was statistically significant ($p<0.001$).

Conclusion : Considering the greater side effects of chlorhexidine, tragacanth mouthwash can be recommended to reduce gingivitis and dental plaque in patients hospitalized in the intensive care unit. Further studies on the effect of this mouthwash on the microbial load and respiratory infections in critically ill patients are recommended.

Lead poisoning and its management from Avicenna's point of view

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Background and Aim : The accumulation of heavy metals in soil, water, and air due to industrial and agricultural activities leads to environmental hazards and widespread toxic consequences on human health. Lead is one of the most toxic metals, and long exposure to it could affect the central nervous system and promote organ dysfunction, such as the heart, liver, and kidneys. Recent studies have focused on the use of natural compounds to reduce the adverse effects of lead. In the Persian medicine manuscripts, various therapeutic options have been considered to treat lead intoxication. The objective of this study is to investigate Avicenna's approach to the management of lead poisoning.

Methods : In the first stage, the Canon of Medicine was searched to extract lead poisoning therapeutic measures and medications. Moreover, a comprehensive review was conducted through electronic databases like PubMed, Science Direct, Scopus, and Google Scholar with keywords including "lead", "antidote", "herbal medicine", "toxicity", "Persian medicine", "Avicenna", and "poisoning" with the title/abstract filter.

Results : Based on the results, Avicenna described acute lead poisoning and believed that lead poisoning causes certain symptoms like edema, swollen tongue, bloated stomach and abdominal heaviness, change in body color, etc. He recommended a combination therapy using some herbal formulations like Triphala and other laxative agents to reduce the adverse effects of lead. In addition, several plants have been suggested for lead detoxification, such as Commiphora myrrha, Valeriana officinalis, Apium graveolens, and Allium sativum. Lead induces cellular damage primarily through the generation of oxidative stress and the activation of inflammatory and apoptotic signaling pathways. The proposed herbal compounds are rich in antioxidant constituents, and their various pharmacological activities, including anti-inflammatory, anti-apoptotic, and geno-protective effects, have been well-documented in numerous preclinical and clinical studies.

Conclusion : The herbal remedies that were recommended by Avicenna for the management of lead poisoning could be subjected to future studies. Additionally, with the support of clinical studies, natural supplements could be developed for the prevention and mitigation of lead-induced toxic effects.

Uncovering the neuroprotective powers of Allium sativum: exploring its potential to alleviate malathion- associated Parkinson's-like behavioral symptoms in a rat model

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Background and Aim : Background: Garlic, scientifically known as Allium sativum, has been a revered traditional medicine for millennia, rich in diverse phytochemicals with various medicinal properties, such as antioxidant, anticancer, anti-inflammatory, pain killer, hypoglycemic, antimicrobial, antiviral, and wound-healing properties. Its remarkable therapeutic potential makes garlic a beneficial natural treatment for many health issues. Objective: This research examined the neuroprotective effects of garlic against Malathion (Mal)- associated Parkinson's-like behavioral symptoms in rats.

Methods : Animals were categorized into eight groups at random: (1) saline-treated group (control); (2) Mal group (100 mg kg^{-1}); (3) Mal + garlic (50 mg kg^{-1}); (4) Mal + garlic (100 mg kg^{-1}); (5) Mal + garlic (150 mg kg^{-1}); (6) Mal + L-DOPA (10 mg kg^{-1}); (7) garlic (150 mg kg^{-1}); and (8) polyethylene glycol (PEG) group (L-DOPA vehicle). Treatment lasted 28 days, followed by behavioral assessments and analyses of acetylcholinesterase (AChE) activity, malondialdehyde (MDA) level, antioxidants levels, and proinflammatory cytokines in the striatum.

Results : Mal exposure caused neurobehavioral toxicity with increased MDA, tumor necrosis factor-α (TNF-α), and interleukin-6 (IL-6), alongside decreased GSH concentration and AChE activity. Garlic treatment successfully mitigated these effects.

Conclusion : The findings suggest that garlic may have a favorable impact in treating Parkinson's disease by enhancing antioxidant levels and mitigating oxidative stress and inflammatory processes, countering the harmful effects of pesticides like Mal. Additional studies necessary to thoroughly explore garlic's protective benefits in this area

Exploring the immune-boosting and hepatoprotective potential of Allium jesdianum against cyclophosphamide-induced toxicity in mice: A promising approach for immunomodulation

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Background and Aim : Cyclophosphamide (CTX) is a potent chemotherapy drug for treating cancer, but its use is limited due to its toxic effects on healthy human tissues. This study aimed to explore the in vivo immunomodulatory effects of Allium jesdianum on CTX-induced toxicity in Nordic Medical Research Institute (NMRI) mice.

Methods : Hydroalcoholic extract of the whole plant of A. jesdianum (AJE) was obtained using the maceration technique, and its total phenolic and flavonoid contents were measured. Mice were orally administered with the extract at a dose of 200 mg/kg for 14 days, either as a standalone treatment or combined with an intraperitoneal injection of 20 mg CTX. The effects of the extract on body and relative organ weight, white blood cell (WBC) count, liver biochemical test, serum antibody titer hemagglutination (HA), delayed-type hypersensitivity reaction (DTHR), lymphocyte proliferation, cytokine production, and spleen and liver histopathological features were assessed.

Results : AJE effectively restored various parameters in immunosuppressed mice, including body and organ weight, WBC counts, liver biochemical markers, HA, DTHR, lymphocyte proliferation ability, and cytokine production. Notably, AJE significantly stimulated lymphocyte proliferation, enhanced both cellular and humoral immunity, restored the levels of interferon (IFN)-γ and interleukin (IL)-4, and reversed the splenic white pulp atrophy in the immunosuppressed mice.

Conclusion : Analyses have shown that AJE exerts protective effects on the immune system of CTX-treated animals by boosting both cellular and humoral immunity, with no observed hepatoxicity. Key Words: Immunesuppression, Hepatoxicity, Allium jesdianum, Cellular immunity, Humoral immunity

TRADITIONAL AND INTEGRATIVE MEDICINE

The Effects of Plantago spp. on the Management of Oral Mucositis Induced by Chemoradiotherapy: An Integrative Review

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Background and Aim : Oral mucositis is a prevalent and debilitating non-hematologic complication of chemotherapy and radiotherapy, particularly among cancer patients. Clinically, it manifests as erythema, ulceration, bleeding, and pain, often leading to impaired speech and swallowing, malnutrition, and heightened risk of infection. This condition affects approximately 40–50% of chemotherapy patients, up to 80% of those undergoing hematopoietic cell transplantation (HCT), and nearly 100% of patients receiving radiotherapy for head and neck cancers. The pathobiology of mucositis involves a complex, multi-stage process, beginning with DNA damage caused by chemoradiotherapy-induced free radicals. This initiates a cascade of inflammatory signaling, culminating in mucosal injury. Given the high incidence of mucositis and concerns regarding the safety and drug interactions of conventional therapies, there is increasing interest in herbal alternatives. This review aims to evaluate the therapeutic potential of Plantago spp. in the management of chemoradiotherapy-induced mucositis, based on evidence from both human and animal studies.

Methods : This review involved a systematic search of the literature across databases including PubMed, Scopus, and Web of Science. The keywords used were “Plantago,” “oral ulcer,” and “mucositis.” Articles relevant to the application of Plantago spp. in the treatment of oral mucositis were extracted and analyzed.

Results : Persian medicine has long utilized Plantago major and Plantago lanceolata for wound healing, toothache, gum strengthening and mouth ulcers. Various studies have shown the anti-inflammatory, analgesic, wound healing, antioxidant, and immunomodulatory properties of plantain. Findings from clinical trials indicate that Plantago major, administered as a syrup or mouthwash, can be effective in mitigating oral mucositis in cancer patients undergoing chemoradiotherapy. The herb has demonstrated potential in reducing the severity of mucositis, alleviating pain, and enhancing patients' quality of life. Experimental studies have revealed that Plantago lanceolata extract significantly inhibits nitric oxide (NO) production, a key signaling molecule in inflammation. Overproduction of NO contributes to tissue damage, and Plantago lanceolata appears to downregulate the expression of inducible nitric oxide synthase (iNOS) in inflammatory cells, while not affecting cyclooxygenase-1 (COX-1) mRNA expression. Moreover, bioactive compounds within Plantago major, including ursolic acid, oleanolic acid, and alpha-linolenic acid, possess notable anti-inflammatory and antitumor properties. These compounds may exert their effects by inhibiting inflammatory signaling pathways and reducing the production of pro-inflammatory cytokines and mediators such as NF-κB, COX-2, and leukotriene B4. These mechanisms contribute to reduced inflammation and tissue damage in mucositis.

Conclusion : Given the lack of definitive treatment for mucositis and the limitations of standard therapies, medicinal plants such as Plantago major offer a promising, accessible, and cost-effective alternative. Current evidence suggests that Plantago major and Plantago lanceolata, through their multifaceted molecular mechanisms, may serve as complementary or alternative therapies for managing chemoradiotherapy-induced mucositis. Nonetheless, further clinical trials are necessary to confirm its efficacy and safety in broader patient populations.

TRADITIONAL AND INTEGRATIVE MEDICINE

A Systematic Review of the Therapeutic and Pharmacological Potential of Capparis spinosa against Cancer Cell Lines: An Examination of In Vitro Studies and Cellular Mechanisms

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Background and Aim : Cancer is a major worldwide contributor to disability and mortality. Rooted in genomic alterations and disruptions of somatic cell life cycles, it manifests as uncontrolled and invasive growth. This leads to impairments in cell cycle mechanisms, apoptosis, and cellular differentiation. In the current era, where chemotherapy and radiotherapy face challenges of resistance and toxicity, the use of medicinal plants holds great potential. In this context, Capparis spinosa (caper), widely utilized in pharmaceutical and nutritional formulations, has emerged as a notable agent in novel oncology research due to its diverse bioactive compounds with antioxidant, anti- inflammatory, and antitumor properties. This study aims to comprehensively review and evaluate the therapeutic potential of this plant in inhibiting various cancer cell lines, focusing on the analysis of molecular mechanisms identified in laboratory (in vitro) studies. This approach seeks to provide a holistic perspective on this plant as a potential candidate for developing new anti-cancer strategies and to guide future research in this field.

Methods : This systematic review was conducted following the PRISMA guidelines. Searches were performed in databases such as PubMed, Scopus, Web of Science, Google Scholar, ScienceDirect, SID and Magiran, using keywords including "Capparis spinosa," "cancer," "cellular mechanism," and "bioactive compounds," from January 2017 to July 2025. Data related to laboratory studies (including cell line type, extract/ compound, dosage, cytotoxicity assay methods, apoptosis, and cell cycle) were extracted from 25 eligible research articles that examined the effects of Capparis spinosa on cancer cells (human or animal) in vitro, in Persian or English. The collected data were then qualitatively analyzed.

Results : These studies demonstrate the significant potential of C. spinosa and its bioactive compounds at specific concentrations in inhibiting the growth and proliferation of various cancer cell lines, including breast cancer (MDA-MB-231, MCF-7), ovarian cancer (1A9), colorectal cancer (HT-29), ileocecal cancer (HCT-8), pancreatic cancer (MIAPaCa-2), liver cancer (HepG2), nasopharyngeal cancer (KB), lung cancer (A549), skin cancer (A431), prostate cancer, bladder cancer (T24), and leukemia (Raji). The anti-cancer cellular mechanisms of this plant include prevention of oxidative damage, induction of apoptosis via caspase-dependent, mitochondrial, and other signaling pathways, regulation of gene expression, cell cycle arrest, inhibition of angiogenesis, suppression of metastasis, and modulation of key signaling pathways such as PI3K/Akt/mTOR and NF-KB. These studies highlight the role of the phenolic compounds, flavonoids, sterols, glucosinolates, and alkaloids present in the plant extracts in eliciting these biological effects.

Conclusion : Studies suggest that extracts and purified compounds from Capparis spinosa exhibit selective cytotoxic effects on neoplastic cells through specific cellular mechanisms, while demonstrating minimal toxicity towards normal cells. Some studies indicate a potential role for these compounds in modulating neural pathways and in attenuating specific adverse effects of chemotherapeutic drugs. These findings position Capparis spinosa as a promising candidate for the development of anti-cancer therapeutic agents and warrant future research into the side effects of cancer treatments. Keywords: Capparis spinosa, cancer, cellular mechanisms, systematic review

Arctigenin Extracted from Arctium Lappa as a Plant-baced Inhibitor of PI3K/Akt/mTOR Signaling in Glioma Cells

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Background and Aim : Arctium lappa, commonly known as burdock, is a biennial herbaceous plant belonging to the Asteraceae family. It contains a bioactive lignan compound called arctigenin (ARG), which possesses multiple pharmacological properties, including antidiabetic, anti-inflammatory, antioxidant, anticancer, and neuroprotective effects. This study aims to explore one of the lesser-known therapeutic potentials of Arctium lappa: its ability to inhibit the proliferation and growth of gliomas. Gliomas are primary tumors stemming from glial cells in the brain and spinal cord, and are classified according to their cellular origin.

Methods : In conducting this study, 10 articles published between 2016 and 2025, including both experimental research and systematic reviews, were analyzed. All were selected based on the following keywords: Glioma, PI3K/AKT/mTOR signaling, Arctigenin, Arctium lappa, Traditional medicine.

Results : The PI3K/AKT/mTOR signaling pathway is a frequently overactivated pathway in most cancers which plays a crucial role in key gliomas characteristics such as growth, proliferation, and overall survival. This pathway activates through binding extracellular growth factors to receptor tyrosine kinases (RTKs) which contributes to receptor dimerization and autophosphorylation which activates phosphoinositide 3-kinase (PI3K). PI3K catalyzes the conversion of PIP2 to PIP3. This begins a signaling cascade where AKT (protein kinase B) is stimulated, leading to mTOR (mechanistic target of rapamycin) activation. mTOR activation enhances mRNA transcription and promotes anabolic processes, leading to growth and proliferation. Furthermore, this pathway inhibits cell apoptosis via inactivating pre-apoptotic factors such as BAD and caspase-9. It also facilitates cell cycle progression by overexpressing cyclins and CDK. ARG inhibits the PI3K/AKT/mTOR signaling pathway at multiple levels: inhibiting PI3K by reducing PIP3 formation, suppressing AKT phosphorylation, inhibiting mTOR activation and promoting apoptosis. All of these effects result in lessening cell growth and proliferation which presents ARG as a vital target in fights against cancer

Conclusion : In summary, ARG is recognized as a natural compound with the capability to disrupt central oncogenic signaling pathways notably PI3K/AKT/mTOR, therefore it reduces glioma cell growth and survival. ARG multi-targeted effects highlight its promise as a plant-based alternative in modern oncological treatment strategies. Keywords: Glioma, PI3K/AKT/mTOR signaling, Arctigenin, Arctium lappa, Traditional medicine

TRADITIONAL AND INTEGRATIVE MEDICINE

Evaluation of Traditional Persian Medicine (TPM) Curriculum and educational environment at Shiraz University of Medical Sciences (SUMS): A CIPP Model Report

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Background and Aim : Traditional Persian Medicine (TPM) education was initiated in Shiraz University of Medical Sciences (SUMS) in 2004. Despite the critical need for evaluating the TPM education success, it remained unassessed since its implementation. This study aimed to evaluate the educational curriculum of the TPM faculty at SUMS.

Methods : This descriptive study evaluated the educational curriculum of the TPM faculty at SUMS using the CIPP model and the DREEM questionnaire. The DREEM questionnaire assesses student perceptions in five areas of learning, teachers, self-perception, atmosphere, and social interactions. The CIPP model is a framework for evaluating the TPM program, considering context (program goals, history), inputs (resources needed), process (teaching/learning activities), and product (teaching/learning quality and societal benefits). The study surveyed professors, current students, and graduates of the TPM department since its inception in 2010, with a final sample of 23 participants. The data obtained from the 5-point Likert-type scale reliable questionnaires. The SUMS Ethics Committee approved the study, and data was analyzed using SPSS software.

Results : The context assessment revealed a high level of satisfaction among students with the educational facilities and environment. The physical infrastructure and resources were considered adequate according to the DREEM questionnaire. They were especially pleased with professors' academic abilities, and the general educational atmosphere although there were some lower levels of satisfaction regarding learning and the social environment. Changing teaching methods, increasing students' motivation, and integrating new practical aspects improve the curriculum. Course topics with low satisfaction need to be carefully coordinated to meet educational objectives. Most courses lacked flexibility for new concepts and innovation, except for a few.

Conclusion : Students expressed overall satisfaction with the educational facilities and environment during the context assessment. The unique identity of TPM was highlighted, and concerns about social status hindered its popularity among students. The support of authorities could potentially encourage more physicians to choose TPM for education. Most courses received positive satisfaction. Thus, modifying teaching methods and improving curriculum topics increases the students' motivation. Therefore, with supporting graduates by healthcare system authorities, there is a promising future for TPM.

TRADITIONAL AND INTEGRATIVE MEDICINE

Assessment of the relationship between mother's temperament and jaundice and neonatal in Qanat city in 1401

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Background and Aim : Neonatal jaundice is a prevalent condition, affecting approximately 60% of full-term and 80% of preterm infants, typically manifesting within the first three weeks postpartum due to the accumulation of bilirubin in the skin. While physiological jaundice is generally benign, severe manifestations can lead to kernicterus, an acute neurological syndrome with potentially fatal outcomes. In traditional medical frameworks, jaundice is attributed to elevated bile levels, considered a warm and dry humoral substance. Maternal nutrition has a critical impact on neonatal outcomes, as inadequate dietary practices during pregnancy and lactation can disrupt infant growth and development, thereby contributing to the occurrence of jaundice. Phototherapy remains the standard intervention for reducing elevated bilirubin levels

Methods : The concept of temperament has historically informed medical, philosophical, and theological perspectives, recognizing that individuals rarely possess perfectly balanced humoral characteristics. Common temperaments are typically compound, including bilious (hot and dry), phlegmatic (cold and wet), and others. Given the high prevalence and potential complications of neonatal jaundice, and the inconsistent findings in the literature regarding maternal temperament and its influence on jaundice, the present study aimed to investigate the relationship between maternal temperament and both the incidence and severity of neonatal jaundice in Qa'in. Following ethical approval, a case-control study was conducted. The case group comprised neonates hospitalized with physiological jaundice, while the control group included healthy infants attending health centers for routine care or vaccination. After obtaining informed consent, maternal and neonatal demographic data were collected, and maternal temperament was assessed via structured interviews using a validated questionnaire. Data analysis was performed using SPSS software

Results : A total of 200 infants were included, with 100 in each group. The mean maternal age was 28.82 years in the case group and 28.0 years in the control group. Multivariate logistic regression revealed significant associations between neonatal jaundice and several factors: father's occupation ($p=0.001$), maternal education ($p=0.084$), place of residence ($p=0.001$), gestational age ($p<0.001$), neonatal weight ($p=0.02$), and maternal temperament ($p=0.005$). Jaundice was most prevalent among infants weighing 3–4 kg and born at 38–39 weeks' gestation. Consistent with prior research, decreased gestational age was associated with an increased risk of jaundice. No significant relationship was observed between delivery type and jaundice incidence. Infant weight demonstrated a positive correlation with jaundice in this cohort, although previous studies have reported inverse associations, potentially reflecting variations in maternal lifestyle and environmental factors. Gender did not significantly affect jaundice incidence, although a slight predominance was observed in male neonates

Conclusion : Maternal temperament emerged as a noteworthy factor, with cold-tempered mothers exhibiting the lowest incidence of neonatal jaundice compared to those with warm temperaments. However, wet and dry temperaments were not significantly associated with jaundice, contrasting with previous findings regarding dietary heat and cold properties. The number of pregnancies was not significantly related to jaundice incidence, differing from other reports in the literature. In conclusion, neonatal jaundice is influenced by multiple determinants, including gestational age, neonatal weight, paternal occupation, and maternal temperament. Recognition and monitoring of these factors are essential for the implementation of preventive strategies aimed at minimizing jaundice incidence and mitigating its potential complications in neonates.

Survey of Attention and Importance Given to Service Packages in the Persian Medicine Integration Program into the Health System from the Community Health Workers (Behvarzan) and Health Caregivers Perspective

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Background and Aim : The integration of Persian Medicine (PM) teachings into the health system has been proposed as a macro-strategy to enhance healthcare services based on Persian Medicine. Given the pivotal role of community health workers (Behvarzan) and health caregivers in the successful implementation of this program, this study aimed to evaluate the level of attention and importance given to service packages in the PM integration program from the perspective of these groups at Esfarayen University of Medical Sciences in 2025

Methods : This cross-sectional descriptive-analytical study was conducted as a census on all Behvarzan and health caregivers employed at Esfarayen University of Medical Sciences (n=135). The research tool was a researcher-made questionnaire consisting of three sections: demographic information, evaluation of attention and importance of service packages, and program implementation notes, the validity and reliability of which were confirmed. Data were analyzed using SPSS-26 software and independent t-tests, Pearson correlation, and two-way ANOVA at a significance level of 0.05.

Results : Among 65 respondents, 76.9% were female, 50.8% were in the 30-40 age group, and 84.6% served in rural health centers. The mean score for attention to service packages was 72.71±17.37, and the mean score for their importance was 74.88±15.75, both at satisfactory levels. The main advantages of the program from participants' perspectives included increased public awareness (33.8%), improved lifestyle (30.8%), and reduced treatment costs (20%). On the other hand, the major challenges identified were incomplete implementation of recommendations by the community (30.8%), lack of acceptance of recommendations (26.2%), and insufficient training and equipment (13.8%). Data analysis revealed a strong positive correlation between attention and importance scores for service packages ($r=0.87$, $p<0.001$). Additionally, mean attention and importance scores were significantly higher among younger age groups (under 30 years) and individuals with higher education (bachelor's degree) ($p<0.05$). Participants suggested continuous training by specialists, simplification of educational content, and updating guidelines.

Conclusion : The findings indicate a positive attitude among Behvarzan and health caregivers toward PM service packages. However, challenges such as cultural resistance and lack of educational resources highlight the need to revise implementation approaches and strengthen training programs. Addressing these issues could improve program quality and help achieve the goals of integrating PM into the health system.

TRADITIONAL AND INTEGRATIVE MEDICINE

Knowledge, Attitude, and Practice (KAP) of Physicians in Iran toward Complementary and Alternative Medicines (CAM)

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Background and Aim : Complementary and Alternative Medicine (CAM) refers to healthcare practices that fall outside the realm of conventional medicine. One of the objectives of WHO member states is to enhance CAM practices and the training of practitioners. Knowledge, Attitudes, and Practices (KAP) studies are employed to reveal knowledge, attitudes, and practices gaps within specific populations on particular topics. This study aimed to assess the knowledge, attitudes, and practices of physicians in Iran regarding complementary and alternative medicine.

Methods : This study was conducted among Iranian physicians using a questionnaire was distributed via two distinct sampling approaches. An electronic questionnaire was prepared for the study, but according to low response rate (5.1%) a paper-based questionnaire added to investigation. To be more random, paper-based questionnaire issued at a large national multidisciplinary scientific conference organized by the Islamic Republic of Iran Medical Council (IRIMC) in January 2025. Participation was entirely voluntary, and the questionnaires were administered anonymously. The questionnaire was designed by the research team, and its validity and reliability were evaluated. A final questionnaire comprising 21 items was prepared, organized into two sections: demographic information and CAM-related questions. One representative modality was selected from each of the five major categories of complementary and alternative medicine (Yoga, Dietary supplements, Chiropractic, Acupuncture, Homeopathy.) Our results were reported using descriptive statistics (analysis), Chi-Square, and single-factor and multi-factor analysis of variance. All analyses were performed by STATA-18 with a p-value of ≤ 0.05 considered statistically significant.

Results : Knowledge for dietary supplements was 45.85%, followed by acupuncture 37.18%, yoga 26.59%, chiropractic 19.37%, homeopathy 17.81% among Iran practitioners and also 26.59% reported no complementary medicine knowledge. The internet and social media emerged as the predominant source of CAM knowledge by a substantial margin. Assessing the participants shown dietary supplements is the most useful perceived 51.74%, followed by acupuncture 36.10%, yoga 31.53%, chiropractic 19.25% and homeopathy 10.71%. Most physicians agreed that CAM enhances patient satisfaction, requires regulatory supervision by the Ministry of Health and should be incorporated into medical curricula through fundamental CAM education. Clinical utilization rates for dietary supplements were 41.76%. This usage was 14.44% for acupuncture, 11.31% for yoga, 6.14% for chiropractic, 2.65% for homeopathy and 40.79% of respondents reported never using CAM. The primary barriers to CAM utilization were lack of clinical guidelines or resources, insufficient scientific evidence and inadequate physicians' knowledge.

Conclusion : This study revealed that among the five complementary medicine modalities investigated, physicians' knowledge, positive attitudes, and utilization of dietary supplements surpassed other modalities, followed by acupuncture, yoga, chiropractic, and homeopathy. Associations between physicians' knowledge, their attitudes toward perceived usefulness, and the clinical use of each studied complementary medicine modality were statistically significant.

TRADITIONAL AND INTEGRATIVE MEDICINE

Effective Herbs for Gum Strengthening: A Comprehensive Systematic Review

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Background and Aim : Background and Objective: Gum diseases such as gingivitis and periodontitis are common oral health problems that also affect the general health of the body [12, 13]. Common chemical treatments are often accompanied by side effects such as staining and altered taste [1, 8]. This has increased interest in using medicinal plants as complementary therapies [1, 3, 15]. The aim of this systematic review is to analyze the available scientific evidence on the effectiveness of various medicinal plants in improving gum health [2, 15].

Methods : This review was conducted based on the PRISMA protocol and by searching reliable databases (PubMed, Scopus, Web of Science and Google Scholar) [2]. Combined keywords such as "Herbal medicine", "Gingivitis", "Periodontitis", "Oral health", "Systematic review" and the names of specific plants were used [15]. Inclusion criteria included randomized clinical trials, animal studies, and reviews published between 2015 and 2025 [2, 15].

Results : Of the articles found, 34 studies were eligible for the final analysis [1]. Results showed that several herbs are effective in improving gum health [1, 3]: Green tea, which contains catechins that have strong antibacterial and anti-inflammatory properties and help reduce plaque accumulation and gingivitis [9]. Aloe vera, whose gel is as effective as chlorhexidine in reducing gingivitis and has fewer side effects [8]. Turmeric, whose active ingredient, curcumin, is a potent anti-inflammatory and antioxidant that helps reduce plaque and gingivitis indices [6]. Clove: Its oil contains eugenol, which is an effective antibacterial and local anesthetic that helps reduce periodontal pathogens and relieve pain [7]. Juniper, whose extract, especially juniper oil, has antiseptic and antibacterial properties that are known to be effective in treating oral infections and improving gum health [17, 18]. Neem, whose extract has antimicrobial properties and is as effective as chemical mouthwashes in reducing plaque and bleeding gums [5]. Pomegranate: Its peel and seed extract contains tannins and ellagic acid, which have anti-inflammatory and antibacterial properties and help reduce plaque and gingivitis [3, 4]. Chamomile, whose anti-inflammatory and soothing properties help reduce inflammation and relieve gum sensitivity [11]. Myrtle (Myrtus communis), whose studies show that the extract of this plant has strong antimicrobial properties against bacteria that cause gum disease and helps reduce gingivitis [12]. Sage (Satureja hortensis) whose essential oil has strong antibacterial and anti-inflammatory effects due to phenolic compounds such as carvacrol, which can be used in mouthwash formulations to combat oral pathogenic bacteria [13, 14].

Conclusion : Available scientific evidence clearly shows that medicinal plants can be used as effective and safe adjunctive treatments for periodontal diseases [1, 2, 3]. These plants, through their multiple mechanisms, help reduce inflammation, plaque, and the growth of harmful bacteria [1, 2, 15]. The main advantage of these plants is their efficacy comparable to some chemical treatments, along with a better safety profile and fewer side effects [1, 8]. This makes them a suitable option for long-term use [1, 8]. Keywords: Medicinal plants, gum health, gingivitis, periodontitis, systematic review, traditional medicine

TRADITIONAL AND INTEGRATIVE MEDICINE

Needling The Root Cause: A Systematic Review of Acupuncture's Impact on Hair Loss

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Background and Aim : This systematic review of human clinical studies aimed to assess the types, and safety of acupuncture techniques, and investigate their effects on treating alpoecia.

Methods : To obtain the relevant publications, Web of Science, PubMed, Scopus, Cochrane Library, and Google Scholar databases were systematically searched up to May 2024.

Results : Out of 156 publications, 7 articles met the inclusion criteria in this study. The types of acupuncture as an adjuvant therapy, were plum-blossom needling acupuncture (PBN) (n = 5), auricular acupuncture (n = 1), electro acupuncture/ seven-star needle tapping (n = 1), manual acupuncture (n = 1) and catgut embedding (n = 1; besides PBN). The total effective rate (TER) for clinical efficacy comparison, was 94.46% TER in treatment group vs. 77.86% TER in control group. Moreover, the levels of estradiol (E2), testosterone (T) and T/E2 were improved by acupuncture ($p<0.05$). Of the 7 studies, no serious adverse events were reported.

Conclusion : Although various acupuncture techniques improved the scores of hair loss and hair growth, further studies are needed to address the issue of small sample sizes by incorporating longer follow-up periods and designing studies with robust methodologies.

Subcision Technique for the Improvement of Cutaneous Scars: Correlation with Cosmetic Acupuncture in Traditional Chinese Medicine and Avicenna's Concept in the Canon of Medicine

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Background and Aim : Subcision is a minimally invasive dermatological procedure that treats depressed and tethered scars by mechanically disrupting fibrotic adhesions beneath the skin. This action promotes neocollagenesis and dermal remodeling, improving scar texture and appearance. Cosmetic acupuncture from Traditional Chinese Medicine (TCM) also uses needling at specific points to stimulate skin regeneration and collagen production, aiding aesthetic enhancement. Avicenna's Canon of Medicine describes subcutaneous needling or injection for treating scars, resembling modern subcision techniques. This study reviews the mechanisms, clinical applications, and outcomes of subcision, and compares them with the principles of cosmetic acupuncture and Avicenna's traditional guidance.

Methods : This literature-based review examined subcision's clinical efficacy and mechanisms in treating atrophic and post-acne scars. Avicenna's Canon of Medicine was reviewed using keywords related to ulcers, scars, and needles to explore historical subcutaneous scar treatments. Simultaneously, modern databases such as PubMed, Scopus, and ISI were searched for current evidence on subcision and cosmetic acupuncture, focusing on fibrosis release, collagen induction, and skin regeneration. Data from traditional and contemporary sources were critically analyzed and integrated to provide a comprehensive perspective on scar management.

Results : Clinical evidence confirms that subcision effectively severs fibrotic bands tethering scar tissue to underlying layers, resulting in improved scar elevation and smoother skin texture. The procedure involves horizontal insertion of fine needles or cannulas beneath the dermis to disrupt connective tissue and induce collagen synthesis and neovascularization. Cosmetic acupuncture similarly targets defined skin points, promoting fibroblast activation and tissue remodeling, leading to enhanced skin elasticity and appearance. Avicenna's references to the use of needles (ʾibrah) for subcutaneous scar treatment demonstrate an early recognition of physical disruption and healing stimulation analogous to subcision. Avicenna specifically recommended inserting or piercing basic copper carbonate (zanjārr) with a needle into the site of the scar to enhance healing, further highlighting the historical foundation of such subcutaneous interventions.

Conclusion : Subcision, cosmetic acupuncture in TCM, and Avicenna's descriptions in the Canon of Medicine converge on the principle of mechanical subcutaneous stimulation to activate dermal repair, collagen synthesis, and tissue remodeling, representing an integrative nexus between historical medical wisdom and modern dermatologic practice. Recent cellular and clinical evidence underscores the therapeutic potential of copper compounds, including basic copper carbonate and its nanoscale forms, for their anti-inflammatory, wound healing, anti-aging, and antibacterial effects on skin. The combination of these bioactive agents with mechanical interventions such as subcision and cosmetic acupuncture may produce synergistic effects, enhancing scar revision and skin rejuvenation outcomes. Future research should focus on elucidating the molecular mechanisms underlying these therapies and evaluating their combined clinical efficacy to develop innovative and comprehensive approaches in aesthetic and reparative dermatology.

TRADITIONAL AND INTEGRATIVE MEDICINE

The effects of acupuncture on canine osteoarthritis: A review of recent studies

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Background and Aim : Osteoarthritis is one of the most common joint disorders in dogs, characterized by chronic pain, reduced mobility, and diminished quality of life. Conventional treatments primarily rely on nonsteroidal anti-inflammatory drugs and supportive interventions; however, these approaches are often associated with limited long-term efficacy and potential side effects. In recent years, acupuncture has gained attention as a complementary and noninvasive modality in the veterinary management of osteoarthritis. This review article examines the current scientific evidence regarding the application of acupuncture in dogs with osteoarthritis. Various studies suggest that acupuncture may alleviate pain and improve mobility through several mechanisms, including activation of neurogenic pathways, increased release of endorphins, enhancement of local blood circulation, and modulation of immune responses. Moreover, some reports indicate that combining acupuncture with pharmacological therapies or rehabilitation techniques may provide greater benefits than either method alone. Nevertheless, heterogeneity in study designs and methodological limitations highlight the need for more robust, large-scale controlled trials. Overall, acupuncture appears to be a safe and potentially effective adjunctive treatment for canine osteoarthritis, although stronger evidence is required to support definitive clinical recommendations.

Methods : web reserch in google scholar and pubmed reserch engine

Results : A total of published studies investigating the effects of acupuncture on canine osteoarthritis were reviewed. Most clinical trials and case series reported a noticeable reduction in pain scores and improvement in mobility following acupuncture sessions. Objective gait analyses in several studies demonstrated enhanced weight-bearing capacity and increased range of motion in affected joints. Additionally, owners frequently reported improved quality of life and reduced reliance on analgesic medications. Experimental studies suggested that acupuncture could modulate inflammatory mediators, enhance local blood circulation, and stimulate the release of endogenous opioids, which collectively contribute to analgesic and functional benefits. In cases where acupuncture was combined with nonsteroidal anti-inflammatory drugs or physiotherapy, outcomes were generally superior compared to monotherapy. However, the reviewed studies varied considerably in terms of sample size, treatment protocols, acupoint selection, and outcome assessment methods. Some investigations reported modest or non-significant improvements, reflecting potential biases or insufficient methodological rigor. Overall, the results suggest that acupuncture may provide clinically relevant benefits for dogs with osteoarthritis, though stronger evidence from well-controlled randomized trials is required to establish standardized treatment protocols and confirm efficacy.

Conclusion : Discussion Evidence from recent studies supports the potential benefits of acupuncture in managing OA in dogs, especially when used as part of a personalized, multimodal treatment plan. However, inconsistencies in protocols, variability in individual response, and a lack of long-term standardized data remain key challenges. Owner-reported outcomes often show more improvement than objective tools, possibly due to the placebo effect or the holistic interaction involved in treatment. Conclusion Acupuncture shows promise as an adjunct therapy in the management of canine OA. While some evidence supports its effectiveness in reducing pain and improving quality of life, further high-quality randomized trials with standardized protocols are necessary to confirm its role in routine veterinary practice.

Studying Medical Controversies through Netography: Cupping as a Case Study

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Background and Aim : Medical ethnography represents one of the most interdisciplinary scientific fields, bridging sociology, clinical medicine, and basic sciences through sub-disciplines like ethnopharmacology. Arabic medicine, with its historical span from India to the Atlantic and roots predating Islam, provides particularly rich material for understanding medical behaviors, beliefs, and social interactions. This tradition has evolved through complex internal debates among practitioners and philosophers, alongside external dialogues with other medical systems, especially during periods of colonial influence that often framed non-Western practices through a "science versus pseudoscience" lens. Contemporary philosophers of science have problematized this binary, noting its limitations in capturing the nuanced reality of medical traditions like Arabic medicine, which persists as both historical legacy and living practice across Arab societies today.

Methods : This research employed digital ethnography to examine cupping (Hijama) as a case study in medical controversy. The study analyzed the top 500 YouTube search results for "الحجامة" (cupping), selecting videos exceeding 5,000 views and 500 comments to ensure relevance and significant public engagement. Through iterative analysis of video content and user comments, the research mapped discussions against a framework of medical controversies, achieving theoretical saturation. Arabic comments underwent AI-assisted linguistic analysis with researcher supervision, enabling thematic coding and systematic categorization of emerging patterns.

Results : The analysis revealed five primary domains of controversy: sources of knowledge, methodological approaches, reliability assessments, definitional conflicts, and scientific/social norms. Most significantly, the study found that religious faith and personal experience narratives substantially outweigh biomedical evidence in validating cupping practices within online discourse. Users frequently referenced religious texts and personal testimonies to establish credibility, while engaging critically with institutional medical authority. The persistence of cupping discussion demonstrates how digital platforms facilitate the maintenance of traditional medical practices despite limited institutional support.

Conclusion : Conclusion and Recommendations The enduring presence of cupping in Arab societies reflects complex interactions between cultural heritage, religious belief, and contemporary digital mediation. Rather than representing a simple "alternative" to biomedical practice, cupping controversy reveals fundamental conflicts over knowledge production, authority structures, and cultural identity. The practice's resilience underscores the limitations of conventional science/pseudoscience binaries in understanding medical pluralism, suggesting need for more nuanced frameworks that acknowledge the social embeddedness of healing traditions. Three pathways emerge for future research: First, investigating how social media algorithms and platform architectures shape the visibility and validation of traditional medical practices. Second, developing evidence-based integration protocols that respect traditional knowledge while ensuring patient safety within institutional healthcare settings. Third, critically examining how binary medical classifications function within Arab contexts, particularly how they might reinforce cultural hierarchies or obscure localized understanding of health and healing. Such research would advance both medical anthropology and healthcare policy in culturally informed directions.

TRADITIONAL AND INTEGRATIVE MEDICINE

Causes of spontaneous miscarriage from the perspective of Persian Medicine and modern Medicine

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Background and Aim : Spontaneous abortion, a prevalent yet complex obstetric phenomenon, poses significant clinical, psychological, and social implications. In Conventional Medicine, it is primarily attributed to genetic anomalies, endocrine imbalances, immune dysregulation, and environmental exposures. In contrast, Persian Medicine approaches this condition through a holistic lens, emphasizing the role of temperamental imbalance (Mizaj), uterine integrity, and systemic harmony. This narrative review aims to explore the multifactorial causes of spontaneous abortion by bridging biomedical evidence with traditional insights. Understanding the convergence and divergence between these paradigms may offer a more integrative framework for prevention and individualized care in reproductive health.

Methods : To compile this article, scientific sources from databases including PubMed, Scopus, Google Scholar, NIH, Magiran, and SID were reviewed using keywords such as "spontaneous abortion," "recurrent miscarriage," "maternal factors in miscarriage," "inflammation and miscarriage," and "Persian medicine and miscarriage." In addition, classical texts of Persian Medicine and the Noor database were also studied to explore the perspectives of traditional Iranian medicine on miscarriage.

Results : Findings revealed that spontaneous abortion arises from a wide array of interrelated biological, environmental, and socio-cultural factors. Conventional Medicine identifies recurrent pregnancy loss as often linked to chromosomal abnormalities, uterine anomalies, endocrine disorders (such as thyroid dysfunction), autoimmune conditions (e.g., antiphospholipid syndrome), and infections like Listeria monocytogenes. Environmental toxins, particularly heavy metals like cadmium and lead, were also found to significantly increase miscarriage risk. Psychosocial stress, advanced maternal age, and lack of healthcare access further contribute to poor reproductive outcomes. In the Iranian context, delays in obtaining legal abortion approval, stigmatization, and insufficient awareness among healthcare professionals were identified as barriers to safe management. Additionally, psychological consequences—such as anxiety, depression, and post-traumatic stress—were prominent among affected women. From the perspective of Persian Medicine, imbalance in uterine temperament, parental humoral disharmony, and inappropriate use of abortifacient herbs (e.g., saffron, pennyroyal) are key contributors. Persian Medicine also highlights weakened organ function and lifestyle disruptions as underlying factors. Integrating modern diagnostics with traditional etiological models offers a culturally competent approach to prevention and holistic care in miscarriage management.

Conclusion : Spontaneous abortion requires a multifaceted understanding that transcends purely biomedical models. This review underscores the value of integrating Conventional Medicine's evidence-based diagnostics with Persian Medicine's individualized, temperament-based insights. Recognizing both physiological and cultural determinants is essential for comprehensive reproductive care. Such an integrative perspective can enhance prevention strategies, support personalized treatment, and bridge the gap between traditional beliefs and modern medical practice—especially in regions where cultural heritage strongly influences perceptions of pregnancy and miscarriage.

TRADITIONAL AND INTEGRATIVE MEDICINE

Reflexology in Classical Iranian Medicine: Historical Roots and Modern Evidence

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Background and Aim : Reflexology is a complementary medicine technique based on applying pressure to reflex points in the hands, feet, and ears. Although this method is not explicitly named in classical Iranian medicine, analogous practices such as Dalk (massage) and Ghamz (digital pressure) have been described as local stimulation methods. According to Iranian medical scholars, stimulating superficial and localized points on the body can influence the function of internal organs. Therefore, integrating their conceptual framework with modern scientific findings may provide broader clinical applications and opportunities for advancing integrative medicine.

Methods : This narrative review was conducted in two stages. First, primary Persian medical texts were systematically examined to identify concepts analogous to reflexology. Second, PubMed and Scopus databases were searched using keywords “reflexology,” “foot reflex therapy,” “hand reflex points,” and “complementary therapy,” for studies published between 2020 and 2025. Randomized controlled trials (RCTs), systematic reviews, and high-quality clinical studies were included. A comparative analysis was then performed between mechanisms described in classical texts and modern physiological processes.

Results : - modern evidence: • Migraine: An RCT in Shiraz (2025, n=84) reported that foot reflexology combined with pharmacotherapy significantly reduced the duration (mean reduction 2.3 hours, P=0.024) and intensity (VAS score reduction 1.8 points, P=0.043) of migraine attacks, although frequency remained unchanged. • Leukemia patients: Foot reflexology during bone marrow aspiration significantly reduced reported pain scores (mean reduction 2.5/10, P<0.01) and anxiety (STAI reduction 4.2 points, P<0.05), while improving heart rate variability and blood pressure stability. • Systematic review: A review of 46 Iranian studies reported consistent benefits of reflexology for pain relief, anxiety reduction, improved sleep quality, mitigation of chemotherapy-related symptoms, alleviation of premenstrual syndrome, and facilitation of labor outcomes. • Hand vs. foot reflexology: Comparative studies indicate both modalities reduce anxiety, but foot reflexology exerts stronger effects on physiological indices (heart rate variability, cortisol reduction). - traditional evidence (Classical Persian medicine): • Asbāb wa ‘Alāmāt by Samarqandi describes that extremities share neural pathways with the brain and are positioned in topographic adjacency, suggesting reflexive interactions. •Teb Akbari by Hakim Arzani emphasized that stamping the feet and massaging the palms and soles are beneficial for head-related disorders, including headache, vertigo, impaired consciousness, and auditory complaints. • In Zakhīrah-yi Khwārazmshāhī, stimulation of specific points on the soles was reported to restore humoral balance, enhance the flow of Rūh Hayawānī (vital spirit), regulate innate heat, and consequently promote energy flow, pain relief, and improved organ performance.

Conclusion : Reflexology is a safe, low-risk therapy with robust evidence for alleviating pain, reducing anxiety, and improving patient functional outcomes. Classical Iranian texts provide a theoretical framework that aligns conceptually with modern physiological mechanisms, supporting its historical roots. Integrating traditional knowledge with contemporary clinical evidence provides a foundation for designing large-scale, multicenter, long-term RCTs, further establishing reflexology as a validated modality in integrative and traditional medicine.

TRADITIONAL AND INTEGRATIVE MEDICINE

From Margins to Mainstream: The Status of Integrative Medicine Education in Leading U.S. Medical Schools

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Background and Aim : Integrative and complementary medicine (IM/CAM) has attracted increasing attention within academic medicine, reflecting a shift toward whole-person, preventive, and lifestyle-oriented care. However, the extent to which leading U.S. medical schools incorporate IM/CAM into their curricula remains unclear. The objective of this study was to evaluate the educational integration of IM/CAM across the top 20 U.S. medical schools listed in the 2025 QS World University Rankings by Subject (Medicine).

Methods : Between September 15 and 22, 2025, we performed a structured web-based review of official university and medical school websites. The search focused on dedicated integrative medicine centers, undergraduate medical education (UME) courses, graduate medical education (GME) opportunities including residencies and fellowships, and the presence of clinical services and continuing medical education (CME) related to IM. Institutions were analyzed and grouped according to the depth of integration across these domains.

Results : Eighteen of the twenty institutions demonstrated at least some engagement with IM/CAM education or services, though with considerable variability. A small group of schools, notably Harvard, UCSF, UCLA, Vanderbilt, Northwestern, and the University of Washington, showed the most comprehensive integration. These institutions typically hosted established centers such as the Osher Centers, provided structured UME electives, offered fellowships, and combined education with clinical and research activities. A second group, including Columbia, Weill Cornell, Yale, NYU, the University of Michigan, Stanford, and the University of Pittsburgh, exhibited strong but more specialized integration. Their programs tended to focus on oncology, family medicine, or lifestyle medicine, with opportunities for electives and postgraduate training but less uniform incorporation into core curricula. A third group, represented by Johns Hopkins, the University of Pennsylvania, UC San Diego, Washington University in St. Louis, and the University of Chicago, offered integrative clinical services but showed limited evidence of systematic educational embedding at the undergraduate or graduate level. Finally, Baylor and Duke provided only minimal documentation of formal IM education within their medical schools, although Duke maintained a well-known integrative health center primarily oriented toward professional training and community programs rather than core medical education. Across these groups, three dominant educational models emerged: the Osher-center model linking education, research, and clinical care; the oncology-integrative model embedded within cancer centers; and the family medicine model emphasizing integrative primary care training.

Conclusion : Our review shows large differences in how IM/CAM is taught in leading U.S. medical schools. Some universities, especially those with strong centers like Harvard and UCSF, have developed full programs that include courses, electives, fellowships, and research. Others only offer limited options such as oncology support or wellness services. Still, it is important to note that 18 of the 20 top schools include some form of IM/CAM in their teaching or training. This shows that integrative medicine is becoming part of mainstream medical education, even if the level of commitment is not the same everywhere. To build on this progress, schools could agree on minimum exposure for all students, create more fellowships and residency tracks, and define clear skills that graduates should have. These steps would help prepare future doctors to use safe and evidence-based integrative approaches in patient care.

TRADITIONAL AND INTEGRATIVE MEDICINE

Effects of Combining Nigella sativa Supplementation with Aerobic Exercise on Blood Pressure and Cardiovascular Function: A Comprehensive Review

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Background and Aim : Hypertension is a prevalent and critical public health issue, significantly an independent causing agent for cardiovascular disease and mortality. Minimally invasive approaches are growing popularity in this field and among them in complementary items are staying focused. Nigella sativa (black cumin) is popular for its potential in modulating blood pressure and supporting cardiac function, while aerobic exercise is well-established as beneficial for cardiovascular health. The aim o the present study was to systematically investigate the probable synergistic effects of Nigella sativa supplementation along with aerobic exercise on controlling systolic and diastolic blood pressure, as well as overall cardiovascular health.

Methods : A systematic search was carried out on the MEDLINE, Scopus, and Web of Science online databases to determine relevant clinical trials, animal and observational studies published from 2011 to 2024. This relevant studies examining both the individual and combined effects of Nigella sativa and aerobic exercise. Data extraction concentrated on blood pressure outcomes (SBP, DBP), endothelial function, lipid profiles, inflammatory biomarkers, and adverse events. Considerations included factors such as age, gender, existing comorbidities, and lifestyle characteristics.

Results : Daily intake of 2 grams of Nigella sativa over eight weeks yielded an average decrease of 7.5 mmHg in systolic blood pressure and 5.3 mmHg in diastolic blood pressure. Engaging in moderate-intensity aerobic exercise for three sessions per week, lasting 45 minutes each, led to an independent average reduction of 8.2 mmHg in SBP and 6.1 mmHg in DBP. When both interventions were combined, participants experienced a significantly larger decrease, with average reductions of 13.4 mmHg in SBP and 9.8 mmHg in DBP ($p < 0.01$). In addition, total cholesterol (TC) levels decreased roughly 12%, while inflammatory markers like hs-CRP dropped by approximately 18%. Importantly, no significant adverse effects on liver or kidney function, nor any disturbances in electrolyte balance, were observed in the studies reviewed.

Conclusion : Integrating Nigella sativa supplements with aerobic exercise presents a promising strategy for managing hypertension and enhancing cardiovascular performance. This approach is not only practical but also accessible, especially for individuals at risk of hypertension-related complications. However, it is crucial to undertake large-scale, rigorously designed randomized controlled trials to establish standardized treatment protocols and clarify the underlying mechanisms at play. Keywords :Nigella sativa, Aerobic exercise, Hypertension, Cardiovascular function.

TRADITIONAL AND INTEGRATIVE MEDICINE

Trachoma in Persian Medicine: Historical Perspectives and Comparison with Modern Therapeutic Approaches

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Background and Aim : Trachoma is an infectious and transmissible ocular disease predominantly prevalent in regions with warm and subtropical climates, caused by the bacterium Chlamydia trachomatis. This condition may progress to trachomatous trichiasis, which if untreated, can lead to permanent and irreversible vision loss. Public health strategies have focused on the SAFE approach (Surgery, Antibiotics, Facial cleanliness, and Environmental improvement). In 2018, the World Health Organization (WHO) declared trachoma eliminated as a public health problem in Iran; however, this does not imply complete eradication of the disease. In Persian Medicine (PM), trachoma was known as jarab al-'ayn (eye scabies). The description of this disease by Rhazes in al-Mansūrī fī al-Ṭibb closely corresponds to the modern clinical understanding. Given this conceptual overlap, the present study aims to investigate trachoma and its therapeutic approaches in ITM manuscripts from the 3rd to the 13th centuries AH, and compare them with contemporary medical therapies.

Methods : This descriptive study was conducted based on historical sources and classical Persian medical texts accessed via the Noor Digital Library software. Data were collected from texts written between the 3rd and 13th centuries AH. Additionally, a comprehensive literature was performed using scientific databases including Google Scholar, PubMed, and Scopus, using keywords related to Ocular trachoma.

Results : Findings from these historical texts demonstrate that trachoma was a widespread disease persisting over many centuries. The main causes of this disease appear to be the lack of personal and public hygiene, poverty, poor environmental conditions, the presence of flies, and the predisposition of certain dystemperaments (imbalances in bodily humors), for which the recommended treatment involved therapeutic cleansing of the body. Additionally, the entry of dust or foreign bodies into the eye, as well as underlying diseases such as tuberculosis, syphilis, and malaria, put individuals at greater risk of developing this disease. A common belief among traditional physicians was that the root cause of the disease originated from the accumulation of corrupted (putrid) humor. Consequently, treatments primarily focused on expelling these humors using methods such as bloodletting, wet cupping, purging, and the application of topical irritants or suppositories. In the most advanced and severe stage, therapeutic interventions included nasal insufflation with compounds such as Aloe vera, Castoreum and Opopanax chironium, all known for their disinfectant properties. Moreover, preparations of copper oxide or calcined copper was applied for their potent antibacterial and wound-healing effects. These traditional treatments underscore an early recognition of the infectious and bacterial nature of trachoma. By comparison, modern medicine identifies Chlamydia trachomatis as the causative agent of trachoma. Current treatments primarily involve oral or topical administration of the antibiotic azithromycin, alongside surgical intervention to correct trichiasis and prevent corneal damage.

Conclusion : These findings indicate a convergence between traditional therapeutic approaches and contemporary medical practices in the treatment of trachoma, highlighting the necessity for further interdisciplinary research to validate and integrate historical insights into modern clinical applications. Keyword: Trachoma, Ocular disease, Chlamydia trachomatis, Persian medicine

TRADITIONAL AND INTEGRATIVE MEDICINE

The Effect of Motivational Interviewing with an Emphasis on Iranian Traditional Medicine Hygiene Principles on Stress and Quality of Life in Infertile Women

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Background and Aim : Infertility is defined as the inability of couples to conceive after one year of regular, unprotected sexual intercourse. Infertility represents a significant crisis that adversely affects the mental health of individuals, ultimately diminishing their quality of life. This study aimed to investigate the effect of motivational interviewing, incorporating the hygiene principles of Iranian traditional medicine (Hefz-Alsehe), on stress and quality of life in infertile women.

Methods : This randomized controlled trial was conducted with ethical approval (IR.ZUMS.REC.1402.196) and registered with the Iranian Registry of Clinical Trials (IRCT20160608028352N13) on 2023/11/28. Fifty-six women aged 20–40 years who met the inclusion criteria were recruited using convenience sampling. Participants were stratified based on primary and secondary infertility and then randomly assigned to either the intervention (n=28) or control (n=28) group using block randomization with a four-person block size. The intervention consisted of five individual, in-person motivational interviewing sessions. Data collection tools included a demographic and infertility characteristics questionnaire, the Newton Fertility Problem Inventory (FPI) for stress, and the Fertility Quality of Life (FertiQoL) questionnaire. These were completed by both groups at three time points: before the intervention, immediately after the intervention, and three months following the final session. The control group didn't receive any intervention. Study outcomes were analyzed using appropriate statistical tests, including independent t-tests and repeated measures analysis of variance, with SPSS version 16.

Results : The results demonstrated that the mean stress score (± standard deviation) in the intervention group was 170.93 (±21.30) at baseline, 150.07 (±21.00) post-intervention, and 142.52 (±20.77) at follow-up, showing a significant reduction in the post-intervention and follow-up phases compared to the control group ($p<0.001$). The quality of life scores in the intervention group were 55.17 (±13.76) at baseline, 68.59 (±9.88) post-intervention, and 70.23 (±10.54) at follow-up, demonstrating a significant increase in the post-intervention and follow-up phases compared to the control group ($p<0.001$).

Conclusion : Based on the study findings, motivational interviewing is recommended as an effective method to enhance motivation and facilitate behavioral changes rooted in Hefz-Alsehe principles, thereby reducing stress and improving quality of life in infertile women.

TRADITIONAL AND INTEGRATIVE MEDICINE

A Comparative Study of infantile colic: etiology and treatment in Conventional and Persian Medicine

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Background and Aim : Infantile colic is a benign condition in newborns and young infants, characterized by excessive crying and irritability, causing significant family distress. This study aimed to compare the causes and management of infantile colic from both conventional and Persian medicine perspectives, focusing on diagnostic and therapeutic similarities. Additionally, the role of infant temperament (Mizaj) and breast milk modification in Persian medicine was investigated.

Methods : This narrative review was conducted using library research. Electronic databases including PubMed, UpToDate, Scopus, Web of Science, and SID were searched for conventional medicine data. Persian medicine information was extracted from main references such as the Canon of Avicenna (Qanun), Mofarah al-Qulub, Aksir-e A'zam, and Khulasat al-Hikmah and related articles.

Results : Conventional Medicine Etiology: Gastrointestinal causes: Immature digestive system, lactose intolerance, inappropriate maternal diet Non-gastrointestinal causes: Poor parent-infant interaction, maternal anxiety during pregnancy/lactation, immature nervous system Persian Medicine Etiology: Includes digestive factors (weak digestion, overfeeding) while emphasizing: • Infant temperament imbalance (cold/heat imbalance causing gas) • Breast milk quality (texture, temperature, nutritional composition) • Maternal stress as contributing factors Conventional Treatments: Non-pharmacological: Infant massage, maternal diet adjustment, formula modification Pharmacological: Probiotics, simethicone, antispasmodics Persian Medicine Treatments: Non-pharmacological: Temperament-appropriate oil massage, maternal dietary modification, cradle rocking Pharmacological: Herbal medicines for breast milk correction and colic relief Key distinction: Persian medicine focuses on improving breast milk quality (not discontinuation) through maternal nutrition and temperament regulation

Conclusion : Despite differing theoretical foundations, significant similarities exist in diagnostic and therapeutic approaches. Both systems recognize gastrointestinal/non-gastrointestinal causes and recommend pharmacological/non-pharmacological treatments (especially massage and maternal nutrition). However, Persian medicine provides a more holistic approach by: • Assessing both maternal and infant temperaments • Enhancing breast milk rather than discontinuing it Integrating both perspectives may lead to more effective colic management strategies.

Aromatherapy in Integrative Medicine: Clinical Evidence and Insights from Persian Medicine

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Background and Aim : Aromatherapy, the therapeutic use of essential oils, has been practiced for centuries in Persian medicine, where aromatic herbs such as rose (Gol-e-Mohammadi), lavender (Ostokhoddus), thyme (Avshan), and saffron (Za'faran) were prescribed for neurological, psychological, and digestive disorders based on mizaj (temperament) theory. Today, aromatherapy has gained renewed clinical relevance within integrative medicine, particularly for symptom management in chronic and psychosomatic conditions. This review explores the convergence of traditional Persian medicine principles with modern clinical evidence on aromatherapy, aiming to highlight its therapeutic potential and integrative role in contemporary practice

Methods : Classical Persian medical texts—including Canon of Medicine (Avicenna) and Al-Hawi (Rhazes)—were examined for references to aromatic herbs and their indications. Modern evidence was reviewed from randomized clinical trials and systematic reviews retrieved from PubMed, Scopus, and Cochrane Library

Results : Persian medicine sources describe aromatics as agents to balance the heart, brain, and spirit, with specific mizaj considerations guiding their use. For example, rose was recommended for calming hot temperaments and improving mood, while lavender was applied for melancholic conditions. Modern clinical studies support these traditional insights: aromatherapy with rose and lavender has been shown to reduce anxiety, depression, and pain in perioperative, obstetric, and palliative settings. Thyme and peppermint oils demonstrate benefits in gastrointestinal disorders, while saffron exhibits antidepressant and anxiolytic properties. Across clinical trials, aromatherapy demonstrates significant improvement in quality of life, sleep quality, and stress-related symptoms, with minimal adverse effects when standardized preparations are used

Conclusion : Aromatherapy exemplifies how Persian medicine's wisdom on temperament and aromatic remedies aligns with modern integrative medicine's emphasis on safe, evidence-based interventions. Future directions include conducting high-quality clinical trials that integrate mizaj-based patient stratification, standardization of essential oil preparations, and the development of clinical protocols that respect both traditional frameworks and modern therapeutic guidelines.

TRADITIONAL AND INTEGRATIVE MEDICINE

Strategies for Implementing Integrative Medicine: Effective Incorporation of Traditional Medicine into the Modern Healthcare System

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Background and Aim : In recent decades, there has been a growing interest among patients and healthcare providers in holistic and patient-centered approaches. This has led to increased attention to integrative medicine—an approach that combines the strengths of traditional and modern medicine within the framework of scientific evidence. Integrative medicine has the potential to enhance the quality of healthcare services, reduce adverse drug reactions, improve patient satisfaction, and lower treatment costs. This study aimed to investigate the principles, strategies, and challenges related to the implementation of integrative medicine in Iran, with an emphasis on harmonizing Iranian traditional medicine with modern healthcare systems

Methods : A narrative review was conducted between January and June 2025. Classical sources of Iranian traditional medicine were reviewed to identify their principles of holistic care and system-based treatment. In parallel, international scientific databases (PubMed, Scopus, Web of Science) and national policy documents were searched for studies, guidelines, and strategic reports on the implementation of integrative medicine. Inclusion criteria covered articles, reports, and policy documents published between 2000 and 2025 in English and Persian. The data were thematically analyzed and categorized into four domains: policy and governance, education and training, clinical practice models, and research and evaluation

Results : The review revealed several key strategies necessary for successful implementation of integrative medicine in Iran. These include: 1. Policy and Governance: Development of unified national policies and regulatory frameworks that integrate evidence-based traditional medicine into healthcare delivery. 2. Interprofessional Collaboration: Establishment of collaborative models where physicians, pharmacists, and traditional medicine practitioners work together within defined clinical protocols. 3. Education and Training: Inclusion of integrative medicine curricula in medical, pharmacy, and allied health education, along with structured continuing education for current practitioners. 4. Clinical Practice Models: Creation of joint clinical centers where integrative care is delivered in a standardized and patient-centered manner, supported by clear treatment guidelines. 5. Research and Evaluation: Expansion of high-quality clinical research, with an emphasis on comparative effectiveness studies, cost-effectiveness analyses, and patient-reported outcomes. These strategies were also compared with international experiences from countries such as China, India, and Germany, demonstrating that localized adaptation of global models is crucial.

Conclusion : Integrative medicine offers a unique opportunity to bridge Iranian traditional medicine with modern healthcare, ensuring safety, efficacy, and patient-centeredness. For successful implementation in Iran, a stepwise approach is needed—starting with national policy alignment, capacity-building in education, pilot joint clinics, and continuous evaluation. The Ministry of Health is encouraged to design a localized integrative medicine model that both preserves the authenticity of Iranian traditional medicine and enhances the efficiency and quality of healthcare services.

Association Between Mizaj (Temperament) and Hypertension: A Cross-Sectional Study Based on Persian Medicine Principles

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Background and Aim : Hypertension, a major modifiable risk factor for cardiovascular diseases, shows ethnic variability in prevalence. While conventional medicine focuses on biochemical markers, Persian Medicine (PM) emphasizes Mizaj (temperament) in disease manifestation. This study investigated the distribution of temperament types among hypertensive patients in Hamadan, Iran, to explore potential associations between Mizaj and clinical characteristics.

Methods : We conducted a cross-sectional study of 120 patients (aged 20-60 years) with primary hypertension at Farshchian Heart Hospital during 2023. Participants were assessed using the standardized Salmannejad Temperament Questionnaire, which evaluates nine temperament types based on classical Persian Medicine criteria. Data analysis was performed using SPSS-26.

Results : The study population had a mean age of 51.73±5.44 years, with a predominance of female participants (65%). Analysis revealed cold-wet temperament as the most prevalent (34.2%), followed by cold-dry(saudavi) (18.3%) and warm-dry(Safravi) (10.8%) types. Statistical analysis demonstrated a significant relationship between temperament and BMI ($p<0.001$), with cold-wet individuals showing higher average BMI values. The Salmannejad questionnaire demonstrated good discriminative validity in identifying these temperament distributions among hypertensive patients.

Conclusion : This study reveals a high prevalence of cold-wet temperament among hypertensive patients, supporting Persian Medicine theories about Mizaj-based disease susceptibility. The findings highlight the potential clinical utility of temperament assessment using the Salmannejad questionnaire in hypertension management. Further research should explore the mechanisms linking specific temperaments to cardiovascular pathophysiology.

TRADITIONAL AND INTEGRATIVE MEDICINE

Frequency of use of complementary and alternative medicine methods in patients who are candidates for coronary artery bypass surgery

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Background and Aim : The desire of patients who are candidates for coronary artery bypass surgery to use complementary and alternative medicine (CAM) is increasing for reasons such as low cost, ease of access and low complications. The present study was conducted to determine the frequency of use of CAM methods in patients who are candidates for coronary artery bypass surgery.

Methods : This study is a descriptive study of the cross sectional-correlation type. The research community of this study included patients who were candidates for coronary artery bypass surgery admitted to the educational and therapeutic hospitals of the city of Urmia in 2022. 245 patients nominated for coronary artery bypass surgery were selected and entered into the study within 4 months after obtaining written consent with the available sampling method. Data rounding tools, demographic questionnaires and researcher-made questionnaires were the use of Complementary/ Alternative Medicine. The data analysis was carried out by SPSS software using descriptive statistics and inferential statistics (Chi-square test and independent T test).

Results : The results of this study showed that 216(88.2%) of the participants used CAM methods for their heart problems. 184 (75.4%) of patients did not have sufficient knowledge of CAM. Among the various CAM methods, the participants mostly used prayer131(53.5%), recreational therapy102(41.6%), and food diet 98(40%) methods.

Conclusion : The use of CAM can lead to abandoning the conventional treatment process, or the occurrence of harmful interactions if used simultaneously with traditional treatment methods. Therefore, it is essential to raise the awareness of the treatment team members regarding the types of CAM available and its possible side effects and benefits.

TRADITIONAL AND INTEGRATIVE MEDICINE

Studying the effect of two methods of acupressure and aromatherapy with rose petals on the level of anxiety in IVF candidate women

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Background and Aim : Infertility is considered a crisis in people's lives. They resort to any infertility treatment method to fulfill their desire to have children. Currently, infertility treatment has also made significant progress and is referred to as assisted reproductive technology (ART). One of the new ways to treat infertility is in vitro fertilization (IVF). Considering that in vitro fertilization is the last method of infertility treatment and failure in it means remaining childless, people who use IVF for infertility treatment are at risk of mental health problems. Anxiety is one of the issues that infertile people suffer from. Anxiety control methods include pharmacological and non-pharmacological methods. However, chemical drugs have limitations due to side effects and drug dependence. Therefore, the use of complementary methods such as aromatherapy and acupressure is considered as a low-risk, easy and cost-effective option. The aim of this study was to investigate the effect of aromatherapy with rose and acupressure on the anxiety level of women who are candidates for IVF.

Methods : This study was a clinical trial conducted on 30 participants in two intervention groups: 15 in the rose aromatherapy group and 15 in the acupressure group. A control group of 30 participants received no intervention. Data collection tools included a demographic checklist and the standard Spielberger Anxiety Questionnaire. Participants were randomly assigned and then divided into three groups by coin toss. Participants at the final stage of IVF, when they came for embryo transfer, were included based on the checklist and inclusion criteria. Questionnaires were completed once before the intervention for all three groups and again one hour after the intervention. Data were analyzed in SPSS version 20 using descriptive statistics (mean, standard deviation) and analytical tests including t-test and ANOVA.

Results : The largest age group was 35–39 years, and more than one-third of participants and their spouses had a bachelor’s degree. Most lived in the city, and over half had been married 1–5 years. There were no significant differences among the three groups in demographic characteristics. Mean anxiety scores in the aromatherapy group before and after the intervention were 52.11 and 54.39, and in the acupressure group 47.8 and 51.23. The increase in mean anxiety scores in both groups was not statistically significant ($P>0.05$).

Conclusion : The results showed that aromatherapy with rose hips and acupressure did not have a significant effect on reducing anxiety in women undergoing IVF. However, the use of complementary methods as a low-risk and easy option remains valuable, and it is suggested that future studies with larger sample sizes and more rigorous designs be conducted to investigate the true effectiveness of these interventions.

TRADITIONAL AND INTEGRATIVE MEDICINE

The effect of Artemisia absinthium L. (wormwood) extract on 3,4-methylenedioxymethamphetamine withdrawal in rat: An animal study

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Background and Aim : Addiction to psychostimulants such as methamphetamine is a major global health concern, causing significant physical, psychological, and social impairments. Chronic methamphetamine use leads to dependence, tolerance, and severe withdrawal symptoms upon cessation, including anxiety, depression, fatigue, and gastrointestinal disturbances. Current pharmacological treatments for withdrawal are often inadequate or associated with adverse side effects, highlighting the need for complementary therapies. Artemisia absinthium L. (wormwood), a medicinal plant with known antioxidant, anti-inflammatory, analgesic, and neuroprotective properties, has shown promising effects in various preclinical studies. The present study aimed to evaluate the protective and therapeutic effects of A. absinthium ethanolic extract on methamphetamine withdrawal symptoms in rats.

Methods : Forty adult male Wistar rats (250–280 g, 10 weeks old) were randomly assigned to five groups (n = 8 per group): Group1: control (saline + naloxone), group 2: methamphetamine + saline + naloxone, and groups (3–5): methamphetamine + saline + naloxone + A. absinthium extract at 5%, 10%, or 25%. Methamphetamine (5 mg/kg, i.p.) was administered daily for seven days to induce dependence. During these seven days, A. absinthium extract was co-administered intraperitoneally at the assigned concentrations. On the seventh day, withdrawal syndrome was precipitated using naloxone (1 mg/kg, i.p.). Behavioral symptoms of withdrawal—writhing, body dragging, teeth chattering, diarrhea, and wet dog shakes—were recorded for 30 minutes post-naloxone injection. Data were analyzed using the Kruskal–Wallis test followed by Dunn's multiple comparisons, and Fisher's exact test for categorical variables.

Results : Administration of A. absinthium significantly attenuated the severity of methamphetamine withdrawal symptoms. Compared to the methamphetamine group, the 25% extract markedly reduced writhing ($p = 0.003$), teeth chattering ($p = 0.001$), and diarrhea ($p = 0.010$). The occurrence of wet dog shakes decreased significantly across all extract-treated groups ($p = 0.005$). The highest protective effect was observed at the 25% concentration, without any noticeable adverse effects. These findings suggest that A. absinthium extract alleviates both somatic and behavioral manifestations of methamphetamine withdrawal in a dose-dependent manner.

Conclusion : The results demonstrate that Artemisia absinthium ethanolic extract may serve as a promising complementary therapeutic agent for managing methamphetamine withdrawal symptoms. Its neuroprotective, antioxidant, and anti-inflammatory properties likely act through modulation of dopaminergic, serotonergic, and noradrenergic neurotransmitter systems affected during withdrawal. By restoring neurotransmitter balance and reducing oxidative stress, A. absinthium could help mitigate depressive mood, anxiety, and physical discomfort associated with withdrawal. Further molecular and toxicological investigations, along with controlled clinical studies, are warranted to validate its safety, mechanism of action, and clinical efficacy as an adjunct in addiction treatment protocols.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Effect of Golghand (Rosadamacena) on Cognitive Status of Elderly with Mild Cognitive Impairment

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Background and Aim : Cognitive disorders are one of the most important disorders occurring among the elderly. The present study was designed to evaluate the effect of Golghand consumption on the cognitive status of the elderly people with mild cognitive impairment.

Methods : In this randomized clinical trial study, 70 elderly people aged 60-75 years after completing the demographic, elderly depression and brief cognitive status questionnaires in several stages and random allocation were divided into two groups of intervention and control. The intervention group used Golgand potion once a day for one month. At the end of the post-test questionnaire was completed for both groups. The data were analyzed with independent t and paired t statistical tests with significance level of less than 0.05.

Results : The mean and standard deviation of the cognitive status score in the experimental group before and after the intervention was 22.57 and 26.17, respectively. The same in score in the control group was 22.65 and 22.66, respectively. The cognitive status scores increased significantly in the intervention group. ($P = 0.027$), but no significant difference was observed in the control group ($P = 0.865$). The results also showed a significant increase in the cognitive status scores in the dimensions of orientation, attention, calculation and recall of the questionnaire in the experimental group in the posttest phase ($P < 0.05$)

Conclusion : According to the present study, Golghand increased cognitive status scores in the intervention group, which indicates the improvement of mild cognitive impairment in the elderly people and the prevention of Alzheimer's diseases

The Effect of Curcumin Supplementation on Glycemic Measures in Patients with Pre-Diabetes

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Background and Aim : Prediabetes is a condition characterized by blood glucose levels higher than normal, but not high enough to be classified as diabetes. Without appropriate interventions, prediabetes can progress to type 2 diabetes. Curcumin, a bioactive component of turmeric, has been attributed anti-inflammatory and antioxidant properties and is widely used in traditional medicine. The aim of this randomized, double-blind, placebo-controlled clinical trial was to evaluate the effects of three-month curcumin supplementation on glycemic measures in patients with prediabetes.

Methods : In this trial, 42 participants were assigned to either the curcumin group (500 mg/day, 16 women) or the placebo group (12 women). A low-calorie diet was recommended for all participants. Measurements included demographic variables and glycemic parameters (fasting blood glucose, HbA1c, and serum insulin) were carried out at baseline and post-intervention.

Results : After adjusting for confounding variables, curcumin supplementation significantly improved glycemic measures compared to placebo: fasting blood glucose (curcumin group: 108.81 to 103.48 mg/dL vs. placebo group: 111.35 to 110.8 mg/dL), HbA1c (curcumin group: 5.87% to 5.68% vs. placebo group: 5.91%, unchanged), and serum insulin (curcumin group: 16.95 to 15.47 μU/mL vs. placebo group: 19.22 to 19.09 μU/mL) ($P < 0.05$ for all).

Conclusion : The findings of this study suggest that three-month curcumin supplementation has beneficial effects on glycemic measures in patients with prediabetes.

The Effect of Music Therapy on Postoperative Recovery After Limb Amputation: A Review study

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Background and Aim : Limb amputation is a life-altering surgical procedure often accompanied by intense physical pain and psychological distress. Postoperative challenges include phantom limb pain, anxiety, depression, and impaired sleep. Music therapy—a non-invasive, cost-effective intervention—has shown promise in alleviating these symptoms by engaging emotional and cognitive pathways. This review evaluates the impact of music therapy on pain, mood, and analgesic consumption in patients following amputation.

Methods : This review synthesizes findings from randomized controlled trials (RCTs), quasi-experimental studies, and meta-analyses published between 2015 and 2025. • Inclusion Criteria: o Adult patients undergoing lower or upper limb amputation o Intervention: Music therapy (live or recorded) o Outcomes: Pain intensity, anxiety, depression, analgesic use • Databases Searched: PubMed, Scopus, Cochrane Library • Statistical Tools: Standardized Mean Difference (SMD), ANOVA, chi-square tests, and meta-regression

Results : Pain Reduction A meta-analysis of 6 RCTs (n = 524 patients) revealed:Music therapy significantly reduced pain scores within the first 48 hours post-amputation. ($p < 0.001$) Psychological Outcomes Three studies (n = 312) assessed anxiety and depression using the Hospital Anxiety and Depression Scale (HADS): • Anxiety: SMD = -0.72 (95% CI: -1.01, -0.43), $p < 0.001$ • Depression: SMD = -0.65 (95% CI: -0.93, -0.37), $p < 0.001$ Analgesic Consumption Two trials reported a 23–30% reduction in opioid use in the music therapy group compared to controls ($\chi^2 = 7.84$, $p = 0.005$).

Conclusion : Music therapy can be an effective adjunctive treatment for managing postoperative pain and psychological distress in patients undergoing limb amputation. Statistically significant reductions in pain intensity, anxiety, depression, and analgesic consumption were observed. Given its accessibility and safety, music therapy should be considered as part of holistic postoperative care. Future research should explore optimal timing, duration, and personalization of music interventions.

TRADITIONAL AND INTEGRATIVE MEDICINE

Aromatherapy for Postmenopausal Sexual Dysfunction: A Systematic Review and Meta-Analysis

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Background and Aim : The transition to postmenopause is accompanied by numerous adverse effects, including physical and emotional changes, decreased vaginal lubrication, and sexual dysfunction. The prevalence of sexual dysfunction among postmenopausal women varies widely, reported between 8.7% and 89.01%, which is notably higher than at other life stages .Hormone replacement therapy (HRT) is the first-choice treatment for sexual dysfunction in postmenopausal women; however, due to adverse effects such as cardiovascular disease and cancer, its use is limited. Consequently, there has been growing interest in complementary therapies, including aromatherapy. Aromatherapy has several advantages, such as reducing anxiety, helping sleep quality, and enhancing cognitive function.

Methods : The aim of this systematic review and meta-analysis was to evaluate how effective aromatherapy is in treating sexual dysfunction in postmenopausal women. Randomized controlled trials (RCTs) published between 2000 and 2025 were systematically searched in PubMed and Scopus databases on June 1, 2025, using the keywords: “aromatherapy,” “sexual dysfunction,” and “postmenopausal.” Inclusion criteria encompassed RCTs published in English, while reviews and irrelevant studies were excluded.

Results : A total of 7 articles from PubMed and 130 from Scopus were initially identified. After screening, 4 duplicates and 129 irrelevant articles were excluded, resulting in 4 eligible studies. All included studies utilized the Female Sexual Function Index (FSFI) to assess outcomes. Meta-analysis revealed that aromatherapy interventions significantly improved sexual function compared to controls, with a pooled standardized mean difference (SMD) of 0.80 (95% CI: 0.57 to 1.02, $p < 0.001$), indicating a large effect size. Among individual interventions, combined aromatherapy inhalers showed the highest efficacy (SMD = 0.85), followed by Salvia officinalis (SMD = 0.83), and Citrus aurantium combined with lavender (SMD = 0.79). Significant improvements were observed across FSFI domains, including desire, arousal, satisfaction, and pain reduction. Heterogeneity was moderate ($I^2 = 38\%$), and the overall risk of bias was low.

Conclusion : Aromatherapy seems to be an effective treatment choice for sexual dysfunction in postmenopausal women. The research on this subject is limited, but these studies mostly show effectiveness in improving desire, arousal, and satisfaction. Combination aromatherapy interventions demonstrated the greatest efficacy, followed closely by Salvia officinalis and Citrus aurantium plus Salvia. Further high-quality research is warranted to substantiate these findings and optimize treatment protocols.

Shared Foundations: Deep Connections Between Japanese Kampo and Iranian Traditional Medicine

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Background and Aim : At first glance, Japanese Kampo and Iranian Traditional Medicine (ITM) appear as distinct healing traditions – one shaped by East Asian philosophies, the other rooted in Persian wisdom and Greek-Arabic influences. Yet beneath these differences, both systems view health through a remarkably similar lens. They share a profound understanding of the human body as a dynamic ecosystem, where wellness emerges from delicate balance rather than simply absence of disease. Kampo expresses this through its elegant Yin-Yang duality and Five Phase theory, while ITM articulates it via the Four Elements/Humors (Arkan/Akhlat) and individual Temperament (Mizaj) concepts.This study examines these parallel frameworks, aiming to determine the structural and functional convergences that persist beyond their distinct cultural origins.

Methods : A careful exploration of classical texts like Avicenna's Canon and foundational Kampo commentaries alongside contemporary research was conducted.

Results : The exploration reveals how these two traditions speak a remarkably similar language in practice. When diagnosing patients, both healers turn first to the pulse – feeling for subtle qualities like depth, rhythm, and strength in Kampo's Myaku or ITM's Nabz – while simultaneously reading the tongue's color, coating, and texture as a living map of internal balance. They listen intently to patients' subjective experiences of heat or chill, thirst or dryness, seeing these as vital clues to underlying imbalances. Treatment in both traditions becomes a personalized art of restoration: master practitioners craft complex herbal formulas guided by sophisticated systems classifying herbs by thermal nature (hot, cold, warm, cool) and taste properties. They share core botanicals like licorice root (Glycyrrhiza glabra) for harmonizing formulas and saffron (Crocus sativus) for moving stagnation, though their applications may dance to different cultural rhythms. Beyond herbs, food itself transforms into medicine – Kampo's Shokuji Ryoho and ITM's Ilaj-bi-Ghiza prescribe specific foods like barley for cooling or dates for warming, tailored to correct individual imbalances. Even therapeutic baths and targeted massage find common ground as supportive therapies. Crucially, both traditions champion prevention through daily rhythms: Kampo's Yojo and ITM's Hifz al-Sehha teach that true health lies in living seasonally and constitutionally, whether adjusting sleep patterns in autumn or selecting foods that steady one's unique temperament.

Conclusion : Recognizing these deep connections not only honors their intellectual legacy but opens vital pathways for cross-cultural dialogue and collaborative innovation in integrative medicine today.

The Science of AYURVEDIC Therapeutic Touch: Abhyanga and Marma chikitsa.

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Background and Aim : Ayurveda, the ancient system of medicine in India, is known as the science of life. Ayurveda has a history of over 5000 years and covers various aspects of medical branches. As a traditional medicine, Ayurveda uses many methods for treating illness and balancing the vital energy in the body according to each body constitution or Dosha (Vata, Pita, Kapha) and it's considered as a personalized and holistic medicine.

Methods : The term Abhyanga is used for the therapeutic massage that stimulates the full body by using a generous amount of medicated oil prepared with medicinal herbs chosen according to each Dosha. The warm medicated oil is applied over the body rhythmically. The goal is to lubricate and nourishing the skin, muscles, and tissues, to improve circulation and help the body to eliminate toxins and resulting in calming the nervous system and reducing stress; improve skin health and sleep quality, and treat conditions such as muscle cramps, inflammation, and joint movement issues. Marma chikitsa is a specialized treatment aimed on stimulating the Marma points that are considered as a Prana (vital energy) gateway of body for better flow of Prana, by applying the gentle pressure on specific points in body (muscles, veins, ligaments, bones and joints) by using fingers or palm of hand or other special tools on the points. The therapeutic effects cover various conditions such as the management of pain, disorders of the nervous system and helps to improve various organ factions, physical, physiological and emotional problems. The Marma points are mentioned 107 in number, plus 1, which is the mind.

Results : The combination of these two therapeutic methods, sometimes called Marmaabhyanga and has a synergic effect when performed with the selection of proper medicinal plants for the preparation of potent therapeutic oil.

Conclusion : Traditional and integrative medicines in various parts of glob specially in east, have similarities and follow the main concepts of holistic approach, the mentions therapeutic methods of Abhyanga and Marma chikitsa in Ayurveda is near to the Acupuncture and Tui na, the traditional Chinese system of medicine (TCM); and the methods known as Dalk and Ghamz which are used traditionally in Persian system of medicine. Therefore, professionals must have an open mind to accept the knowledge of traditional medicine from all parts of the world; Hence, practitioners can have a better perspective of integrative medicine and use many helpful techniques to achieve better results in their goal.

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Current state of case report and case series studies in the field of complementary and alternative medicine: A scoping review

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Background and Aim : This study aimed to investigate case reports and case series studies in the field of complementary and alternative medicine (CAM) to identify gaps in knowledge and research priorities.

Methods : Case reports and case series studies in the field of CAM were analyzed in a scoping review until the end of 2022. Additionally, their research settings and methodologies were examined.

Results : A total of 808 articles were identified, with approximately 80% classified as case reports. The most prevalent fields of interest included abnormal clinical and laboratory findings (13.4%), musculoskeletal system diseases (8.9%), and genitourinary system diseases (8.3%). Among the investigated interventions, acupuncture (32.5%), Chinese medicine (11.5%), and hypnosis (7.9%) were the most common outcomes of interest. The primary outcomes of interest encompassed COVID-19 disease (3.1%), headache (2.6%), pain (2.6%), and cardiovascular disease (2.2%). Approximately 7.1% of the articles reported complications or negative impacts associated with CAM treatments, while 9.5% highlighted their distinct and beneficial effects. Additionally, 83.4% of the articles stressed the need for further studies to confirm the beneficial effects of CAM treatments. Geographically, the majority of the studies originated from China (25.6%) and the United States of America (22.4%), with Africa displaying comparatively fewer studies.

Conclusion : Our research revealed a substantial rise in case reports and case series studies over the past decade in the CAM field. These studies encompassed various interventions, fields of study, and outcomes of interest. Notably, China and the United States have made more significant contributions compared to other countries, particularly African nations, in conducting studies and generating evidence.

Effects of Foot Massage on Severity of Fatigue and Quality of Life in Hemodialysis Patients: A Randomized Controlled Trial

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Background and Aim : Despite the advances in treatment, fatigue is a common symptom experienced by many patients undergoing hemodialysis, and is associated with poor health-related quality of life. The aim of the present study was to explore the impact of foot massage with chamomile oil and almond oil on the severity of fatigue and quality of life of Hemodialysis patients.

Methods : In these four parallel groups controlled clinical trial, 120 male patients under hemodialysis were randomly assigned to foot massage groups and control (30 in each group) from June 2016 to April 2017 in Urmia, Iran. foot massage using either chamomile oil, almond oil or no oils was provided to patients undergoing hemodialysis for two months. The primary outcome measures were the Fatigue Severity Scale (FSS) and secondary outcomes included quality of life using the Short-Form Quality of Life for Renal Patients questionnaire (KDQOL-SF). Data were analyzed using ANOVA, Tukey's and paired t-test in SPSS the (Version 16) at the significance level $P<0.05$.

Results : The mean FSS scores after the implementation of foot massage in all intervention groups were significantly lower than the control group ($P=0.005$). Mean KDQOL-SF scores after the intervention in all intervention groups increased compared to the control group, but this increase was not statistically significant ($P=0.34$).

Conclusion : Foot massage appears to be effective in reducing fatigue and improving quality of life in patients undergoing hemodialysis. Further studies are needed to confirm and extend these results. Furthermore, involvement of patients' companions as family caregivers in massage therapy can lead to continuation of this effective intervention at home.

Effects of aromatherapy with Lavender on sleep qualiy of hemodialysis patiens

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Background and Aim : Sleep disorders are common in hemodialysis patients,it can decrease thequality of life and increase the rate of death.Due to its sedative effects,lavender may be effective in promoting sleep quality ofthese patients.this reaserch was conducted to examine the effects or aromatherapy with landaver essential oil on sleep quality of hemodialysis patients

Methods : This is a randomized clinical trial.76 hemodialysis patients were selected by convenience sampling and were randomly divided into two groups:intervention and control.In the intervention groups,the patiens were requested to inhale a piece of cloth smeared with tree drops of the lavender essential oil during dialysis sessions. In the control groups,only the usual care was given.

Results : resuls showed no significant,difference in the mean sleep quality score between the experimental (12.67±3.407)and control groups(13.83±3.940)at baseline($p<0.012$),but a significant difference was seen in mean sleep quality score between the experimental(7.93±3.483)and control groups(8±2.32)after the end of study($p<0.0001$).

Conclusion : Aromatherapy with lavender essential oil positive effect on improving sleep quality in hemodialysis patients and may be used as a noninvasive,easy and low-cost method for sleep disorders in these patients.

TRADITIONAL AND INTEGRATIVE MEDICINE

The effect of massage on pain and bleeding in patients undergoing open thyroidectomy: A randomized clinical trial study

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Background and Aim : Pain and bleeding are common complications among patients undergoing open thyroidectomy. Research suggests that complementary treatments such as massage therapy may help reduce postoperative complications. Therefore, This randomized clinical trial aimed to evaluate the effect of massage on pain and bleeding in patients undergoing open thyroidectomy

Methods : This randomized clinical trial was conducted on 40 patients referred to Al-Zahra Hospital of Isfahan between October 2024 and April 2025, all of whom underwent open thyroidectomy. The participants were randomly assigned to either the control or experimental group (20 patients each). In the experimental group, massage therapy was performed by the researcher. In this group, three massage therapy sessions were performed: in the recovery room, on the first postoperative day, and on the third postoperative day. The duration of each massage therapy session was 15 to 20 minutes. Pain was assessed using the Visual Analog Scale (VAS). Bleeding was evaluated based on the volume of drainage and the amount of blood in the hemovac drain in both groups. Hemoglobin and hematocrit levels were recorded from the patient's medical records prior to surgery and again at 24 and 48 hours postoperatively. Data were analyzed using SPSS version 23. Statistical tests including repeated measures analysis, independent t-test, and chi-square test were used to compare the results between the groups.

Results : The findings indicated that changes in the mean pain score varied over time, with a significant reduction in pain observed in the experimental group ($P < 0.001$). Prior to the intervention, the mean pain score was 8.75 ± 0.23 in the experimental group and 8.80 ± 0.23 in the control group, with no statistically significant difference between them ($P = 0.88$). However, at the assessed time points following the intervention, the difference became significant ($P < 0.001$). Furthermore, in both the experimental and control groups, the volume of blood collected in the patient's drain increased significantly at 24 and 48 hours post-surgery ($P < 0.001$), suggesting that the intervention had no effect on postoperative bleeding.

Conclusion : The present study demonstrated that massage therapy significantly reduced pain in patients undergoing thyroidectomy. However, it did not affect the volume of bleeding, including drain secretions, hemoglobin levels, or hematocrit. Given the limited sample size, further research on a larger population is recommended.

The Impact of Aromatherapy on Labor Pain Management

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Background and Aim : Labor pain is an acute pain that intensifies rapidly and is considered a critical experience in a woman's life. Due to the side effects associated with analgesic medications, non-pharmacological and complementary medicine methods such as aromatherapy are increasingly being used for pain relief during labor. This study aims to investigate the effects of aromatherapy on managing and reducing labor pain.

Methods : This is a review study. Articles were searched from databases including PubMed, Scopus, Google Scholar, as well as reputable Persian scientific-research journals focusing on aromatherapy and labor pain. A total of 43 articles addressing aromatherapy and labor pain management were reviewed.

Results : Most studies confirmed the positive effects of aromatherapy in managing and alleviating labor pain. Essential oils such as Lavender (a multifunctional and analgesic essence), Rose (with anti-anxiety properties providing maternal calmness), Peppermint (with antispasmodic and analgesic properties), Bitter Orange Blossom (Neroli) (with antidepressant and antispasmodic effects), and Lemon oil (effective in controlling pregnancy-related nausea and early labor pain) were found beneficial. Other essential oils such as Clove, Clary Sage, Rosemary, and Chamomile also demonstrated analgesic properties.

Conclusion : Aromatherapy is one of the most common, affordable, and practical complementary medicine methods. However, proper attention must be given to the dosage, application methods, and selection of essential oils for effective labor pain management. Keywords: Aromatherapy, Essential Oils, Labor Pain, Aromatic Therapy

Investigating the Temperament of Autism Spectrum Patients from the Perspective of Persian Medicine

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Background and Aim : Autism is a highly variable neurodevelopmental disorder, formally called autism spectrum disorder, characterized by deficits in social communication, social interaction, and repetitive or restricted behavior patterns. This study aims to investigate the temperament of autism spectrum patients from the perspective of Iranian medicine, so that by helping to understand the causes of the temperament of this disease, a new step can be taken in the direction of prevention and treatment of this disorder.

Methods : This research is a descriptive cross-sectional study. The study subjects were 60 patients referred to Golhai Behesht Autism Rehabilitation Center in Qom city in 1401, who were randomly selected. Dr. Salmannejad's temperament questionnaire was used to determine the temperament of the participants in the study. SPSS version 25 software was used for data analysis.

Results : The findings showed that the highest frequency of mixed temperament among children on the autism spectrum was related to cold and dry temperament with 40% and the highest frequency of singular temperament was related to dry temperament with 78%. .

Conclusion : According to the findings of this research, autism spectrum patients have a cold and dry temperament. Clinical studies are suggested to investigate the effectiveness of therapeutic interventions in cold and dry mood for the recovery of these patients.

The effect of lavender essential oil inhalation aromatherapy on students' anxiety induced by the objective structured clinical examination

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Background and Aim : Exam anxiety can have an unpleasant effect on students and change exam results. This study aimed to investigate the effect of inhaled lavender essential oil aromatherapy on objective structured clinical examination (OSCE)-induced anxiety.

Methods : The present study was conducted as a double-blind, randomized clinical study with a control group. The participants were 51 college students who were randomly divided into two groups of placebo and intervention. The intervention group was given 2 drops of 2% lavender essential oil, and the placebo group was given 2 drops of distilled water. The samples inhaled the essential oil using an absorbable napkin attached to a face mask for 20 minutes. Before the OSCE test, each group's anxiety and vital signs were assessed and recorded before and after the intervention using the Spielberger State-Trait Anxiety Inventory (STAI) and Vital Signs Instruments.

Results : The results of the independent t-test showed that before the intervention, the difference in mean anxiety between the intervention and placebo groups was not statistically significant (44.16±10.58 vs. 41.80±12.54). Even after the intervention, there was no statistically significant difference between the intervention and the placebo groups in terms of mean anxiety values (44.92±12.18 vs. 43.19±13.12).

Conclusion : Inhalation aromatherapy with lavender essential oil does not affect anxiety caused by OSCE test in students. It is recommended that lavender be used in a variety of ways, with the duration and number of drops alone or in combination with other medicinal herbs effective in reducing students' test anxiety being evaluated in future studies.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Role of Tryptophan-Rich Foods in Traditional Medicine: A Nutritional Strategy for Improving Sleep in Older Adults

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Background and Aim : Sleep disturbances, particularly insomnia, are prevalent in the aging population and are strongly associated with cognitive impairment, mood disorders, and diminished quality of life. Although pharmacological therapies remain a mainstay in clinical practice, their adverse effects and risk of dependency have prompted increasing interest in non-pharmacological, diet-based interventions. Tryptophan, an essential amino acid and a biochemical precursor to serotonin and melatonin-neurotransmitters central to sleep regulation-has emerged as a promising dietary target.This review evaluates current scientific evidence on the efficacy of tryptophan-rich foods in improving sleep quality among older adults, with particular emphasis on traditional nutritional practices as described in Iranian medicine.

Methods : A comprehensive literature search was conducted in PubMed, Scopus, and Web of Science for clinical and preclinical studies published between 2000 and February 2025. Keywords included “tryptophan”, “sleep quality”, “older adults”, and “traditional medicine”. Studies were screened for methodological quality, relevance to sleep outcomes, and focus on geriatric populations.

Results : Findings from randomized controlled trials and observational studies indicate that dietary intake of tryptophan-particularly from sources such as dairy, poultry, eggs, soy, nuts, and seeds-significantly improves sleep latency, efficiency, and duration in older adults. Enhanced serotonin and melatonin synthesis following tryptophan consumption has been consistently observed. Notably, carbohydrate co-ingestion improves tryptophan transport across the blood-brain barrier, amplifying its neurophysiological effects. Preclinical models corroborate these outcomes, demonstrating modulation of circadian rhythms and sleep-wake architecture in response to dietary tryptophan manipulation. Furthermore, traditional dietary principles in Iranian medicine advocate for evening intake of warm, tryptophan-containing foods-recommendations that align with contemporary nutritional insights. Although there are still only a few clinical studies directly examining the connection between these traditional practices and better sleep, new research suggests that they may work well together to improve sleep quality.

Conclusion : Tryptophan-rich foods enhance sleep quality in older adults by supporting serotonin and melatonin production. Integrating traditional dietary principles, particularly from Iranian medicine, with modern nutritional science offers a safe and holistic approach to managing sleep disturbances. Further research is warranted to optimize dosage and assess clinical effectiveness.

TRADITIONAL AND INTEGRATIVE MEDICINE

Chromotherapy from the Viewpoint of Persian Medicine and Its Comparison to Current Evidence

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Background and Aim : Chromotherapy is a complementary therapy that utilizes colors and colored lights to address certain physical and mental health issues. Persian medicine is a holistic medicine that originated from the land of Persia with a humoral approach. This study aims to compare the evidence of chromotherapy in Persian Medicine manuscripts with contemporary evidence.

Methods : A search was conducted in both Persian medicine sources and databases, including PubMed,Scopus and Google Scholar. A total of 32 articles were found from 2015 to 2025. Only original articles published in English were included in the study. Animal studies and Studies that were only light therapy without mentioning a specific color were not included.In the end, 10 articles were included.

Results : In Avicenna's "Canon of Medicine," various treatments for eye ailments are discussed, emphasizing chromotherapy. For strabismus in children, he recommends hanging a red shiny object opposite the affected eye. To protect against cold and snow, he suggests using black cloth or a mask made of black horsehair. For eyelid inflammation, called "tanasor al-ashfar," yellow kohl is advised. For "Ghomur," or visual impairment due to bright objects , he suggests gazing at green and skyblue objects and keeping something black in view. He uses black ink for nosebleeds and warns against looking at red objects. For mouth bleeding, avoiding red objects is recommended. In epilepsy, he warns against bright lights. For meningitis, he advises simple, colorless surroundings. For "laqwah," or paralysis of the 7th cranial nerve, he recommends staying in the dark.Ismail Jorjani emphasizes a similar approach in his book " Zakhirey-e Khwarazmshahi.". In "Kholasat Al-Hekma," Aghili Khorasani suggests that, during vomiting, to prevent the eyes from protruding, a person should tie a black cloth over their eyes or place two bags of kohl on them. Recent studies highlight the therapeutic effects of colors. Blue light has been found to lower blood pressure, relieve allergy symptoms, enhance sleep in children, and promote relaxation. It also benefits urinary function in children with obstructive uropathy and can reduce anxiety during dental procedures. Green light improves cognitive function in the elderly and supports the treatment of bronchial allergies and emotional states in children. Additionally, blue light shows promise in cancer treatment, while yellow light helps with stomach ulcers. Purple and blue light are being explored for hyperthyroidism, and green light may alleviate depression, stress, and migraines.

Conclusion : For comparing the collected data, it should be mentioned that in Persian medicine, red is used as a stimulant, but current evidence supports its role in treating infectious diseases, such as cutaneous leishmaniasis. Blue and green colors are employed in Persian medicine for eye disease treatments, while existing evidence connects them to alleviating depression, reducing stress, and enhancing cognitive function. Additionally, black and gray colors are used in Persian medicine to lower stimulation; however, current research suggests that these colors should be avoided in treating patients with multiple sclerosis (MS). For investigating these controversies, more studies should be dedicated to the topic. Keywords: Chromotherapy, Persian Medicine, Color therapy, Complementary Medicine

TRADITIONAL AND INTEGRATIVE MEDICINE

Persian Medicine and Complementary Therapies: Usage Patterns Among Iranian Healthcare Staff

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Background and Aim : The World Health Organization's 2014–2023 strategy promotes integrating traditional and complementary medicine (TCM) into modern healthcare systems. Persian Medicine (PM), a holistic system with a history of thousands of years, emphasizes personalized treatments using herbs, diet, and manual therapies like cupping, drawing from ancient texts such as Avicenna's Canon of Medicine. PM has gained ground in Iran recently through medical education and policy-backed centers. While 24–71.3% of people worldwide use TCM, little is known about its use among Iranian healthcare professionals. This study explores how providers in health centers use TCM, particularly PM.

Methods : This cross-sectional study, conducted in 2024, surveyed 432 healthcare staff from multiple centers affiliated with Iran University of Medical Sciences. A validated questionnaire, distributed via Google Forms, assessed past-year use of PM and CAM modalities. Data were analyzed with SPSS version 25 to explore usage patterns and prevalence.

Results : Participants had a mean age of 37.58 ± 8.96 years; 91.5% were female, 71.6% were married, and their educational backgrounds included diploma (2.6%), bachelor's (69.3%), MSc (11.1%), and MD/PhD (17%), with primary fields in midwifery (35.95%), public health (13.10%), and general medicine (4.76%). Overall, 47.8% (n=202) reported using at least one CAM or PM modality in the past year. Medicinal plants were the most common, with Thyme (Avishan) used by 26.85%, followed by Horse Mint (Puneh) and Mint (Na-na) at moderate levels, and green tea, saffron (Zaferan), and lavender (Ustukhuddus) each used by less than 10%. The internet and on-the-job training were primary information sources, indicating limited formal education.

Conclusion : Nearly half of the surveyed healthcare staff reported using TCM, mainly herbal remedies such as thyme, horse mint, and spearmint, indicating strong engagement with Persian Medicine (PM). Given the widespread use of medicinal plants, a better understanding of their indications, interactions, and side effects is essential for safer integration with conventional care. The findings underline the pivotal role of healthcare professionals in integrating contemporary and traditional medical approaches, thereby contributing to the advancement of Iran's healthcare system. Thus, individualized training and specific evidence-based clinical guidelines are necessary to bridge the knowledge gap and enable safe and reasonable use of TCM.

TRADITIONAL AND INTEGRATIVE MEDICINE

"Effects of Bergamot Aromatherapy Massage on Anxiety and Heart Rate Variability in Mechanically Ventilated ICU Patients: A Randomized Controlled Trial"

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Background and Aim : Patients in intensive care units (ICUs), particularly those undergoing mechanical ventilation, frequently experience anxiety, pain, and physiological dysregulation, including alterations in heart rate variability (HRV). Anxiety and autonomic imbalance can negatively affect recovery, making non-pharmacological interventions an important adjunct to standard care. This study aimed to evaluate the effects of aromatherapy massage with bergamot essential oil on anxiety levels and heart rate variability in mechanically ventilated ICU patients.

Methods : In this randomized controlled trial, ICU patients with a hospital stay longer than 24 hours were assigned to one of three groups: (1) aromatherapy massage with bergamot essential oil, (2) massage with almond oil, and (3) control (standard care). Interventions were administered once daily for three consecutive days. Anxiety was assessed using the Facial Anxiety Scale (FAS), and heart rate variability was recorded at baseline, 30 minutes, and 6 hours post-intervention.

Results : Aromatherapy massage significantly reduced anxiety levels compared with both massage-only and control groups at 30 minutes and 6 hours post-intervention ($p < 0.05$). Additionally, patients receiving bergamot aromatherapy showed improvements in HRV indicators, suggesting enhanced autonomic regulation, whereas no significant HRV changes were observed in the other groups.

Conclusion : Aromatherapy massage with bergamot essential oil may be an effective, low-risk intervention for reducing anxiety and improving autonomic function in mechanically ventilated ICU patients. Incorporating such complementary therapies into routine critical care could support psychological well-being and physiological stability.

TRADITIONAL AND INTEGRATIVE MEDICINE

Identifying the information priorities of general practitioners in Isfahan regarding traditional Iranian medicine

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Background and Aim : General practitioners play a vital role in the country's healthcare system. Identifying their informational needs regarding Iranian traditional medicine is essential for enhancing their professional knowledge and capabilities. This study aimed to assess the informational needs of general practitioners in Isfahan related to Iranian medicine.

Methods : This applied research was conducted using a descriptive-survey method. The study population included all general practitioners in Isfahan, from which 204 participants were selected through stratified sampling. Data were collected using a researcher-made questionnaire covering seven key areas of Iranian medicine. Data analysis was performed using descriptive and inferential statistics via SPSS version 21.

Results : Out of the selected participants, 177 completed the questionnaire. Among the seven dimensions of Iranian medicine, the highest average informational need was related to dietary simples (mean: 2.72), while the lowest was related to therapeutic measures (mean: 1.61). No significant relationship was found between informational needs and demographic variables such as age, gender, work experience, or employment status. However, a meaningful correlation was observed between prior participation in Iranian medicine workshops and the willingness to attend such workshops with the level of informational need.

Conclusion : Based on the findings, it is recommended that health and treatment authorities, along with traditional medicine experts, develop targeted educational programs, empowerment workshops, and accessible resources. These efforts should be organized according to the seven key areas and identified priorities to update and enhance the knowledge of general practitioners in Iranian traditional medicine.

TRADITIONAL AND INTEGRATIVE MEDICINE

Investigating the effect of acupressure on the quality of recovery and satisfaction of patients undergoing laparoscopic cholecystectomy : A randomized clinical trial study

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Background and Aim : Laparoscopic cholecystectomy is a common procedure, and many patients experience adverse effects of the surgery, so one of the things that should be considered is the evaluation of the patient's recovery. Complementary therapies can be used to prevent or treat disease, promote health, or improve a person's overall condition. This study aims to investigate the effect of acupressure on the quality of recovery and satisfaction of patients undergoing laparoscopic cholecystectomy.

Methods : This parallel, unblinded, randomized clinical trial study was conducted in 2022 at Besat and Beheshti Hospitals in Hamadan, Iran and the ethics code number is IR.UMSHA.REC.1401.136. 140 patients were selected using convenience sampling and randomly divided into two groups, A and B. After receiving the informed consent form for participation, the demographic information questionnaire was completed. Patients in group A (control) received only routine care. In addition to routine care, patients in group B received acupressure three times at the points of SP6, HT7, and PC6 on the first day after surgery. The recovery variable was analyzed using the 15-item Quality of Recovery Inventory (QoR-15), and the satisfaction variable was analyzed using a numerical rating scale in SPSS 23 software.

Results : In terms of demographic data, the two groups did not significantly differ from one another and were homogeneous ($p>0.05$). Before the intervention, the two groups did not show significant differences in recovery quality scores and satisfaction ($p > 0.05$). The acupressure group had a significantly higher mean score for recovery quality and patient satisfaction following the intervention ($p < 0.001$).

Conclusion : The results showed that acupressure was effective in increasing the quality of recovery and satisfaction in patients undergoing laparoscopic cholecystectomy. However, further studies are needed to determine the generalizability of the findings.

TRADITIONAL AND INTEGRATIVE MEDICINE

Investigating the Effect of Aromatherapy with Peppermint Essential Oil on the Severity of Nausea and Pain in Patients Undergoing Laparoscopic Cholecystectomy: A Randomized Clinical Trial

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Background and Aim : Laparoscopic cholecystectomy, while minimally invasive, is frequently associated with postoperative symptoms such as abdominal pain, nausea, and vomiting. Given the limitations of pharmacological interventions, complementary therapies, including aromatherapy, have gained attention due to their non-invasive nature and favorable safety profile. Peppermint essential oil (Mentha piperita) has demonstrated potential in alleviating gastrointestinal discomfort, yet its efficacy in postoperative settings remains understudied. This study aimed to evaluate the effect of peppermint essential oil aromatherapy on the severity of nausea and pain in patients following laparoscopic cholecystectomy.

Methods : A randomized clinical trial was conducted in 2022 involving 140 eligible patients undergoing laparoscopic cholecystectomy at Ba'asht and Beheshti Hospitals in Hamadan, Iran and the ethics code number is IR.UMSHA.REC.1401.136. Participants were randomly allocated into two groups: an intervention group (n=70) receiving aromatherapy with 100% peppermint essential oil (3 drops on a 2×2 cm gauze, placed 10 cm from the nostrils for 5 minutes, three times daily) alongside standard nursing care, and a control group (n=70) receiving standard care alone. The data were collected using a demographic information form and the Numerical Rating Scale (NRS) for the variables of nausea and pain on the first and second postoperative days, with analysis performed using SPSS version 23 software.

Results : Baseline demographic and clinical characteristics were comparable between groups ($p > 0.05$). While no significant difference in pain reduction and nausea was observed between groups ($p > 0.05$), After the intervention exhibited a statistically significant reduction in nausea severity compared to controls ($p < 0.05$). Regarding pain outcomes, while the between-group comparison did not reach conventional statistical significance ($p = 0.063$), a clinically relevant trend toward reduced pain perception was noted among participants receiving aromatherapy intervention.

Conclusion : Peppermint essential oil aromatherapy may serve as a safe and effective adjunctive intervention for mitigating postoperative nausea in laparoscopic cholecystectomy patients. Further large-scale studies are warranted to validate these findings and explore long-term outcomes.

TRADITIONAL AND INTEGRATIVE MEDICINE

An Integrative Approach to Male Infertility: Exploring Causes and Herbal Treatment Strategies Based on Iranian Traditional Medicine to Enhance Reproductive Health

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Background and Aim : Male infertility is a significant challenge in reproductive health, affecting about 20% of couples in Iran, with men being responsible for about half of these cases. Male infertility not only impacts physical and mental well-being but also leads to considerable social and emotional burdens for the couples involved. Therefore, exploring the underlying causes, as well as effective natural treatments within the framework of traditional medicine, is of utmost importance. Natural and herbal approaches, in addition to minimizing adverse effects, can play a vital role in improving reproductive outcomes. This article aims to examine and clarify the perspectives of Iranian Traditional Medicine (ITM) regarding the underlying causes of male infertility and to propose natural treatment strategies. By identifying medicinal plants and effective therapies rooted in ITM, we intend to suggest cost-effective and accessible methods to enhance reproductive capacity, ultimately contributing to the improvement of reproductive health within the community.

Methods : The methodology is based on a review of classical Iranian medical texts, including " Makhzan al-Advia ," " Al-Qunun fi al-Tibb" ," Tibb-e Akbari ", Zakhireh-ye Kharazmshahi ," " Exir e-Azam ," " Tuhfat al-Momineen ," as well as Electronic databases, including Web of Science, PubMed, Scopus, Google scholar, and SID have queried.

Results : The results indicate that the main causes of male infertility in ITM include weakness of sexual function, defects in the sperm production system involving the testes, penis, and spermatic ducts, reduced production of healthy semen (such as low semen volume, poor semen quality due to body imbalance, excessive use of certain medications like camphor and opium and their impact on semen), as well as malnutrition of other organs (heart, brain, liver, testes). Psychological issues such as fear, anger, and sadness are also considered contributing factors. Additionally, infertility with unknown causes or true infertility are recognized as significant factors. Most common herbs such as Tribulus terrestris, Boswellia serrata, Crocus sativus, Vitis vinifera, Phoenix dactylifera, Cinnamomum verum, Phoenix dactylifera, Panax ginseng, Withania somnifera, Cicer arietinum, Piper nigrum, Matricaria chamomilla, Equisetum arvense, Sesamum indicum, Nigella sativa, Acorus calamus, Curcuma zedoaria are recommended to support male fertility and overall reproductive health. These materia medica are utilized to enhance and strengthen sexual potency, improve semen quality, increase semen production, strengthen sperm, warm the body temperament, and serve as general fertility tonics.

Conclusion : ITM adopts a comprehensive approach to male infertility, recommending a combination of lifestyle modifications, nutritional adjustments, and herbal therapy for treatment. The use of these natural methods can serve as a safe and effective adjunct to conventional treatments.

TRADITIONAL AND INTEGRATIVE MEDICINE

The effect of aromatherapy with lemon essential oil on occupational fatigue of operating room nurses: A clinical trial study

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Background and Aim : Occupational fatigue is a prevalent issue among operating room nurses, arising from prolonged working hours, physical strain, and mental stress. Persistent fatigue can negatively impact performance, reduce alertness, and endanger patient safety. Aromatherapy has recently gained attention as a complementary, non-pharmacological method to improve physical and mental well-being in clinical settings. Lemon essential oil, known for its energizing and fatigue-reducing properties, may provide a natural intervention for managing fatigue. The aim of this study was to evaluate the effect of lemon essential oil aromatherapy on occupational fatigue in operating room nurses.

Methods : This double-blind randomized clinical trial was conducted in 2024 in four teaching hospitals affiliated with Isfahan University of Medical Sciences. A total of 196 operating room technologists were randomly assigned to two groups: intervention (n=98) and control (n=98). The intervention group received aromatherapy with 2% lemon essential oil by inhaling four drops placed on a gauze inside a surgical mask for 30 minutes during three consecutive shifts. The control group used odorless distilled water in the same manner. Fatigue was measured at four time points (before, immediately after, 10 days, and 17 days post-intervention) using the Occupational Fatigue Exhaustion Recovery (OFER-15) questionnaire. Data were analyzed using independent t-test, paired t-test, and repeated measures ANOVA.

Results : In the intervention group, the mean fatigue score decreased from 41.52 ± 5.80 at baseline to 39.32 ± 5.43 on day 17. In contrast, the control group experienced a slight decline from 35.04 ± 6.47 to 34.71 ± 6.21. The reduction in fatigue was statistically significant in the intervention group ($p < 0.05$), although the effect declined over time.

Conclusion : Lemon essential oil aromatherapy demonstrated a temporary but significant reduction in occupational fatigue among operating room nurses. This simple, safe, and low-cost complementary approach can be considered for short-term fatigue management in high-demand clinical environments.

TRADITIONAL AND INTEGRATIVE MEDICINE

Grapes and Raisins in Women's Nutrition and Reproductive Health: An Integrative Review

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Background and Aim : Grapes (Vitis vinifera L.) rank among the most widely cultivated fruits worldwide and are recognized not only for their delightful taste but also for their remarkable nutritional and medicinal benefits. Within the realm of Persian Medicine (PM), grapes (Enab) and their derivatives, especially raisins (Zabib), are very nutritious and are often prescribed for a variety of health conditions. Contemporary biomedical research further highlights the therapeutic potential of grapes, attributing their benefits mainly to an abundance of bioactive phytochemicals such as polyphenols, flavonoids, and resveratrol. This fascinating intersection of traditional wisdom and modern scientific discovery inspires this study, which seeks to explore the applications of grapes in women's health. By thoughtfully integrating classical Persian medical texts with recent scientific findings, we aim to present a comprehensive and compelling perspective on this extraordinary medicinal fruit.

Methods : This narrative review was carried out by using both traditional and contemporary sources. Data on the nutritional composition and health effects of Vitis vinifera were collected from scientific databases, including PubMed, Scopus, and ScienceDirect, as well as the USDA National Nutrient Database. The following keywords were used in the search strategy: Vitis vinifera, grape, raisin, Enab, Zabib, Persian medicine, women's health, fertility, pregnancy, nutrition, phytochemicals, polyphenols, resveratrol, and antioxidants. Data on traditional uses was extracted from authoritative Persian medicine references, including The Canon of Medicine, Makhzan al-Adawiyya, and Tohfeh Hakim Momen. The findings were synthesized to explore overlaps and complementarities between traditional insights and modern evidence.

Results : Regular consumption of grapes, grape juice, and raisins enhances antioxidant capacity in mothers and offspring, improves vascular function, regulates blood pressure, and may reduce the risk of preeclampsia and thrombosis. Purple grape juice during pregnancy and lactation has been shown to modulate acetylcholinesterase activity and oxidative stress in the offspring hippocampus, suggesting neuroprotective effects. Maternal grape intake may also lower offspring breast cancer risk. Benefits extend to metabolic health, including improved insulin sensitivity, lipid profiles, and inflammatory markers in premenopausal and postmenopausal women. Bowel regulation, appetite control, and gastrointestinal health with raisin consumption have also been reported. From a nutritional perspective, grapes are low in fat and protein. However, rich in carbohydrates (18.6 g/100 g), natural sugars (16.1 g), water (79.9 g), potassium (218 mg), and vitamin C (3 mg), making them an easily digestible source of quick energy and antioxidants. In Persian medicine, they are described as highly nutritious, jali (abstergent), monzej (coctive), quickly digestible, with laxative, hematopoietic, and blood-purifying effects. They are among the fruits that promote weight gain. Some studies suggest mixed associations with gestational diabetes, highlighting the need for careful intake evaluation.

Conclusion : Grapes and their derivatives provide antioxidant, cardiometabolic, neurocognitive, and reproductive health benefits for women. Their nutritional and traditional properties, such as easy digestion, laxative effect, hematopoietic and blood-purifying actions, support their role as a functional food. Encouraging moderate grape consumption could support maternal, neonatal, and long-term women's health. Further research is warranted to clarify safe intake levels during pregnancy, particularly regarding gestational diabetes.

TRADITIONAL AND INTEGRATIVE MEDICINE

Exploring Parallels: Dry Dystemperament in Persian Medicine and its Similarities with The Concept of Dietary Advanced Glycation End Products

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Background and Aim : Advanced Glycation End Products (AGEs) are productions of non-enzymatic reactions between lipids, amino acids, carbohydrates, and DNA molecules glycation. Higher intake of dietary AGEs is related to higher serum level of AGEs that elevates the risk of metabolic syndrome, diabetes, and their complications by enhancing obesity, chronic inflammation, oxidative stress, insulin resistance, and endothelial dysfunction. As the main source of AGEs is exogenous, mainly foods, a low-AGE diet is in the spotlight that led physicians, patients, and healthy people to use traditional diets. Traditional Persian Medicine (PM) is a temperament-based medical system that recommends personalized diets for each individual. PM textbooks categorize foods into wet or dry temperaments and state specific characteristics for each of them. Hence, this study aims to provide a hypothetical interpretation on the relationship between PM dietary recommendations and the process of inflammation related-aging through the consumption of AGEs.

Methods : This study is a brief hypothetical comparative review on the concept of AGEs in Western medicine and dry temperament in PM. To access the related published literature, a glance search was performed through English and Persian language publications in PubMed, Web of Sciences, Scopus, Google Scholar, and SID without time limitation using keywords related to "AGEs", "advanced glycation end products", "diet", "food", "cooking method", "Persian medicine", and "dry temperament", and their synonyms and Persian equivalent. On the other hand, to reach the PM perspective in this issue, PM main textbooks including "Canon of Medicine", "Zakhireh Kharazmshahi", "Al-Shamel", "Exir Azam", "Makhzan-al-Adviah", and "Kholase-al-Hikma" were reviewed. The search in online databases and textbooks continued until the concept was explained sufficiently clear.

Results : Consumption of AGE-rich diets is associated with a high level of circulating AGEs leading to oxidative stress and inflammatory conditions such as metabolic syndrome, etc. Although foods are the primary source of AGEs in the body, cooking methods can play a role in AGE production: high temperature, longer duration of cooking, cooking surfaces, and lower moisture can increase AGE production, especially during cooking animal-derived foods. This concept has some similarities to the PM doctrine that states that many chronic diseases such as atherosclerosis, cardiovascular disease, diabetes, and cancers develop from dry dystemperament. Foods with dry temperament such as low-fiber foods undergoing low-moisture high-heat food processing, can lead to dry dystemperament.

Conclusion : High dietary intake of AGEs has been consistently linked to elevated circulating AGE levels, contributing to various adverse health conditions. Persian Medicine recommendations align closely with recent findings on AGEs, particularly in the context of mitigation of the dry dystemperament and its associated health problems. The correlation between diets that produce AGEs and diets associated with dry temperament in Persian Medicine offers promising insights for future studies aiming to make more precise dietary guidelines for preventing chronic inflammatory disorders.

TRADITIONAL AND INTEGRATIVE MEDICINE

A scoping review of the current evidence on individualized nutrition in two Medical Paradigms: conventional medicine and Persian Medicine

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Background and Aim : Recently, nutrition as a principle of lifestyle medicine (LM) has led to the concept of "food is medicine" (FIM). FIM includes culinary medicine (CM), aimed at prescribing individualized dietary regimens for each patient. On the other hand, Persian medicine (PM) physicians believed in FIM and prescribed individualized nutritional plans, a concept now supported by new developments in conventional medicine. The aim of this review is to compare these two paradigms from the perspective of individualized nutrition.

Methods : This review was conducted using the PubMed database with the following keyword combination: ("Culinary Medicine", "nutritional intervention", "chronic disease"). All articles included in the review were published from the inception date until September 2025. A total of 46 articles were reviewed, of which 25 were deemed qualified. In addition, 400 titles relevant books and manuscripts of Persian medicine related to nutrition were reviewed. and notes from 20 principal books and manuscripts from Persian Medicine were also reviewed and analyzed.

Results : Since the 1980s, there has been an increasing focus among physicians on addressing the patients' question: "What should I eat for my condition?" This interest has led to the recognition that a single diet is not suitable for everyone, and different clinical conditions require different dietary approaches. A relationship has been discovered between nutrition as a principle of LM, and health, culminating in culinary medicine (CM), a term coined in 2016. Recently, nutritional interventions have also been referred to as FIM, which includes CM. CM is taught through an interprofessional educational model, involving a team of nutritionists, medical students, and chefs, in teaching kitchens using a hands-on cooking method. The CM educational content focuses on nutritional science for diet-related diseases, such as the Mediterranean diet for cardiovascular diseases. The goal of this education is to prescribe specific nutritional plans for individuals based on their living conditions and illnesses. The most important individual conditions to consider are literacy, knowledge of measurements, purchasing ability, cooking ability, and access to raw materials. In contrast, PM view on health, particularly the six principles (Setteh Zarorieh), emphasize a healthy lifestyle, with "foods and drinks" being one of the core principles for maintaining and improving health. Additionally, one of the foundations of treatment in PM has always been food. Rhazes (865-925 AD) is an example of a physician who believed in FIM, starting his treatment with food. PM sources are rich in guidance related to foods and drinks, with PM physicians using an individual's unique characteristics to prescribe individualized nutrition plans alongside medical prescriptions. In PM, nutrition is tailored to the patient's temperament, the temperament of the disease, whether the condition is acute or chronic, the season, age, climate, activity level, and more. Also patients are educated on the ingredients, methods of preparation and cooking, dining etiquette, and the consumption of desserts and drinks and more.

Conclusion : In PM, FIM has a longer history and provides a more detailed and precise nutritional prescription by using individual's unique characteristics. PM physicians prescribe individualized nutritional plans for prevention and treatment of individual's specific illness.

TRADITIONAL AND INTEGRATIVE MEDICINE

Effect of Green Coffee Supplementation on Weight Loss and Weight-Related Parameters: A Systematic Review of Clinical Trials

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Background and Aim : Obesity is an excessive amount of energy stored in a form of fat in body, which is a serious medical, social, and economic problem. The factors affecting obesity include geographic location, environment, genetic effects, energy imbalance, inappropriate diet, and physical inactivity. It has been shown that green coffee extract can affect weight by changing plasma adiponectin levels , distributing body fat , and decreasing the concentration of fatty acids. This study aimed to summarize the data from clinical and laboratory trials related to the effect of green coffee supplementation on weight and parameters associated with obesity

Methods : To conduct the study , the articles published between 1990 and 2018 related to the effect of green coffee supplement on weight loss were searched in PubMed, Scopus, ISI , and Google Scholar databases. The search process was accomplished using the keywords of Green Coffee, Green Coffee Extract, Roasted Coffee, Decaffeinated Coffee, Chloronergic Acid, Obesity, Overweight, Body Fat Percent, BMI, Abdominal Fat, Antiobesity Agent, Weight Loss, Weight Decrease, Weight Gain, and Weight Control

Results : The exact mechanism of green coffee extract in weight loss, BMI , and body fat percentage is still unknown. The findings suggest that chlorogenic acid plays a major role in weight changes due to its various antioxidant properties and its effect on anti -inflammatory factors, which can be manifested by a reduction in weight loss, BMI, or other parameters. Some studies have also shown the effects of green coffee bean extract on the changes in liver PPAR expression.

Conclusion : Green coffee can affect lipid and glucose metabolism, which includes reduction of serum insulin as a result of a reduction in glucose uptake, inhibition of glucose 6 phosphatase activity, as well as suppression of lipid absorption, decrease of lipogenesis , and increase of lipolysis. These changes lead to weight loss, reduced fat percentage , and decrease d BMI.

TRADITIONAL AND INTEGRATIVE MEDICINE

Design of biomaterials coated with plant extracts for the treatment of diabetic wounds and burns

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Background and Aim : Diabetic and burn wounds are important clinical challenges in modern medicine, which are difficult to treat due to pathophysiological complexities such as delayed healing, chronic inflammation, and resistant infections. Biocompatible biomaterials with anti-inflammatory, antimicrobial, and regenerative properties can provide novel solutions for the healing of these wounds. The use of plant extracts has attracted great attention in tissue engineering due to their natural therapeutic properties, biocompatibility, and low cost. The aim of this study was to design and evaluate biomaterials based on hydrogels coated with plant extracts to accelerate the healing of diabetic and burn wounds.

Methods : In this study, chitosan and alginate-based hydrogels were selected as biomaterial matrices. Aloe vera, turmeric (containing curcumin), and rosemary plant extracts were added to the hydrogels due to their anti-inflammatory, antioxidant, and antimicrobial properties. The hydrogels were synthesized by ionic cross-linking method and dip-coated with plant extracts. The physicochemical properties of the biomaterials, including porosity, water absorption, and biocompatibility, were investigated using scanning electron microscopy (SEM), swelling test, and MTT assay. The performance of the biomaterials in animal models (diabetic mice and second-degree burns) was studied by evaluating the wound closure rate, inflammation reduction, and granulation tissue formation. The data were analyzed by ANOVA statistical analysis.

Results : Hydrogels coated with plant extracts showed suitable porosity (70-85%) and high water absorption capacity (up to 1200% dry weight), which was ideal for maintaining a moist wound environment. MTT assay confirmed the high biocompatibility of the biomaterials with cell survival of more than 95%. In animal models, the group treated with the coated hydrogel (especially with a combination of aloe vera and curcumin) significantly ($p<0.05$) increased the wound closure rate compared to the control group (without treatment). Diabetic wounds were closed by 85% on day 14 and burn wounds by 90% on day 10. A significant decrease in inflammatory markers (IL-6 and TNF-α) and an increase in collagen synthesis in the repaired tissue were also observed. The antimicrobial activity of the biomaterials against Staphylococcus aureus and Pseudomonas aeruginosa was confirmed.

Conclusion : Hydrogel biomaterials coated with plant extracts showed great potential in the treatment of diabetic and burn wounds due to their porous structure, biocompatibility, and multiple therapeutic properties. The combination of aloe vera and curcumin synergistically reduced inflammation and accelerated tissue regeneration. These biomaterials can provide a moist and infection-free environment, which is essential for wound healing. The results of this study indicate a novel and cost-effective approach for the management of chronic wounds. Future research can focus on optimizing the dosage of plant extracts and clinical evaluations to facilitate the application of these biomaterials in clinical practice.

TRADITIONAL AND INTEGRATIVE MEDICINE

Current Trends in Assessing Medicinal Plant Toxicity: Influencing Factors and Novel Approaches

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Background and Aim: Medicinal plants are vital to global healthcare, with approximately 80% of the world's population relying on them for primary treatment. However, risks such as hepatotoxicity, nephrotoxicity, and genotoxicity necessitate robust toxicity assessments to ensure safety. This review explores influencing factors, including intrinsic phytochemicals and extrinsic contaminants, and highlights innovative methodologies to enhance the safety evaluation of herbal medicines.

Methods: A systematic literature review was conducted using PubMed, Scopus, and Web of Science, covering studies from 2015 to 2025. Search terms included "medicinal plant toxicity," "omics technologies," "in silico toxicology," "alternative models," and "herbal safety." Inclusion criteria targeted peer-reviewed articles on toxicity assessment methods, influencing factors, and WHO/EMA regulatory guidelines. Data were synthesized to compare traditional (in vivo/in vitro) and novel approaches (multi-omics, Galleria mellonella, in silico QSAR), with case studies on toxicants like pyrrolizidine alkaloids and aristolochic acids.

Results: Intrinsic factors, such as toxic metabolites (e.g., pyrrolizidine alkaloids, aristolochic acids), vary by plant species, part, and dosage, driving organ-specific toxicities. Extrinsic factors, including heavy metals (found in 30% of herbal products), pesticides, and adulteration (e.g., Aristolochia misidentification), heighten risks. Traditional OECD-guided rodent studies and in vitro assays (Ames, micronucleus, comet) remain standard but are labor-intensive. Novel approaches include multi-omics (transcriptomics, proteomics, metabolomics), revealing pathways like NF-κB inhibition in aristolochic acid nephropathy. Invertebrate models like Galleria mellonella provide ethical LD50 data (e.g., 3.90–>166.67 g/kg for Moringa oleifera). In Silico QSAR models predict genotoxicity, while DNA barcoding and NGS detect adulterants despite DNA degradation.

Conclusion: Challenges include polypharmacy in herbal formulations, false positives in genotoxicity assays, and DNA degradation hindering authentication. Novel methodologies, such as AI-driven multi-omics and high-throughput platforms like CometChip®, enhance precision and align with 3Rs principles. Future directions prioritize integrated NGS-metabolomics for rapid contaminant detection and unified DNA barcoding databases for regulatory compliance. These advancements mitigate risks, enabling evidence-based integration of medicinal plants into modern pharmacopeias. Interdisciplinary collaboration is crucial for refining toxicity evaluations and ensuring sustainable, safe phytotherapy.

The Role of Mizaj (Temperament) in Asthma Severity: Insights from Mild to Severe Persistent Cases

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Background and Aim : In Traditional Persian Medicine (TPM), Mizaj (temperament) is a foundational concept influencing health and disease susceptibility. This study investigates the association between Mizaj types and asthma severity, bridging traditional and modern medical perspectives.

Methods : A cross-sectional study was conducted on 156 asthma patients (aged 20–60 years) recruited from allergy clinics. Mizaj was assessed using the validated Salmannezhad Mizaj Questionnaire (SMQ), and asthma severity was classified as mild-to-moderate or severe persistent based on GINA guidelines. Statistical analyses evaluated the distribution of Mizaj types across severity groups and their associations with clinical variables.

Results : The most prevalent Mizaj types were cold-wet (23.71%) and warm-wet (20.51%), while temperate-dry was the least common (2.56%). No significant difference in Mizaj distribution was found between mild-to-moderate and severe asthma groups ($p = 0.61$). However, allergic rhinitis (AR) prevalence varied significantly by Mizaj ($p = 0.03$), with the highest rates in temperate-dry (100%) and warm-temperate (70.6%) groups. Body mass index (BMI) also differed across temperaments ($p = 0.005$), with temperate-wet individuals having the highest mean BMI.

Conclusion : While wet temperaments (cold-wet and warm-wet) were common among asthma patients, Mizaj was not associated with disease severity. The link between specific temperaments and AR suggests the potential utility of Mizaj in personalized comorbidity management. Further research with larger cohorts is needed to validate these findings and explore mechanistic pathways.

TRADITIONAL AND INTEGRATIVE MEDICINE

Development of Intelligent Models for Disease Diagnosis and Treatment Recommendations in Iranian Traditional Medicine Using Artificial Intelligence

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Background and Aim : Iranian Traditional Medicine (ITM), rooted in a rich history of systematic use of herbal remedies and therapeutic practices, is a significant cultural and scientific legacy. However, its diagnostic and treatment approaches primarily rely on experiential knowledge and intuition. Advances in artificial intelligence (AI) offer transformative opportunities to enhance the accuracy, efficiency, and standardization of these processes. This study focuses on creating intelligent, data-driven models capable of diagnosing diseases and recommending suitable traditional treatments.

Methods : Data were extracted from diverse sources, including classical medical texts, relevant jurisprudential documents, and authoritative historical or scientific references. Specialized forms were developed to systematically gather and record patient experiences and medical histories. Advanced technologies like Optical Character Recognition (OCR) and Natural Language Processing (NLP) facilitated text analysis and high-quality information extraction. During data preprocessing, steps such as error correction, format standardization, and encoding techniques were employed. Training datasets were carefully labeled based on scientifically verified diagnoses to optimize machine learning processes. Various algorithms—including Decision Trees, Random Forests, Support Vector Machines (SVM), and both standard and deep neural networks—were tested in developing the intelligent models. The accuracy, sensitivity, specificity, and other key metrics were assessed during model validation.

Results : The research involved designing and evaluating multiple machine learning models for diagnosing diseases based on patient-reported symptoms. Among these, Decision Tree and Random Forest models achieved notable accuracy levels exceeding 80% for common conditions such as headaches, digestive issues, and general fatigue. Specifically, the Decision Tree model achieved an average accuracy of 84% with 82% sensitivity, while the Random Forest model outperformed others with 88% accuracy and 86% sensitivity. Significant predictive features included temperament type (Mizaj), physical symptoms, and family medical history. Additionally, the AI-driven treatment recommendation system demonstrated strong performance by aligning with expert-prescribed traditional therapies in 80% of cases. The system consistently suggested appropriate treatment options based on patient history, herbal medicine principles, and core ITM methodologies, establishing its utility as a decision-support tool in clinical settings.

Conclusion : The findings highlight the considerable potential of AI-based tools in enhancing both diagnostic accuracy and the efficacy of traditional treatment planning in ITM. By integrating AI technologies into ITM practice, healthcare providers can achieve greater precision, accessibility, and overall efficiency in service delivery.

Nutritional Patterns and Temperament in Vitiligo Patients: Insights from Traditional Persian Medicine

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Background and Aim : Vitiligo, a chronic autoimmune skin disorder characterized by melanocyte loss, presents remarkable physical and psychosocial challenges. While its etiology remains multifactorial, emerging evidence has implicated diet as a potentially modifiable factor influencing the disease's onset and progression. The present study aimed to investigate the dietary patterns and temperament (Mizaj) characteristics in individuals with vitiligo.

Methods : A case-control study was conducted at Molecular Dermatology Research Center, Shiraz, Iran, in 2024, involving 60 patients diagnosed with vitiligo and 60 age- and sex-matched healthy controls. Dietary intake and Mizaj of the participants were assessed according to the Food Frequency Questionnaire (FFQ) and Mojahedi's Mizaj Questionnaire (MMQ), respectively. Statistical analyses were carried out by Stata 14.2, and p-values under and equal to 0.05 were considered significant.

Results : Vitiligo patients demonstrated significantly higher consumption of specific fruits and vegetables (e.g., lettuce, cucumber, pumpkin, carrots, potato, pomegranate), condiments (salt, spices), and other food items such as soy, liquid oils, and citrus fruits ($p < 0.05$). Of 35 food items differing significantly between groups, six had a wet Mizaj, and two had a dry Mizaj. Patients also consumed more foods with a cold Mizaj (11 items) than those with a hot Mizaj (5 items). Findings revealed no significant Mizaj differences between groups in terms of hot-cold ($p = 0.101$) or wet-dry ($p = 0.895$).

Conclusion : The findings suggest a potential link between dietary habits and vitiligo. Further longitudinal and mechanistic studies are needed to explore diet-based therapeutic strategies with Persian medicine frameworks.

TRADITIONAL AND INTEGRATIVE MEDICINE

Integrating Persian Traditional Medicine into Health Tourism: Potentials, Challenges, and Strategic Pathways

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Background and Aim : Health tourism, as an emerging branch of the tourism industry, offers considerable potential for sustainable development and cross-cultural knowledge exchange. Among various medical traditions, Persian traditional medicine -one of the oldest medical systems in the world- presents unique opportunities through its emphasis on prevention, temperament-based diagnostics, and natural therapies. The integration of this medical heritage with health tourism infrastructure can establish a locally grounded yet globally competitive model.

Methods : To assess the role and potential of Persian traditional medicine in the health tourism sector, a systematic literature review was conducted, covering publications from 2010 to 2024. Major databases including Web of Science, PubMed, Scopus, and SID were searched using keywords such as "Persian Traditional Medicine", "Iranian Traditional Medicine", "Medical Tourism", "Health Tourism in Iran" and inclusion criteria comprised research articles, systematic reviews related to traditional medicine and health tourism.

Results : Content analysis of these studies revealed that Persian traditional medicine offers four key advantages for integration into the health tourism industry: Nature-based and low-risk therapies (medicinal plants, herbal drugs, traditional massage, dry cupping), which are especially attractive to health tourists from Muslim-majority countries and Middle East. A well-documented scientific and historical foundation, rooted in canonical texts such as Avicenna's Canon of Medicine and Jorjani's Zakhireh Kharazmshahi, which can serve as a cultural-medical brand. Alignment with Islamic values and lifestyle, increasing its appeal in target markets such as Tajikistan, Afghanistan, Uzbekistan, Iraq and certain Arab countries. Cost-effectiveness, as PTM services are generally more affordable compared to conventional or complementary medical treatments in more developed nations. Conversely, several challenges were identified, including: Lack of international standards for the delivery of traditional medicine services; Deficiency in quality certification and scientific accreditation for active PTM clinics; Institutional fragmentation between the Ministry of Health, the Ministry of Tourism, and academic institutions; A conservative or instrumental approach toward traditional medicine among some policymakers.

Conclusion : Persian traditional medicine holds significant promise for enhancing the distinctiveness of Iran's health tourism offerings. Realizing this potential requires coordinated national policies, strengthened educational and clinical infrastructures, and the development of quality assurance mechanisms for traditional medicine services. Furthermore, synergies between the health, tourism, and cultural sectors can facilitate authentic, science-based experiences for international visitors. The future success of this sector depends on interdisciplinary models and the strategic promotion of health diplomacy rooted in Persian traditional medical knowledge.

Glanzmann thrombasthenia (GT) with severe menorrhagia treated with Persian medicine recommendations: A case report

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Background and Aim : Glanzmann thrombasthenia (GT) is a bleeding disorder caused by a platelet IIb/IIIa receptor defect. Menorrhagia is a common and debilitating manifestation in women with this syndrome. Conventional treatments include antifibrinolytic agents, GnRH agonists, and in severe cases, repeated platelet transfusions. These approaches often face challenges such as symptom recurrence, side effects, or limited accessibility. In recent years, there has been growing interest in the potential role of Persian medicine in disease management. From the perspective of Persian medicine, menorrhagia has diverse causes, categorized into uterine and blood-related factors. In blood-related causes, changes occur in the quantity or quality of blood; qualitative changes arise from blood thinning due to its dilution or increased heat. Another factor is uterine weakness due to impaired vascular tone.

Methods : A 34-year-old married woman presented with complaints of severe and prolonged menorrhagia. The patient had a history of GT since childhood, which has manifested itself in the form of very severe bleeding (menorrhagia and hypermenorrhea), especially after her first and second cesarean sections. She has been bleeding continuously for about 3 years after the first cesarean section and after the second cesarean section (one year ago). She has not had any bleeding for only two to three weeks in the past year after taking various medications, including coagulation factor 7 and platelets. The severe bleeding has caused anemia in the patient, followed by symptoms of headache, dizziness, weakness, and severe lethargy. Over the past two months, she was initially advised to use an IUD, which did not work for the patient. However, according to the medical commission of Imam Khomeini Hospital in Tehran, a hysterectomy was recommended, and the patient had been referred to the clinic for consultation on whether or not to undergo surgery. Results: According to the principles of Persian medicine, to reduce and control the patient's bleeding, strategies to soothe the uterus and avoid uterine stimulation were recommended, with an emphasis on dietary and behavioral recommendations: For example, avoiding bathing and consuming foods that trigger menstruation, and recommending lying down for ten minutes every two hours. Also, “astringent” compounds were prescribed to increase the consistency of the blood and strengthen the uterine muscle. Lens culinaris powder, Plantagel powder, Golnar capsules, Myrtus communis syrup, Cydonia oblonga paste, and Plantago major syrup (Barshan syrup). Also, in the second visit two weeks after taking the medicine, the patient admitted that the bleeding had completely stopped, and during the follow-up a few months later, the patient had no bleeding at all for two and a half months. They experienced normal menstruation for up to 8 days, and during the follow-up of 3 years, she mentioned completely normal bleeding only during menstruation.

Conclusion : This case report presents a documented case of Glanzmann's thrombasthenia and predominant refractory menorrhagia. After an inadequate response to standard treatments, she underwent a comprehensive Persian medicine regimen and experienced significant clinical improvement. This report emphasizes the need to use the comprehensive Persian medicine approach in patient management and the need for more research.

Prescription indicators for traditional medicine specialist

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Background and Aim : From the beginning of the year 1401, consultations with traditional medicine specialists have been covered by basic insurance organizations, and from the year 1402 three traditional medicine services—wet cupping, dry cupping, and bloodletting—have been added to insurance benefit package. This has enabled the investigation of the role of traditional medicine specialists in various aspects of the health system. The aim of this study is to assess the prescribing indicators of traditional medicine specialists contracted with the Iran Health Insurance Organization

Methods : For this purpose, a cross-sectional study was conducted on prescriptions issued by general practitioners and traditional medicine specialists for insured individuals of the Health Insurance Organization in May and June 1404 (Hijri Shamsi). This study was conducted on registered data without sampling.

Results : A total of 290 traditional medicine specialists working in offices, clinics, and hospitals contracted by the Health Insurance Organization prescribed an average one drug per visit for insured individuals. The average number of laboratory items was 2.38, and imaging items was 0.12. The percentage of prescriptions for drugs was 21%, for laboratory tests 9%, and for imaging procedures 4%. Additionally, outpatient services that could be performed by the physician accounted for 10% of the prescriptions. On the other hand, nearly 50,000 general practitioners provide diagnostic and therapeutic services to the insured individuals of the Health Insurance Organization, prescribing an average of 3.15 medication items per patient. The average number of laboratory items was 1.99, and imaging items was 0.08. The percentage of prescriptions for medications was 64%, for laboratory tests 8%, and for imaging procedures 3%. The proportion of outpatient services that could be performed by the physician was less than 1%.

Conclusion : Considering the prescription of medicinal plants, which are not primarily covered by basic insurance, the average number of medicinal items prescribed by traditional medicine specialists and the percentage of such prescriptions are lower than those of general practitioners. However, the average number of laboratory and imaging items, as well as the percentage of prescriptions for these services, are slightly higher than those of general practitioners. Most patients consulting traditional medicine specialists, as well as those at university and non-university health centers, tend to present with more complex, chronic conditions, often accompanied by distemperament that require more extensive diagnostic evaluations. On the other hand, many patients seek cupping therapy (wet or dry) or bloodletting, especially in the spring, which is considered an appropriate time for these preventive measures in traditional medicine. Therefore, the indication for providing services by specialized traditional medicine physicians is much higher than that of general practitioners

Metabolic Implications of Mastication Efficiency - A Scoping Review

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Background and Aim : Mastication efficiency serves as a critical modulator of metabolic homeostasis, influencing nutrient bioavailability, hormonal signaling, and energy regulation. Emerging clinical evidence suggests that suboptimal chewing parameters (duration, frequency, and biomechanical efficacy) contribute to dysregulated postprandial glycemia, impaired lipid metabolism, and appetite dyscontrol. This scoping review synthesizes human clinical evidence to map the mechanistic pathways and clinical implications of chewing efficacy on metabolic outcomes, identifying research gaps for clinical translation.

Methods : Systematic searches in PubMed and Scopus (January 2000-June 2024) employed a Boolean query combining mastication terminology ("mastication," "chewing efficiency," "chewing duration," "oral processing time") with metabolic outcome parameters ("postprandial glucose," "insulin sensitivity," "lipid oxidation," "appetite regulation," "metabolic syndrome," "HbA1c," "triglycerides") while excluding animal studies using the "human NOT animal" operator. Searches targeted Title/Abstract/Keywords fields, restricted to English-language human clinical trials and cohort studies reporting objective metabolic endpoints. The PRISMA-ScR framework guided evidence synthesis, supplemented by manual reference screening. Grey literature and non-English publications were explicitly excluded from the review process.

Results : Glycemic Regulation Clinical evidence from 18 randomized trials demonstrated that deliberate chewing (≥30 chews per bite) reduced postprandial glucose excursions by 29% in type 2 diabetics. This effect was mechanistically linked to increased salivary α-amylase activity (47% elevation) and potentiated GLP-1 secretion (35% increase), collectively delaying gastric emptying. Longitudinal cohort data further associated thorough mastication habits with 0.5% lower HbA1c independent of dietary composition. Lipid Metabolism and Appetite Control Extended oral processing decreased postprandial triglycerides by 18% through enhanced chylomicron clearance and increased lipid oxidation rates by 22%. Neuroendocrine satiety pathways showed 31-35% elevation in peptide YY and cholecystokinin, reducing subsequent meal energy intake by 14%. These effects were consistently observed across metabolic syndrome populations. Weight Management Outcomes High-frequency chewing protocols (40 chews/bite) produced superior weight management outcomes, with randomized trials documenting 2.3 kg greater weight loss over six months compared to controls. Significant reductions in waist circumference (-4.1 cm) were independently associated with chewing efficacy. Mechanistic Pathways Three interconnected biological pathways were identified: optimization of nutrient hydrolysis through increased food surface area, trigeminal nerve-mediated hypothalamic satiety upregulation, and duodenal L-cell activation amplifying GLP-1 secretion. These mechanisms collectively explain observed metabolic benefits. Research Limitations Significant gaps included methodological heterogeneity in chewing assessment, insufficient data on cardiovascular outcomes, and unexplored interactions with oral microbiome composition.

Conclusion : Mastication efficiency significantly modulates metabolic health through nutrient partitioning, incretin signaling, and appetite regulation. Integration of structured chewing protocols (≥30 chews/bite) into nutritional interventions represents a low-cost adjunct strategy for metabolic syndrome management. Future research priorities include: standardization of mastication metrics, dose-response studies in insulin-resistant populations, and investigations of oral-gut microbiome axis interactions. Clinical translation requires validated behavioral interventions targeting chewing efficacy.

TRADITIONAL AND INTEGRATIVE MEDICINE

Enhancing Sleep Quality in Pregnant Women Through Nasal Lemon Balm Administration: A Double-Blind Randomized Controlled Trial

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Background and Aim : Abstract Background: Sleep disorders are common and clinically significant issues among pregnant women. Adequate sleep during pregnancy plays a vital role in maternal and fetal health, and sleep disturbances can lead to adverse outcomes such as increased stress, chronic fatigue, and pregnancy complications. Given the limitations and potential risks associated with conventional pharmacological treatments for sleep improvement during pregnancy, investigating safe, natural alternatives—particularly herbal medicines—has become critically important. In recent years, interest in herbal remedies during pregnancy has markedly increased. Therefore, this study was designed to evaluate the effect of intranasal Melissa officinalis (lemon balm) drops on sleep quality among pregnant women attending Mahdieh Hospital in Tehran.

Methods : Methods: This randomized, double-blind, placebo-controlled clinical trial was conducted to assess the efficacy of intranasal lemon balm in improving sleep quality in pregnant women. The study included 90 pregnant participants who presented to the antenatal clinic of Mahdieh Hospital with complaints of sleep disturbances. Data were collected using a demographic questionnaire and the Pittsburgh Sleep Quality Index (PSQI). Participants were randomly assigned to receive either intranasal lemon balm drops or a placebo (carrier oil). The administration protocol was one drop per nostril, twice daily (morning and night) for eight consecutive weeks. This trial was registered in the Iranian Registry of Clinical Trials (IRCT) under registration number IRCT20231213060353N1 on February 27, 2024 (Persian date: 1402/12/08). Statistical analyses were performed using SPSS software, employing independent t-tests, analysis of variance (ANOVA), Pearson's correlation, and chi-square tests to evaluate outcomes.

Results : Results: The mean global PSQI score in the intervention group significantly decreased from 11.02 ± 4.26 at baseline to 8.24 ± 3.51 after the intervention ($p < 0.05$). Furthermore, all seven individual PSQI components showed statistically significant improvement following treatment. These improvements were significant both for the global score and for each subscale ($p < 0.05$).

Conclusion : Conclusion: Findings indicate that intranasal lemon balm drops can effectively and significantly improve sleep quality in pregnant women. These results are consistent with prior research demonstrating lemon balm's anxiolytic and sedative properties, likely mediated through modulation of GABAergic pathways in the central nervous system, thereby reducing stress and enhancing sleep parameters. Given the limited availability of safe pharmacological options for managing sleep disorders during pregnancy, intranasal lemon balm emerges as a promising, well-tolerated, natural alternative that can improve sleep quality without significant adverse effects, potentially contributing to better maternal and fetal health outcomes. Keywords: Lemon balm drops, sleep quality, pregnant women, sleep disorders, efficacy

Aromatherapy with Rosa damascene Mill. To Relieve the Symptoms of Postpartum Depression and Sleep Quality in Primiparous Women: A Randomized Controlled Trial

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Background and Aim : Postpartum depression can significantly impact mothers' health, quality of life, and child growth and development. Early detection and treatment are critical. Healthcare providers should screen mothers for postpartum depression during prenatal and postnatal visits. The present study aims to determine the effectiveness of aromatherapy with Rosa damascena Mill. in relieving the symptoms of postpartum depression and improving sleep quality in primiparous women.

Methods : This study is a 1:1 randomised controlled trial. The study included 74 women aged 20–35 who had given birth and were admitted to the postnatal wards of hospitals in Babol City in 2020–2022. Eligible subjects were randomly assigned to receive R damascena or distilled water (placebo) using permuted block randomisation. In both groups, depression and sleep quality were assessed 24 hours, 4 weeks, and 12 weeks after delivery. Participants completed a demographic characteristics checklist, Edinburgh Postnatal Depression Inventory, and Pittsburgh Sleep Quality Index. Independent t-tests, chi-square, Fisher's exact tests, and repeated measures statistical tests were used.

Results : The mean age of mothers was 26.82 ± 5.15 years. The mean scores of postpartum depressions in the two groups at three-time points showed no significant difference. However, the depression scores decreased over time in both groups. In the analysis of overall sleep quality scores, the time irrespective of groups improved the sleep quality. However, the interaction was not significant. The group effect was not significant, and based on the partial eta square value (η^2), there was a small effect ($\eta^2 = 0.03$).

Conclusion : A three-time assessment of postpartum depression and sleep quality revealed no significant difference between the aromatherapy and control groups.However, there was a trend toward improved sleep quality in the aromatherapy group at the final assessment. Further research with larger sample sizes and more rigorous methodology is needed to confirm these findings and to determine the optimal aromatherapy interventions for postpartum women. Longitudinal studies are also needed to assess the long-term effects of aromatherapy on maternal well-being.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Role of Spiritual Health in the Treatment of Infertility: A Perspective from Persian Medicine

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Background and Aim : Infertility and ovulatory disorders are common problems among women. Persian Medicine attributes these conditions not only to physical causes but also to psychological and spiritual factors. One of the most frequently mentioned causes of infertility in classical Persian medical literature is “coldness of the uterus.” This narrative review aims to explore the views of traditional Iranian scholars regarding the role of spiritual and psychological health in infertility and to compare these perspectives with those of modern medicine.

Methods : This study is a narrative review based on content extraction and analysis from classical Iranian Traditional Medicine(ITM) texts, including The Canon of Medicine (Ibn Sina), Zakhireh Kharazmshahi (Jurjani), Tohfat al-Sa'diyyah (Qutb al-Din Shirazi), and Aksir-e-Azam (Azam Khan). Relevant themes on causes of infertility, ovulatory dysfunction, uterine coldness, and the impact of emotional and spiritual states were identified and interpreted. These were then compared with contemporary sources found through literature searches in modern medical databases.

Results : Ibn Sina states that intense emotional states such as grief, fear, chronic sadness, and anger can weaken the uterine governing force, disturb humoral balance, and induce uterine coldness, resulting in disrupted ovulation and fertilization. Jurjani emphasizes the importance of “healthy humors” and “mental well-being” in reproduction, asserting that psychological weakness and lack of sexual desire are common causes of infertility. Shirazi highlights mental health and emotional stability as prerequisites for temperamental balance of the uterus and its receptivity to semen, linking uterine coldness to a deviation in temperament caused by withdrawal of the body's innate heat. Ibn Sina and Shirazi both stress the direct relationship between emotional stability and fertility. Azam Khan also refers to “prolonged sorrow” as a cause of uterine weakness and amenorrhea. Recent studies support these insights, indicating that spiritual-psychological interventions, such as spiritual counseling, can improve fertility and enhance IVF success rates.

Conclusion : According to classical Persian Medicine, spiritual and psychological health play a critical role in maintaining and restoring fertility by influencing vital forces, humors, and temperamental balance—especially in the uterus. Addressing spiritual dimensions alongside physical treatments has always been integral to infertility management in Iranian medicine. This perspective can be integrated with modern complementary and psychotherapeutic approaches to improve infertility outcomes and enhance quality of life.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Frequency of Different Temperaments Among Women of Reproductive Age with Iron Deficiency

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Background and Aim : Anemia and iron deficiency are common health issues among women of reproductive age. It is estimated that between 10% and 30% of women in this demographic group suffer from iron deficiency. In Iranian traditional medicine, blood deficiency is associated with a deficiency in phlegmatic humor. This study aimed to investigate the relationship between different temperaments and the incidence of iron deficiency.

Methods : In this cross-sectional study, 123 women of reproductive age (18 to 45 years) were enrolled. Participants completed the 10-item Mojahedi questionnaire (MMQ). Based on this questionnaire, participants were categorized into nine temperament groups. The collected data were analyzed using the chi-squared test.

Results : The mean age of the patients was 35.12 years. The difference between the observed distribution and the uniform distribution was statistically significant. Among the nine temperament groups, the two groups with cold and humid (38 individuals) and cold and dry (34 individuals) temperaments had the highest frequencies, which were statistically significant ($p < 0.05$).

Conclusion : A direct relationship exists between temperament and the incidence of iron deficiency in women. Specifically, individuals with cold temperaments—whether cold and humid or cold and dry—are more likely to suffer from iron deficiency. To confirm this finding, extensive community-level studies on temperament are warranted.

TRADITIONAL AND INTEGRATIVE MEDICINE

Impact of Face-to-Face Training on Increasing Awareness of Integrating Traditional Persian Medicine teachings program Among Staff at Sabzevar University of Medical Sciences

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Background and Aim : The acceptance of complementary medicine services, including Traditional Persian Medicine, is increasing. The World Health Organization has also presented its strategies through various programs and emphasizes the integration of complementary and traditional medicine services in providing health services to society. In Iran, academic education in Traditional Medicine Officially began in 2007 with the addition of the field of Traditional Persian Medicine to universities, and currently, 8 faculties and 13 educational groups provide services related to this field. The program for integrating Traditional Persian Medicine Teachings into the network system was proposed in 2022, and by the end of that year, 15 universities had prioritized the implementation of the program, and it was planned that all faculties and universities of medical sciences in the country would implement this program by the end of 2022. Sabzevar University of Medical Sciences, as one of the volunteer universities in the first phase, began preparations for its implementation in late 2022 and, by holding in-person training sessions for physicians in the form of a retraining program, as well as in-person training sessions for health educators and staff experts from family health, health education, and Gostaresh units, it began a cascade training of health educators and caregivers. Given the direct impact of in-person training on the level of knowledge of individuals in each program, in this study, we intend to study the impact of in-person training on the level of awareness of the personnel working in the program for integrating Traditional Persian Medicine Teachings into the network system at Sabzevar University of Medical Sciences.

Methods : According to the completion of the pre-and post-training test sheets by all participants in the program, first, the general statistics of the target groups that participated in this program were separated according to their educational qualifications, and then the scores of each group in two stages before and after the training were extracted and the amount of change in the information of each group was calculated.

Results : The total participants in this program was 146, including 56 physicians and 90 experts. The average scores before the training of the groups of physicians and experts were 62.93 and 46.36, respectively, and the average scores after the training were 88.89 and 90.71, which shows an increase of 26.95 points for physicians and 44.34 points for experts. All these changes are statistically significant (P<001).

Conclusion : Despite the fact that the use of Traditional Persian Medicine Teachings and services exists in society and numerous meetings are held in academic and educational circles, it does not seem that the level of awareness of the group of physicians and health experts is very proportional to the current situation, and this intervention showed that providing face-to-face training significantly increased the average scores. Holding face-to-face sessions is essential for the best implementation of important health programs and improving their efficiency, and implementing these face-to-face sessions in a workshop manner is a frequent experience.

Investigating the quality of sleep in infertile women referred to Hamadan Fatemieh Hospital in 2024

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Background and Aim : Sleep disorders are a common problem related to a wide spectrom of physical and mental diseases. However, the prevalence of sleep disorders in infertile women has not been completely investigated. In this study, sleep quality in infertile women was investigated.

Methods : In this descriptive-analytical study, 300 infertile women referring to Fatemieh Hospital in Hamadan in 2024 were selected using the convenience sampling method. The participants' sleep problems and sleep quality were assessed with the Pittsburgh Sleep Quality Inventory (PSQI) and compared in terms of individual and contextual variables. The data were analyzed with SPSS version 26 software at a confidence level of 95%.

Results : The mean and standard deviation of the age of the women participating in the study was 33.90±6.63 years and the body mass index was 26.30±3.93 kg/m2. The prevalence of moderate to severe sleep disturbance in the domains of subjective sleep quality was 86.3%, sleep latency was 83.3%, sleep duration was 41%, sleep efficiency was 55.3%, sleep disorders were 99%, and daily functioning disorders were 57.7%. In total, 52.67% of the women participating in the study had poor sleep quality. No significant differences were observed between sleep quality and the variables of age, weight, body mass index, frequency of infertility treatment, place of residence, occupation and education, cause of infertility, and ovarian problems.

Conclusion : According to the results of the present study, more than half of the infertile women participating in the study had sleep disorders, especially in the subdomains of sleep latency, sleep efficiency, and subjective sleep quality.

TRADITIONAL AND INTEGRATIVE MEDICINE

Chronic Constipation: Neglected role in liver disease due to changes in gut microbiota; Prevention from the prespective of Persian Medicine and Modern Medicine (A Narrative Review)

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Background and Aim : Constipation is a collection of symptoms that defined as a hard defecation. Chronic constipation is a widespread, multi-cause gastrointestinal ailment, and its etiology and pathophysiology are not well known. Also, liver disease in Europe is a critical subject, with increment of cirrhosis and liver malignancy, and liver disease is responsible for almost 2 million deaths per year in the world. The gut microbiota, as the original part in gut microecology, is a vital moderator in health and disease and impresses the progress of chronic diseases including metabolic disease, gastrointestinal ailments and colorectal malignancy. This study provides an overview of research related to the correlation of chronic constipation and liver diseases due to changes in the gut microbiota according to the perspective of Persian medicine and modern medicine

Methods : In this narrative review, the resources of traditional Persian medicine and modern medicine were investigated using the keywords of "Constipation", "Gastrointestinal Microbiome", "Dysbiosis", "Liver Diseases", "Non-alcoholic Fatty Liver Disease", "Liver Diseases, Alcoholic", "Liver Cirrhosis", "Carcinoma, Hepatocellular", and "Medicine, Persian" ; in medical Information databases of Scholar, PubMed, ISI, Scopus, and etc. 81 articles between 2014 and 2022 were chosen for discussion in 5 axes: Constipation, Gut microbiota, Liver disease, Constipation and Gut microbiota, as well as Gut microbiota and Liver disease. In addition, titles and contents linked to constipation and liver diseases from the reliable texts of Persian Medicine were discussed by the authors.

Results : Lately, research has confirmed dysbiosis of gut microbiota in chronic constipation by using 16S rRNA-based microbiota profiling. And on the other hand, the intestinal microbiome has a main impress in the pathogenesis of liver disease, with a specific occurrence being dysbiosis, or an inequity of pathobionts and useful bacteria with the harmful effects on their host.

Conclusion : According to Traditional Persian Medicine School, chronic constipation is not only a gastrointestinal malady, but also may result in several chronic complaints and an indication for maltemperament (Soo-emazaj) state of the body. Chronic constipation can be the origin of many diseases, for this reason, it has been named Mother of disease or “Omm-ol-Amraz”. Avicenna believed that four talents are involved in the process of digestion and absorption of the consumed food and ejecting the surplus articles. These talents include ha'zemeh (digestive), ja'zebeh (absorptive), ma'sekeh (retentive) and da'fe'eh (propulsive). Constipation is generally the outcome of potent ma'sekeh and feeble da'fe'eh. During chronic constipation, the normal digestive pathway of natural humors is clogged that affords pathological cumulation of burned humors in different organs. So, toxins and surplus materials are reabsorbed through intestine and their evacuation pathway alters to other systems like skin and respiratory tract. As well as according to Modern Medicine, Lengthy cease of feces in the intestines of constipated person alters the microbial composition of the intestine, affecting the pathogenesis of liver diseases. Thus, we can conclude that constipation may propel to liver diseases that lifestyle correction, especially from the perspective of Traditional Persian Medicine can be helpful in preventing liver diseases.

The effect of sweet almond oil vaginal suppository on the cervical ripening in nulliparous women: a randomized controlled trial

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Background and Aim : The failure of labor induction often occurs when the cervix is not ripe. To mitigate the side effects of chemical drugs, herbal medicines are now being considered for cervical ripening. Sweet almond oil has compounds that seem to be effective on the cervical ripening. Omega6 which includes essential fatty acids (Oleic acid and Linoleic acid) are the precursors to the labor prostaglandins. This study aimed to investigate the impact of sweet almond oil vaginal suppositories on cervical ripening in nulliparous women.

Methods : This three-blinded clinical trial was conducted in 2023-2024 and involved 60 pregnant women who were referred to Shahid Hashmi-nejad Hospital in Mashhad. Eligible participants were given either a daily vaginal suppository of sweet almond oil or a placebo for up to one week. The Bishop score was assessed before the intervention, 72 hours later, and four-seven days after the intervention. Data analysis was performed using SPSS 25, and the independent sample t-, Mann-Whitney, and Wilcoxon tests were used. A significance level of $P<0.05$ was considered.

Results : The intervention group and placebo group had a mean Bishop score of 1.7±1.4 and 0.6±0.8 respectively. After 72 hours, the mean scores for the intervention and placebo groups were 4.0±2.5 and 0.9±1.6, respectively and four to seven days after the intervention, the mean scores for the sweet almond oil and placebo groups were 4.5±2.1 and 1.2±2.1 respectively. The Mann-Whitney test demonstrated a significant difference in the Bishop scores during these three follow-ups ($P < 0.001$).

Conclusion : Based on the positive impact of sweet almond oil vaginal suppositories on increasing the Bishop score and softening the cervix, it is recommended to utilize this affordable, safe, and accessible method for cervical ripening in nulliparous women.

TRADITIONAL AND INTEGRATIVE MEDICINE

Evaluation of Iranian and Complementary Medicine Course from the Perspective of Nursing and Midwifery Students at Sabzevar University of Medical Sciences

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Background and Aim : The goal of educational programs is to create appropriate and desirable effects on students. The need to achieve these goals is to assess the needs of students, implement appropriate educational methods, and evaluate them. Curriculum evaluation is carried out to find the weaknesses of the program and improve the current situation. The Iranian and Complementary Medicine course is one of the mandatory courses for students in some medical fields. The aim of this study is to evaluate this curriculum from the perspective of nursing and midwifery students at Sabzevar University of Medical Sciences.

Methods : 42 students were selected based on the convenience sampling method. A researcher-made questionnaire was used to collect data. This questionnaire consisted of two sections: personal characteristics and questions related to the overall evaluation of the Iranian and Complementary Medicine course from the perspective of nursing and midwifery students. After reviewing the data, it was entered into SPSS version 24.

Results : The results of this study showed that students had a positive reaction to the course and relatively high satisfaction. Overall, the necessity of presenting the course from the students' perspective was high, with 41% considering it essential and 49% considering it useful. In the comparison between the two fields, there was a significant difference in this regard, and the necessity of presenting it was greater from the perspective of midwifery students. ($p<0.02$) Also, the materials presented in this course were useful and practical from the perspective of 84% of the students. Based on the open-ended questions, the students listed the strengths and challenges for this program and had suggestions, including presenting the Iranian and complementary medicine course in a more specialized and practical way for the midwifery field.

Conclusion : Based on the results, considering the needs of midwifery students, it is possible to present the Iranian and complementary medicine course in a specialized and practical way in the higher semesters of this field. Also, providing specialized workshops for students in this field seems practical.

Examining the effect of aromatherapy using orange essence and an orientation tour upon anxiety in birthing parents of premature infants: a quasi-experimental study

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Background and Aim : Those birthing premature infant's experience anxiety after the hospitalization of their infants in the neonatal intensive care unit (NICU). This study investigated the effect of an orientation tour with and without aromatherapy using orange oil on birthing parents' anxiety levels.

Methods : In a quasi-experimental study, a total of 130 participants with hospitalized premature infants in the NICU were considered into three groups, 1) orientation tour only, 2) orientation tour-aromatherapy, and 3) control group. Participants were placed to one of the three groups weekly. In the orientation tour-aromatherapy group, 4 drops of orange essence were inhaled 30 minutes prior to participants' first entry into the NICU. Subsequently an orientation tour was undertaken in the NICU for 30 minutes. Thirty minutes before going to bed at night, participants re-inhaled 4 drops of orange essence again for 30 minutes. In the orientation tour only group, participants inhaled 4 drops of distilled water instead of the orange oil aroma. The state-trait anxiety inventory (STAI) was completed by all participants one hour prior to the first entry into the NICU, as well as one and 24 hours after participants left the NICU.

Results : At both one and 24 hours post visiting the NICU, the mean score and severity of state and trait anxiety measured in the two intervention groups ($P < 0.001$) were less than those measured in the control group. No difference was observed between the two intervention groups in either time stages.

Conclusion : Both an orientation tour as well as an orientation tour administered in combination with aromatherapy using orange oil effectively reduces both state and trait anxiety in new birthing parents with premature infants entering the NICU. Thus, orientation tours may usefully be considered to reduce stress overall in those birthing parents who their premature infants are subsequently hospitalized in the NICU. Keywords: Orientation tour, prematurity, Aromatherapy, state anxiety, trait anxiety, Neonatal Intensive Care Unit.

TRADITIONAL AND INTEGRATIVE MEDICINE

Anthropometric indices Correlates of Temperament (Mizaj) in Traditional Medicine: A Cross-Sectional Study of Iranian males

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Background and Aim : Traditional Iranian medicine classifies individuals based on temperament (Mizaj), defined by hot-cold and dry-wet attributes, which are thought to influence health and disease susceptibility. This study investigates the relationship between temperaments and anthropometric variables, aiming to provide a quantitative, evidence-based foundation for traditional medicine.

Methods : A cross-sectional study conducted with 200 healthy males aged 20–30. We recorded a number of anthropometric measurements, including height, weight, skinfold thickness, and hip (HC) and waist (WC) circumferences. Body Mass Index (BMI) and body fat index (BFI) were calculated. Participants completed a validated temperament assessment questionnaire.

Results : Participants were categorized into four groups: Warm-Dry (WD) (28 %), Warm-Wet (WW) (18 %), Cold-Dry (CD) (17.3 %), and Cold-Wet (CW) (36.7 %). Significant differences were observed in weight, BMI, BFI, waist, and hip circumferences among the groups. The CW group had the highest average weight (88.35 kg), BFI (25.1 %), BMI (27.93 kg/m²), while the WD group had the lowest weight (69.39 kg), BMI (21.13 kg/m²), BFI (14.8 %), ROC curve analysis identified pelvic circumference as the optimal predictor for cold-warm temperament classification, with a cut-off value of 99.5 cm, for dry-wet temperament, BFI was the reasonable predictor, with a cut-off of 20.10 %. The findings are consistent with traditional Iranian medicine principles, which associate warm-wet temperaments with larger body sizes and greater soft tissue mass, while cold or dry temperaments correlate with a leaner physique

Conclusion : These findings support the using anthropometric indices as objective measures for temperament classification, offering a scientific basis for traditional Iranian medicine and enhancing personalized health interventions.

Evidence-Based Medicine and Iranian Traditional Medicine: The Science/Tradition Confrontation or the Power/Knowledge Relationship

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Background and Aim : The relationship between evidence-based medicine (EBM) and Iranian traditional medicine (ITM) reveals a complex interplay of knowledge, power, and social practices that shape norms, identities, and institutional authority in Iran. Using Michel Foucault's critical discourse analysis, this paper examines how these medical paradigms extend beyond treatment to construct realities, legitimize authority, and regulate bodies within historical and contemporary contexts. While EBM emphasizes scientific objectivity through clinical trials and standardized protocols, ITM draws on holistic principles from ancient texts like Avicenna's Canon of Medicine. Together, they function as mechanisms of power and knowledge production, influencing socio-political dynamics by defining "truth," legitimizing practices, and controlling bodies and societies.

Methods : This qualitative study applies Foucauldian critical discourse analysis to explore power-knowledge dynamics in evidence-based medicine (EBM) and Iranian traditional medicine (ITM). Analyzing foundational texts like Avicenna's Canon, contemporary policies, and scholarly literature, it examines dominant discourses, legitimation mechanisms, and resistance within these paradigms. The study critiques institutions legitimizing each system and traces historical shifts in their influence, using Foucault's concepts of biopower, discourse formation, and hegemony to reveal how certain truths are normalized and alternatives marginalized.

Results : The analysis shows that evidence-based medicine (EBM), emphasizing clinical trials and hierarchical evidence, constructs a discourse of scientific objectivity that marginalizes experiential and traditional knowledge. By standardizing treatment protocols, EBM transforms patients into manageable objects and medical professionals into enforcers, centralizing power in institutions like scientific journals and health organizations, thus reinforcing biomedical hegemony. In contrast, Iranian traditional medicine (ITM) is rooted in a holistic view of the body as a microcosm balanced with nature, legitimized by classical texts and religious institutions, where physicians serve as both scientific and spiritual authorities and patients actively maintain bodily equilibrium. However, modernization during the 1980s marginalized ITM, causing a discursive rupture. Contemporary ITM revival involves state regulation, academic standardization, and commercialization, blending tradition with neoliberal markets while reasserting cultural identity. Both EBM and ITM engage in a dynamic power struggle, negotiating legitimacy and knowledge boundaries, with institutions acting as gatekeepers and each system validating some knowledge while excluding others, reflecting Foucault's power-knowledge nexus.

Conclusion : EBM and ITM are intertwined with power structures governing health, reflecting broader socio-political struggles. EBM's hegemony aligns with neoliberal priorities, optimizing bodies for economic productivity, while ITM's revival resists Western modernity through cultural reassertion. Foucault's framework highlights how both systems construct subjectivities-EBM fostering passive patients, ITM promoting "responsible" subjects-and legitimize authority via institutions like peer-reviewed journals or religious decrees. Each marginalizes alternatives: EBM sidelines traditional healers, ITM rejects biomedical reductionism. Their tension underscores clashes between globalized science and local epistemologies, impacting medical pluralism and patient autonomy. EBM dominates through standardization and institutional control, whereas ITM persists via cultural adaptation and alternative knowledge. Recognizing these dynamics is vital for equitable healthcare that respects diverse systems without reinforcing hegemony. Future research should explore hybrid models merging EBM's rigor with ITM's holistic ethos, challenging monolithic paradigms. This Foucauldian analysis reveals EBM and ITM as networks of power-knowledge shaping Iranian healthcare governance, identities, and social order, necessitating nuanced integration for balanced coexistence.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Effect of Iranian Traditional Medicine Interventions during Pregnancy on Maternal and Fetal Health and the Prevention of Future Diseases: A Systematic Review

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Background and Aim : Pregnancy is a critical period that significantly influences disease prevention for both the mother and the fetus. Iranian Traditional Medicine (ITM) provides comprehensive strategies, encompassing dietary alterations, herbal treatments and lifestyle guidance, to enhance pregnancy outcomes and mitigate future disease risks. This systematic review seeks to assess the efficacy and safety of ITM interventions during pregnancy concerning maternal-fetal health and their prospective role in preventing chronic diseases in offspring.

Methods : Adhering to PRISMA guidelines, we conducted a systematic search of PubMed, Scopus, Web of Science, Embase and Persian databases (SID, Magiran) from their inception until March 2024. "Pregnancy," "Maternal Health," "Fetal Development" and "Disease Prevention" were among the keywords. The inclusion criteria comprised clinical trials, observational studies and historical ITM texts. The exclusion criteria encompassed studies lacking relevance, non-peer-reviewed articles and publications not available in Persian or English. We employed the Cochrane Risk of Bias Tool for randomized trials and the Newcastle-Ottawa Scale for observational studies to assess bias. We employed narrative synthesis to aggregate the data and conducted meta-analysis when feasible.

Results : Twenty-eight studies (n=3,752 participants) were selected from a total of 1,247 screened records. ITM interventions encompassed herbal supplements such as "Date palm" and "Anise", dietary modifications including honey-based regimens and alterations to daily routines involving regulated physical activity. A meta-analysis of 10 randomized trials (n=1,642) demonstrated that ITM interventions significantly diminished gestational complications (OR: 0.62; 95% CI: 0.48–0.80; $p<0.001$) and enhanced birth weights (MD: 112g; 95% CI: 85–139; $p<0.001$) compared to controls. No significant adverse effects were documented. Observational studies demonstrated enduring advantages, such as reduced risks of metabolic disorders in children.

Conclusion : The discussion indicate that ITM interventions during pregnancy show promise in improving maternal-fetal health and may aid in the prevention of future pediatric diseases. Additional high-quality, longitudinal studies are necessary to validate these findings and ensure uniformity in protocols. Currently, the available evidence substantiates their safety and efficacy. Incorporating ITM into prenatal care may expand your options; however, clinical guidelines must prioritize evidence-based recommendations. Policymakers and healthcare providers should consider these factors when formulating comprehensive maternal care plans.

Knowledge and Attitudes of Hypertensive Patients on the Use of Traditional and Complementary Medicine

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Background and Aim : High prevalence of hypertension (HTN) and its detrimental effects have resulted in more use of traditional and complementary medicine. This study aimed to investigate the knowledge and attitudes of hypertensive patients on the use of traditional and complementary medicine

Methods : This descriptive study was performed in 400 hypertensive patients attending an academic outpatient clinic in Kermanshah Heart Center, Iran 2017. Data were recorded by a demographic questionnare and a researcher-made questionnaire about the knowledge and attitudes of hypertensive patients on the use of traditional and complementary medicine. Data were analyzed using Chi-square, independent t-test, and Pearson's correlation coefficient.

Results : The mean HTN was 14.19±3.14 mm/Hg. Low and moderate awarness about the use of traditional and complementary medicine were seen in 63.5% and 36.5%, of hypertensive patients, respectively. Among the patients, 14% were found to have moderate attitude and 86% had positive attitude towards traditional and complementary medicine. Significant associations were found between attitude and marital stuatus, educational level, occupation, place of residence, comorbidities, and family history of the disease (P <0.001). There was a direct correlation between attitude and age (P= 0.01, r= 0.14) but a significant negative correlation between attitude and duration of HTN (P= 0.03, r = -0. 12).

Conclusion : : More than half of the patients had low knowledge about the use of traditional and complementary medicine, however, they were found to have positive attitudes toawrds traditional and complementary medicine. Therefore, health authorities are recommended to provide people with more information on traditional and complementary medicine.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Impact of Sleep Disorders on Infertility from the Perspective of Persian Medicine and Modern Medical Sciences

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Background and Aim : Infertility is a major global public health concern, affecting more than 8% to 15% of couples of reproductive ages. It is a multifactorial condition that may result from ovulatory dysfunction, male factors, tubal and peritoneal abnormalities, or even unexplained causes. In recent years, lifestyle-related factors—particularly sleep deprivation—have emerged as important contributors to infertility. Persian Medicine also emphasizes the vital role of sleep in maintaining temperamental balance and reproductive health. This study aims to investigate the impact of sleep disturbances on infertility from both traditional and modern medical perspectives.
Methods : This study is a narrative review. Scientific sources were collected from databases such as PubMed, Scopus, and Google Scholar, as well as from reputable texts in Persian Medicine.
Results : Sleep plays a critical role in regulating the circadian rhythm of reproductive hormones such as testosterone, estradiol, progesterone, and gonadotropins. Sleep deprivation is associated with hormonal imbalances that can lead to ovulatory disorders, menstrual irregularities, reduced sperm quality, and erectile dysfunction. Moreover, inadequate sleep activates the hypothalamic-pituitary-adrenal (HPA) axis and elevates cortisol secretion, which may suppress the hypothalamic-pituitary-gonadal (HPG) axis and impair the production of sex hormones. Sleep deprivation also reduces melatonin levels, damaging gametes and decreasing fertilization and implantation potential. Additionally, sleep disorders are linked to the onset or worsening of gastrointestinal (IBS, IBD), metabolic (obesity, diabetes, PCOS), and inflammatory diseases, all of which negatively affect fertility. In Persian Medicine, sleep irregularities are considered to reduce the body's innate heat, induce cold temperament, and weaken both digestive and reproductive functions.
Conclusion : The findings suggest that sleep deprivation affects fertility through multiple mechanisms, including disruption of hormonal axes, decreased gamete quality, oxidative stress, menstrual disorders, and impaired implantation. The interaction between sleep deprivation and metabolic diseases such as obesity and diabetes may create a vicious cycle that exacerbates infertility. Additionally, reduced melatonin—an important antioxidant and reproductive regulator—further increases the risk of fertility impairment. Animal studies also confirm that sleep loss can reduce sperm quality, alter sex hormone levels, and disrupt embryonic development. From the traditional perspective, both insufficient and excessive sleep disturb basal metabolism and digestive function, leading to an accumulation of waste products and inadequate cellular nourishment, including in reproductive tissues, thereby contributing to infertility. Sleep deprivation and sleep disorders are closely linked to decreased fertility in both men and women, as supported by evidence from both traditional and modern medical sciences. Therefore, maintaining healthy sleep hygiene and circadian rhythm regulation may play a key role in enhancing reproductive health. Integrating insights from Persian Medicine with modern findings could provide a comprehensive approach for preventing and managing lifestyle-related infertility.

TRADITIONAL AND INTEGRATIVE MEDICINE

Comparison of the Effects of Music Therapy and Play Therapy on Anxiety and Physiological Indicators during Cast Removal in Children: A Randomized Clinical Trial

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Background and Aim : Cast removal is a routine yet stressful procedure for children, often triggering anxiety and physiological stress responses. Non-pharmacological strategies such as music therapy and play therapy have been introduced to help reduce this burden. This study investigated and compared the effects of these two interventions on children's anxiety levels and physiological indicators during cast removal.

Methods : In this randomized clinical trial, 105 children aged 8–12 years undergoing cast removal at Valiasr Hospital, Arak, Iran, were enrolled. Participants were randomly assigned to one of three groups: music therapy, play therapy, or a control group receiving standard care. Anxiety was assessed using the Facial Anxiety Scale and the Children's Emotion Management Scale (CEMS). Physiological parameters, including heart rate, were measured before and after the intervention. Data were analyzed using chi-square, Fisher's exact test, paired t-tests, ANOVA, and Tukey's post-hoc test.

Results : Children in the music therapy group showed significantly lower mean heart rates after the intervention (108.22 ± 9.59 bpm) compared with both the play therapy (114.62 ± 11.10 bpm) and control groups (115.45 ± 10.99 bpm). The difference versus control was −7.23 bpm (95% CI: −13.25 to −1.21; p = 0.014). Emotional expression scores were also lower in the music therapy group (14.77 ± 4.16) than in the play therapy (16.65 ± 4.91) and control groups (17.68 ± 4.43), with a mean difference of −2.91 compared to control (95% CI: −5.48 to −0.35; p = 0.022). Based on anxiety rankings, children who received music therapy reported the lowest anxiety (mean rank = 43.69) compared with the control group (63.23; p = 0.006).

Conclusion : Both music therapy and play therapy were beneficial in easing children's responses to cast removal, but music therapy demonstrated a stronger effect on reducing anxiety and stabilizing physiological indicators. As a safe, inexpensive, and easily applicable approach, music therapy is recommended for routine use in pediatric cast removal units to improve cooperation and comfort in children.

TRADITIONAL AND INTEGRATIVE MEDICINE

The Role of Exercise in Gastrointestinal Health: A Comparative Review of Iranian Traditional Medicine and Modern Evidence

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Background and Aim : Maintaining gastrointestinal (GI) health is essential for overall well-being and disease prevention. Among various lifestyle factors, exercise has long been recognized as a key element in promoting digestive function. This study explores the effects of exercise on the gastrointestinal system by comparing insights from Iranian traditional medicine (ITM) with evidence from modern scientific literature.

Methods : This review was conducted by searching classical Persian medical texts such as The Canon of Medicine by Avicenna, Zakhireh Kharazmshahi, and Kamel al-Sana'eh, focusing on keywords such as “Riazat” (exercise), “Hifz al-Sehha” (preservation of health), digestion, and gastrointestinal function. Simultaneously, modern scientific databases including PubMed and Scopus were explored using equivalent English terms like exercise, digestion, gastrointestinal health, and physical activity.

Results : This review was conducted by searching classical Persian medical texts such as The Canon of Medicine by Avicenna, Zakhireh Kharazmshahi, and Kamel al-Sana'eh, focusing on keywords such as “Riazat” (exercise), “Hifz al-Sehha” (preservation of health), digestion, and gastrointestinal function. Simultaneously, modern scientific databases including PubMed and Scopus were explored using equivalent English terms like exercise, digestion, gastrointestinal health, and physical activity. In ITM, exercise (Riazat) is considered one of the six essential principles of maintaining health (Sitteh Zaruriyyah). Avicenna emphasized that moderate and properly timed physical activity enhances digestion, supports waste elimination through defecation and sweating, and strengthens the body’s natural heat (Hararat-e Gharizi), which is crucial for metabolic functions. ITM sources stress that exercise must be tailored to the individual's temperament (Mizaj), physical condition, age, and the state of humors (Akhlaat) to avoid harmful effects such as dryness or excessive fatigue. Furthermore, traditional texts describe how exercise facilitates various stages of digestion, including gastric, hepatic, and vascular digestion, thereby contributing to the production of balanced humors and preventing the development of gastrointestinal disorders. From a modern medical perspective, numerous studies confirm the protective role of physical activity in digestive health. Regular exercise is associated with reduced risk of constipation, diverticulosis, gastrointestinal bleeding, colorectal cancer, and inflammatory bowel disease. Mechanisms include improved gut motility, enhanced blood flow to the intestines, modulation of stress responses, and regulation of hormonal and immune functions.

Conclusion : This comparative review demonstrates that the role of exercise in digestive health is a point of convergence between traditional and modern medical systems. The parallels between these approaches offer valuable opportunities for integrative strategies in preventive medicine. Further interdisciplinary research is recommended to scientifically validate traditional guidelines and enhance public health interventions. In conclusion, incorporating exercise as a structured health-preserving measure—as advocated in Iranian traditional medicine—can provide an accessible, cost-effective, and evidence-based method for improving gastrointestinal function and promoting long-term health.

TRADITIONAL AND INTEGRATIVE MEDICINE

Studying the effect of anise consumption on weight loss and anthropometric indices of women with polycystic ovary syndrome referring to the infertility clinic of Sabzevar University of Medical Sciences

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Background and Aim : One of the important risk factors in women with polycystic ovary syndrome is obesity and increased body mass index. There are various studies on the effects of anise on improving metabolism and fat and insulin metabolism in hormonal disorders of women's diseases. Therefore, the present study was designed to investigate the effect of anise consumption on weight loss and anthropometric indices of women with polycystic ovary syndrome referred to the Infertility Center of Sabzevar University of Medical Sciences

Methods : In this clinical trial study, patients referred to the Infertility Center of Sabzevar University of Medical Sciences with a diagnosis of polycystic ovary syndrome were included in the study. The diagnosis of polycystic ovary syndrome was made by an obstetrician-gynecologist based on the Rotterdam criteria (oligomenorrhea or menstrual disorders, clinical or laboratory signs of hyperandrogenism, evidence of polycystic ovaries on ultrasound), with the presence of two of the three criteria being sufficient for diagnosis. The study samples were divided into two intervention and control groups by block randomization. Before the intervention, anthropometric indicators of all samples including weight, height, waist, hip and abdominal circumference and wrist circumference were measured by the researcher. Also, appetite assessment (based on the visual analogue scale (VAS) as well as the quality of life questionnaire (SF-26) were completed. The intervention group received 5 grams of anise powder every day, and the control group received placebo (corn starch) half an hour before lunch and dinner for 8 weeks. To blind the study, the drugs were provided in similar, opaque packaging and the samples were delivered after coding. The study outcomes included changes in weight and body mass index, changes in waist circumference and waist-to-hip ratio, as well as changes in appetite, quality of life, and physical activity, which were re-evaluated after the end of 8 weeks.

Results : : In this study, 40 participants in the intervention group and 37 in the control group were studied. In comparing the outcomes after the intervention, there was a statistically significant difference in the appetite variable between the two groups (P=0.028). There was no statistically significant difference in the weight, waist-to-hip ratio, abdominal circumference, and body mass index variables between the two groups (P<0.05). The mean quality of life score in the intervention group increased compared to the control group, and there was a statistically significant difference between the two groups. (P-value<0.001). When examining the two groups separately, a statistically significant difference was observed in terms of the mean quality of life score (P value < 0.001).

Conclusion : The results of the present study showed that although anise consumption did not have a significant effect on anthropometric indicators during the study period, it was effective in improving the quality of life and appetite of women with PCOS

A Non-Pharmacological Approach to Lower LDL Cholesterol by Raising HDL: The Role of Extra Virgin Olive Oil and Regular Aerobic Exercise

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Background and Aim : Dyslipidemia is a key risk factor for cardiovascular diseases. Given the concerns regarding the side effects of statin medications, this study aimed to evaluate the effect of increasing HDL as a strategy to lower LDL levels, using a structured protocol based on extra virgin olive oil consumption and regular aerobic exercise—without any use of statins.

Methods : In this interventional study, 56 adults with elevated LDL levels followed a 60-day non-pharmacological regimen. The intervention included consuming two tablespoons of extra virgin olive oil with each main meal (exclusively as the sole source of fat) and engaging in moderate-intensity aerobic exercise five times per week (30 minutes per session using a treadmill or stationary bike). Key biomarkers such as LDL, HDL, total cholesterol, and the LDL/HDL ratio were measured before and after the intervention.

Results : All participants experienced a reduction in LDL levels. In individuals with baseline LDL under 130 mg/dL, the average reduction reached up to 30%. HDL levels increased significantly, and the LDL/HDL ratio dropped from 3.7 to 2.5. Total cholesterol levels also showed a notable decline.

Conclusion : In the absence of statin use, the combination of daily extra virgin olive oil intake and consistent aerobic exercise led to significant reductions in LDL cholesterol across all participants, especially in those with baseline LDL below 130 mg/dL. Participants with LDL above 170 mg/dL showed a weaker response, highlighting the potential need for adjunct pharmacological treatment in such cases

Persian Culinary Medicine: Bridging Persian Medicine Wisdom and Conventional Science

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Background and Aim: Culinary medicine is an innovative, evidence-based field that integrates nutrition science and culinary arts to prevent and treat diet-related diseases. It emphasizes hands-on learning in teaching kitchens, where individuals can acquire practical cooking skills and nutrition knowledge to make healthier food choices. This approach is particularly beneficial in addressing chronic diseases and promoting food equity among vulnerable populations. Culinary medicine is increasingly being incorporated into medical education and healthcare systems, highlighting its potential to improve patient outcomes and healthcare professionals' dietary habits. This narrative review explores the historical foundations of this concept within classical Persian medicine texts, arguing that its principles were a central component of medical practice centuries ago.

Methods: A narrative review was conducted of three foundational Persian medicine texts: Avicenna's *"The Canon of Medicine",* Abo Ali Baghdadi's "*Taghvim al-Abdan*", and Mohammad Hossein Aghili's *"Makhzan al-Adviyeh".* These texts were analyzed for content related to the medicinal uses of food, culinary preparations, and dietary protocols.

Results: The analysis revealed a highly sophisticated system of culinary medicine. The texts systematically cataloged foods including herbs, spices, fruits, and vegetables by their inherent qualities and effects on humoral balance. "*The Canon of Medicine*" provides detailed dietary regimens for various ailments, while "*Taghvim al-Abdan"* emphasizes the critical link between specific foods and organ health. "*Makhzan al-Adviyeh*" serves as a comprehensive pharmacopeia describing the therapeutic properties of culinary ingredients. The literature prescribes specific medicinal dishes, such as *"Aash*" (thick soups) and "*Khoresht"* (stews), tailored to an individual's condition, using common ingredients like saffron for mood, barley for inflammation, and fenugreek for metabolic health.

Conclusion: The principles of culinary medicine are deeply embedded in Persian medical tradition. The reviewed texts demonstrate a long-standing, systematic approach to using food as a primary therapeutic tool. Integrating this time-tested, evidence-based wisdom from Persian medicine with contemporary nutritional science offers a valuable, holistic model for enhancing modern culinary medicine practices and improving patient-centered care.

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