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و خدمات بهداشتی درمانی بابل و خدمات بهداشتی درمانی سبز

## Enhancing Quality of Life in Multiple Sclerosis Patients through Personalized (Temperament-Based) Iranian Medicine: An Investigation into the Efficacy of Lifestyle Education

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**Background and Aim:** The aim of the study was to investigate the effectiveness of lifestyle education based on personalized (temperament-based) Iranian medicine on the quality of life of multiple sclerosis patients in Mashhad. In these studies, Iranian medicine's approach adapts lifestyle modifications according to each individual's temperament, with subsequent evaluation of treatment outcomes.

**Methods:** The research employed a Pretest-Posttest Design with a control group and a one-month follow-up. The study included a sample of 30 female patients with multiple sclerosis, purposefully selected from the population of multiple sclerosis patients in Mashhad. Among these, 15 participants were assigned to the experimental group, while the remaining 15 constituted the control group. All participants held at least a high school diploma and fell within the age range of 20 to 40 years. The inclusion criteria for the participants in this study required a minimum level of high school diploma, age range of 20 to 40 years, and a confirmed diagnosis of multiple sclerosis.

**Results:** In accordance with demographic characteristics, all participants in both the experimental and control groups were exclusively female, ranging in age from 20 to 40 years. Regarding educational attainment, all participants held a minimum of a high school diploma, with 60% being married and the remainder single. Predominant symptoms reported by patients were weakness and fatigue. The average quality of life scores of the experimental group members in the pretest, posttest and follow-up stages were 51.93, 72.86 and 72.60 and in the control group there were 55.53, 56.00 and 55.93 respectively. According to this table, the average quality of life scores of the experimental group were higher than the control group in the post-test.

**Conclusion:** This study delves into the efficacy of personalized Iranian medicine, specifically focusing on temperament-based lifestyle education interventions, in enhancing the quality of life for patients with multiple sclerosis. The average level of quality of life of the patients in this study was 51.93 in the test group and 55.53 in the control group at the beginning of the study. In comparison, the baseline figures in studies by Masoudi and colleagues (44.8) and Hazrati and colleagues (48.5) are considerably lower.

*Keywords: Lifestyle; Iranian medicine; Temperament; Multiple sclerosis*

## Investigating the effect of diet containing sesame seeds on epididymis and seminal vesicles of adult Wistar rats

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**Background and Aim:** Infertility is one of the medical problems in the world and about 10-15% of couples have experienced the problem of infertility. In recent years, many efforts have been made to identify a desirable and ideal medicinal plant with a strong anti-metabolic effect and the effect of this plant on male fertility. Sesame is an important oil seed obtained from *Sesamum indicum* plant. The aim of this study was to investigate the effect of sesame seed diet on the epididymis and seminal vesicle structure of adult male rats.

**Methods:** Thirty adult Wistar rats weighing 200 g were obtained from the animal house of Kashan University of Medical Sciences. Mice were randomly divided into two experimental groups (n=15) and control (n=15). The control group received standard diet and the experimental group received diet containing 70% of standard diet and 30% of sesame seeds after weaning for 12 weeks. The right epididymis was removed and crushed into several pieces in a sample bottle containing normal saline for several minutes to allow the sperm to swim out. Sperm parameters, sperm count and motility were also determined. The left epididymis was divided into three parts and fixed in Bouin's solution for histological evaluation. Also, seminal vesicles were examined after being fixed. The data were analyzed using SPSS software and t-test.  $P < 0.05$  was considered significant.

**Results:** The average number of cells and sperm motility in the left epididymis in the experimental group was very significant compared to the control ( $P < 0.001$ ). The average diameter of the epididymis of the tubes, lumen and epithelium was not significantly different in the three parts ( $P > 0.05$ ). A significant difference was observed between the treatment and control groups in fibromuscular diameter and seminal vesicle epithelium ( $P < 0.05$ ). The volume density of the seminal vesicle epithelium in the treatment group compared to the control group increased significantly, but the volume density of the fibromuscular gland and the lumen of the seminal vesicle decreased significantly in the treatment group compared to the control group.

**Conclusion:** Sesame consumption improved sperm motility and number. However, it had no effect on epididymal tissue. Therefore, to further investigate this seed on the reproductive system, more studies should be conducted in this field.

*Keywords: Sesame Seeds; Rat; Seminal Vesicle; Epididymis; Histology*

## Grape molasses a Persian nutraceutical food efficacy in women with iron deficiency anemia: a randomized, placebo controlled, clinical trial

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**Background and Aim:** Grape molasses or pekmez is a popular functional food globally, particularly in Middle Eastern. Its high carbohydrate content makes it a good source of energy, while its mineral compounds, phenolic content, and organic acids, etc. Notably, iron (Fe) in grape molasses (GM) demonstrates high digestibility and absorption by the digestive system. In Persian Medicine sources grape molasses has been mentioned as a nutraceutical food with mood and body booster and blood producing effects which recommended for treatment of anemia. The aim of this study was to evaluate the efficacy of GM on iron deficiency anemia (IDA) in women with iron deficiency anemia.

**Methods:** This randomized double-blind clinical trial, conducted at Imam Khomeini Hospital (Urmia, Iran) in 2022 until 2022, included 80 women aged 15-49 with diagnosed anemia (Hgb 10-12). The study was approved by the Shahed University IRB and registered at the Iranian Registry of Clinical Trials (IRCT20200120046205N1). GM purchased from local source prepared from green grapes of Urmia (Iran), and placebo syrup prepared using sodium saccharin, carboxymethyl cellulose and caramel. Intervention group received ferrous sulfate tablet (50 mg orally) with GM (10 ml) and placebo group received ferrous sulfate tablet with placebo syrup 3 times a day for 4 weeks. Both groups underwent pre and post-intervention assessments of vital signs (pulse, respiration, blood pressure) and hematological markers for anemia hemoglobin (Hb), hematocrit (Hct), corpuscular volume (MCV), red blood cell count (RBC), serum iron, ferritin, and total iron binding capacity (TIBC). Both groups participated in quality-of-life assessments using the validated Persian translation of the General Health Questionnaire-28 (GHQ-28) at baseline and after 4 weeks. GM was analyzed for heavy metals, including iron, copper, zinc, lead, arsenic, and tin, using flame atomic absorption spectrometry.

**Results:** Both groups showed significant improvements in key hematological markers after 4 weeks of intervention. Notably, RBC increase was significantly greater in the GM group ( $0.29\pm 0.30$ ) compared to the placebo group ( $0.11\pm 0.03$ ) ( $p=0.003$ ). Similarly, the MCV increase was significant. Hb and Hct levels showed significantly higher increases in the GM group compared to the placebo ( $p=0.0001$ ), suggesting a more substantial improvement in these key anemia markers. However, no significant differences were observed for iron, ferritin, or TIBC between the groups after the intervention. Quality of life, as measured by the GHQ-28, did not differ significantly between the GM and placebo groups after the intervention, but the GM group showed a statistically significant improvement in GHQ-28 scores compared to the baseline ( $p=0.001$ ), suggesting an overall positive impact on quality of life. No significant changes were observed in vital signs or liver function tests in the intervention group compared to placebo ( $p > 0.1$ ). The analysis of heavy metals in the grape syrup confirmed levels within the acceptable ranges set by the Iranian Standard Organization.

**Conclusion:** This study showed grape molasses as a food, with iron tablets have a better effect than iron tablets alone on hematological parameters and also may helpful in enhancing mood and body health can be considered as a complementary therapy for the management of IDA.

*Keywords: Iron deficiency anemia; Hematological parameters; Grape molasses; Persian Medicine*

## Assessment of the Effect of Grape Molasses on Preventing Postpartum Depression in Women Referred to Shahid Sadoughi Hospital in Yazd

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**Background and Aim:** Postpartum depression (PPD) is the most common complication following childbirth, which can have negative effects on both the mother and the newborn. Considering the prevalence of this disorder and its widespread negative impacts, prevention becomes a crucial approach in public health. Substances containing flavonoid compounds exhibit antidepressant effects, and grape derivatives such as grape molasses are rich in these compounds. The aim of this study, alongside assessing the heavy metal content of grape molasses and the level of its flavonoid compounds, was to investigate the effect of grape molasses in preventing postpartum depression.

**Methods:** This study was clinical trial study. In the first phase, atomic absorption spectroscopy and aluminum chloride colorimetry methods were employed to measure the heavy metal elements and total flavonoid compounds in grape molasses, respectively. In the subsequent stage, for clinical experimentation, 72 postpartum women who had delivered at Shahid Sadoughi Hospital in Yazd and met the inclusion criteria were randomly assigned to intervention and control groups. The Edinburgh Postnatal Depression Scale (EPDS) was administered to both groups at the beginning, the first month postpartum, and three months postpartum. Finally, data were collected and analyzed using the SPSS statistical software.

**Results:** The levels of iron, zinc, cadmium, lead, and arsenic in grape molasses were 24.305, 1.9325, 0, 10.8225, and 0.03513 milligrams per kilogram, respectively. The total flavonoid compound content was also 0.32 milligrams per 100 milligrams of grape molasses. The mean PPD scores, based on the EPDS, showed no significant difference between the two groups at the beginning and three months postpartum. However, one month postpartum, the EPDS scores were  $4.45 \pm 3.30$  for the consumer group and  $8.13 \pm 5.21$  for the control group, indicating a statistically significant difference.

**Conclusion:** The findings indicate that grape molasses contains high levels of flavonoid compounds, and its consumption one month postpartum may prevent the onset of PPD.

*Keywords: Postpartum depression; Grape molasses; Heavy elements; Flavonoids*

## The effect of Aloolax on constipation during pregnancy in pregnant women referred to the midwifery clinic Qom city in 1399

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**Background and Aim:** Constipation is one of the most common complaints during pregnancy and the use of herbal medicines is one of the ways to improve it. This study aimed to determine the effect of Aloolax on constipation during pregnancy in patients referred to the midwifery clinic in Qom in 1400-1399.

**Methods:** This randomized, single-blind clinical trial study was performed on 70 pregnant women with constipation symptoms, according to Rome III criteria, in two groups of 35 intervention and control. The intervention group, in addition to routine training, one hour after breakfast and dinner, two tablespoons of Aloolax syrup with a glass of warm water for a month, if necessary, members of both groups completed a checklist of constipation and demographic symptoms before the intervention. A post-test was performed at the end of the intervention in both groups. Research data were entered into SPSS software. Descriptive and inferential statistics, dependent t-test and independent t-test, and Chi-square and Wilcoxon test were used. The p-value was less than 0.05 significant.

**Results:** Among the symptoms associated with constipation, are feeling of incomplete excretion and fullness in the intestines ( $p= 0.13$ , abdominal bloating ( $p= 0.001$ ), and the number of bowel movements per week ( $p= 0.048$ ) The difference between the two groups was significant but other symptoms such as nausea, pain and burning and sores and bleeding were not significantly different. In general, the mean symptoms of constipation after taking Aloolax in pregnant women with constipation in the intervention group and the mean scores of pregnant women in the control group Aloolax syrup improved constipation ( $p<0.001$ ) and the mean improvement score in the intervention group by ten-point scale (VAS) was significantly higher than the control group.

**Conclusion:** Aloolax improved constipation in pregnant women in the intervention group compared to the control group who received only routine training.

*Keywords: Constipation; Pregnancy; Plums; Roses; Brown sugar; Persian Medicine*

## Using *Ziziphus jujuba* Extract and *Pistacia atlantica* Gum in combination with *Lactobacillus casei* in treatment of Ulcerative Colitis: Synergistic effects of natural products in Colitis therapy

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**Background and Aim:** Ulcerative colitis is a chronic inflammatory bowel disease that causes recurring episodes of active disease in the colon and rectum. Standard treatments may not always be effective, leading to the exploration of alternative therapies. Probiotics, such as *Lactobacillus casei*, have shown promising effects on the immune system. *Pistacia atlantica*, a wild pistachio species, and *Ziziphus jujuba*, a tree-like plant, have been traditionally used in Iranian medicine for their anti-inflammatory and therapeutic properties. This study aimed to investigate the probiotic effects of *Lactobacillus casei* in combination with *Ziziphus jujuba* extract and *Pistacia atlantica* gum on cellular profile and expression of inflammatory cytokines in an experimental model of ulcerative colitis.

**Methods:** In this study, male BALB/c mice were used and divided into 10 groups of 5 animals each, including: Group 1: Healthy control (negative control), Group 2: Untreated colitis (positive control), Group 3: Treatment with *Pistacia atlantica* gum hydroalcoholic extract, Group 4: *Ziziphus jujuba* hydroalcoholic extract treatment, Group 5: *Lactobacillus casei* probiotic treatment, Group 6: Combined treatment with *Ziziphus jujuba* hydroalcoholic extract and *Pistacia atlantica* gum, Group 7: Combined treatment with *Lactobacillus casei* probiotic and *Pistacia atlantica* gum hydroalcoholic extract, Group 8: Combined treatment with *Lactobacillus casei* probiotic and *Ziziphus jujuba* hydroalcoholic extract, Group 9: Triple combination treatment with *Ziziphus jujuba* hydroalcoholic extract, *Pistacia atlantica* gum, and *Lactobacillus casei* probiotic, Group 10: Mesalazine treatment. In all groups except the negative control group, colitis was induced in mice by injecting 100  $\mu$ L of 4% acetic acid, and treatment was initiated upon the onset of disease symptoms. After 40 days of treatment, the mice were euthanized, and the disease activity index (DAI), myeloperoxidase enzyme production, nitric oxide production, and expression of IL-1 $\beta$ , IL-6, and TNF- $\alpha$  cytokines were evaluated. Additionally, histopathological evaluation of intestinal tissue lesions was performed under a microscope. A p-value of <0.05 was considered statistically significant.

**Results:** The results showed that each of the therapeutic agents, either alone or in combination with each other and mesalazine, led to a reduction in the levels of myeloperoxidase enzyme, nitric oxide, and the expression and production of IL-1 $\beta$ , IL-6, and TNF- $\alpha$  cytokines, as well as a reduction in intestinal tissue lesions. It was also evident that the combination therapy was more effective than the treatment with each individual agent alone.

**Conclusion:** Based on the findings of this study, it appears that *Lactobacillus casei* probiotic, along with the herbal compounds of *Pistacia atlantica* gum and *Ziziphus jujuba*, possess desirable anti-inflammatory properties and can play a central role in the regeneration of intestinal tissue in ulcerative colitis. Therefore, a combination of these therapeutic agents can be used as an adjunctive treatment alongside conventional medications for managing the disease.

**Keywords:** Ulcerative colitis; *Lactobacillus casei* probiotic; *Pistacia atlantica* gum; *Ziziphus jujuba*; Mesalazine; Inflammation

## Nanotechnology in Traditional Medicine and Natural Products: Challenges and opportunities

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**Background and Aim:** Herbal medicines are widely used throughout the world for the management of diseases. However, because of some limitations such as poor water solubility, limited bioavailability and toxicity, there is a need for optimal therapeutic approaches such as designing new drug delivery systems for herbal compounds. Although, studies on herbal nanomedicines are expanding, there is still a need to investigate the common challenges of herbal nanoformulations. The purpose of this review is to present recent studies on herbal nanomedicines, different types of herbal nanoformulations, related advances and challenges, and future directions to accelerate their clinical transition.

**Methods:** Electronic databases (PubMed, Medline, Cochrane Library and Scopus) were searched for research and review articles with the words “Medicinal plant”, “traditional medicine”, “phytochemical”, “nanotechnology”, “bioactivity”, and “drug delivery”.

**Results:** Drug delivery by nanocarriers has advantages such as targeted delivery, controlled release and delivery efficiency. In this review, the suitability of nanocarriers and production strategies for phytochemicals and extracts was investigated based on their characteristics with reproducibility in physicochemical parameters and effectiveness. The nanotechnology of herbal medicines has important challenges, including evaluating the mechanism of action of herbal compounds.

**Conclusion:** Nanotechnology for herbal medicines is a necessity for the development of herbal research due to increased bioavailability and less toxicity. Also, the targeted drug release system has many advantages, including reducing the frequency of drug use, along with fewer side effects. However, the development of nanomedicine is still in its early stages and more future studies of clinical trials and systematic reviews are recommended to confirm the efficacy and safety.

*Keywords: Herbal medicine; Nanotechnology; Drug delivery; Traditional medicine; Phytochemical*



## Review of A Persian Medicine product for withdrawal syndrome and maintenance treatment

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**Background and Aim:** Substance abuse and opiate dependence are the major health problems and inevitably seeking new drugs with effectiveness and low cost and side effects for the opioid use disorders is inevitable. Hab-o-shefa is a recommended formulation in Persian Medicine literatures, which is consisted herbal constituents of *Datura stramonium*, *Rheum palmatum*, *Zingiber officinale* and *Acacia senegal*. Deaddicta® product is the registered Iran Registration Code for Hab-o Shefa in the Iran Food and Drug Organization. The aim of this study was review of Basic and Clinical studies of Hab-o-shefa to alleviate withdrawal syndrome and opioid dependence.

**Methods:** In this narrative review, Scientific databases such as PubMed, Google Scholar, Scopus, SID, Magiran, ISC were searched with relevant keywords from 2000 to 2024.

**Results:** In Nazari study et al. on Hab-o-shefa (2000 mg/kg, i.g.) the pharmacological effect on withdrawal syndrome in morphine received rats (10 mg/kg daily/ for 8 days) was investigated compared to methadone (25 mg/kg) using naloxone injection. As a result, in terms of desired withdrawal parameters such as diarrhea and jumping, a significant difference was between methadone and Hab-o Shefa compared to placebo ( $p < 0.05$ ). Nazari et al. in another study in clinical trial assessment of Hab-o-shefa (500 mg, TDS, 12 weeks) on the opioid dependent patients withdrawal syndrome, demonstrated statistically decrease on depression and signs of deprivation scores in Hab-o-shefa group compared to placebo and clonidine ( $p < 0.05$ ). In a randomized double-blind clinical trial on Hab-o Shefa (500mg, TDS, 12 weeks) effects on craving, depression and anxiety of 81 opioid dependent patients from a residential center of addiction, after detoxification was investigated. The rates of opioid-positive urine tests and self-reported opioid use and craving score were significantly lower in Hab-o Shefa group ( $p = 0.001$ ) and also depression ( $p = 0.01$ ) and anxiety ( $p = 0.035$ ) scores compared to placebo. Another study on the maintenance treatment of opioid addicts 6 months following up the previous study, demonstrated that in 15 members included of the intervention group in previous study, which received Deaddicta® (500 mg, TDS, 12 weeks), the craving belief questionnaire and visual analog scale were also applied to measure the temptation. Depression, anxiety, and craving scores decreased 6 months after the end of the previous study. This decrease was significant in the temptation score ( $p = 0.011$ ) compared to the base line and 3 months after study. Saberi-Zafarghandi et al study on 78 opioid addicted patients from a private outpatient treatment center showed that randomly specified groups of placebo or Deaddicta® (500 mg capsules, TDS, 12 weeks). The results showed the significant difference between the Deaddicta® and placebo groups in the of craving scores ( $p = 0.044$ ) and depression ( $p = 0.029$ ). Also, there was a reduction in the anxiety score in both groups but the mean difference was not significant.

**Conclusion:** The results of studies reviews, indicated that Deaddicta® could be considered as promising drug for withdrawal syndrome and opioid maintenance treatment and reduction of craving and relapse, anxiety and depression in opioid use disorders.

*Keywords:* Deaddicta; Depression; Relapse; Persian Medicine; Withdrawal syndrome

## Efficacy of Topical Rosemary Extract Lotion Versus Topical 2% Ketoconazole Lotion in the Treatment of Seborrheic Dermatitis: A Double Blind Randomized Controlled Clinical Trial

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**Background and Aim:** Seborrheic dermatitis manifests as greasy, itchy lesions, commonly affecting sebum-rich areas like the scalp and face. Its prevalence is 11.6% in the general population, with various internal and environmental factors contributing to its development. This study aimed to compare the efficacy of rosemary extract lotion in the treatment of seborrheic dermatitis in comparison with topical 2% ketoconazole lotion.

**Methods:** This double-blind, randomized clinical trial included 42 patients with scalp seborrheic dermatitis, divided into rosemary and ketoconazole lotion groups. Both lotions were applied twice daily for 2 months. The severity of scalp dandruff was assessed using the Adherent Scalp Flaking Score. Itchiness of the scalp and quality of life were assessed using itchy quant and the Dermatology Life Quality Index (DLQI), respectively. Stata software was applied for statistical analysis.

**Results:** The reduction in the Adherent Scalp Flaking Score was statistically significant the ketoconazole group compared to the patients in the rosemary group (P value = 0.011). However, the reduction in itching score was statistically significant more in the rosemary group at the end of the first and second months in comparison to the ketoconazole group (P value < 0.001). The statistical analysis demonstrated no significant difference in the reduction of DLQI scores between the rosemary and ketoconazole groups at the end of 1 and 2 months after starting the treatment in both crud and adjustment with base-line score analysis.

**Conclusion:** Both rosemary and ketoconazole lotions were effective in treating scalp seborrheic dermatitis and decreasing the patient's DLQI score.

*Keywords: Rosmarinus; Herbal medicine; Seborrheic dermatitis; Skin diseases; Complementary therapies*

## Effects of medicinal plants on sports performance: Why and How

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**Background and Aim:** The increasing tendency to use natural products among athletes results in more research in this field and the production of a new category of sports supplements with the content of medicinal plants. Regardless of the effectiveness rate of medicinal plants in sports performance, this study investigated why and how medicinal plants affect sports performance

**Methods:** This is a qualitative review study which was conducted by searching key words in reliable scientific databases, reviewing the related English and Persian articles, repeatedly studying the extracted materials and finally categorizing and labeling them.

**Results:** Often, the effects of medicinal plants on sports performance have been investigated in 5 areas: Energy gain: One of the most important reasons why athletes use medicinal plants is to gain more strength. Achieving this goal, athletes usually use three herbs, saffron, ginseng, and bindii (*Tibullus terrestris*), as well as caffeine, which is an effective ingredient in some herbs. These plants increase sports performance by different mechanisms: Bindii with androgenic properties, ginseng by postponing fatigue caused by sports activities and accelerating recovery after sports activities; saffron by improving blood circulation and better oxygenation to muscles and caffeine by maintaining muscle carbohydrate reserves. Improving the immune system: The most prominent plant in this group is echinacea, which even in the open window period after intense sports activities, when there is a high chance of contracting acute respiratory infections, has been shown appropriate effects in preventing these infections through the modulation of immune system by inhibiting the production of inflammatory factors. Weight loss: for this purpose, plants such as green tea and coffee are considered. Stimulating thermogenesis, increasing the speed of lipolysis, and affecting the central nervous system are among the most important mechanisms of these plants to weight loss. Analgesic: Sports pains, especially those that occur after the first 24 hours, will reduce the athlete's performance. According to the consensus manifest of the International Olympic Committee, cherry extract, beetroot extract, and curcumin (the active ingredient of turmeric) are effective in reducing these pains, possibly by inhibiting inflammatory pathways and stimulating the internal antioxidant system. Ginger has also been effective in reducing exercise-related pain through its anti-inflammatory mechanism. Psychological effects: Sometimes the athlete seeks to increase concentration; so, plants such as guarana and coffee, which contain high caffeine and can affect the central nervous system with their alkaloid effects, are efficient. Sometimes the athlete is looking for relaxation due to severe stress caused by heavy training and competitions, in this situation, the mentioned plants may be harmful, even though, some sedative plants may lead to sleepiness.

**Conclusion:** Medicinal plants affect sports performance in at least 5 areas and with various mechanisms, the most important of which are antioxidant and anti-inflammatory effects. Medicinal plants can potentially be a sports supplement, however, before the general recommendation to use them as a sports supplement, it is necessary to ensure the safety of using these new supplements and their actual effectiveness, the permitted amounts of consumption and the distance between consumption and sports activity.

*Keywords: Medicinal plants; Exercise; Sports; Sports supplements; Herbal supplements*

## Efficacy of a Persian herbal remedy and electroacupuncture on the Quality of Life in Polycystic Ovarian Syndrome patients: A Randomized Clinical Trial

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**Background and Aim:** Polycystic ovarian syndrome (PCOS) is known as the most common endocrine disorder with a high prevalence among women of childbearing age. Due to the importance of discovering new methods for the treatment of PCOS patients and the limited studies assessing the effect of Iranian traditional medicine (ITM) on the management of these patients, we sought to determine the effect of ITM and acupuncture on the quality of life indexes in patients with PCOS.

**Methods:** This was a randomized control trial (RTC), which was performed on 78 obese or overweight women with PCOS who were referred to university clinics or infertility centers of Imam Reza and Ghaem hospitals, Mashhad, Iran. In this study the patients were assigned to four groups of 20 (i.e., metformin, ITM (herbal therapy) plus metformin, acupuncture plus metformin, and acupuncture and ITM plus metformin). Polycystic Ovarian Syndrome questionnaire (PCOSQ) that designed by Cronin et al. was completed before and after the intervention.

**Results:** Comparison of different therapies in PCOS patients showed a significant difference between the pre- and post-treatment scores of emotional status in the metformin ( $t=-3.14$ ,  $P=0.006$ ), ITM ( $t=-7.76$ ,  $P=0.001$ ), acupuncture plus metformin ( $t=-5.19$ ,  $P=0.001$ ), and ITM and acupuncture ( $t=-7.13$ ,  $P=0.001$ ) groups. Also, we observed a significant difference between the scores obtained pre- and post-treatment in terms of hirsutism in the metformin ( $t=-2.81$ ,  $P=0.01$ ), ITM ( $t=-4.72$ ,  $P=0.001$ ), acupuncture plus metformin ( $t=-4.001$ ,  $P=0.001$ ), and ITM plus acupuncture ( $t=-4.75$ ,  $P=0.001$ ) groups. The comparison between the four groups showed a significant difference in terms of hirsutism between the metformin alone and TIM groups ( $P=0.02$ ).

**Conclusion:** Considering the clinical improvement in intervention groups, it is recommended to use complementary methods, especially herbal remedies, in patients with PCOS syndrome who have some degrees of overweight and hirsutism.

*Keywords: Iranian traditional medicine; Polycystic ovarian syndrome; Acupuncture; Herbal medicine*

## The effectiveness of a Persian herbal formulation on functional bloating symptoms: A double-blind randomized clinical trial

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**Background and Aim:** A frequent digestive problem that is hard to manage is bloating. This study aimed to examine the effectiveness and adherence of a formulation named KAASER containing *Trachyspermum ammi* (L.) Sprague seed, *Zingiber officinale* Roscoe. rhizome and *Piper nigrum* L. berry for the treatment of functional bloating.

**Methods:** This double-blind randomized controlled trial involved 106 patients aged 20-50 years who suffered from functional bloating. The patients were randomly assigned to one of three groups, each receiving 500 mg of either placebo, dimethicone, or KAASER, three times a day for 14 days. The main outcomes were the frequency and intensity of bloating, while the secondary outcomes were the frequencies of eructation, defecation, borborygmus, and early satiation. All these variables were measured at baseline, and at weeks 2, 4, and 10, using self-administered rating scales. Intention to treat analysis was used to evaluate the effect of KASSER using GEE analysis.

**Results:** Of the 84 patients who finished the study, the group that received KAASER (36 patients) showed significant improvements in the frequency and intensity of bloating ( $P < 0.001$ ), as well as the frequency of belching, bowel movements, and rumbling sounds ( $P = 0.03$ ), compared to the groups that received dimethicone (35 patients) or placebo (35 patients), across the 3 follow-up stages. These significant differences remained through the follow-up periods of 2 and 8 weeks after stopping the medication (weeks 4 and 10). No significant differences were found among the 3 groups in terms of feeling full quickly.

**Conclusion:** The findings indicated that KAASER was an effective treatment for patients with bloating. The KAASER group maintained significant improvements in bloating, eructation, bowel movements, and borborygmus sounds after stopping the medication for 2 and 8 weeks, suggesting that this mechanism warrants further exploration.

*Keywords: Flatulence; Gastrointestinal diseases; Persian medicine; Plants; Traditional medicine*

## Phlebotomy: A Comprehensive Review of Evidence in Contemporary and Traditional Medicine

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**Background and Aim:** Phlebotomy, a therapeutic method involving blood removal, has a rich history spanning thousands of years and continues to be employed as a medical intervention for various ailments. This study aims to evaluate the scientific evidence supporting the efficacy of phlebotomy in diverse diseases through the lenses of modern and traditional medicine.

**Methods:** Utilizing a systematic approach, we reviewed clinical trials, case reports, systematic reviews, meta-analyses, and animal studies from PubMed, Google Scholar, Scopus, and ISI databases up to April 2024.

**Results:** In contemporary medicine, phlebotomy has demonstrated benefits in treating polycythemia vera, hemochromatosis, porphyria, sickle cell anemia, non-alcoholic fatty liver disease, polycystic ovary syndrome, blood pressure, metabolic syndrome, and hepatitis C. In traditional medicine, the practice has shown promise in alleviating carpal tunnel syndrome, radiating lower limb pain, sciatica, post-trauma neurological complications, femoral head necrosis, hemorrhoids, chronic low back pain, and sexual dysfunctions.

**Conclusion:** Despite the extensive mention of phlebotomy in traditional medicine texts, a lack of substantial and high-quality evidence hinders its widespread acceptance. Therefore, we recommend further research to validate its effectiveness in various diseases and expand our understanding of this ancient therapeutic approach.

*Keywords: Phlebotomy; Traditional Medicine; Current Medicine; Fasd*

## Bridging the Gap: Fostering International Collaboration in Persian Medicine Research

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**Background and Aim:** Persian medicine, with a lineage extending back millennia, offers a distinct approach to health that emphasizes humoral balance, diet, and lifestyle modifications. Despite its rich historical texts and theoretical framework, integration with contemporary medical practices remains limited due to a lack of robust scientific evidence. This paper explores the key obstacles hindering international collaboration in Persian medicine research and proposes strategies to overcome them. One major challenge lies in adapting clinical trial design, a cornerstone of modern medicine, to Persian medicine interventions. Traditional therapies often focus on holistic well-being rather than isolating specific components, making it difficult to establish standardized protocols. Additionally, skepticism towards traditional knowledge exists within some segments of the Western scientific community, hindering funding opportunities and collaboration with mainstream researchers. Furthermore, research infrastructure dedicated to Persian medicine often falls short. This includes a shortage of researchers with specialized training, limited access to standardized databases of historical texts, and insufficient funding for clinical trials. Finally, inconsistencies in treatment protocols across regions create fragmentation within the practice of Persian medicine, hindering the standardization necessary for robust research.

**Methods:** However, this paper is not without solutions. By promoting international collaboration, we can foster advancements in Persian medicine research. One strategy involves developing culturally appropriate methodologies that bridge the gap between traditional practices and modern research design. Collaborative efforts can explore pragmatic trials or mixed methods approaches encompassing both objective clinical outcomes and subjective patient experiences.

**Results:** Building bridges of understanding between practitioners of Persian and modern medicine is also crucial. Joint research initiatives can foster mutual respect and establish a common research language, leading to a more comprehensive understanding of health and illness. Additionally, investing in training programs for researchers specializing in Persian medicine and establishing centralized repositories for historical texts are essential steps to strengthen research infrastructure. International collaboration can leverage resources and expertise to address these needs.

**Conclusion:** Finally, collaborative efforts can develop standardized treatment protocols for key areas of Persian medicine, drawing on established practices and incorporating research findings. This approach can balance respect for tradition with the need for scientific rigor. By overcoming these existing obstacles, we can unlock the vast potential of Persian medicine. Integrating its rich tradition with modern scientific methods has the potential to expand our understanding of health and illness, leading to more holistic and effective healthcare for patients worldwide.

*Keywords: Persian Medicine; Methodology; Integrative Medicine; International Collaboration*

## Bridging the Gap: Utilizing Artificial Intelligence to Advance Traditional Persian Medicine

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**Background and Aim:** Traditional Persian Medicine (TPM), with roots stretching back millennia, offers a holistic approach to health that emphasizes prevention, diet, and herbal remedies. Despite its rich history and documented effectiveness in certain areas, TPM faces challenges in disseminating its vast knowledge base, standardizing practices, and achieving widespread clinical validation. This lack of standardization and rigorous research makes it difficult to integrate TPM into mainstream healthcare systems. Artificial intelligence (AI), with its revolutionary capabilities in data analysis and pattern recognition, presents a unique opportunity to address these limitations and advance TPM forward. The aim of this study is to explore how AI can be used to propel TPM, enabling its incorporation into modern healthcare and helping to realize its full potential.

**Methods:** This study is based on a review of the existing literature on AI applications in traditional medicine and specifically TPM. We identify relevant studies by searching databases such as PubMed and ScienceDirect using keywords like “artificial intelligence,” “traditional medicine,” “Persian medicine,” “natural language processing,” “machine learning,” and “clinical trials.” This review then inform the discussion on the potential roles of AI in knowledge organization, treatment optimization, drug discovery, and clinical validation within the context of TPM.

**Results:** AI can significantly contribute to the development of TPM by: 1) Knowledge Organization and Dissemination: Natural Language Processing can automate the analysis of historical texts, creating a comprehensive digital library of TPM knowledge. This can facilitate easier access and understanding of TPM principles for practitioners and researchers. 2) Standardization and Treatment Optimization: Machine learning algorithms can analyze patient data to identify correlations between patient characteristics, TPM interventions, and treatment outcomes. This can lead to the standardization of TPM practices and the development of more effective treatment protocols. 3) Drug Discovery and Development: AI can analyze the vast database of medicinal plants and natural ingredients used in TPM to identify promising candidates for further research and drug development. 4) Clinical Validation and Integration: AI-powered clinical trials can be designed to evaluate the efficacy and safety of TPM interventions, paving the way for their integration into mainstream healthcare systems.

**Conclusion:** AI offers a powerful set of tools to advance TPM. By harnessing its capabilities, we can unlock the full potential of this time-tested medical system. This can lead to better integration with modern medicine, ultimately improving patient care. However, challenges like data quality, potential biases in algorithms, and ethical considerations need to be addressed for successful implementation.

*Keywords: Artificial Intelligence; Traditional Persian Medicine; Natural Language Processing; Integrative Medicine*



## Designing a questionnaire to measure students' lifestyles: a new tool for measuring lifestyle behaviors of Persian medicine students.

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**Background and Aim:** Lifestyle is very important because of its ability to prevent diseases, improve quality of life, increase life expectancy and improve physical and mental health. This study was conducted to design a suitable tool to measure the lifestyle of Persian medicine students.

**Methods:** The study was of a mixed type and its purpose was tool making, which was carried out in 1400 in Isfahan province. The statistical population included all fourth to sixth grade students in the academic year of 1399-1400 in Isfahan province and cluster sampling method. The sample size included 727 male and female students in the 4th to 6th grades in the academic year 1399-1400, from the 1st, 2nd, 3rd and 4th districts of Isfahan city and the cities of Shahinshahr, Gaz, Khomeinishahr and Semiram. participated and a 37-question lifestyle questionnaire based on the teachings of Persian medicine was completed. After studying sources, reviewing similar questionnaires and interviewing expert experts, a question bank was prepared and a preliminary questionnaire was created and it was edited and evaluated for content, form and structure validity. Data were analyzed using exploratory and confirmatory factor analysis, Cronbach's alpha through SPSS software.

**Results:** The Persian medicine lifestyle assessment questionnaire in students had 37 questions in the field of healthy lifestyle based on the teachings of Persian medicine in the fields of advertisement, insight and performance. Its formal, content and structural validity was confirmed and Cronbach's alpha coefficient and intra-category correlation coefficient were calculated.

**Conclusion:** Due to its brevity, small number of questions, simplicity of sentences, as well as appropriate validity and reliability, this tool can be used in the student population and can be used to evaluate their lifestyle and health planning.

*Keywords: Lifestyle; Persian medicine; Questionnaire*

## Rapid diagnosis of coronary artery disease with tongue image analysis by artificial intelligence. A study protocol

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**Background and Aim:** Coronary artery disease (CAD) is the most common manifestation of heart disease and has the highest mortality rate among adults. Despite the fact that CAD is preventable, early and accurate diagnosis is critical. Since ancient times, tongue examination has acted as a fast diagnostic technique in numerous medical traditions such as Iranian and Chinese medicine. The incorporation of artificial intelligence (AI) into medical practice has gotten a lot of attention and application, like diagnostic capacities of melanoma diagnosis via dermoscopic imaging. Nonetheless, the potential of artificial intelligence-assisted tongue image processing for CVD diagnosis remains untapped. As a result, the goal of this study is to create an algorithm that uses AI to understand tongue image analysis for CVD diagnosis. In correlating tongue pictures with CVD, the proposed approach outperforms expert analysis.

**Methods:** A cross-sectional study of a sample of inpatients will be conducted. Patients will be examined for nine distinct aspects of tongue including shape, coloration, presence of fissures, teeth marks, coating presence, coating color, red spots, moisture levels, and pigmented patches. Then images of patients tongue hospitalized in the angiography department will be obtained under the same conditions, and the results of the patients' angiography will be likewise extracted. To establish the link between heart vessel blockage and tongue manifestations, we will present angiography findings for the proximal, middle, and distal segments of the four major heart arteries. Additionally, we will report on angiography results for the secondary vessels of the heart, focusing on their blood supply in the left anterior descending artery (LAD), left circumflex artery (LCX), and right coronary artery (RCA). Blockage is categorized using the modified Agatston score as mild (1-49%), moderate (50-69%), and severe (70-99%). We will train a model AI machine to extract tongues from the patients' facial image using the Segment Anything Model, and then distinguish the nine criteria by utilizing deep neural networks and Convolutional Neural Network (CNN) for extracting high-level features. AI will meticulously assess these variables within tongue images to ascertain their correlation with coronary angiography results. We will conduct this study at the hospitals of Tehran University of Medical Sciences in collaboration with the Artificial Intelligence Research Institute of the Computer Faculty at Sharif University of Technology.

**Results:** This is a study protocol and its results will be determined after the implementation of the research

**Conclusion:** This protocol aims to integrate AI technology with tongue image analysis for dependable diagnostic support for CVD. We will create an algorithm that can accurately determine the relationship between patients' tongue findings and the condition of their heart vessels. We aim to develop software utilizing the study's findings to analyze tongue images captured by a digital camera and assess potential heart vessel blockage levels.

*Keywords: Coronary angiography; Tongue- image analysis; Artificial intelligence*

## Severe congenital pulmonary valve stenosis (PVS), relieved by SINA therapy, a novel treatment derived from traditional Persian medicine: A case report

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**Background and Aim:** Pulmonary valve stenosis (PVS) is a congenital heart disease diagnosed by echocardiography (echo). It requires balloon valvuloplasty when severe and, if not treated properly at the right time, may damage other heart structures, especially the right ventricle and atrium. In the presented patient, the stenosis severity was reduced to moderate within two weeks by performing non-invasive and non-pharmacological treatment protocols derived from the principles of Persian medicine (SINA therapies #3 & 6). After 30 months, the stenosis resolved entirely. Another important aspect of this case was treating the heart through massage of the extremities and perspiration induction. Furthermore, it showed the ability of the heart to fulfill its fetal growth delays when augmented after birth.

**Methods:** Following a suspicious murmur during a routine examination, a 7-month-old male patient was examined by two pediatric cardiologists, and subsequently, according to Pulmonary pressure gradient (PG) of 70 mmHg in echocardiography, severe pulmonary valve stenosis was reported, and thus pulmonary balloon valvuloplasty was recommended. A Persian Medicine specialist examined the child. Thick hypodermal fat in the extremities was detected and labeled as excessive phlegm accumulation. The phlegm was considered a consequence of poor peripheral circulation, reconfirming the heart's weakness in distributing the blood adequately.

**Results:** According to the parents' request and based on the surgeon's two-week deadline, a pilot SINA therapy #3 protocol (twice a day, upper and lower extremity massage from proximal to distal, 30 times per limb) was implemented that reduced the PG to 45 mmHg (moderate stenosis), which withdrew the patient from valvuloplasty. With the six-month extension of the echo follow-up by the surgeon, the Persian medicine treatment was continued with the substitution of SINA therapy #6 protocol (wearing a sauna suit and creating moments of sweating for half an hour every day and then tapered during the treatment), which gradually caused a PG reduction to 28 mmHg within 12 months (mild stenosis) and after 30 months, the patient's echo became normal.

**Conclusion:** SINA #3 inspired from Avicenna's pre-exercise massage, Dalk-e-estedaad, was prescribed to loosen the dense peripheral phlegm, which was considered a result of a weak heart and also an afterload on the heart, suppressing and weakening the heart even more. Subsequently, SINA #6 was prescribed to spill out the melted phlegm out of the body via perspiration. The combination of both forced the heart to complete its valvular and structural growth. Considering the invasion, cost, and complications of pulmonary balloon valvuloplasty in PVS patients, the combination of the non-invasive, non-pharmacological SINA therapy protocols 3+6 seems to be a very suitable alternative. Based on this report, clinical trial studies can be designed in which children with PVS of any degree (severe, moderate, mild) may be given such a treatment for 2-4 weeks and an echo may be repeated to check the effectiveness.

*Keywords: Pulmonary valve stenosis; Persian medicine; Heart; Sauna; Massage; SINA therapy*

## Evaluation of knowledge, attitude and acceptance of Traditional Persian Medicine “TPM” specialists and specialist assistants about artificial intelligence and its application in medical science.

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**Background and Aim:** The use of artificial intelligence “AI” in medical science can include a wide range of early disease diagnosis to more advanced levels of specialized and sub specialized care and treatment. The adoption of medical AI-related technologies by healthcare workers can be closely related to factors such as their knowledge, acceptance and attitude. Therefore, considering these factors and measuring them is essential for developers of health and artificial intelligence systems. This study aims to investigate the level of knowledge, attitude, and acceptance among Traditional Persian Medicine “TPM” specialists and specialist assistants about artificial intelligence and its application in medical science.

**Methods:** The current study was a cross-sectional study. An online questionnaire link was sent to all TPM specialists and specialist assistants in different cities of Iran. After collecting information, the data were analyzed using spss software and t-test and ANOVA statistical methods.

**Results:** 269 people received the questionnaire and 68% answered it. 76% of the participants were women and 82% were in the age range of 34 to 54 years. The level of knowledge was reported to be weak ( $7.79 \pm 4.7$ ). 80.2% had not participated in any artificial intelligence training course before. The level of acceptance was good ( $113.52 \pm 14.5$ ), The level of attitude was good ( $43.53 \pm 5.7$ ) and performance was in a good level ( $42.86 \pm 7.15$ ). 58% were interested in learning artificial intelligence in their field of work, and 69% considered artificial intelligence may be a helpful factor for their professional and personal development. They considered the most important advantage of artificial intelligence to be providing access to a huge database for researchers across the country and increasing the speed of serving clients. 65% believed that the introduction of artificial intelligence training in the curriculum of medical students would be useful.

**Conclusion:** In this study, despite the good level of acceptance, attitude and performance towards the function of artificial intelligence in the field of medicine, unfortunately, the level of knowledge of doctors was reported to be low. Considering the expansion of artificial intelligence in medical science and the interest of TPM doctors in training in this field, it seems that they welcome artificial intelligence training courses.

*Keywords: Artificial intelligence; Traditional Persian Medicine; Medical Science*

## Implementation of healthy lifestyle guidelines from Persian Medicine within Iran's primary healthcare system: An overview of a nationwide initiative

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**Background and Aim:** The significance of traditional medicine in disease prevention and management, particularly lifestyle-associated chronic illnesses cannot be overstated. The World Health Organization (WHO) established plans to promote use of traditional and complementary medicine (T&CM) in the healthcare frameworks of nations. To this end, the Office of Persian and Complementary Medicine, along with the Deputy of Health at the Ministry of Health and Medical Education in Iran, has formulated a strategy to incorporate the principles of Persian Medicine (PM) into the primary healthcare services of Iran's healthcare framework.

**Methods:** This national plan is dedicated to educating individuals on adopting a healthy lifestyle based on PM principles of health (air, food, sleep and wakefulness, physical activity, waste elimination, and mental and emotional states). The program officially commenced in the year 2022 in 15 universities, with plans to expand to the remaining 48 universities in 2023. PM specialists are responsible for imparting knowledge on healthy living practices to health system employees within health deputies of universities. Subsequently, this information is disseminated to healthcare workers in a cascading manner, culminating in the implementation of the PM service package within the healthcare system. Furthermore, lifestyle monitoring tools in electronic health systems are utilized to educate the general population on healthy practices in the aforementioned areas through both group and community-based training sessions.

**Results:** Thus far, more than 30 thousand of the country's health staff, including health trainers, technical staff experts, and healthcare workers, have received training on PM health essentials. Moreover, over 1,250,000 lifestyle questionnaires have been filled out by individuals over the age of 6 who have received PM services in 63 universities/faculties of medical sciences. Approximately 100 public group training sessions have been conducted to introduce individuals to these principles in various settings such as community centers, mosques, schools, households, and health facilities.

**Conclusion:** Based on the existing reports, this project stands as an innovative endeavor on a worldwide scale. The full execution of this strategic initiative has the potential to contribute significantly to enhancing societal well-being and realizing the WHO's objectives in terms of advancing and integrating T&CM within the healthcare system.

*Keywords: Persian Medicine; Non-communicable diseases; Lifestyle; Health system*

## Traditional Persian Medicine research in “Scopus”: Scientometrics study

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**Background and Aim:** Traditional Persian Medicine (TPM), boasting a rich history spanning millennia, is experiencing a surge in public and academic interest. However, a comprehensive evaluation of Iran’s scientific output in this field remains absent. This study aims to assess the value of ITM-related research in Iran and determine the country’s regional and international standing.

**Methods:** Employing a descriptive scientometric approach, this study analyzed data from the Scopus database (1960–2022) using relevant keywords such as “Iranian traditional medicine”, “Traditional Iranian medicine”, “traditional Persian medicine”, “traditional medicine”, “Persian medicine”, and “Unani medicine.”

**Results:** A significant increase in TPM research output was observed from the year 2000 onwards. This surge has positioned Iran as the leading country in the Eastern Mediterranean region and fourth globally in terms of TPM-related publications within the Scopus database. Tehran University of Medical Sciences emerged as the top contributor, followed by Shahid Beheshti, Mashhad, and Shiraz Universities of Medical Sciences.

**Conclusion:** TPM research represents a notable scientific strength for Iran on the world stage. The prolific research activity in this domain has propelled the country to a leading position both regionally and internationally. Establishing dedicated traditional medicine programs and faculties has undoubtedly played a crucial role in this success.

*Keywords:* Traditional Iranian medicine (ITM); Scientometrics; Scopus database; Iranian medicine



## Establishing a master's Program in Traditional Nursing: A Necessity

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**Background and Aim:** The evolving landscape of healthcare demands a paradigm shift in nursing education. Complementary medicine practices are increasingly prevalent worldwide, including in Iran. Nurses, as frontline caregivers, must integrate complementary therapies into their practice to meet the diverse needs of their patients. Therefore, this study aims to underscore the imperative of establishing a master's program in traditional nursing.

**Methods:** This study adopts a review approach. In addition to scrutinizing nursing and complementary medicine literature, articles indexed in prominent databases such as SID, PubMed, and MEDLINE were reviewed. Keyword searches encompassing complementary and alternative medicine, nursing roles, ethics, holistic care, and nursing theories were conducted to extract relevant articles.

**Results:** The review reveals that nursing, as a holistic profession, is ideally positioned to embrace complementary and alternative medicine. Nurses' holistic view of patients aligns seamlessly with the principles of complementary medicine. Moreover, complementary, and alternative medicine interventions are increasingly integrated into nursing practice, addressing various patient needs and enhancing care outcomes.

**Conclusion:** Given the pivotal role of nurses in healthcare delivery and their unique ability to incorporate complementary and alternative medicine, it is imperative to establish a master's program in traditional nursing. Such a program will equip nurses with the necessary knowledge and skills to deliver holistic and patient-centered care in alignment with contemporary healthcare demands.

*Keywords: Holistic care; Complementary medicine; Nursing theories; Ethical nursing practices*

## Investigating the types of “Mizaj jebeli” (Innate temperament) in patients with kidney stones

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**Background and Aim:** Urinary system stones are the third most common disease of the urinary system. The prevalence of this disease is generally estimated between 1 and 20%. In Persian Medicine textbooks, formation process of Lithia's is due to “heat quality”. No study has assessed the Mizaj types in patients with kidney stones, yet. This study performed to identify the frequency of nine types of “Mizaj jebeli” among patients with Lithia's.

**Methods:** This descriptive-cross-sectional study was conducted between June and October 2022. The research population included all patients who underwent surgery for kidney stones in Hamadan city. A sample of 240 people was selected using the available method. Data was collected using a demographic questionnaire and Salmannezhad Mizaj Questionnaire (SMQ). Data analysis was done using spss version 25 software and descriptive and analytical statistics

**Results:** Male patients (66.3%) were twofold of females (33.8%) with the average age of  $43.97 \pm 10.62$  years. “Hot & humid” temperament was the most frequent Mizaj type in general and gender segregation, also (23.3 %). “Dry” temperament was the least frequent Mizaj type in general and gender segregation, also (3.3%).

**Conclusion:** This results as the first study on Kidney stones with temperament perspective, approve the role of “Heat” quality in formation of kidney stones as mentioned in Persian Medicine theory. So, people with “Hot & humid” Mizaj are more susceptible to kidney stones and should avoid predisposing factors of that in their life-style. Yet more studies should be done on larger population to confirm this result.

*Keywords: Kidney stones; Persian medicine; Temperament; Mizaj jebel*





## Medicinal leech status in the world

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**Background and Aim:** Medicinal leech has been traditionally used since ancient times, and recently, its use in a scientific and specialized treatment has brought significant changes. Leech therapy clinics have been established all over the world and the application of medical leeches in operating rooms for organ transplants and plastic surgeries has become a key role in medicine.

**Methods:** Legal status of the medicinal leech in different countries were studied.

**Results:** Hirudiculture was developed in different countries and in 2004 certified leeches approved as a medical device by US FDA and then as a drug in Germany and some European countries. Unfortunately, there has been irrational resistance in some countries and application of medicinal leech has been banned by authorities. Therefore, it is used in a completely traditional way and under no regulation. In Iran, after the formation of the Medical Leech Committee in the FDA of the country, in 2015, the Medical Leech was approved as a traditional product.

**Conclusion:** In this article, the status of medicinal leech in the world and the challenges that we face in our country to use this invaluable creature will be discussed.

*Keywords: Medicinal leech; Medical device; Drug; Traditional product*

## Knowledge, attitude, and practice of Iranian adults toward Wet Cupping: A national survey

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**Background and Aim:** Prior research in developed and developing countries showed an increasing trend in using complementary and alternative medicine among people. World Health Organization emphasized studying the prevalence and determinants of complementary and alternative utilization. The present study explores Iranian adults' knowledge, attitude, and practice toward Wet Cupping as a traditional therapeutic method of complementary and alternative medicine based on a national survey for the first time.

**Methods:** A total of 2882 Iranian adults (aged  $\geq 15$  years) were randomly chosen from all regions. Data were gathered through structured door-to-door interviews using a survey questionnaire, wherein cases were selected randomly based on postal codes, and interviewers completed the forms at the participants' residences.

**Results:** This study indicated that nearly 43.7% of the subjects had not familiarity with wet cupping. The major source of knowledge achievement about wet cupping was family, relatives, and friends (65%). Only 14.1% of them reported that medical staffs were their knowledge source. This study showed 65.3% of participants were not informed toward application of wet cupping but 29.9% supposed wet cupping is highly effective. 21.8% of participants believed that non-medical staffs are providers of wet cupping. The results showed that about 14.9% of the participants have a history of wet cupping utilization in their lifetime and 55% of them provided by medical staffs. 57.3% of these users reported that wet cupping is highly effective.

**Conclusion:** This study showed that using of wet cupping is low. This low using rate is probably related to low knowledge and other factors like the availability of PM services, the number of PM providers, accessibility, costs, Etc.

*Keywords: Cupping; Wet cupping; Persian medicine; Complementary Therapies; Traditional medicine; KAP studies*

### A historical look at health tourism with a focus on the structure of Rab'-e Rashidi

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**Background and Aim:** Tourism is considered one of the world's major industries due to its high-income generation, and among its various fields, health tourism and its sub-branches with the titles of "preventive tourism", "health tourism" and "therapeutic tourism" have received a lot of attention due to their competitive capabilities. Today, medical tourism has become a growing industry and has led to patients taking domestic and international trips to receive medical services, often along with leisure time. Since health travel, as the oldest form of tourism, has a long history in ancient societies, especially in Iran, as a model, we will discuss a part of Rab'-e Rashidi administrative university town near the city of Tabriz, which was built by Khwaja Rashiduddin Fazlullah Hamadani in the 8th century AH. Because the expansion of this industry, in addition to expressing national identity, leads to economic improvement.

**Methods:** In this research, by examining books such as *Savaneh al- Afkar -e Rashidi*, Rab'-e Rashidi's Waqf-name and examining some of letters of the builder and other research on this subject, with the descriptive-analytical method, first describe the subject and then examine the nature of medical tourism in Rabe Rashidi and the place of this industry in this large cultural, religious and educational complex, especially Dar al-Shifa.

**Results:** This endowment complex is managed like a large university with excellent and experienced management and has diverse departments in terms of spatial organization. One of these main elements was Dar al-Shafa, which included a pharmacy and an office for physicians. In addition to teaching the students, the doctor was supposed to treat all those who stayed in Rab'-e Rashidi, travelers and workers who fell ill, and the travelers were able to enjoy comfort facilities such as a place to rest and food, which was spent for them from the endowment treasury, for up to three days.

**Conclusion:** Rab'-e Rashidi was structurally very coherent and organized and had many service elements. Even today, according to the progress of Iran's medicine in modern and traditional medicine, in terms of hardware, advanced medical facilities should be created, despite favorable geographical conditions and many neighbors with close cultural ties, because there are special places for tourists who have traveled to recover health. It is necessary to reduce the departure of Iranian doctors by using the talent of the medical staff and the boom in tourism.

*Keywords: Health tourism; Medical tourism; Therapeutic tourism; Rab'-e Rashidi; Rashiduddin Fazlullah Hamdani*

## A Brief Overview of Non-Pharmacological Treatments for Hypermenorrhea in Persian Medicine

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**Background and Aim:** Hypermenorrhea, characterized by abnormal uterine bleeding (menorrhagia), presents as a disturbance in quantity, duration, regularity and menstrual pattern. It is a significant issue, accounting for one-third of gynecological visits, and is a common indication for hysterectomies. In Persian medicine (PM), various medicinal and non-medicinal methods have been presented to treat hypermenorrhea. Some medicinal methods have been studied in recent years and the effectiveness of some of them has been proven. However, no significant study has been reported regarding non-pharmacological methods. The purpose of this study is to report the non-pharmacological treatments of hypermenorrhea according to PM viewpoints.

**Methods:** Valuable PM written Sources such as the “Exire-Azam” and “Tebe-Akbari” were utilized for this study. Additionally, a search was conducted in databases such as PubMed, Scopus, Web of Science, Google Scholar with related keywords such as “hypermenorrhea”, “menorrhagia”, “polymenorrhagia”, “traditional medicine”, “Persian Medicine”.

**Results:** According to PM, the first step to treat this disease is to modify the lifestyle and nutritional measures, including reducing food and using fast-digesting and tonic foods such as egg yolk, kebabs and roast meat with sumac, as well as avoiding the consumption of spices, heavy mental and physical activity during menstruation. Wet and dry cupping in the lower location of the breasts, chest bandage in the breast area, fasd (Phlebotomy), Stimulation of vomiting are some of the non-pharmacological methods mentioned in these sources.

**Conclusion:** Based on the results of this study, there are significant non-pharmacological strategies in Iranian traditional medicine resources for controlling or treating hypermenorrhea, which are suggested to be investigated in future clinical trials. If the effectiveness of these methods is proven, they will provide valuable assistance in the treatment of this condition.

*Keywords: Uterus; Menorrhagia; Abnormal uterine bleeding; Hypermenorrhea; Iranian traditional medicine; Persian medicine*

## Mobile health applications for Traditional Medicine and Persian Medicine available on the market

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**Background and Aim:** Mobile health applications are one of the tools developed in the field of serving patients and health care professionals in various fields, including traditional medicine and Persian medicine, so the purpose of this study is to examine the quality and content of mobile health applications available on Google Play and Bazaar market in the field of traditional medicine and Persian medicine.

**Methods:** This study presents a systematic review of mobile health applications in the Google Play and Bazaar market stores with Over 10,000 downloads in English and Persian languages. Companion health applications in the fields of traditional medicine and Persian medicine were reviewed and tested in January 2024.

**Results:** Based on the study criteria, a total of 20 applications was identified in the fields of traditional medicine and Persian medicine, and 25% of these applications had in-app payment. Most of the applications were shareable and had no design flaws, but most of them supported old versions of Android. The most content of mobile health applications has been in the fields of properties of medicinal plants, temperament, treatment of skin diseases, respiratory diseases, blood pressure, and depression

**Conclusion:** Surveys show that there are very few mobile health applications in the field of traditional medicine and Persian medicine in Google Play and Bazaar market stores that have good quality and most of the mobile health applications do not meet the needs of their users and designers and developers should try to produce better quality products.

*Keywords: Traditional medicine; Persian Medicine; Mobile health; Mobile application*

## The Correlation assessment between depression and Mizaj (Temperament) in Persian Medicine

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**Background and Aim:** Depression, with a prevalence of 3.8%, is a common mental disorder and a major contributor to disability worldwide. This illness leads to significant consequences and costs within the healthcare system. Alongside the increasing financial burden of healthcare, the use of non-pharmacological treatments such as complementary medicine has gained significant importance. The concept of Mizaj (temperament) is the most important axis for diagnosing and treating diseases in Persian Medicine (PM). According to the Mizaj theory, individuals with a cold temperament are more prone to depression, and Mizaj modification can reduce the likelihood of depression. Due to a lack of evidence in this area, the aim of this study is to assess the relationship between Mizaj and depression.

**Methods:** In this cross-sectional study, individuals aged 20 to 40 years of both genders were invited to participate. After explaining the objectives and method of the study and obtaining written consent, participants completed self-report Mojahedi and Salmannejad, Mizaj questionnaires as well as the Beck Depression Inventory. The data were analyzed using SPSS version 17, and results with  $p < 0.05$  were considered statistically significant.

**Results:** Out of 142 volunteers, 13 individuals were excluded from the study based on the exclusion criteria. Eventually, 129 participants, including 58 (45%) men and 71 (55%) women, completed all questionnaires. The average depression scores were calculated for nine Mizaj groups. According to the two aforementioned questionnaires, the depression score in the hot-wet Mizaj group was the lowest among all nine Mizaj groups. In contrast, the average depression score in the cold-dry Mizaj group in the Mojahedi questionnaire and the moderate and dry Mizaj group in the Salmannejad questionnaire had the highest depression scores.

**Conclusion:** Considering that the highest depression scores are associated with dry, especially cold-dry Mizaj, it seems that dry Mizaj are more prone to depression. On the other hand, there is a possibility that dry Mizaj modification by PM lifestyle recommendations could help in the treatment of depressed patients. If these findings are confirmed through clinical studies, it will open a new window in the management of depressive disorders.

*Keywords: Depression; Temperament; Persian Medicine; Mizaj*

## Applications of emesis (Qay) in the prevention and treatment of diseases in Persian medicine

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**Background and Aim:** Cleansing the body from the rotten humors is one of the main methods of treatment in Persian medicine (PM) and the induce emesis (Qay) is one of them. Frequency and the time of this procedure is important principles of prescribing this method. According to the theories of PM emesis is effective in preventing and treating many diseases, including gastrointestinal diseases, anorexia, headaches and joint pain, with the mechanism of cleaning the stomach and head as well as other parts of the body from waste. The purpose of this study is to express the importance of emesis and its indications from the perspective of PM.

**Methods:** In this study, PM sources such as “Kholasatol-Hikma”, “Zakhire-Kharazmshahi” and “Mufarahol-Qulob” were used. In addition, reliable sources such as PubMed, Scopus, Web of Science, Google Scholar were researched with related keywords such as vomit, emetic, nausea, Qay, emesis.

**Results:** In PM, emesis is performed with the two aims of maintaining health and treatment. With the consumption of daily food, some thick and slimy phlegm remains in the stomach, especially if the food consumed is thick and the person has a cold and wet stomach and does not exercise, waste materials gradually accumulate in the stomach and lead to disorders. By cleaning the stomach and its surroundings, as well as absorbing and excreting substances from other parts of the body, emesis helps to increase the level of health and also suppresses diseases. Therefore, PM scholars believed that a healthy person can induce emesis twice a month to maintain health. Emesis is used as the main treatment of some diseases, including heaviness of the head, joint pain, headaches, dyspepsia, eczema and mental problems. The best season for emesis is summer and the best time is the middle of the day. Vomiting is contraindicated in people with respiratory disease, brain and heart weakness, acute diseases, obesity, pregnancy.

**Conclusion:** In conventional medicine, not only the emesis inducing has no place in the treatment process, but any nausea and vomiting is also recognized as a complication that needs to be controlled. Considering the importance of Qay in the treatment and prevention of diseases in PM, it is suggested evaluation of this method efficacy by conducting clinical trial studies as a non-pharmacological treatment method.

*Keywords: Nausea; Vomiting; Emesis; Qay; Persian medicine; Iranian Traditional Medicine*

## Electroacupuncture vs Acupotomy in treatment of Adhesive capsulitis

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**Background and Aim:** Adhesive capsulitis is a common condition that is characterized by pain and loss of motion in the shoulder joint. There are various treatment modalities available, of which acupuncture and acupotomy are becoming increasingly popular. This study aimed to compare the effectiveness of acupuncture and acupotomy in the treatment of adhesive capsulitis.

**Methods:** In this randomized controlled trial, 40 patients who had been diagnosed with adhesive capsulitis were randomly assigned to receive either acupuncture or acupotomy treatment. The acupuncture group received 10 sessions, three times per week, while the acupotomy group received four sessions, with one session every five days. The study lasted for four weeks, with follow-up assessments taken at 12 weeks.

**Results:** The results showed that both acupuncture and acupotomy treatments were effective in improving pain and shoulder joint function in patients with adhesive capsulitis. However, the acupotomy group showed significantly higher improvements in pain relief and range of motion compared to the acupuncture group. The mean Visual Analog Scale (VAS) score for pain relief in the acupuncture group was 3.2, while that of the acupotomy group was 5.7. The Constant-Murley score for shoulder joint function showed a statistically significant improvement in both groups, but was higher in the acupotomy group.

**Conclusion:** Acupotomy needles have both properties of Acupuncture needles and also have properties of surgery blades for cutting and separating soft tissues, so that in acupotomy is more effective than acupuncture in conditions that we have changes in soft tissues.

*Keywords:* Frozen shoulder; Adhesive capsulitis; Acupuncture; Acupotomy; Electroacupuncture



## Acupuncture plus mugwort as treatment of plantar wart

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**Background and Aim:** Plantar warts are caused by the human papillomavirus (HPV) and can be very difficult to treat. Traditional treatment methods often involve painful and invasive procedures, such as freezing or surgery. Acupuncture is a non-invasive alternative treatment method that has been used successfully to treat a variety of conditions, including skin conditions like eczema and psoriasis. However, there are limited studies on the effectiveness of acupuncture for the treatment of plantar warts. This case report aims to describe a successful treatment of plantar warts using a special method of acupuncture.

**Methods:** This case report demonstrates the effectiveness of a special method of acupuncture plus moxibustion for the treatment of plantar warts. Traditional treatment methods for plantar warts can be painful, invasive, and often require multiple treatments. Acupuncture offers a non-invasive alternative that can be highly effective. This case study suggests that acupuncture may be a safe and effective treatment option for plantar warts. Acupuncture treatment involved the use of a specialized needle and moxibustion on specific points. Although we used acupuncture points, we also used local point near to warts regions, the needle was inserted into the center of each wart, and a small amount of moxa-stimulation was applied to the needle for 5 minutes. The patient received twice treatments in week, with each treatment lasting approximately 30 minutes.

**Results:** After six treatment sessions, the patient reported a significant reduction in pain and the wart had noticeably diminished in size. By the end of the treatment course, the wart had completely resolved and the patient reported no residual discomfort.

**Conclusion:** This case report demonstrates the effectiveness of a special method of acupuncture plus moxibustion for the treatment of plantar warts. Traditional treatment methods for plantar warts can be painful, invasive, and often require multiple treatments. Acupuncture offers a non-invasive alternative that can be highly effective. This case study suggests that acupuncture may be a safe and effective treatment option for plantar warts.

*Keywords: Plantar wart; Acupuncture; Moxibustion*

## Cataract Prevention and Treatment in the first Persian Medicinal Manuscripts (10-11 Centuries AD)

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**Background and Aim:** Cataract treatment has usually been considered one of the vital techniques of eye care, in the past was called “nuzul-al-māe” or “āb āvardan-e-chešm”. This disease can cause low vision and even entire blindness. Over time, scholars have tried to prevent or slow its progression through various solutions, including medicinal plants and surgery. The purpose of this study is to locate strategies for the prevention and treatment of cataracts.

**Methods:** This review study is conducted through a library-based research method by examining the reference texts of Persian medicine. The study examined two important books, *Hidāyat al-Muṭaʿallemin fi al-Ṭibb* (A Guide to Medical Learners), and *Nur al-ayun* (The Light of the Eyes), known for three main reasons: firstly, they are the first Persian works on medicine and ophthalmology; secondly, they presented scientific knowledge in a non-Arabic language, and finally, they were composed a century apart, highlighting their significance in tracing the progress of medical history research on prevention and treatment.

**Results:** The text presents methods to prevent eye illnesses, which include cataracts, which can cause blindness if left untreated. The books written in the 10th and 11th centuries AD point out three methods for controlling and treating cataracts: prevention, drug-food remedy, and surgical treatment.

**Conclusion:** Coping with patients’ way of life and nutritional habits before the onset of the disorder, and providing them with herbal remedies during the early stages, can prevent the development of cataracts or slow down their progression. Surgery should be considered as a last resort when alternative treatments have been attempted and proved ineffective.

*Keywords:* Cataract; History of medicine; Persian Medicine; Nuzul-al-māe

### Traditional medicine with medical ethics approach

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**Background and Aim:** The burden of diseases is influenced by various factors such as poverty, lack of food, insufficient access to health care and unaffordability of common and traditional medicine, and it is appropriate to improve the knowledge of traditional medicine with the aim of treating emerging diseases. A school of thought defends the idea of improving therapeutic interventions, whether traditional or common, based on scientific research and an opposing school of thought; Scientific research on the style and procedure of treatment and traditional medicines is considered a form of colonialism and heresy. Insisting on using only therapeutic interventions in both old and new medicine sectors, without efforts to improve their effectiveness and safety, is an unethical approach. Monitoring the burden of diseases based on access to traditional and common medicine treatments can be a challenging issue in the effects and consequences of applying the principles of medical ethics in the field of policymaking, administration and health services.

**Methods:** The present research is carried out in a library manner, by examining the articles and texts published in reputable scientific journals, obtained by referring to information databases and search engines such as Google Scholar, PubMed, Scopus, SID, etc. and has been cited.

**Results:** Traditional medicine is an effective approach in providing and maintaining the health of communities. Expansion of research in the progress of traditional medicine is an essential strategy. Narrow-mindedness, dogmatism and blind and one-sided prejudices in the interpretation and application of traditional medicine are unethical and lead to an increase in the burden of diseases. With more research and the updating of traditional medicine in the field of policymaking and providing solutions based on the principles of medical ethics, it is possible to provide justice in access to health services, both from the point of view of out-of-pocket payments and from the perspective of catastrophic reduction.

**Conclusion:** By using the capacities of traditional medicine and popular medicine and guiding the principles of medical ethics, it is possible to provide justice in access to health services and reduce the burden of diseases.

*Keywords: Disease burden; Traditional medicine; Medical ethics*

## The role of complementary and alternative medicine on the treatment and care of elderly people with neurological disorders: a review article

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**Background and Aim:** The world's population is rapidly aging and one of the main threats to the health of the elderly is the occurrence of neurological diseases and psychological disorders. Stroke, Parkinson's disease, dementia, and depression impose adverse consequences on these individuals, caregivers, and the community health system. Despite the efforts made to treat and reduce the symptoms of neurological disorders, many challenges still remain. Today, complementary therapies such as acupuncture, moxibustion, herbal medicine and tai chi are widely used in the treatment of various neurological disorders around the world. Therefore, this study was conducted with the aim of reviewing the role of complementary and alternative medicine on the treatment and care of the elderly with neurological disorders.

**Methods:** This study is a systematic review. PubMed, Web of science, Google scholar, Science direct, Scopus and SID databases were used to search for related items. Articles in the period from 2010 to 2024 were searched in these databases using the keywords Alternative medicine, Neurogenic disorder, Complementary medicine, Persian medicine. In the initial search, 53 articles were extracted and after removing the irrelevant ones, 13 original articles that investigated each of the above complementary treatments in the clinic were included in the study.

**Results:** Review of the 13 final articles revealed that many complementary therapies, such as acupuncture, electroacupuncture, moxibustion, tai chi, and herbal medicines including lavender, valerian, chamomile, feverfew, and passionflower, play an important role in relieving symptoms and controlling side effects of medications in elderly people with neurological disorders. It is noteworthy that these alternative therapies were more acceptable to older adults than conventional treatments, and this potential can be well utilized.

**Conclusion:** Considering the increase in the number of elderly people in societies and the high rate of diseases and neurological disorders in them, it seems necessary to provide new solutions adapted to the condition of the elderly, including complementary and alternative medicine. One of the things that must be considered is that the use of these methods is only under the supervision of a doctor because many of the chemical drugs used can cause interference with herbal drugs. It is also recommended that the effectiveness and mechanisms of complementary treatments on the treatment and supportive care of neurological disorders should be investigated and studied more in the form of clinical studies.

*Keywords: Aging; Neurological disorders; Iranian medicine; Complementary medicine; Alternative medicine*

## Uses of Mizaj (temperament) in modern sports science: a review of clinical studies

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**Background and Aim:** To obtain better results in sports events, many physiologic factors have been introduced, some of which are classified as components of health and fitness (e.g. muscle strength and endurance, ...). Along with lifestyle, body type is considered to be another factor affecting sports performance. Also, individual factors are other important criteria that usually deal with the personality and psychological characteristics of people in studies. According to Persian medicine, mizaj (temperament) is the most important individual factor with physical and psychological dimensions that affects many body functions. In general, four temperament groups have been described, which are: Hot, Cold, Wet and Dry. Sometimes these four mizajes are mentioned as a combination, for example, hot - wet mizaj. In studies, sometimes, other equivalents are used for the combined states of mizaj, for example, Sanguinic mizaj instead of hot - wet mizaj, phlegmatic mizaj for cold - wet, and Melancholic and Choleric mizaj for cold - dry and hot - dry mizaj are used respectively. Nowadays, new studies have paid attention to find a relationship between mizaj as an individual factor and sport performance. This study set to this topic.

**Methods:** A qualitative review is the method of this study which was conducted by searching key words in reliable scientific databases, reviewing the related clinical trial articles in English and Persian, repeated review of extracted content and finally content classification and analysis.

**Results:** Five main themes were obtained from the classified data: Mizaj and Basal metabolism: Hot Mizaj is associated with higher basal metabolism due to greater activity of the sympathetic system. In addition, there are some differences in proteomic between cold and hot Mizaj. Mizaj and Muscle mass: Athletes with hot mizaj have more muscle mass so, some physical fitness indexes are higher among these athletes. Also, muscle damage during training is more in this group and recovery takes longer. Mizaj and Sheldon's Three Somatotypes: Among athletes, mesomorph phenotype in Sanguinic mizaj, endomorph in phlegmatic mizaj and ectomorph in both Melancholic and Choleric mizaj have been more common. Mizaj and Tendency to exercise activity: Hot mizaj has a relationship with a higher willingness to participate in exercise activities. Mizaj and sports Talent identification: Physical fitness index is higher among Sanguinic mizaj. Respectively, people with hot - wet and hot-dry mizaj are more willing to enter professional sports than other mizajes especially for individual sports. People with cold mizaj have higher aerobic capacity while people with a hot mizaj have a higher peak anaerobic capacity.

**Conclusion:** Mizaj as an individual indicator can affect sports performance by affecting body type, muscle mass, and aerobic and anaerobic capacity, which can be considered as a potential criterion in sports talent identification; especially in this matter, endemic factors are of interest to experts. Despite the fact that new studies confirm the influence of personal factors on sports performance, more studies about a relationship between mizaj and sports performance are needed and these sporadic researches on different groups cannot lead us to definite results.

*Keywords: Mizaj; Temperament; Sports science; Exercise; Athletes; Persian medicine*

## Applications of Artificial Intelligence in Persian, Complementary and Alternative Medicine (CAM); Neurological Drug Interactions

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**Background and Aim:** Neurological disorders often necessitate multifaceted treatment plans. However, integrating Complementary and Alternative Medicine (CAM) therapies can introduce complexities due to potential adverse drug-drug interactions (DDIs). Artificial Intelligence (AI) offers a groundbreaking solution to enhance clinical decision support in this domain. The incorporation of CAM therapies presents unique challenges to the neurological DDI landscape. AI tackles this by processing information regarding a patient's specific CAM use alongside their prescribed medications. This comprehensive analysis fosters a more holistic understanding of potential interactions, empowering clinicians to make evidence-based decisions and optimize treatment regimens.

**Methods:** The successful application of AI in this domain hinges on several critical considerations. Data quality is paramount, as the accuracy of AI models is directly tied to the comprehensiveness and quality of the data used for training. It is crucial to emphasize that AI serves as a valuable decision-support tool, not a replacement for human expertise. Clinicians must exercise judgment when interpreting AI-generated recommendations, tailoring them to the specific needs of each patient. Additionally, ongoing research is necessary to elucidate the mechanisms behind CAM therapies and their potential interactions with neurological drugs. In this work, the method for designing a clinical decision support will be described and presented. We will consider the data banks for neurological CAM drugs such as the ones provided by Memorial Sloan Kettering Cancer Center. Then we will apply the related drug-drug interactions rules based on the framework of Medscape or Micromedex.

**Results:** For example; Consider an epilepsy patient receiving conventional medication who desires to incorporate St. John's Wort, an herbal treatment for depression, into their regimen. An AI-powered clinical decision support system will: 1. Analyze the patient's medical history, current medications, and desired CAM intervention (St. John's Wort). 2. Access extensive databases on documented DDIs between conventional drugs and CAM therapies. 3. Identify any potential interactions between the epilepsy medication and St. John's Wort. 4. Alert the clinician and suggest alternative CAM options or medication dosage adjustments to minimize potential risks.

**Conclusion:** AI holds immense potential for navigating the complexities of neurological DDIs, particularly when CAM therapies are involved. By leveraging AI's analytical prowess, clinicians can provide safer and more effective treatment plans, ultimately improving patient outcomes and propelling the future of neurological care.

*Keyword: Artificial intelligence; Drug interaction; Complementary and alternative medicine*

## Application of Machine Learning in development Traditional Medicine and Persian Medicine: A review article

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**Background and Aim:** Persian and traditional medicine include a collection of knowledge and experimental experiences and observations that have been used in the diagnosis and treatment of diseases since ancient times and have the ability to improve the health of society. Nowadays, artificial intelligence (AI), especially machine learning (ML), using unique algorithms and techniques, is used in various fields of medicine. Therefore, by combining traditional and Persian medicine with modern technologies such as ML, it is possible to make a significant contribution to the progress and development of traditional and Persian medicine. This study was conducted with the purpose of ML applications in the development of traditional and Persian medicine.

**Methods:** This is a narrative review. A review of published texts related to the subject in PubMed, Google Scholar, Science Direct and Web of Science, was conducted using ML keywords of Persian medicine and traditional medicine from 2019 to 2024. In the initial search, the authors retrieved, screened and reviewed 446 studies, and after checking the titles of the articles, 446 articles were removed and 36 articles were included.

**Results:** We screened and reviewed 36 potential articles based on inclusion criteria from 4 databases. The findings show that ML can be used in the fields of assisting in the diagnosis, treatment, prognosis and classification of diseases, the effectiveness and evaluation of the side effects of using traditional and Persian medicine, the extraction of symptoms from clinical records, as well as imaging to determine the anatomical points of acupuncture.

**Conclusion:** Today, machine learning algorithms can be used in the development of traditional medicine and personal medicine due to their unique capabilities in pattern recognition in data and significance in data processing and extraction. It is suggested to conduct more comprehensive research on the application of AI algorithms in the development of Persian medicine.

*Keywords: Machine learning; Persian medicine; Traditional medicine; Artificial intelligence*

## Investigating the relationship between health literacy and the lifestyle of Persian medicine in second year primary school students in Isfahan province

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**Background and Aim:** Health literacy includes the ability to understand health care and use it to improve a healthy lifestyle. Elementary school students are the future builders of our country and their health plays a significant role in the health of society. The purpose of this research is to determine the relationship between health literacy and the lifestyle of Persian medicine in second year elementary school students.

**Methods:** The current research is a descriptive-analytical cross-sectional study that was conducted in 1400 on 1196 male and female second grade elementary school students in Isfahan province. which were selected in the form of easy sampling. The data was collected through a researcher-made questionnaire whose validity and reliability were confirmed. The lifestyle of Persian medicine consisted of five parts: sleep, mental health, nutrition, mobility and disposal of waste materials. Analysis was done using SPSS software and Spearman's correlation tests.

**Results:** 28.2% of male participants and 71.4% of female participants and the average age was 10.89 years. The results of the correlation test showed that there is a significant direct relationship between health literacy and sleep ( $r=0.243$ ), mental health ( $r=0.117$ ) and nutrition ( $r=0.124$ ) ( $p$  value  $<0.05$ ). However, no significant relationship was observed between health literacy and mobility ( $r=0.024$ ) and disposal of waste materials ( $r=0.046$ ) ( $p$  value  $> 0.05$ ).

**Conclusion:** The results of this study show that there is a direct relationship between health literacy and sleep, mental health, nutrition, mobility and waste disposal. Therefore, health literacy plays a significant role in the performance of Persian medicine lifestyle. Therefore, to raise a healthy generation with a healthy lifestyle, health education and increasing health literacy are necessary.

*Keywords: Health literacy; Lifestyle of Persian medicine; Student*





## Developing a Comprehensive Care Application for Elderly based on Persian Medicine

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**Background and Aim:** Aging is an inevitable process and elderly people need health care, diagnosis, treatment and health promotion. The purpose of this research is to design and create a functional and multitasking application for managing health of the elderly based on Persian medicine.

**Methods:** Target population in the first stage is people over 65 years old with an underlying disease including diabetes and hypertension in an area of Mashhad. Using wearables technology and artificial intelligence algorithms in smart watches, personalized health programs and recommendations are provided intelligently and continuously.

**Results:** The application includes innovative features including vital monitoring with smart watches, online communication with physicians, medication and appointment management, mental health support, lifestyle promotion, and the use of complementary and integrative medicine. Health Coaching provides the monitoring services. Diet and exercise are recommended according to individual needs. Using the capabilities of Persian and complementary medicine along with modern medicine, this application improves communication between physicians and elderly patients. In cases where the received or entered data is far from the health criteria, for example, in the case of an increase in blood pressure from the normal state of the person, using algorithms, this imbalance is detected and appropriate treatment is recommended or provided and if possible, an online visit by a specialist is planned. This program is available on different platforms, android and IOS. Secure and stable connection with cloud servers is provided for data storage.

**Conclusion:** The mobile phone application is designed to prevent diseases and maintain the health of the elderly by a specialized team and based on the recommendations and protocols of Persian medicine.

*Keywords: Application; Persian medicine; Geriatric health; Wearable technology; Artificial intelligence algorithms*

## The Role of Artificial Intelligence (AI) in the Development of Traditional Persian Medicine

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**Background and Aim:** Traditional Persian Medicine is a healthcare system that is based on philosophical theories and long-term experiences. Artificial Intelligence (AI) has revolutionized various industries and has a significant impact on the medical field. The purpose of this Article is to investigate the various applications of Artificial Intelligence in Traditional Persian Medicine in order to improve human health.

**Methods:** At the beginning, the basis of Traditional Persian Medicine and its philosophical and theoretical frameworks have been mentioned. Then it has been addressed to different areas of traditional Persian medicine, including: Hefz-al-Sehhah (hygiene and lifestyle), disease diagnosis and treatment. Considering the necessity of standardizing, refining and analyzing medical data for use in Artificial Intelligence, how to perform this process and discover suitable algorithms for data mining and machine learning in this field have been investigated.

**Results:** Our findings indicate that Artificial Intelligence technologies are increasingly integrating into various aspects of medicine including prevention, diagnosis, disease treatment, and drug production. By converting Traditional Persian Medicine data into structured information, Artificial Intelligence and machine learning technologies can be utilized in various areas of Traditional Persian Medicine such as determining human Mizaj (temperament), drug Mizaj, and therapeutic algorithms. Additionally, this technology can be used in producing Intelligent drugs in line with Traditional Persian Medicine and assisting in medical education.

**Conclusion:** Today, the applications of Artificial Intelligence in medicine are very diverse and its role in helping doctors to maintain health and treat diseases is significant. By using the power of Artificial Intelligence in the production and processing of medical information and by incorporating healthcare and treatment theories in Traditional Persian Medicine, a more effective future for human physical and mental health can be envisioned. Artificial Intelligence as an Intelligent and error-free assistant in the service of doctors will promote Traditional Persian Medicine. The speed of knowledge growth in computer science, especially Artificial Intelligence, shows the necessity of formulating policies, laws and guidelines in order to move faster in this field, However, one should not ignore the dangers of Artificial Intelligence, such as: mistakes in possible results, the weakening of face-to-face communication between the doctor and the patient, and the violation of people's privacy.

*Keywords: Artificial intelligence; Machine learning; Medicine; Traditional Persian Medicine; Mizaj; Hefz-al-Sehhah; Hygiene*



## Integration of Traditional Persian Medicine and Artificial Intelligence

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**Background and Aim:** For centuries, medicinal plants have been recognized as a valuable source of important compounds. In the 21st century, Computational Research has increasingly focused on utilizing medicinal plants for developing new drugs due to the lengthy and costly process of traditional pharmacological screening.

**Methods:** This review delves into the evolution and examination of computational research, transitioning from the traditional static molecular docking method to a variety of dynamic simulation techniques and cutting-edge artificial intelligence tools like machine learning.

**Results:** The significant advancements in computer science have enabled researchers to explore the biological mechanisms of various diseases through the use of these sophisticated computational tools. The progress includes velocity, system setup, and software enhancements for a deeper understanding and improvement in the analysis of biological molecules. The potential transition from simulation to AI has greatly boosted the field of scientific research. Cutting-edge algorithms like Artificial Neural Networks, Deep Neural Networks, and Neuro-fuzzy Logic have revolutionized the traditional experimental approach by saving time and offering more efficient solutions.

**Conclusion:** The remarkable advancements in computer science technology have opened up new pathways for studying pharmacological functions and establishing a framework for drug design and development, as well as other breakthroughs in the realm of medicinal plants research.

*Keywords: Artificial intelligence; Biology; Medicinal plants*

## Development of Traditional and Herbal Medicines with Artificial Intelligence

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**Background and Aim:** The use of traditional and herbal medicines in Iranian traditional medicine dates back to ancient times and is still regarded as one of the primary methods for treating diseases and maintaining health. With technological advancements, the use of artificial intelligence has emerged as a powerful tool in the development and enhancement of traditional and herbal medicines.

**Methods:** Artificial intelligence employs various methods to identify active compounds in medicinal plants. Here are several common approaches: 1. Chemical Data Analysis: Artificial intelligence can utilize complex algorithms to analyze chemical data from medicinal plants, including various algorithms such as clustering, principal component analysis (PCA), and machine learning models. 2. Prediction of Medicinal Properties: Using machine learning models and neural networks, artificial intelligence can predict various medicinal properties based on the chemical structure of plant compounds. 3. Biological Studies: Artificial intelligence can utilize biological and molecular data to evaluate the effects of plant compounds on cells and tissues and identify compounds with therapeutic activities. 4. Database Utilization: Artificial intelligence can leverage large chemical and pharmacological databases to identify active compounds in medicinal plants and explore their medicinal properties. These methods enable artificial intelligence to identify active compounds present in medicinal plants and optimize them for medical and therapeutic applications.

**Results:** In general, the integration of artificial intelligence with pharmaceutical research can contribute to the development of Iranian traditional medicines and improve the quality of life for patients.

**Conclusion:** The use of artificial intelligence as a powerful tool in improving treatment methods in Iranian medicine can help enhance the quality of medical services and improve patient outcomes. This fusion of tradition and technology paves the way towards personalized and more efficient medicine.

*Keywords: Traditional medicine; Medicinal plants; AI; Pharmacology*

## Artificial Intelligence in Service of Persian Medicine: Design and Development of New Drugs

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**Background and Aim:** Persian medicine, with thousands of years of history, is a treasurehouse of knowledge and experience in the field of prevention, diagnosis and treatment of diseases. In today's age, artificial intelligence (AI) as a powerful tool is breaking new horizons for the revitalization and advancement of this ancient medicine. This article examines the application of artificial intelligence in the design and development of new drugs based on Persian medicine.

**Methods:** This rotating study, gathering information from credible scientific sources, explores the role of artificial intelligence in the various stages of the design and development of new drugs based on Persian medicine.

**Results:** Artificial intelligence is a powerful tool for accelerating and advancing the process of designing and developing new drugs based on Persian medicine. This technology can be effective in various stages of the process, including the identification of active compounds, bioactivity prediction, drug design, formulation optimization, and virtual experimentation. Using artificial intelligence, it is possible to identify active compounds with high therapeutic potential in medicinal plants, predict their bioactivity, design new molecular structures with desired medicinal properties, optimize pharmaceutical formulations, and predict the side effects and effects of new drugs. These capabilities lead to the discovery and delivery of new, effective and safe medicines for the treatment of various diseases based on Persian medicine.

**Conclusion:** Artificial intelligence, as a new tool, has huge potential to accelerate and advance the process of designing and developing new drugs based on Persian medicine. In collaboration with Persian medical experts and artificial intelligence experts, this powerful technology can be used to discover and deliver new, effective and safe medicines for the treatment of various diseases.

*Keywords: Artificial intelligence; Persian medicine; Drug design; Drug development; Medicinal plants; Active compounds; Bioactivity prediction; Formulation optimization; Virtual experimentation*

## AI-Driven Transformation: Bridging Traditional Medicine and Evidence-Based Practice

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**Background and Aim:** The integration of Artificial Intelligence (AI) into Traditional Medicine (TM) represents a transformative development in healthcare, moving towards an evidence-based approach. This paper aims to explore how AI can revolutionize Persian medicine by enhancing diagnostic accuracy, optimizing treatment, and empirically validating herbal remedies, thereby making traditional healing more accessible and effective in the contemporary medical framework.

**Methods:** A Semi-Systematic review was conducted across medical databases such as PubMed and ScienceDirect focusing on AI and medical research. Keywords included “Artificial Intelligence”, “Traditional Medicine”, “Chinese Medicine”, “Persian Medicine”, and related terms. Studies from 2000 to March 2024 detailing AI’s application in TM were included, particularly those that offered empirical evidence. Theories without empirical backing and publications outside the TM context were excluded. Analyzed articles were categorized by their focus on diagnostics, treatment optimization, or empirical validation.

**Results:** AI applications in diagnostics have notably improved the accuracy of traditional diagnostic methods like pulse and tongue assessments in Chinese Medicine by utilizing machine learning algorithms to analyze large datasets. In treatment optimization, AI has enhanced the formulation and dosage accuracy of herbal medicines in TM. Furthermore, AI has played a crucial role in the empirical validation of herbal remedies, using advanced statistical techniques to substantiate their efficacy, which supports their integration into evidence-based medical practices.

**Conclusion:** AI not only modernizes TM but also bridges the gap between traditional healing practices and modern evidence-based medicine. This synergy expands healthcare horizons, offering novel insights and enhancing the applicability of TM. The future of AI in TM involves a collaborative, multidisciplinary approach focused on refining AI applications in diagnostics, treatment optimization, and empirical validation, while ensuring ethical practices are maintained.

*Keywords: Artificial intelligence; Traditional medicine; Evidence-based medicine*

## Efficacy and Safety of Fateh Technique for Chronic Low-Back Pain and Lumbar Radiculopathy – A Randomized Controlled Trial

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**Background and Aim:** Chronic low-back pain (LBP) and lumbar radiculopathy are significant causes of disability worldwide, with few effective non-surgical treatment options available. This study evaluates the efficacy and safety of the Fateh technique, a Persian manual therapy method, in managing these conditions, aiming to provide an effective alternative to conventional treatments.

**Methods:** This single-center, single-blinded randomized controlled trial enrolled 52 patients with chronic LBP and lumbar radiculopathy. Participants were randomly assigned to two groups: one received Fateh manual therapy combined with active home exercises, and the other performed active home exercises only. The primary outcomes measured were pain, disability (Roland-Morris Disability Questionnaire), paresthesia, and body flexibility (finger-to-floor test), assessed at baseline, post-treatment, and four weeks after the intervention.

**Results:** Forty-eight participants completed the study. The Fateh technique group showed significant improvements in pain reduction (mean decrease of 4.28 units), radiculopathy (mean decrease of 3.85 units), paresthesia (mean decrease of 1.32 units), disability (mean decrease of 4.58 units), and increased body flexibility (mean increase of 35.42 mm) compared to the exercise-only group. No significant adverse events were reported, affirming the safety of the technique.

**Conclusion:** The Fateh technique is a safe and effective method for reducing symptoms of LBP and lumbar radiculopathy, outperforming standard exercise regimens. It offers a promising non-surgical alternative for chronic pain management. Further studies are recommended to explore its efficacy against other manual therapies and to confirm these findings in larger, more diverse populations.

*Keywords: Low back pain; Lumbar radiculopathy; Manual therapy; Non-surgical treatment; Pain management*

## Utilizing Artificial Intelligence for Advancements in Iranian Medicine: A Comprehensive Review

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**Background and Aim:** This paper aims to investigate the role of artificial intelligence (AI) in advancing various aspects of Iranian medicine, focusing on its applications, impact, and future potential. The role of AI in diagnosis and prognostication is one of the most promising aspects of Iranian medicine. AI algorithms can be used to evaluate imaging scans, medical histories, and other diagnostic tests to identify potential illnesses and pre-empt possible treatments. Furthermore, AI can aid in diagnosing complicated medical problems in a shorter timeframe than human doctors. This method called ‘machine learning,’ involves the use of specific algorithms to extract meaningful patterns from large quantities of data derived from medical records and other sources. Iranian medical researchers are also using AI in developing new medicines and analyzing clinical trials.

**Methods:** A thorough review of the literature was conducted, spanning research articles, review papers, and official reports, to gather insights into the integration of AI in Iranian medicine. The search included databases such as PubMed, IEEE Xplore, Google Scholar, and Iranian medical databases using keywords such as “artificial intelligence,” “Iranian medicine,” “healthcare,” “medical diagnosis,” “image analysis,” “natural language processing,” and “drug discovery” Inclusion criteria encompass studies published between 2010 and 2024, written in English or Persian, focusing on AI applications in Iranian healthcare settings.

**Results:** The findings reveal a growing interest and utilization of AI technologies within the Iranian healthcare sector. AI has been employed across diverse domains, including medical imaging analysis, disease diagnosis, treatment planning, drug discovery, and patient management. In medical imaging, AI algorithms have demonstrated remarkable accuracy in detecting and classifying abnormalities, aiding in the early diagnosis of diseases such as cancer. Natural language processing (NLP) techniques have facilitated the extraction of valuable insights from electronic health records (EHRs), enhancing clinical decision-making and personalized treatment approaches. Moreover, AI-driven drug discovery efforts have expedited the identification of novel therapeutic compounds, potentially revolutionizing pharmaceutical research in Iran. Another area where AI is increasingly being used in Iranian medicine is healthcare delivery. AI-powered chatbots can provide patients with advice, triage, and wellness-related information. Chatbots can answer questions that might typically require a medical professional’s assistance, such as explaining medication side effects, requesting an appointment with a doctor, and reviewing medical records. This can help reduce the burden on healthcare professionals, freeing up their time to focus on more complex tasks. Medical image analysis is another area that has been significantly impacted by AI technology.

**Conclusion:** The integration of AI holds significant promise for advancing Iranian medicine by improving diagnostic accuracy, optimizing treatment strategies, and enhancing patient care. To fully realize these benefits, concerted efforts are required to address technical, ethical, and regulatory challenges. However, challenges such as data privacy concerns, regulatory hurdles, and the need for robust infrastructure remain critical considerations. Collaborative efforts between academia, healthcare institutions, and government bodies are essential to harness the full potential of AI while addressing these challenges. In conclusion, AI technology has brought about notable changes, positively impacting various aspects of Iranian medicine. These range from diagnosis and prognostication to healthcare delivery.

*Keywords: Artificial intelligence; Iranian medicine; Healthcare; Medical diagnosis; Image analysis; Drug discovery.*



## Enhancing Parental Support based on Persian Medicine for Children's Healthy Lifestyles through Educational Intervention: A Pre-Post Test Pilot Study

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**Background and Aim:** Children, as future spouses and parents, play a crucial role in designing the overall health of society. Investing in this age group and providing early education on healthy lifestyles is a highly effective preventive strategy for improving lifelong health. In this pilot experimental study, we explored the intended impact of an educational intervention based on Persian Medicine (PM). The goal was to empower parents in assisting their children to adopt healthier lifestyles.

**Methods:** We conducted a pre-post pilot intervention study targeting parents of 3-6-year-old children. Thirty parents participated in a two-module intervention delivered through both virtual and face-to-face training over a three-month period. The educational content consisted of two main components emphasizing the management of the six essentials based on PM, known as "Setteh-e-zarurieh." We provided general education and specific recommendations, considering individual differences, family conditions, and children's temperaments based on the principles of health maintenance outlined in "Osul-e-hefz-al-sehheh" within the context of PM. The impact of the intervention was evaluated using online questionnaires administered before and 2-4 weeks after the intervention.

**Results:** Significant improvement was observed in general healthy lifestyle (2.56 vs. 2.84;  $P=0.001$ , pre-post, respectively). Also, physical activity (2.17 vs. 2.46;  $P=0.02$ ), evacuation and retention /detoxification (1.97 vs. 2.94;  $P<0.01$ ), environmental health (2.31 vs. 2.81;  $P=0.002$ ) and mental health (2.93 vs. 3.15;  $P=0.05$ ) were improved significantly. Although there were improvements in sleep hygiene (3.01 vs. 3.14;  $p=0.31$ ) and healthy nutrition (2.36 vs. 2.47;  $p=0.32$ ), these changes were not statistically significant in the pre-post comparison.

**Conclusion:** Our findings underscore the value of providing parents with both virtual and face-to-face education to support their children's healthy lifestyles. Future research should explore the feasibility of an online platform that offers continuous educational support for parents, accessible anytime and anywhere.

*Keywords: Health; Life style medicine; Lifestyle modification; Pediatrics; Traditional Medicine*

## Sleep hygiene in the Healthy Living Guide (2024-2022) of Harvard School of Public Health: A Review from the Perspective of Persian Medicine

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**Background and Aim:** The Harvard School of Public Health annually publishes the Healthy Living Guide for the general public and researchers. This guide is based on credible international studies and research, which consistently attract the attention of medical researchers in the field of Lifestyle Medicine. Considering the importance of aligning Persian Medicine resources with Conventional Medicine, the sleep section of the two recent guides (2023-2022 and 2024-2023) is reviewed from the perspective of Persian Medicine.

**Methods:** This is a library-based review study where Persian Medicine resources such as Avicenna's cannon, Mofarreh-al gholoob, Exir-e-Azam, etc., were examined using keywords related to sleep and insomnia (nowm, yaghzeh, sahar, ect.). Simultaneously, the complete files of the two Healthy Living Guides were searched on the Harvard University online platform. The extracted content was then summarized.

**Results:** In both guides, the importance of sleep as a fundamental aspect of a healthy lifestyle is emphasized, akin to the necessity of water and food. In Persian Medicine, sleep is considered essential for maintaining health, much like a daily requirement for replacing materials that consumed (badale-ma-yatahallal). Attention to individual differences, including age, in the sleep needs is highlighted in both guides. According to Persian Medicine sleep requirements vary based on individual temperaments across different age groups. Quality of sleep is highly emphasized in the guides, and recommendations for improving it align with Persian Medicine sleep hygiene advises. These recommendations include maintaining a regular sleep schedule (circadian rhythm regulation), avoiding daytime naps, and ensuring a cool room temperature during sleep. The latest guide also introduces calming pre-sleep practices, such as deep breathing (meditative breathing) or performing stretching exercises like yoga, as simple and effective strategies for enhancing sleep quality.

**Conclusion:** A comparative analysis reveals that sleep quality, quantity, and sleep hygiene principles are crucial in both Conventional and Persian Medicine. This review demonstrates substantial alignment between the sleep measures recommended by Persian Medicine scholars and current researches.

*Keywords: Sleep hygiene; Life style medicine; Persian medicine; Insomnia; Health*

## Optimal Meal Timing According to Persian Medicine and Recent Studies on Circadian Rhythms

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**Background and Aim:** The timing of food intake is a contentious topic within the field of medical science. This research study compares the insights of Persian Medicine (PM) with the latest discoveries in circadian rhythm regarding the most favorable times for consuming food.

**Methods:** This descriptive interpretive review research examines the perspectives of PM regarding optimal meal times by analyzing PM literature and comparing it with recent English publications from the past three decades on the subject.

**Results:** According to PM, the ideal time for eating coincides with the most balanced period of the day in terms of temperature and light, with the night, early morning, and midday being deemed unsuitable times for food consumption. Traditional Chinese medicine considers breakfast to be the most important meal and acts based on the movement of energy in the body, and traditional Indian medicine considers noon meal to be the most important meal and acts according to the activity of the Doshas in the body. Disturbance in circadian rhythms can lead to unhealthy metabolism and weight gain. People with nocturnal chronotype are more prone to eating disorders. Meal timing is intricately linked to the body's circadian rhythm, with variations based on seasonal changes, such as a preference for midday meals during winter. Circadian rhythms are 24-hour biological cycles primarily regulated by the suprachiasmatic nucleus (SCN) as the central clock, alongside peripheral clocks found in tissues. Light/darkness, eating/fasting, and sleep/wake cycles serve as triggers for a series of biological processes in the body. The synchronization of peripheral clocks with the central clock is crucial to maintain physiological processes' harmony. Human activities and nutritional patterns align with daylight hours, governed by the coordination between the SCN and the body's circadian rhythms present in nearly all cells. Ensuring peripheral clocks are in sync under the central clock's guidance is vital for achieving circadian alignment. The body's overall energy expenditure and thermic effect of food decrease at night. Carbohydrate oxidation and insulin sensitivity are highest in the biological morning and lowest in the afternoon, suggesting a preference for consuming carbohydrates in the morning and fats in the afternoon. As the body exhibits a higher calorie burn rate from the afternoon to early evening, the largest meal should be consumed in the evening. Digestive enzyme and hormone secretion levels peak in the mornings and afternoons, emphasizing the importance of regulating meal timings beyond the early morning, peak of the day, and late night hours.

**Conclusion:** Both Persian Medicine and recent insights on circadian rhythms advise against consuming food during the early morning, peak of the day, and late night hours for optimal health benefits.

*Keywords: Persian Medicine; Circadian rhythms; Main meal; Diet; Digestive enzymes*

## Investigating Some Social Factors Affecting the Decision for Wet Cupping

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**Background and Aim:** Wet cupping is one of the medicinal methods in Persian medicine. To obtain more beneficial effects, it is necessary to pay enough attention to the correct principles of its performance. The purpose of this study is to determine some social factors influencing the decision to perform wet cupping.

**Methods:** This cross-sectional descriptive study was conducted on 1323 people in the Mashhad, Sabzevar, Saveh, and Birjand cities during 2020-2022. The samples were selected in an easy and accessible way. A researcher-made questionnaire was used for data collection, and it was completed by self-report. Data analysis was done using SPSS-24 software. Frequency, mean, and standard deviation were used to describe the data, and the Kruskal-Wallis non-parametric test was used to analyze the data. A significance level was considered less than 0.05.

**Results:** The participant's average age was  $34.91 \pm 11.75$ . %33.9 (448 people) of the participants had university and seminary education, and %46.9 (620 people) had an average economic status. The most common reason for wet cupping was to health maintain (57.7% - 763 people). Due to previous acquaintance, %35.4 (468 people) of them met it, and %68.6 (501 people) of them chose the Persian Medicine Specialist to receive traditional medicine services. A statistically significant difference was observed between education and economic status, the reason for doing it, and how to meet and receive services ( $p=0.001$ ). A statistically significant difference was also observed between economic status and the reason for performing and receiving services ( $p=0.001$ ).

**Conclusion:** The results showed that more than 30% of the participants had university and seminary education and about 50% had an average economic level. This finding shows that Wet cupping not only is a forced action due to low education and economic conditions, but also, It is a completely targeted and chosen action. In this study, the most common (57.7%) reason for Wet cupping was to health maintain. This can be an indication of the society's belief in the teachings of authentic Persian medicine regarding the priority of health over treatment. As a result, society's acceptance of manual procedures, especially wet cupping, is increasing. There are various social factors on the decision to do it. Also, there are different claimants who do not have the necessary licenses in this field. The sum of these factors shows that it is absolutely necessary to give sufficient awareness to the society through the media, to use Persian medicine experts to monitor the correct performance of Wet cupping and also to observe its principles in reputable centers.

*Keywords: Persian Medicine; Sabzevar; Social factors; Wet cupping*

## Exercise in children and adolescents in Persian medicine viewpoint and a comparison with modern sports sciences: a review study

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**Background and Aim:** Today, the importance of exercise in both maintaining health and preventing diseases among children has been proven in numerous studies. According to Persian medicine, there are several recommendations to maintain and improve health among different ages, and exercise is one of the most important of them. This study investigated the basics of physical/exercise activities recommendations in children and adolescents in order to maintain their health in both Persian medicine and sports sciences.

**Methods:** This study has been done with a review of the original sources of Persian medicine and the book of sports in Persian medicine, as well as the sources and articles of modern sports sciences.

**Results:** The findings can be discussed in two general parts: A- Persian medicine: For children, physical activity starts from the time of infancy in the form of moving in the mother's arms, moving in the cradle and rubbing the body. With the growth and strength of the child's body, he/she should play and run and jump on the smooth ground. When children reach the age of 7, they should do more physical activity, especially before eating, and when their bodies get enough strength, they can also engage in exercise. After the age of 10, children can do more intense exercise and plays. When puberty occurs, they should not stop exercising. However, as they approach the age of 14, they should avoid very intense workout and sitting for long periods of time, and moderate intensity exercise activities should be chosen. Exhilarating games in nature, wrestling, swimming, horse riding may be recommended for adolescents. B- Modern sports science: Babies and infants should not be swaddled for more than 1 hour a day and should be allowed to move their arms and legs. As the child grows, he/she should daily do all kinds of physical activities such as rolling, crawling, jumping, catching, throwing, running, etc. to develop his/her motor skills. After the age of 6, gradually do more complex skills such as cycling, swimming, skating and exercise-related plays for at least 2 hours a day with different intensities. In addition to aerobic exercises, resistance exercises with body weight, and safe gym equipment, can be prescribed by experienced coach. After 7 years old, they can start structured training and do a variety of exercises to improve aerobic endurance, muscular endurance, strength, flexibility, and balance for all-round development, then teenagers are allowed to enter semi-professional activities and do specialized exercises. From the age of 18, the performance stage will be excellent and the training become very specialized.

**Conclusion:** Based on our findings, both sciences pay attention to the physical/exercise activities among children and adolescents. Age is an important factor for classifying the level of exercise activity in children so that, according to age classification, recommendations may be various. For younger, the activities are recreational; The older the child, the more specific the activity. Physical/exercise activities recommendations are suggested according to the child's ability, age, development and even puberty, in both Persian medicine and sports sciences.

*Keywords: Children; Exercise; Physical activity; Persian medicine; Sports science*

## Link between accustomedness and temperament, maintaining health and treating diseases in Persian medicine – A brief overview

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**Background and Aim:** Persian medicine is a science that identifies the factors affecting the human body in healthy and unhealthy conditions in order to maintain the existing health and restore it in case of lack of health. Therefore, knowing the position of the factors affecting the body can help us to use the principles and teachings of this science to maintain and improve health or treat diseases. Accustomedness is one of these factors. Our main goal in this research was to investigate the effect of accustomedness on the temperament and the state of health and illness.

**Methods:** Qualitative content analysis. Assumptions: • Is the accustomedness effective on material dysstemperament • Is the accustomedness effective on non-material dysstemperament • Is the acceptance limit of accustomedness, only damage to functions or change of them • What is the role of accustomedness in “Ajnase Asharah” and how is it measured.

**Results:** After the three stages of this Method (collecting, organizing and coding), qualitative data analysis about accustomedness was done based on the research questions. Finally, a conceptual module was created in this field with the main branches of the accustomedness and its components, intervening factors and components affecting the accustomedness, the effect of the accustomedness on temperament and dysstemperament, the relationship between the accustomedness and prevention and treatment measures. This conceptual model determined the answer to some questions, although some ambiguities still remained. Accustomedness and effective components: - Accustomedness - Secondary nature - Short duration / long duration - Repetition / reproduction / subtraction / reduction - In a healthy temperament / In an unhealthy temperament - Acceptable / Unacceptable - It causes disease / does not cause disease / intermediate state - Effective in temperament/ Ineffective in temperament - Increasing production of humor /Consumption or decreasing production of humor - Harmful to natural functions / Non-harmful to natural functions - Effective in the quantity and quality of drug selection / Ineffective in the quantity and quality of drug selection - Quick correction / Slow correction

**Conclusion:** According to the current research and the review of the literature, the relationship between the accustomedness and the questions of this research is confirmed. The relationship and mutual effects between accustomedness and Ajnase Asharah are frequently mentioned in the Canon of medicine (Written by Avicenna). Due attention should be paid to this issue when it comes to preventative and therapeutic measures. Such measures include maintaining health, prescribing medication, adjust moderating the congenital temperament and dysstemperament which are done slowly and with difficulty. Also, in strengthening good accustomedness and changing the negative ones, full attention to the relationship and mutual effects of the two aforementioned topics are of utmost importance. But more research is needed to determine about the effects. Our limitations in this study included the breadth of content, the lack of appropriate measurement tools, lack of resources and research background, the possibility of bias in sample selection, the researcher's inability to control unwanted variables, and time limitation. We hope that this content can be useful in more thinking about practical and effective concepts in health, and small step for effective applied research in Persian medicine.

*Keywords: Persian medicine; Accustomedness*

## Investigating the effect of proper sleep from the perspective of Iranian medicine on the prevention and treatment of diabetic patients

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**Background and Aim:** The increasing number of non-communicable diseases, which is due to the lifestyle and many factors affecting the society and the health system, has led to a decrease in the quality of life, the complications of the disease and the costs imposed on the people and the health system. Diabetes is a chronic, non-communicable disease and the most common metabolic disease in the world. The prevalence of diabetes in Iran is reported as 10.3% according to the statistics of the World Health Organization. And it is predicted that this number will increase to more than 9.7 million people in 2045. Much research has been done regarding the important role of lifestyle in this disease. In the sources of Iranian medicine, a special place has been defined for the influence of the principles of health preservation and disease prevention. One of the most important health measures in Iranian medicine is the amount and quality of sleep. The purpose of this study is to investigate the amount and pattern of sleep in the prevention and treatment of diabetic patients.

**Methods:** By reviewing Iranian medical texts based on keywords related to the causes and symptoms of diabetes, we investigated the quantitative and qualitative effect of sleep based on the restorative sleep pattern in Iranian medicine. Also, the effect of sleep on diabetes was also investigated in new databases.

**Results:** In the sources of Iranian medicine, there is a direct relationship between proper sleep and prevention of diseases related to emtela, including diabetes. In modern medical studies, there are many articles on the effect of other factors related to lifestyle on diabetes, but the number of studies on the effect of sleep is limited and only on the quantity and hours of sleep. And no study has been done on the quality and effect of sleep on diabetes.

**Conclusion:** By modifying the sleep pattern quantitatively according to the phenotype and physical condition of each person as well as the quality of sleep with the patterns defined in the sources of Iranian medicine, it is possible to help improve the symptoms that lead to the progression of diabetes.

*Keywords: Diabetes; Education; Lifestyle; Traditional medicine; Hygiene; Sleep*

## The effects of exercise on endometriosis in the perspective of modern medicine and the works of Avicenna and Razi

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**Background and Aim:** Endometriosis is the misplaced presence of uterine endometrial tissue in the abdominal cavity and rarely in other parts of the body. Endometriosis with the prevalence of about ten percent and unknown etiology among women in their reproductive age causes severe pain, bleeding and neurological complications and sometimes infertility. It is considered a problem in health systems and changes the quality of patients' life. Therefore, attempts to find suitable solutions for the treatment continue. Lifestyle has a great impact on endometriosis, and various articles have confirmed this issue. Many studies have been conducted on nutrition and exercise. Traditional Iranian medicine with a history of thousands of years is based on logical and holistic principles in eliminating the cause and the following symptoms of this disease. It has simple and appropriate treatment prescriptions and it applies lifestyle modification at the beginning of the treatment of any disease. Since lifestyle in Iranian medicine has six areas, the purpose of this study is to investigate the relationship between exercise and endometriosis

**Methods:** Since endometriosis is not directly mentioned in traditional medicine, diseases similar to endometriosis were investigated under "Uram Rahem". For the research review, Ibn Sina's book "Al-Qanun fi Tib" and "Al-Murshid fi Tib" by Razi were investigated. The research about uterine tumors was carried out in the treatment section, the basics, "Hefzosseha" or hygiene section, and the concept of exercise or "Riazat" with the keywords "endometriosis" and "exercise". Scientific databases such as Google Scholar and PubMed were investigated and their commonalities and contradictions were checked with each other

**Results:** Ibn Sina considers exercise to be the most important principle to maintain health. Razi also considers exercise to be one of the necessities in cleansing, eliminating toxins and preventing the retention of waste materials, and if these harmful substances are correctly removed from the body, the occurrence of all kinds of swellings, tumors and cancers will be reduced. Traditional medicine considers not a very heavy exercise, after a long night's sleep and the elimination of body waste, without stomach accumulation, under the condition appropriate to the season, age, sex, and temperament of each person. It is better to take a short bath after exercising. Studies of modern medicine have shown contradictory results on the effect of exercise on endometriosis, although the conditions of exercise have been different in the studies, generally, medical research emphasizes on the exercise that is gentle and not heavy, and the effect of exercise can be seen on the increase of cytokines and the decrease of estrogen

**Conclusion:** It seems that in order to prevent endometriosis and improve the quality of life of affected people, it is effective to do mild exercise under certain conditions strengthening the body and not causing weakness and damage to body parts, but conducting more detailed studies in this regard is in accordance with the Iranian medicine recommended conditions, which leads to the elimination of body wastes, improves blood supply and proper oxygenation in the body's cells, seems essential in controlling the disease and pain of endometriosis

*Keywords: Persian Medicine; Exercise; Endometriosis, Razi; Avicenna*



## Contributions of Traditional Persian Medicine lifestyle principles in primary health care: An evidence-based review

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**Background and Aim:** Traditional Medicine (TM) is widely used and holds significant potential for increasing Primary Health Care (PHC) coverage and achieving Universal Health Coverage (UHC), especially in developing countries. Persian Medicine (PM), an ancient form of TM, encompasses lifestyle principles known as “Hifz-o-Siha” that aim to maintain and improve health. This study seeks to explore whether lifestyle modifications based on PM can effectively promote health within the framework of PHC.

**Methods:** We conducted searches across various databases including Science Direct, Scopus, PubMed, and Google Scholar. Our search terms included Traditional medicine, Persian, Iranian, Health maintenance, Education, and Primary health care.

**Results:** Three randomized clinical trials conducted between 2017 and 2019 examined the impact of educating individuals about PM’s lifestyle principles on their quality of life and healthcare utilization. The results indicated significant improvements in all measured outcomes. Furthermore, six clinical trials focused on PM dietary modifications in the treatment of conditions such as obesity, infertility, nephrotic syndrome, and non-alcoholic fatty liver disease. In all of these studies, PM diets demonstrated significant efficacy when compared to conventional medicine.

**Conclusion:** Lifestyle modifications based on PM recommendations have the potential to positively influence PHC and promote overall health. However, the incorporation of PM into national health systems faces challenges, primarily due to the limited availability of supporting evidence.

*Keywords: Primary health care; Persian Medicine; Public health; Lifestyle*

## Nutritional and behavioral strategies to prevent abortion and increase fertility rate based on the basics of Persian Medicine

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**Background and Aim:** Fertility is a category worthy of attention. Considering the prevalence of abortion and its complications, it is very important to use all the therapeutic and preventive capacities in this field. It is one of the schools of complementary and accepted medicine in the world assemblies of Persian medicine (PM). In this article, based on the basics of PM, there is a simple and available solution to reduce Abortion cases are presented as well as increasing the fertility rate.

**Methods:** This study was conducted as a research review on PM books, including the canon of Hakim Abu Ali Sina, Kholasat OL Hekmah ,Makhza OL Advieh, as well as the review of related common medicine and TPM articles from PubMed, Google Scholar, SID databases.

**Results:** One of the concepts of PM is the stimulation and relief of moisture. One of its important reasons can be mentioned seasonal changes, foods, drugs and severe physical and mental changes. In the sources of PM, the uterus is described as a nervous organ and is very affected by stress. and the mental conditions of people and it is also influenced by food and behavioral stimuli, such as foods that stimulate the uterus, which should be avoided in people with a history of miscarriage and in the days try to get pregnant, fenugreek, walnuts, raw garlic and onion, red bean, chickpeas, sesame, pepper, ginger, and saffron, spicy vegetables such as tarragon, savory, thyme can be mentioned as those foods that should be avoided. And the reliever foods such as quince paste, roasted lentil powder, and Kebab with sumac is recommended. Among the behavioral things before pregnancy that stimulate the uterus, we can also mention bathing during menstruation and having frequent coitus for fertility and during pregnancy, as well as the illusions or imaginations of the person are also stimulating. For example, in the PM books, it is forbidden to look at red objects in order to stimulate the blood and increase the bleeding. One of the effective solutions in this field is that the person who is trying to get pregnant should avoid traveling, long walks, standing for long periods, arguing, stress, sadness, and extreme anger, and recommending behavioral relievers such as smelling rose water and Total physical, mental, sexual relaxation is given.

**Conclusion:** According to the basics of PM, many nutritional and behavioral solutions can be offered to infertile couples with an unknown cause or people with a history of frequent miscarriages to increase the fertility rate and reduce the number of miscarriages by soothing the uterus and avoiding uterine stimulation. This category requires effective communication between experts in the field of infertility and PM experts and conducting the necessary research in this field.

*Keywords: Persian medicine (PM); Recurrent miscarriage; Stimulate; Reliever; Fertility*

## Evaluation of Persian life style and COVID-19 intensity in Rafsanjan cohort members from the perspective of Persian medicine in 1400, a pilot study

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**Background and Aim:** The lifestyle in Iranian traditional medicine includes six factors, the balance of which can help in maintaining health and preventing severe diseases. These six factors are: 1. Stress and emotional symptoms, 2. Nutrition, 3. Physical activity and exercise, 4. Sleep and wakefulness, 5. Lack of constipation and 6. Weather. Although today the connection of some of these factors with Covid-19 has been determined to some extent, considering the new emergence of this disease and its high casualties, obtaining more information in this regard can help improve public health and reduce the burden of the disease. Considering these conditions, we decided to do a retrospective study of 6 factors in lifestyle with three components of measuring the severity of covid disease in a pilot group of 52 people with corona disease, whose information is in the cohort system of Rafsanjan University of Medical Sciences in It was registered in 1400.

**Methods:** This pilot study was done cross-sectionally. First, the information of about 52 patients with COVID was extracted from the cohort system, and after obtaining consent and necessary explanations and completing the demographic information, the data related to the measures of the severity of the disease, oxygen level, duration of the disease, and hospitalization were completed. Finally, a self-made questionnaire to determine the temperament before the corona disease and measure the lifestyle components was asked over the phone and entered in the files. Then the obtained information was analyzed by SPSS software version 21.

**Results:** The average age of the participants was  $52.33 \pm 9.66$  years, about 60% of the participants were women and 40% were men, and about 75% of the participants had a history of illness and drug use. In general, about 60% of the participants had an optimal oxygen level above 93%, and about 52% of people had experienced lung involvement during the disease. It seems that the type of temperament affected the lung involvement of patients, so about 52% of people with moderate temperament, 18.5% of people with cold temperament, and 29.6% of people with hot temperament had lung involvement ( $P=0.049$ ). Also, a significant difference was observed in the sleep disorder and blood oxygen levels of patients, so 19% of people with sleep disorders had oxygen levels less than 93 ( $P=0.031$ ). About 63% of people with a history of drug use had lung involvement ( $P=0.037$ ) and among people who had lung involvement, 18.5% of them had a history of diabetes ( $P=0.024$ ).

**Conclusion:** It seems that the small size of the sample caused the non-significance of most of the variables in this study. Of course, it is helpful to carry out an investigation in a higher volume. In the other two cases, due to the multifactorial nature of the case, such as age and underlying diseases and small volume, it needs further investigation with a higher sample size.

*Keywords:* COVID-19; Persian life style; Persian medicine

## The relationship between arthritis and digestive system perspective of Persian medicine

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**Background and Aim:** Joint pain is one of the common problems that manifests in various forms such as osteoarthritis, rheumatoid arthritis and gout. In this research, the relationship between the digestive system and arthritis has been investigated in the sources of Persian medicine and new scientific articles.

**Methods:** This is a summative qualitative content analysis that focused on Persian Medicine (PM) texts from 2th to 13th AH centuries. In order to investigate the relationship between the digestive system and arthritis the causes of joint diseases were studied from the main textbooks of Persian medicine Also, keywords were searched in scientific databases such as Web of Science, PubMed, Scopus, Google Scholar and SID.

**Results:** In this research, it was found that digestive problems play important role in causing joint pain by producing inappropriate humor and various dysmperament (suzmezaj) in the joint. The relationship between overweight and metabolic syndrome with knee osteoarthritis has been shown in the articles. This problem is known in Persian medicine with the effective role of indigestion in causing excess weight by cold and wet dysmperament. The production of inappropriate humor in the stomach and liver and their fall towards the joints is another factor in the occurrence of joint pain in Persian medicine. In new studies, the role of intestinal microbiota in the development of arthritis has been emphasized. Joint pain, stiffness and arthritis manifestations in inflammatory bowel diseases are another evidence of this connection.

**Conclusion:** Based on the Persian medicine texts, disorders of the digestive system play a main role in causing arthritis. New scientific findings, such as the relationship between intestinal microbiota and arthritis confirm this idea. More studies are needed to evaluate comprehensively.

*Keywords: Arthritis; Digestive system; Persian medicine; Microbiota*

## Al-Razi's Al-Tibb al-Muluki; as a guide book to reform today's food style

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**Background and Aim:** One of the physicians' problems during history has been the unpleasant taste of their prescribed medications. To encourage their patients toward the use of these medications, they provided their patients with rational or mythical arguments. To disentangle this problem, Muhammad ibn Zakariya al-Razi (864-925 CE), the renowned Iranian physician, embarked on composing a comprehensive book (Al-Tibb al-Muluki) as to the slow and mellow treatment with various foods so that the unpleasant taste of medications would not annoy sensitive patients like kings, the affluent, children, and women. As Al-Razi put it, harsh treatments and bitter medications are heavy on the soul of these people and cause their intense hatred toward medications, thereby quitting their treatment. This makes their disease worse and extended and their treatment difficult; it may even lead to their death. The purpose of this article is to investigate how to use the information of Al-Tibb al-Muluki book to reform today's food style.

**Methods:** This research has been written through gathering data via library-documentary method, based on book of Al-Tibb al-Muluki.

**Results:** In this book, Al-Razi cites every disease, from head to toe, with short descriptions. After mentioning every disease, he states its prevention and treatment with multifarious foods and spices. To prevent and treat via foods, he adopts two methods; in the first part of the book, he prescribes some foods for different diseases with the number of times as well as the quantity patients should consume those foods. In the second part, to prevent and treat various diseases, he mentions some spices that patients should use when cooking their food. The second part of Al-Razi's book may aim at those who cannot afford some expensive foodstuffs. In this vein, they can treat themselves by buying cheaper spices and adding them to their common foods and also reform their food style.

**Conclusion:** Al-Tibb al-Muluki has been written with simple and fluent prose, and Al-Razi has avoided using specialized expressions as far as possible. It is because the readers of Al-Razi in this book, like those of the books Al-Tibb al-Mansuri as well as Al-Hawi fi Al-Tibb, are not just students of medicine who are the physicians of the future, but also the common people who are literate on average. As Al-Razi put it in the book himself, no one is as eager as him to lessen the sufferings and pains of these common people. Accordingly, it may be claimed that Al-Razi has written this book more for the common people than for the kings – despite its name. The cause of naming this book as kings, what is more, has been to preserve it for future generations as well as for the people to follow the lifestyle of their kings. To modernize the nourishment measures that Al-Razi brings up in this book to preempt and cure diseases (all the more, the second part of the book which discusses the spices) can be very fruitful and functional for the rectification of today's food style.

*Keywords:* Al-Tibb al-Muluki; Al-Razi; Food style; Persian medicine

## Psychogenic Fever in Medieval Persia

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**Background and Aim:** Psychogenic fever is one of the most common psychosomatic diseases in conventional medicine. This disease is elevated core temperature due to psychological stress. Stress threatens health, so it is essential to find preventive methods which are more effective and result in fewer complications like fever of unknown origin (FUO). Medieval ancient scholars have introduced some type of fever or hyperthermia. This article presents the psychogenic fever according to Persian medicine.

**Methods:** Reference Resources of Persian medicine related articles on psychogenic fever from Scopus and PubMed were reviewed.

**Results:** Through the ensuing centuries, definition, mechanisms, types and etiologies of fever had been discussed. Ancient Persian physicians determine some etiologic factor for fever such as grief, distress, anger and fear. In Persian medicine “psychogenic fever or hyperthermia” may be the type of fevers that occurs due to emotions interaction like grief and distress. In addition, preventive and therapeutic methods are discussed for these types of fevers.

**Conclusion:** In recent decades psychosomatic diseases like psychogenic fever are more discussed. Psych has the effect on body. Stress is life-threatening; so, with utilizing of preventive and curative methods of traditional medicine, higher level of health will be achieved.

*Keywords: Psychogenic fever; Psychosomatic; Persian medicine; Stress; Distress; Grief*

## Investigating the Effects of the Health Principles of Persian Medicine on the Treatment of Infertility

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**Background and Aim:** The importance of having children for the continuation of human life, the growth and excellence of society and the preservation of the family is not hidden from anyone. One of the many problems of human societies is the inability to have children. Many problems caused by infertility among couples, such as decreased sexual desire, anxiety, depression, as well as problems in interpersonal relationships on the one hand, and decreasing the population rate and having a population that is going towards old age on the other hand, make this issue more important. The aim of this study is to determine the effect of modifying the health maintenance principles of Persian medicine on the treatment of infertility.

**Methods:** In this study, the sources of Persian medicine such as Canon of medicine, Kamil al-Sana'ah, Zakhire Kharazmshahi, Khalase al-Hikma, Al Hawi and Tib-e-Akbari were evaluated and analyzed with the aim of determining the effect of the six hygiene principles of Persian medicine (air, nutrition, sleep and wakefulness, movement and stillness, absorption and excretion of body substances, and mental states and its health) on the treatment of infertility.

**Results:** The results of our study showed that compliance with the principles of health preservation from the perspective of Persian medicine is effective on all aspects of human health, including reproductive health, and the Persian medicine scholars have prepared practical and useful lifestyle modification recommendations in six sections to maintain and increase fertility including paying attention to air modification (recommendations for maintaining health in different climates, different seasons and dealing with air pollution), nutrition, sleep and wakefulness, movement and stillness (exercise, massage and appropriate physical activity), absorption and excretion of body substances (proper retention of useful substances in the body and disposal of non-useful substances in different ways), and mental states and its health.

**Conclusion:** Compliance with the six principles of maintaining health, and in other words, modifying people's lifestyle, can play an essential role in maintaining reproductive health and treating infertility. Future clinical studies should be conducted to evaluate their effects.

*Keywords: Infertility; Fertility; Persian medicine; Lifestyle*

## The effect of education of the six essential principles of health of Persian Medicine on the quality of life of rural women

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**Background and Aim:** Health maintenance and promotion is a vital pillar for development of societies. The World Health Organization (WHO) has introduced health promotion as the process of enabling individuals to control factors affecting their health. Hence, learning and practicing health-promoting behaviors and a healthy lifestyle is one of the best ways by which health can be promoted. Persian Medicine (PM) prioritizes health maintenance over treatment and provides practical and simple health recommendations known as the six essential principles of health. The purpose of this study was to investigate the effect of educating PM principles of health maintenance on the quality of life of rural women.

**Methods:** This study was designed as an interventional clinical trial. The six essential principles of health maintenance, including 1) air and climate; 2) sleep and wakefulness; 3) eating and drinking; 4) movement and stillness; 5) retention and excretion; and 6) mental and emotional states, were educated by health workers to 703 rural women in 32 villages of Kashan city during 4-6 sessions in a two-month time period. The Short Form Health Survey questionnaire (SF-36) was used for evaluating health-related quality of life (QoL) before and three months after the completion of training. To analyze data, SPSS 19 software and paired t-test and chi-square tests were used.

**Results:** Educating PM principles of health maintenance on the quality of life of rural women was found to be effective. Six of the eight QoL subscales demonstrated significant changes after receiving intervention. Improvements in the six subscales included the following: 1) “physical performance” with a change in the average score from 65.95 to 71.28 ( $p < 0.001$ ); 2) “physical role limitations” with a change in the average score from 58.48 to 67.78 ( $P < 0.001$ ); 3) “bodily pain” with a change in the average score from 63.93 to 67.04 ( $p < 0.001$ ); 4) “energy/vitality” with a change in the average score from 58.54 to 60.64 ( $p: 0.002$ ); 5) “social functioning” with a change in the average score from 68.78 to 71.54 ( $p < 0.001$ ); and 6) “emotional role limitations” with a change in the average score from 61.83 to 72.31 ( $P < 0.001$ ). Despite relative improvement, changes in domains of “general health perceptions” and “mental health” were not found to be significant.

**Conclusion:** This study showed that education of PM principles of health maintenance can improve the quality of life of rural women.

*Keywords:* Healthy lifestyle; Health maintenance principles; Persian Medicine; Quality of life; Women



## Management of Peripheral Neuropathy from the Perspective of Persian (Iranian) Medicine

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**Background and Aim:** Peripheral Neuropathy (PN) is a prevalent neurologic condition encountered by family physicians. It arises from various systemic, metabolic, and toxic factors. The most common treatable causes include diabetes mellitus, hypothyroidism, nutritional deficiencies, and chemotherapy-induced PN. Despite advancements in PN treatment, standard approaches remain elusive, prompting exploration of traditional and complementary therapies. Persian Medicine (PM), with its rich historical context, offers potential insights into PN management. This study aims to investigate PN management through the lens of PM.

**Methods:** A comprehensive literature review was conducted, focusing on PM manuscripts such as “The Canon of Medicine” and “Tibb-e-Akbari.” Within these texts, we explored references related to PN using terms like ‘pain’ (vajae), ‘numbness’ (khadar), and ‘neurologic disorders’ (amraz-e-demaghi). Data were meticulously collected and categorized.

**Results:** While the term “neuropathy” does not explicitly appear in PM manuscripts, the constellation of PN symptoms—numbness, tingling, and pain in the fingers, palms, and feet—resembles the presentation of “Khadar” disease in PM. Treatment modalities encompass lifestyle modifications, medicinal interventions, and manual therapies. Lifestyle Modifications: 1. Body Massages: Recommended for improving circulation and alleviating discomfort. 2. Seawater Immersion: Swimming in the sea may provide therapeutic benefits. 3. Sulfur Water Baths: Bathing in sulfur-rich mineral waters could offer relief. 4. Abzan Baths: Patients can benefit from traditional abzan baths containing warm oils and boiled meat water. 5. Dietary Considerations: o Easily Digestible Foods o Avoidance of Wine and Alcohol o Caution with Cold Water o Heavy Foods: Deemed potentially harmful. Simple medicines are usually preferred due to causing fewer unwanted side effects, which leads to higher patient compliance. Simple medicines are a single botanical, mineral, or animal agent such as cardamom leaves, lavender leaves, and turmeric. Compound Medicines The next step of treatment in PM is administration of compound medicines containing two or more simple medicines in pharmaceutical dosages. Many such compound preparations were prescribed by Persian practitioners when the PN was severe and intractable to other forms of treatment. Honey or diluted honey in boiled water (mae-ol-asal) formed the base for many traditional oral compound formulations.

**Conclusion:** Exploring the synergy between modern medicine and traditional wisdom can enrich PN management. Rigorous research, respectful integration, and open dialogue are essential for advancing patient care.

*Keywords: Neuropathy; Khadar; Iranian traditional medicine*

## The importance of Mizaj (temperament) identification criteria in children according to viewpoint of Persian medicine specialists

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**Background and Aim:** Traditional Persian medicine (TPM) is based on lifestyle. It seems that Mizaj (temperament) has a connection with people's lifestyles. Starting lifestyle modification in childhood can make it more lasting. To understand their lifestyle and modify it as much as possible, knowing children's Mizaj is crucial. TPM experts may differ on the significance of items when determining children's Mizaj. The purpose of this study was to gather the opinions of TPM professionals on the significance of each item in the children's Mizaj.

**Methods:** The aim of this cross-sectional study is to introduce a standard tool to determine a child's Mizaj from the perspective of TPM. Studying reference books on TPM and related published scientific articles was the first step. Obtaining the opinion of faculty members in TPM departments was the second step. To determine children's Mizaj, 26 items were extracted. Through email, 37 traditional Persian medicine experts with at least 5 years of clinical experience were invited to share their opinions on the importance of each item. A Likert scale with 11 scores was given to experts to share their opinions, ranging from zero to 10. The 0-10 score was defined as zero being not applicable, and 10 being the most applicable. The experts were instructed to send their responses via email within a month. To collect their responses during this period, two reminders were sent to them. R software was used to enter the collected views. The minimum, maximum, first quartile, second quartile (mean), and third quartile scores were calculated and reported separately for each item based on the determined Mizaj (hot/cold and wet/dry). An average score above 7 was the indicator of high use, moderate use was 5 to 7, and low use was less than 5.

**Results:** Out of the 37 experts, 25 sent their responses. The results were sorted based on the highest median value for variables of hot/cold and wet/dry respectively. Table 1 shows that Physical activity in general, impressibility of weather, touch, general appearance (fatty or muscular), anthropometric body measures (physique), quality of speaking, growth rate, comprehension, personality, and being influenced by foods were of great significance for hot/cold variables. Table 2 highlighted the importance of general appearance, depth of sleep, duration of sleep at night, sleep as a general index (quality/quantity of sleep), and anthropometric body measures for the variables of wet/dry.

**Conclusion:** According to the data analysis, TPM experts had diverse opinions on the practicality of certain criteria for children's Mizaj in practice. Nevertheless, their views were similar in other criteria. It is recommended to carry out further investigations, discuss the importance of Mizaj criteria, and design a Delphi study in light of this divergence. Therefore, preparing a standard questionnaire is necessary to determine children's Mizaj, and using a unified Mizaj questionnaire for research purposes is necessary.

*Keywords: Integrative medicine; Lifestyle; Pediatric; Persian medicine; Personalized medicine*

## Traditional Persian Medicine Recommendations in elderly chronic constipation

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**Background and Aim:** Chronic constipation is a common healthcare complaint in the elderly, especially in parallel with the growing elderly population. The prevalence of this functional gastrointestinal disorder is more than 20% in the elderly. It is defined by decreased frequency of bowel peristalsis, hard stool, and incomplete defecation. Age-related problems such as limited physical activity, inappropriate nutrition, underlying disease, depression, and multiple medications lead to constipation. Its diagnosis is by ruling out non-functional causes and based on the Rome IV criteria, and the treatment includes pharmacological and non-pharmacological interventions. Because of the public interest in using traditional medicine, in this study, we will discuss the general brief recommendations of Persian medicine for elderly chronic constipation.

**Methods:** In this library-review study, we overviewed the main sources of Persian medicine such as “Qanoon fi-Tibb” by Avicenna, and relevant articles in PubMed and Google Scholar databases about chronic constipation in geriatrics.

**Results:** In Persian medicine, primary and secondary constipation are mentioned, and temperament (Mezaj) changes correlated with aging conditions are linked to geriatric chronic constipation. General recommendations for elderly chronic constipation in Persian medicine references include these items: 1-The first step is lifestyle modification appropriated with age and temperament such as some interventions in how to eat and drink, physical activity (light exercises, walking, and even swing ride), and light and gentle massage 2- Consumption of light and easily digested food like soup and other liquid-based foods that use chicken, beetroot leaves, cabbage, and barley in them 3- Ginger jam, fig jam with walnut, and honey for breakfast 4- Vegetables such as beetroot leaves, celery, and chive with spice and olive oil can be served before the main course 5- Fresh or dried fruits such as figs and plums for snacks 6- Medicinal plants like *Pistacia lentiscus* L., *Carthamus tinctorius* L., *Calystegia sepium* L., and *Polypodium vulgare* L., which are prepared and consumed in specific ways and quantities

**Conclusion:** Due to the simplicity and availability of traditional medicine treatment packages, evaluating therapeutic programs based on them will be useful.

*Keywords: Persian Medicine; Chronic constipation; Elderly; Geriatric; Iranian Traditional Medicine*

## The effect of cumin essential oil on the total oxidant states changes and interleukin-6 in the model of gastric ulcer in rats

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**Background and Aim:** Considering the role of oxidative stress and interleukin-6 and the involvement of calcium in the parthenogenesis of gastric ulcer, and based on the antioxidant, anti-inflammatory and antimicrobial properties of cumin, in this experimental study, the effect of cumin essential oil on the serum changes of these factors was investigated.

**Methods:** The study was conducted on 6 groups of rats as follows: Group 1: Sesame oil (as cumin diluent), Group 2: Cumin essential oil 400 mg/kg, Group 3: Indomethacin with a dose of 50 mg/kg, Group 4: Indomethacin + Cumin essential oil 200 mg/kg, group 5: indomethacin + Cumin essential oil 400 mg/kg, group 6: indomethacin + omeprazole 20 mg/kg and all drugs received orally. After 6 hours of indomethacin administration, rats were anesthetized with ketamine-xylozine. Blood was taken from the heart and the head was removed. Total oxidant status (includes reactive oxygen and nitrogen species) and interleukin 6 were measured in serum using a commercial ELISA kit and total serum calcium.

**Results:** Indomethacin caused the destruction of the covering epithelium and the invasion of inflammatory cells and microscopic edema of the stomach tissue and caused a significant increase in interleukin 6 beta in the serum and the consumption of cumin in both doses of 200 and 400 mg reduced tissue damage and a significant decrease of this interleukin 6. Indomethacin significantly increased total oxidant status compared to cumin group alone. The amount of serum calcium in the group receiving indomethacin + omeprazole was significantly lower than the other groups, and the average of this factor was not statistically different among the other groups, in other words, indomethacin and cumin essential oil had no effect on the amount of serum calcium.

**Conclusion:** Indomethacin significantly increased interleukin 6 beta and total oxidant status and had no effect on calcium levels. Cumin essential oil decreased the amount of interleukin-6 and total oxidant status

*Keywords: Gastric ulcer; Interleukin 6 beta; Total oxidant status; Calcium; Cumin; Rat*

## Nutritional and Supportive Care for the Elderly from the Perspective of Persian Medicine

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**Background and Aim:** The progressive increase in the elderly population in many countries has caused attention to the health of this population. Persian Medicine (PM), considering the change in human characteristics, especially temperament at different ages, expresses special methods and programs to maintain people's health, which can be used in different societies to improve people's quality of life. In this study, the solutions provided by PM Hakims to maintain the health of the elderly have been investigated.

**Methods:** The data collection of the present study was done using Noor software, which is considered a comprehensive and reliable library of Persian medicine. Also, a search was made in related articles in data banks and finally, the contents were categorized.

**Results:** From PM view, maintaining health and strengthening temperament at all ages is based on maintaining moisture and instinctive heat (the body's basic metabolism), but due to the special physical conditions of the elderly, who have developed weakness in their powers and organs, more and better attention should be paid in this era. Considering the dryness and coldness of the temperament at this age, they need moisturizing and warming solutions. When are edible and behavioral? In addition, having enough sleep at night, gentle massage with oil after waking up, and then having a gentle walk. (Suitable exercises for the elderly induced gentle walking and swinging, as well as using chairs with movements similar to cradles). Smelling good smells, and not being constipated (it is normal to consume figs or plums before meals in summer and dried figs cooked in water and honey in winter) In terms of nutrition, increasing the frequency of meals and reducing the volume of each meal, continuing to consume water and honey, It is among the measures to avoid all phlegmatic foods (cucumber, watermelon, etc.) and sodas (excessive consumption of salt, eggplant, lentils). It is very appropriate to consume milk in the elderly because it is very nutritious and moisturizing (boiled with ginger if they can digest it), the best of which is goat's milk. Suitable vegetables include beets, celery, and leeks with olive oil before meals. Chicken feed and sheep muscle extract are among the nutritious foods suitable for this age. Also, blood sampling, especially Bloodletting, is prohibited in the elderly.

**Conclusion:** Considering the specific temperamental conditions of old age, it is possible to use the measures and solutions of Persian medicine to promote health and improve the quality of life.

*Keywords: Elderly; Persian medicine; Health; Nutrition*

## A review on the digestive protective effects of jujube in Iranian and modern medicine

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**Background and Aim:** Jujube (*Ziziphus jujuba* Mill.) from the Rhamnaceae family, is a native fruit of Iran. It has been available in the food basket of different societies in the world for many years as a rich and nutritious food. It also has medicinal and cosmeceutical properties. Jujube contains many bioactive compounds and has a wide range of therapeutic properties. It has a long history of use in traditional medicine, especially in traditional Persian medicine. In Persian, the dried drupes are known as "Annab". It has many pharmacological properties, which include hepatoprotective, anti-pruritic and tranquilizing effects for renal and bladder pain. Also, include antioxidant, anti-cancer, antimicrobial, neuroprotective, cardioprotective. *Z. jujuba* has been used to treat various gastrointestinal problems, such as constipation, diarrhea, chronic gastritis, chronic colitis, liver diseases, as emollient, laxative, in colorectal cancers, and IBD. The digestive effects of jujube have been discussed in Iranian and Chinese medicine. The purpose of this review is to explain the place of jujube as a food-medicine in Iranian medicine, emphasizing the effects of jujube on the digestive system from the mouth to the intestines.

**Methods:** PubMed, Scopus, Web of Science, EMBASE were searched, based on related keywords such as *Ziziphus jujuba*, red date, Chinese date, Chinese jujube, peptic ulcer, gastric ulcer, constipation, liver, hepatic, hepatoprotective, ulcerative colitis, inflammatory bowel disease, diarrhea, colon cancer, colorectal cancer. Data were collected from 2000 to 2024.

**Results:** According to the search results, jujube has good effects on digestive system diseases, especially liver diseases and metabolic syndrome. Clinical studies have pointed to the effects of jujube in the field of metabolic syndrome, antidiabetic, liver protection and constipation in children and adults, and *in vivo/ in vitro* studies have shown the effects of anti-ulcerative, chronic gastritis, chronic colitis, antidiarrhea, fatty liver, hepatoprotective and anti-colorectal effects. Jujube alone or in combination with other plants has been effective.

**Conclusion:** The good digestive effects of jujube have been well demonstrated in *in vitro* and *in vivo* studies, but few clinical studies have been conducted. Due to the many medicinal properties of jujube, more clinical trials are needed to utilize this potential.

*Keywords:* *Ziziphus jujuba*; Red date; Chinese jujube; Gastric ulcer; Constipation; Diarrhea; Hepatoprotective; Colorectal cancer

## Beneficial effects of apple fruit as a psychobiotic, Persian medicine's point of view

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**Background and Aim:** Psychobiotics are a type of bacteria that can improve mental health by interacting with the gut. Although their exact mechanisms are not yet understood, they have been found to modulate neurotransmitters such as serotonin and dopamine. Serotonin is linked to feelings of happiness, focus, and calmness, while dopamine and serotonin play a key role in mental health by affecting motivation and mood, particularly in conditions like depression

**Methods:** The search was conducted in various academic databases including Google Scholar, PubMed, Scopus, SID, and Magiran, along with reference to two key texts: “Kaplan and Sadock’s Synopsis of Psychiatry” and “Makhzan-Al-Adwiah”, a basic book on Persian medicine in pharmacology.

**Results:** In modern medicine, there is a diet referred to as “psychobiotic” that includes certain vegetables and fruits such as apples. This diet has been shown to reduce stress and depressive symptoms. Apples, in particular, are rich in quercetin, which is a plant-based phytochemical that boosts the production of brain chemicals like serotonin and dopamine. Additionally, the chromium found in apples can help increase neurotransmitters such as serotonin, norepinephrine, and tryptophan, which can regulate mood and emotions.

**Conclusion:** Certain foods recommended in Persian Medicine for mental health, such as almonds and apples, are now recognized as psychobiotics that can positively impact the gut microbiome and gut-brain axis to manage psychiatric disorders.

*Keywords: Apple; Psychiatry; psychobiotics; Persian Medicine*

## Insomnia of the elderly in Iranian traditional medicine

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**Background and Aim:** Today, with the increase in life expectancy, the elderly population has grown more than in the past. According to Avicenna, old age is an intermediate state between health and illness; It means that the elderly are a vulnerable group even if they are apparently healthy. Therefore, it is necessary to pay attention and take care of them.

**Methods:** In this review study, a search was conducted for the materials in TIM books such as Canon of Medicine, Hefz-al-Sehe Naseri and for the related studies in online databases such as PubMed and Scopus using the keywords sleep, sleep disorder, insomnia, nutrition, traditional Iranian medicine.

**Results:** One of the problems of old age is insomnia. According to Iranian medicine, the cause of it can be the dryness of the body, especially the brain, and it reduces the body's strength. In order to improve insomnia in the elderly, Iranian medicine recommends the use of some herbs, including lettuce, pumpkin, spinach, and cilantro, which, in addition to inducing sleep, are also useful for digestive problems such as constipation (which is common at this age). Recent researches have confirmed the sleep-enhancing and sleep-inducing effects of lettuce (its leaves and seed oil), coriander (increasing the speed of falling asleep and the integrity of sleep), and the anti-stress and anti-depressant effects of spinach. Another recommendation of Iranian medicine is massage and anointing with suitable oil, which, in addition to calming effects and improving sleep, also helps to eliminate dry skin (one of the common complaints of the elderly). Clinical studies also show that instilling violet oil in the nose is effective on insomnia.

**Conclusion:** Considering the recommendations of traditional Iranian medicine in improving sleep and some common problems of the elderly and the low complications of these recommendations, further research in this field can help improve the quality of life of the elderly.

*Keywords: Sleep; Insomnia; Traditional Iranian medicine; Persian medicine*



## Dairy Consumption and Its Association with Anthropometric Measurements, Blood Glucose Status, Insulin Levels, and Testosterone Levels in Women with Polycystic Ovary Syndrome (PCOS)

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**Background and Aim:** We conducted a systematic review and meta-analysis on dairy consumption and its association with anthropometric measurements, blood glucose status, insulin levels, and testosterone levels in women with Polycystic Ovary Syndrome (PCOS).

**Methods:** This study conducted a comprehensive literature search using electronic databases like MEDLINE, Scopus, PubMed, Web of Science, and Google Scholar to identify observational and interventional studies investigating the relationship between dairy product consumption and PCOS. A meta-analysis was performed on clinical trial studies that examined the effect of a low starch/low dairy diet in PCOS subjects. Statistical analyses were performed using Stata version 16.0 (Stata Corporation, College Station, Texas, USA), and statistical significance was defined as  $p$  value  $< 0.05$ .

**Results:** Of the 1,313 citations reviewed, our systematic review identified 11 studies that met the inclusion criteria, comprising six case-control studies, four clinical trials, and one cross-sectional study. Case-control studies found limited evidence of an association between dairy consumption and PCOS. Intervention studies showed that reducing dairy intake along with reducing starch intake led to statistically significant improvements in anthropometric and metabolic measures including weight (SMD: -8.43 (95% CI: -9.01, -7.86)), BMI (-3.14 (95% CI: -3.35, -2.92)), WC (-6.63 (95% CI: -10.70, -2.57)) and WHtR (-0.04 (95% CI: -0.07, -0.01)), insulin fasting, insulin fasting (-18.23 (95% CI: -22.11, -14.36)), insulin 120 minutes (94.05 (95% CI: -157.67, -30.42)), HbA1c (-0.27 (95% CI: -0.37, -0.17)) and Ferryman-Gallwey score (-2.07 (95% CI: -2.07 (-2.98, -1.16))). No significant reduction was found in fasting glucose, 2hours glucose, and percent of fat mass, and no significant association was found between the two groups in terms of mean free testosterone after intervention.

**Conclusion:** The findings of this systematic review show limited evidence about the association between dairy consumption and PCOS. The interventional studies suggest that low-dairy/ low-starch diet may improve some anthropometric and metabolic measures in PCOS women.

*Keywords: Dairy consumption; Polycystic ovary syndrome (PCOS); Anthropometric measurements; Blood glucose; Insulin levels; Women; Systematic review; Meta-analysis*

## Application of honey to heal episiotomy and caesarean section wounds: A systematic review of clinical evidence

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**Background and Aim:** Honey is a natural product from the nectar of flowers collected by honeybees. Honey has been used in diets and medicines for thousands of years. The advantages of the use of honey for wound healing are the acceleration of dermal repair and epithelialization, immune response promotion, and the reduction of infections with pathogenic microorganisms. Episiotomy and caesarean are the common procedures during childbirth. They cause pain, discomfort, wound, and scar. The use of honey in wound treatments is suitable due to its anti-inflammatory and antioxidant activity. It eliminates free radicals, and acts as a vasoconstrictor and inflammation, edema, and exudate in wounds decrease. Most of the wounds such as surgical wounds or abdominal wall and perineum wounds have been confirmed to be well treated with honey. Therefore, this study was conducted to determine the efficacy of honey used for the treatment of wound of caesarean and episiotomy in clinical trials.

**Methods:** Electronic databases, including Web of Science, PubMed, Scopus, Google scholar, and SID have queried with the keywords “honey” OR “honey bee” OR “propolis” OR “royal jelly” AND “female disease” OR “women’s health” OR “gynecology” OR “cesarean” OR “episiotomy” in the title and abstract from inception up to January 2024. Only clinical studies articles with English and Persian full-texts on surgical wounds from a cesarean section or episiotomy were included in our study. A manual search of the references of the retrieved articles were also evaluated for relevant studies and supplement the electronic search.

**Results:** Six clinical trial articles (total of 674 women) were reviewed and investigated the effects of honey. In all studies, honey was used topically (gel or cream) in wound care of caesarean (3 articles) and episiotomy (3 articles). Duration of treatment with honey was 4- 16 days.

**Conclusion:** Honey provided epithelization in wound care of caesarean and episiotomy. Honey increases the speed of infection control, healing process and pain reduction. Honey has a notable cleansing effect on wounds, stimulation of tissue regeneration, reduction of inflammation, edema and scar formation and effective wound debridement. Thus, topical products containing honey have significant healing potential for episiotomy and cesarean wounds, however, more studies are needed to prove this effect in the future.

*Keywords: Honey; Women’s health; Wound; Cesarean; Episiotomy*

## Therapeutic Application of Fruits in Diarrhea based on Persian and current medicine

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**Background and Aim:** Nutrition plays a crucial role in the treatment and management of diarrhea, including reducing the duration and recurrence of the condition. In this context, one of the frequently asked questions by patients is regarding the consumption of fruits and their types during diarrhea episodes, as some fruits may not only be unhelpful but can also exacerbate symptoms. This study reviews principles of Persian medicine and compares it with the relevant literature on this topic.

**Methods:** To investigate the perspective of Persian medicine, a library search was conducted using the keywords “gastric diarrhea,” “antidiarrheal,” “zarab,” and “heyzeh.” To review contemporary articles, the PubMed, Scopus, ISI, SID, and Web of Science databases were searched using the keywords “Fruit,” “Iranian medicine,” “Traditional Medicine,” “Persian Medicine,” “Diarrhea,” “Medical Plant,” and “Herbal Medicine” up to April 2024.

**Results:** According to Persian medicine, diarrhea has various causes and etiologies. In addition to general treatments for all types of diarrheas, specific treatments are recommended based on the cause, temperament of the disease, and whether it is acute or chronic. For instance, pomegranate, barberry, and sumac are particularly used for bile-related diarrhea. Persian medicine texts mention various fruits for treating diarrhea and improving symptoms, including pomegranate, quince, apple, banana, oak, mango, and jujube. Additionally, fruits from trees such as cornelian cherry, sumac, barberry, hazelnut, verjuice, raisin, and pistachio are also considered effective in diarrhea treatment. Despite the high significance of the topic, limited researches exist on the role of fruits in diarrhea and gastroenteritis. Cooked unripe banana, cooked peeled apple, cornelian cherry, and pomegranate peel were found to have antisecretory, antispasmodic, astringent, and antimicrobial properties, making them beneficial for treating diarrhea.

**Conclusion:** The findings of this study highlight the significant role of herbal therapies in managing diarrhea, particularly in pediatric gastroenteritis, where parents prefer to minimize the use of chemical medications. However, this aspect has been relatively neglected in the literature. Considering the diversity of effective fruits for treatment of diarrhea and the lack of sufficient clinical trials in this area, further research is warranted.

*Keywords: Persian medicine; Nutrition; Fruit; Diarrhea; Gastroenteritis*

## Whole grain Bread and Microbiome Flexibility: Exploring the Effect on Gut Health and Disease Susceptibility

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**Background and Aim:** The gut microbiome plays an important role in several physiological functions and immune responses. Recent studies have suggested that diet, especially whole grains, can affect the composition and function of the gut microbiome. However, there is little literature regarding the specific effects of whole grain bread consumption on microbiome flexibility, gut health, and disease susceptibility. This abstract will try to summarize the present literature in order to establish the relationship between whole grain bread consumption, microbiome flexibility, and implications for gut health and disease susceptibility.

**Methods:** This systematic review was performed by searching electronic databases for relevant literature in regard to the relationship between whole grain bread consumption, gut microbiome, and its association with gut health outcomes and disease susceptibility. Several electronic databases, like PubMed and Google Scholar, were searched for articles using keywords such as “whole grain bread,” “microbiome,” “gut health,” and “disease susceptibility.” Only human intervention trials and observational studies published in the period ranging from 2010 to 2024 were included.

**Results:** The review has gathered several studies that point out that whole grain bread consumption is associated with better microbiome diversity and composition. Whole grain bread, enriched with fiber and other bioactive compounds, serves as a prebiotic; it promotes growth and metabolism of beneficial bacteria, such as Bifidobacteria and Lactobacilli. This appears to be the mechanism by which these changes in microbiome composition might contribute to better markers of gut health, including increased SCFA production, improved gut barrier function, and reduced inflammation. For instance, whole grain bread has been found to increase the flexibility of the microbiome, which refers to gut microbiota adaptability and responsiveness to environmental changes. It is the sole feature that has established microbiome flexibility as a hallmark of a healthy gut microbiota and resilience against the pathogenesis of the diseases. The overall dysbiosis, that is an imbalance in gut microbiota composition, is associated with gastrointestinal disorder, metabolic disorders, and inflammatory diseases. Whole grain bread brings forth the promotion of the microbiome flexibility, which will reduce the susceptibility to gut-related diseases.

**Conclusion:** This review summarizes promising effects that whole grain bread may exert in promoting microbiome flexibility, gut health, and reducing the risk of disease. Consumption of whole grain bread brings about beneficial changes in gut microbiota composition, such as an increase in microbial diversity, gut barrier functions, and a decrease in inflammation. These effects, coupled with the potential for enhancing microbiome flexibility, underline the importance of whole grain bread in a healthy diet in achieving optimal gut health and reduction in the risk of gut-related diseases. Further investigation is required to elucidate the mechanisms by which whole grain bread exerts these effects and to determine its effects in a long-term perspective regarding gut health and diseases.

*Keywords: Whole grain bread; Microbiome flexibility; Gut health; Disease susceptibility; Prebiotics; Gut microbiota; Dysbiosis; Inflammation*

## Proofs regarding efficacy of “food restriction” regimen on the intestinal microbiome: a scoping review

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**Background and Aim:** Based on reliable Traditional Persian Medicine references, the first step in the treatment of diseases is compliance with dietary measures. Avicenna (Ibn-Sina) wrote in detail about disease’s dietary rules like food ban, food size reduction, or increase in the book “The Canon of Medicine”. One of the most important of the dietary rules, which is used in the treatment of diseases is “food restriction”. This is somehow equal to the “fasting” regimen known in modern nutrition knowledge. New researches emphasize the pivotal role of the gut microbiome in maintaining human health and also relating the intestinal microbiome to some of the common diseases like obesity, metabolic diseases, or even depression. In this scoping review, we assess some of the modern evidence on the efficacy of “food restriction” on gut microbiome.

**Methods:** This research is a scoping review. At first keywords “food restriction”, “calorie restriction”, “fasting”, “microbiome” and “microbiota” were used in databases like PubMed, Scopus, Web of Science, and Google Scholar, then data were classified and analyzed.

**Results:** Fasting regimen has different types like Intermittent fasting, Time-restricted eating, and Fasting mimicking diet. Based on some research, each of these fasting regimens could have a variety of effects on the gut microbiome, for instance, intermittent fasting could enhance the intestinal microbiome with specific genera of bacteria like *Parabacteroides distasonis* and *Bacteroides thetaiotaomicron*, in which this change could enhance metabolic health of the body. Also, Time-restricted eating, which means increasing daily fasting intervals to longer than 12 hours could increase the variety of intestinal microbiome. This shows that adjusting the time of food consumption without changing the quality of the dietary regimen could have a great impact on the intestinal microbiome and could enhance the relationship between circadian rhythms and metabolic health. A fasting-mimicking diet based on animal studies could adjust the gut microbiome in rats having inflammatory bowel diseases and even decrease inflammatory factors and increase the healing rate of damaged organs. Researchers suggest that this regimen could decrease metabolic and inflammatory markers of the body due to an increase in microbiome genus related to adjustment in the T-cells.

**Conclusion:** This work shows that different dietary regimens related to food restriction could change the intestinal microbiome, especially in the Firmicutes and Bacteroidetes eventually leading to positive impacts on metabolic status and decreased inflammation in the body.

*Keywords: Persian Medicine; Microbiome; Food restriction; Fasting*

## The effect of Lavender aromatherapy on reducing anxiety and stress in dental procedures

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**Background and Aim:** Experiencing anxiety and stress during dental procedures is a common and unpleasant reality that can significantly affect the quality of treatment. Aromatherapy, as a novel approach using essential oils from plants, aims to promote the well-being of patients. This study investigates the effectiveness of lavender aromatherapy in reducing anxiety and stress in dental clinics.

**Methods:** A thorough search was conducted in reputable scientific databases such as PubMed, Scopus, Web of Science, Google Scholar, and Cochrane Library to identify articles related to the study topic. Keywords “aromatherapy,” “anxiety,” “stress,” “dentistry,” “lavender,” and “randomized controlled trial” were used in this search process. After matching studies with inclusion and exclusion criteria, 11 studies were reviewed. Inclusion criteria were clinical trials, and exclusion criteria included review studies.

**Results:** 11 RCT studies with a total of 678 participants were included in this review. Meta-analysis results indicated that aromatherapy significantly reduced anxiety and stress in dental patients compared to the control group.

**Conclusion:** The evidence from this review suggests that lavender aromatherapy can be an effective complementary method for reducing anxiety and stress in dental offices.

*Keywords: Aromatherapy; Anxiety; Stress; Dentistry*

## Review and prioritization of single drugs effective in the treatment of head lice in selected sources of Persian medicine

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**Background and Aim:** *Pediculus capitis* is one of the most common health problems in societies. Considering the increasing resistance of existing drugs to this parasite, it is very important to find new and effective drugs for this problem. Today, the references of traditional and complementary medicine are considered valuable sources for finding new medicines. One of the holistic medical schools is Iranian medicine. In this study, we conducted a comprehensive review of traditional medicine references and summarized the single drugs recommended for this problem and prioritized them based on the principle of repetition and emphasis. The purpose of this research is to review, introduce and prioritize single drugs recommended for the treatment of head lice in Iranian traditional medicine sources.

**Methods:** This study was conducted in a review-analytical method based on selected valid references of Persian medicine. In this study, the recommended materia medica in the treatment of *Pediculus capitis* is based on Ibn Sina's *Al-Qunun fi al-Tibb* (Volume II) and in the books of *al-Abnieh an Haghayegh al-advieh*, *Tazkare Ulul Al-bab*, *Tohfah al-Momenin*, *Makhzan al-Advieh*, and *Taghvim al-Advieh*. At first, related keywords were searched based on books, and synonyms equivalent to head louse and louse eggs were searched. In the next step, the keywords found in the sources were examined and a complete list of recommended vocabulary in different books was collected. Then the synonyms of various nouns were searched and duplicate names were removed. Finally, the words were graded based on the number of repetitions in the sources and the emphasis of the author of the book, and the corresponding graph was drawn.

**Results:** In this research, 50 materia medica were found, of which 70% were herbal, 18% mineral and 12% animal. Based on the score assigned to the drugs, the highest score was related to beetroot leaves, followed by honey, mercury, and tar. Based on the score assigned to the drugs, the highest score was related to beetroot leaves, followed by honey, mercury, and tar.

**Conclusion:** The prioritization method recommended in this study can be a model for conducting similar studies in different diseases. Also, single drugs with the highest score can be used to select research ideas for interventional studies.

*Keywords:* Persian medicine; *Pediculus capitis*; Avicenna; *Al-Qanun fi al-Tibb*

## Vaginal Atrophy Management in Menopausal Women from the Perspective of Persian Medicine

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**Background and Aim:** Vulvovaginal atrophy (VVA), now known as genitourinary menopausal syndrome (GMS), is a progressive condition characterized by a constellation of genitourinary and sexual symptoms resulting from decreased estrogenic stimulation of the female genitourinary tract after menopause. Approximately 40-54% of postmenopausal women and 15% of perimenopausal women suffer from it. The main symptoms of this syndrome are vaginal dryness, burning and irritation, dyspareunia, loss of vaginal moisture and dysfunction during sexual activity, urgency and urinary burning, and recurrent urinary tract infections. Common options for managing VVA symptoms include lubricants and moisturizers, hormone therapy (local and systemic), selective estrogen receptor modulators, vaginal dehydroepiandrosterone, laser therapy, and non-pharmacological treatments. The choice of treatment for VVA depends on several factors, including symptom severity, patient preference, and treatment efficacy and safety. Approximately 50-70% of postmenopausal women use alternative remedies to relieve menopausal symptoms. Persian medicine, one of the oldest traditional medicine sources, can be considered as an important complementary and alternative approach. Given the similarities between the causes and symptoms of VVA and those described in Persian medical texts, it is likely that both conditions are related and can be classified under a single heading.

**Methods:** To conduct this narrative review focusing on the Persian medicine approach to manage VVA symptoms, a search was conducted through PubMed, Google Scholar, and SID, during the years 2019-2024, using the keywords “vulvovaginal atrophy”, “Vaginal dryness”, “Genitourinary syndrome of menopause”, “Vaginal atrophy”, “menopausal syndrome”, “Persian medicine”, “Iranian traditional medicine”, “herb”, “traditional medicine”. Also, the Canon of Medicine, Exir-e-Azam, and Tebb-e-Akbari were searched using the library study method with the lexical equivalents of the words “dryness of the uterus and vagina”, “uterine fissure”, in Persian and Arabic.

**Results:** According to Persian medical texts, lifestyle modifications and dietary and medicinal recommendations are the recommended methods for treating VVA. Almond milk, fatty soups, and violet syrup are among the dietary and medicinal recommendations. The topical treatments proposed are in the form of vaginal suppositories (forzjeh, hamoul), sitz baths (abzan) and vaginal enema (hoghneh) containing plant components and plant and animal oils with moisturizing and hydrating properties. According to Iranian traditional medicine texts, mucilage-containing plants such as Hollyhock, zucchini, and violet can be used to treat mucosal dryness. Oily wax prepared from duck or chicken fat is one of the most important animal products suggested for the treatment of VVA.

**Conclusion:** Reviewing the proposed treatments for VVA in Persian medical texts and comparing them with recent studies revealed that most of the Persian medicine-proposed drugs have moisturizing, mucilaginous, and anti-inflammatory properties, which have been shown to be effective in numerous studies. Further research is warranted to investigate the efficacy and safety of Persian medicine treatments.

*Keywords: Atrophic vaginitis; Vulvovaginal atrophy; Iranian traditional medicine; Persian Medicine*



## Review of the role of medicinal plants in the treatment of irritable bowel syndrome

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**Background and Aim:** Irritable Bowel Syndrome (IBS) is a prevalent gastrointestinal disorder affecting approximately 11.2% of the global population. Its hallmark features include chronic abdominal pain, intestinal distension, and irregular bowel movements, encompassing both constipation (IBS-C) and diarrhea (IBS-D), significantly impacting individuals' quality of life. Despite extensive research, no definitive pharmaceutical treatment for IBS exists, prompting exploration into alternative therapies, particularly herbal medicine, renowned for its multi-targeted approach and demonstrated efficacy in experimental and clinical settings.

**Methods:** This research is a review of the role of medicinal plants in the treatment of irritable bowel syndrome. The keywords used are “irritable bowel syndrome” and “Constipation” and “medicinal plants” and “diarrhea,” which were searched in Scholar search engine and databases such as PubMed and Web of Science in two phases: “irritable bowel syndrome” AND “Constipation” AND “medicinal plants” and “irritable bowel syndrome” AND “diarrhea” AND “medicinal plants.” The number of results after searching in the mentioned databases between 2015 to 2024 was 235 and 330, respectively. After excluding irrelevant and old articles, a total of 25 articles were selected.

**Results:** constipation is a prominent symptom of IBS. Padma Lax, a complex herbal blend from Tibetan guidelines, has been traditionally used for constipation relief and digestive aid. Traditional Chinese Medicine (TCM) shows promise in treating IBS-C, with favorable effects on associated constipation. Rosemary exhibits various therapeutic activities relevant to gastrointestinal motility disorders. *Plantago ovata* Forsk, a significant medicinal plant, is historically used for chronic constipation, IBS, and diarrhea. Mint, *Cyperus rotundus* L., and *Zingiber officinale* Roscoe are common in Iraqi medicine for gastrointestinal issues. Fermented plant-based foods, alongside a healthy diet, effectively treat IBS. Flixweed or fig consumption improves IBS symptoms, though not affecting abdominal pain severity or C-reactive protein levels. *Lysimachia vulgaris* L. extract exhibits antagonist activity on HT3-5 receptors, while rosemary and *P. guajava* possess anti-muscarinic properties. *Castanea sativa* Mill. wood extract exerts a spasmolytic effect on the intestine and bael fruit aids in both treating and preventing IBS. *Bacopa monnieri* (L.) Wettst. and peppermint oil also demonstrate therapeutic effects. The efficacy of Chang-Kang-Fang, an herbal combination in Traditional Chinese Medicine, is confirmed for treating IBS-D in mice. These herbal remedies not only alleviate diarrhea but also reduce intestinal inflammation and heal ulcers associated with IBS. However, formulations containing almonds with Carbohydrate fermentation may exacerbate symptoms of the disease.

**Conclusion:** The collective evidence underscores the efficacy of herbal medicines in mitigating IBS symptoms, such as increased bowel frequency, improved stool consistency, alleviation of abdominal pain, and enhancement of overall quality of life. However, the diversity in interventions and outcomes highlights the necessity for further research. Clinicians should exercise caution when prescribing herbal remedies, considering individual patient characteristics. Moreover, future studies should prioritize investigating the therapeutic properties of *At-ractylodes macrocephala* Koidz. in managing IBS symptoms.

**Keywords:** Irritable bowel; Constipation; Medicinal plants; Diarrhea

### An overview of antidotes in some Persian medicine resources

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**Background and Aim:** Antidote as a therapeutic agent that counteracts against toxins and poisons, has an ancient history. Persian medicine (PM) has a special definition of this concept as well as a rich background of natural remedies suggested to exert antidote effects. Considering the exposure to various types of environmental poisons in the modern life, finding the right agents to preserve the health of people is very important. This article aimed to provide a brief mechanistic classification of antidotes based on some credible PM resources. Also, it presents the therapeutic properties of antidote from the PM scholars' viewpoint, to compare with its definition in the modern clinical toxicology

**Methods:** This study reviewed Tohfe-al-momenin and Zakhireh Khārazmashāhi which are two of the most credible PM resources. The keywords related to the antidote concept included “Pādzahr, Bādzahr, Fādzahr, Teryāgh, Sam, Somoom, Adwieh Ghattāleh” in Persian language were searched in these books. Then, the suggested mechanisms of action were classified and discussed briefly. Also, various therapeutic applications of antidotes are presented from the perspective of PM scholars

**Results:** Physical removal, accelerated elimination, chemical neutralizing, pharmacological neutralizing and reducing the harmful effects of the poisons and toxins, are the main mechanisms mentioned for antidote effect in PM. In addition to negate the poisons effect, boosting the immune system, antibiotic, antiviral, anti-inflammation and aphrodisiac effects, cardiac tonic, useful for palpitation and cardiac arrhythmia, neuroprotective and hepatoprotective are other therapeutic properties mentioned in PM literature for antidotes

**Conclusion:** The antidote's mechanisms of action suggested by PM scholars have some similarity to the recent medical approaches. Considering the therapeutic properties, it seems that PM antidote is not limited to dealing with poisons and has more comprehensive pharmacological effects than its definition in modern clinical toxicology

*Keywords: Antidote; Toxicology; Persian medicine*

## Larva therapy, an effective method of diabetic foot ulcer treatment

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**Background and Aim:** Larva therapy, known as maggot therapy, biodebridement, or maggot debridement therapy, and received FDA approval in 2004, involves the use of live fly larvae on a patient's wound for debridement, disinfection, and wound healing. This review study aimed to investigate the benefits of larval therapy in diabetic foot ulcers by conducting a systematic review

**Methods:** A descriptive analysis was performed on articles published from 2018 to 2023. A total of 265 articles with keywords were found in PubMed (77), Science Direct (34), and Scopus (120, ProQuest (34). The inclusion criteria for the articles were as follows: population - patients with diabetic foot ulcers, debridement, or therapeutic use of maggot therapy with *Lucilia sericata*. After analyzing the inclusion and exclusion indicators, 15 articles were selected. The results of the articles showed the effectiveness of the use of 1st instar larvae of *Lucilia sericata* in diabetic foot ulcers

**Results:** The results of the articles showed that larval therapy can be an effective method in the treatment of diabetic foot ulcers, especially when used correctly and according to the conditions and needs of each patient.

**Conclusion:** The larva of the bottle fly, *Lucilia sericata*, secretes proteolytic enzymes, antimicrobials, and growth factors. which helps to heal the wound. In addition, the results showed that combining larval therapy with other methods in wound healing is recommended.

*Keywords: Larva therapy; Diabetic foot; Ulcer*

## The Effect of Bitter Almonds in the Removal of Kidney Stones

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**Background and Aim:** Kidney stones are a common urologic condition characterized by a thickening of the urethra. They can cause severe pain and discomfort, which, if left untreated, can lead to complications such as kidney damage. Treatment options are available, including medical interventions and surgeries. However, there is growing interest in finding natural treatments for kidney stones. Bitter almond, a type of almond known for its unique taste and potential health benefits has been proposed as a potential natural remedy for removing kidney stones. This abstract aims to present the current research investigating the effects of almonds a thorough examination of the effects of bitterness on the kidneys will give a rubbed stone.

**Methods:** A systematic literature search was conducted to identify relevant studies investigating the effects of bitter almonds on kidney stone fractures using the keywords "bitter almonds", "kidney stones", "natural remedies". Electronic databases such as PubMed and Google Scholar were searched and studies published between 2010 and 2024 were included.

**Results:** The review identified several studies suggesting that bitter almonds possess bioactive compounds, including amygdalin, which may have potential in promoting the dissolution of kidney stones. Amygdalin is a glycoside that undergoes enzymatic hydrolysis, releasing hydrogen cyanide, benzaldehyde, and glucose. It is hypothesized that the release of hydrogen cyanide may help in breaking down the mineral components of kidney stones, facilitating their dissolution and passage. Animal studies have shown promising results, demonstrating the ability of bitter almond extract to reduce stone size and promote stone clearance in experimental models of kidney stone disease. However, human studies evaluating the effect of bitter almonds on kidney stone dissolution are limited. Further research is needed to determine the optimal dosage, duration, and safety profile of bitter almonds in human subjects.

**Conclusion:** In conclusion, preliminary evidence suggests that bitter almonds may have potential in promoting the dissolution of kidney stones. The bioactive compounds present in bitter almonds, particularly amygdalin, may contribute to breaking down the mineral components of kidney stones. However, further well-designed clinical trials are warranted to establish the efficacy, safety, and optimal usage of bitter almonds in kidney stone management. It is important to note that bitter almonds contain amygdalin, which metabolizes into hydrogen cyanide, and thus, their use should be approached with caution and under appropriate medical supervision.

*Keywords: Bitter almonds; Kidney stones; Stone dissolution; Natural remedies; Amygdalin; Urology; Alternative therapy*

## Herbal medicines as chondrogenesis potential in adipose derived stem cells: a review of recent studies

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**Background and Aim:** Conditions affecting cartilage through damage or age-related degeneration pose significant challenges to individual patients and their healthcare systems. The disease burden will rise in the future as life expectancy increases. This has resulted in vigorous efforts to develop novel therapies to meet current and future needs. Due to the limited regenerative capacity of cartilage, in vitro tissue engineering techniques have emerged as the favored technique by which to develop replacements. Tissue engineering is mainly concerned with developing cartilage replacements in the form of chondrocyte suspensions and three-dimensional (3D) scaffolds seeded with chondrocytes. One of the factors limiting the formation of cartilage is the growth factor that is used for the differentiation of stem cells. These growth factors sometimes cause cells to become hypertrophied and ossified. Because of this, various materials have been used in past research to find the appropriate growth factor, but a suitable growth factor that is approved by all researchers has not yet been found.

**Methods:** We investigate different growth factors, especially growth factors derived from herbal medicines that have been used in research. Google Scholar, Web of Science, PubMed, Scopus and SID databases were searched with a time limit of the last 10 years and without language restrictions.

**Results:** The findings presented here provide valuable insights into the potential of natural growth factors and herbal medicine in the field of chondrogenesis and pave the way for future advancements in cartilage repair and regeneration.

**Conclusion:** Chondrogenesis of adipose-derived stem cells (ADSCs) holds great promise for tissue engineering and regenerative medicine. The use of natural growth factors and herbal medicine to enhance the chondrogenic potential of ADSCs offers a novel approach to cartilage repair and regeneration. The studies reviewed in this article highlight the potential of growth factors such as TGF- $\beta$ , IGF-1, FGF, and PDGF, as well as herbal extracts from plants like *Salvia miltiorrhiza* Bunge and *Tripterygium wilfordii* Hook.f., in promoting chondrogenesis. Further research is needed to fully understand the mechanisms by which these natural compounds enhance chondrogenic differentiation and to optimize their use in therapeutic applications.

*Keywords:* Herbal medicines; Chondrogenesis; ADAC; Review

## Application of Iranian medicine in parasitic diseases, A Review

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**Background and Aim:** Iranian medicine has a rich history of using natural remedies to address various health conditions, including parasitic diseases. Several Iranian medicinal plants and herbs have shown promising antiparasitic properties in scientific studies. The purpose of this review is the application of Iranian medicine in parasitic diseases.

**Methods:** In this review, articles related to the application of Iranian medicine in parasitic diseases from 2018 to 2024 were reviewed in Web of Science PubMed, Scopus, Google Scholar, SID, Magiran and ISC databases.

**Results:** Several studies have shown that various plants and plant compounds are effective in the treatment of many parasitic diseases. Saffron (*Crocus sativus*) and its active compounds, such as crocin and safranal, have demonstrated in vitro antileishmanial effects against Leishmania parasites, which cause leishmaniasis. Harmel (*Peganum harmala*) seeds and extracts have shown activity against various parasites, including Leishmania and Giardia lamblia. Pomegranate (*Punica granatum*) fruit and peel extracts have demonstrated antiparasitic effects against parasites like Leishmania, Giardia lamblia and Trypanosoma cruzi. Garlic (*Allium sativum*) and its active compound, allicin, have been found to possess antiparasitic properties against parasites such as Leishmania and Trypanosoma. Myrtle (*Myrtus communis*) essential oil has shown potential activity against Leishmania parasites, making it a possible natural alternative for treating leishmaniasis.

**Conclusion:** Iranian medicine plays an essential role in the treatment of parasitic diseases by offering a unique, holistic perspective on health and providing natural remedies with potential antiparasitic properties. Continued research and integration with modern medicine can further advance our understanding of these traditional treatments and their applications in contemporary healthcare.

*Keywords: Iranian Medicine; Parasitic diseases; Plant compound*

## Therapeutic Potential of Carvacrol in Pneumonia Treatment: A Comprehensive Review

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**Background and Aim:** Carvacrol is a phenolic monoterpene found in medicinal plants. Studies highlight its diverse biological activities, including antioxidant, anti-inflammatory, antimicrobial, antidiabetic, hepatoprotective, and immunomodulatory effects. Recent research also suggests its potential in alleviating bronchial asthma symptoms. Some of the most important plants recommended in traditional Persian medicine for the treatment of pneumonia, such as *Thymus vulgaris*, *Zataria multiflora*, *Oreganum vulgare*, *Satureja hortensis* and *Nigella sativa*, commonly contain carvacrol as a key active ingredient. This review aims to investigate the efficacy of carvacrol in treating pneumonia, focusing on its mechanisms of action and potential applications in respiratory infections.

**Methods:** This review utilized a comprehensive search strategy to identify relevant research studies investigating the therapeutic potential of carvacrol in pneumonia treatment. PubMed, Web of Science, and Scopus databases were searched using keywords such as “carvacrol,” “pneumonia,” and “antimicrobial”. The inclusion criteria encompassed studies published in peer-reviewed journals from 2000 to 2023, written in English and Persian, and focusing on the antimicrobial properties, mechanisms of action, and synergistic effects of carvacrol in pneumonia treatment.

**Results:** Carvacrol demonstrates strong antimicrobial activity in diverse situations. It exerts bactericidal activity by damaging bacterial cell membranes, altering membrane fluidity, and affecting membrane phospholipids. It inhibits biofilm formation, reducing bacterial adhesion and colonization on surfaces. Studies have explored its synergistic effects with antibiotics like ceftazidime and cefepime against *K. pneumoniae* infections, as well as its combined efficacy with other natural compounds against multidrug-resistant bacteria implicated in respiratory tract infections. Furthermore, carvacrol disrupts quorum sensing, interfering with bacterial communication and inhibiting biofilm development. Apart from its well-documented antimicrobial properties, carvacrol exhibits additional positive effects beneficial in pneumonia treatment. Research suggests it possesses antioxidant and anti-inflammatory activities, crucial in combating oxidative stress and inflammation associated with pneumonia. Carvacrol reduces inflammatory mediators and oxidative damage in the respiratory system, indicating its potential in alleviating lung injury. Moreover, carvacrol protects the lungs from oxidative injury by increasing levels of enzymatic antioxidants. This protective mechanism is valuable in preventing lung damage caused by diseases including pneumonia. Additionally, carvacrol reduces alveolar enlargement and inflammatory markers in lung tissues, suggesting its potential in mitigating lung damage. Furthermore, carvacrol's ability to ameliorate inflammation extends beyond the respiratory system, reducing inflammatory responses in extra-intestinal organs. This systemic anti-inflammatory effect highlights its broad-reaching impact in managing pneumonia. Additionally, carvacrol has been studied for its potential anticancer properties, hinting at its diverse pharmacological effects beyond antimicrobial activity. Inhibition of cell proliferation and induction of apoptosis by carvacrol in lung cancer cells suggests its ability to modulate cellular processes relevant to pneumonia treatment.

**Conclusion:** The multifaceted properties of carvacrol, including antimicrobial, antioxidant, anti-inflammatory, lung-protective, and potential anticancer effects, make it a promising candidate for adjunctive therapy in pneumonia treatment. Its ability to target multiple pathways involved in lung infections suggests broader therapeutic benefits complementing conventional antimicrobial approaches. Further research is needed to validate its efficacy and safety in clinical settings, paving the way for novel strategies to combat pneumonia and associated complications.

*Keywords: Carvacrol; Pneumonia; Antimicrobial; traditional Persian medicine*

## Effects of *Nigella sativa* and Its Derivatives on Systolic and Diastolic Blood Pressure: A Review Article

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**Background and Aim:** High blood pressure is a common condition that affects individuals across a wide age range and has many devastating effects on normal body functions, particularly on the cardiovascular system. To address this critical health issue, various studies have been conducted, including those exploring the efficacy of *Nigella sativa* (black seeds) in reducing blood pressure among treatment groups.

**Methods:** A rapid review of the scientific literature resources, including clinical trials and animal and epidemiological studies, published in PubMed during the past decade was conducted in this qualitative research. In obtaining the results, factors such as age, gender, lifestyle, and eating habits were not taken into consideration.

**Results:** Research has shown that *Nigella sativa* consumption is effective in lowering systolic and diastolic blood pressure (SBP and DBP, respectively). For instance, the short-term use of its powdered form was found to decrease both SBP and DBP levels. Studies have demonstrated that *Nigella sativa* significantly reduces heart rate and improves blood pressure control when used together with amlodipine. Furthermore, daily intake of 2 grams of *Nigella sativa* for one year improved total cholesterol (TC), mean arterial pressure (MAP), and heart rate (HR) in type 2 diabetic patients. Peritoneal injection of 600 mg hydro-alcoholic extract of *Nigella sativa* significantly lowered SBP, MAP, and HR because this extract contains the active ingredient thymoquinone, which provides strong antihypertensive effects by influencing angiotensin.

**Conclusion:** The findings suggest that *Nigella sativa* used alone can significantly reduce both SBD and DBP and positively influence cardiovascular health. Interestingly, its use in blood pressure reduction has been associated with no electrolyte abnormalities, hepatotoxicity, renal toxicity, or orthostatic hypotension.

*Keywords:* *Nigella sativa*; Blood pressure; Thymoquinone; Heart; Vasculature



## Complementary methods in traditional medicine for treating genital warts

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**Background and Aim:** Genital warts are external genital infections caused by the human papillomavirus, the most common sexually transmitted infection. This virus can lead to beauty problems, psychological issues, and, if occurs in high-pressure and contact areas, can cause pain and inflammation. There are numerous treatment options available for genital warts that can assist healthcare providers, but many patients prefer a home-based treatment. Both pharmaceutical and non-pharmaceutical treatments have been performed for warts, which in more than 50% of cases lead to side effects.

**Methods:** To gather relevant articles, databases such as PubMed, Medline, Cochran Library, Emro, WHO, Iran-medex, SID, and Google Scholar were utilized. Initially, articles containing keywords such as medicinal plants, warts, traditional medicine, and treatment were searched in the databases to collect the required information.

**Results:** Research has demonstrated that green tea extract, garlic, fig sap, black seed, myrtle, morrow, *Allium porrum*, and *Cecropia obtusifolia* are effective in treating warts.

**Conclusion:** Considering the effective treatment of herbal plants in warts treatment and their minimal side effects and allergies compared to new chemical drugs, we hope to utilize research in phytotherapy and traditional medicine sources for alternative treatments for wart lesions.

*Keywords: Warts; Herbal medicine; Traditional medicine; Effective substances*

## Effect of *Cymbopogon olivieri*-based herbal vaginal product on bacterial vaginosis

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**Background and Aim:** Bacterial vaginosis (BV) is the most common vaginal infection in reproductive-age women; if it is not treated, quality of life will be reduced. In this study, the herbal medicine product *Cymbopogon olivieri* was used for its treatment.

**Methods:** This study was conducted with 90 women. The patients were randomly divided into two groups of 45: *C. olivieri* and metronidazole. The treatment period was 7 days for each group. Improvement status was determined by eliminating at least three out of four of Amsel's criteria. A new variable with two order levels (negative, positive) was constructed. This new variable shows the status of the treatment process. Chi-square and Fisher's exact tests were used to examine the relationship between the new variable and treatment status.

**Results:** The results demonstrate that *C. olivieri* and metronidazole significantly reduced the burning, itching, malodor, abnormal vaginal discharge, pH, clue cell, and positive whiff test (P value < 0.05). The findings also demonstrate that neither treatment was statistically different from the other for at least three of Amsel's criteria.

**Conclusion:** This study shows the *C. olivieri* effect on bacterial vaginosis is similar to that of metronidazole, hence *C. olivieri* is a suitable option to treat BV.

**Keywords:** Bacterial vaginitis; Metronidazole; Complementary medicine; Herbal medicine; *Cymbopogon olivieri*

## Evaluation of the effect of rose essential oil and its comparison with the effect of lemongrass tea on reducing stress and depression in gynecology assistants

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**Background and Aim:** Medical workers have a lot of connection with occupational stress and depression as a result. This issue is more apparent in medical residents who endure a lot of work pressure and stress. And it causes a decrease in their work efficiency and boredom. It will also have severe destructive effects on the mental and physical health of these people. The effect of medicinal plants to reduce the level of stress and symptoms of depression in different jobs has been investigated and identified. In this study, the effects of two plants, lemongrass and *Rosa damascena*, on female residents have been investigated.

**Methods:** This study is designed as a cross-over, two groups are cross-exposed to inhaling rose essential oil or oral consumption of lemongrass tea. At first, the Beck II questionnaire is given to the assistants to assess their basic level of stress and depression. Then, they receive rose essence or lemongrass tea for one week and are re-evaluated by the Beck II questionnaire. After a week of rest, the groups are moved and use lemon balm tea or rose essential oil for a week, and then they are evaluated by Beck's II questionnaire.

**Results:** The periodic effect shows that in the first period both the effects of tea and essential oil were more than in the second period and this difference is statistically significant ( $p$  value  $< 0.05$ ). The  $p$  value of 0.074 shows the possible carryover effect is no significantly different between AB/BA sequences. The effects of tea and essential oil are not significant in both normal and adjusted tests. The reason was probably the high standard deviation of the two groups.

**Conclusion:** It seems that the use of lemongrass and *Rosa damascena* is effective in reducing the symptoms of depression and stress in female residents. In this regard, the effect of lemon balm tea is probably greater than that of rose essential oil. But to confirm it, studies with a larger sample size are needed.

*Keywords:* Depression; Herbal medicine; *Rosa damascena*; Lemon balm; Traditional medicine

## Effect of *Rheum palmatum* (Rivand), *Paeonia officinalis* (Favania) and Mefenamic acid on primary dysmenorrhea: A randomized, double-blind, placebo-controlled study

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**Background and Aim:** Menstrual pain is a cyclic pain which happens during the days of menses. The menstrual disturbances as a health problem among young girls affect psychological health and quality of life. This study was conducted with the goal of comparing the effect of Rivand, Favania and Mefenamic acid on primary dysmenorrhea.

**Methods:** This clinical trial study was done in Iran on 105 girl students aged 18 to 35 years old with primary menstrual pain in Tabriz University of Medical Sciences. The participants were randomly allocated to three groups receiving the drugs Mefenamic acid, *Rheum palmatum* and *Paeonia officinalis*. During the first cycle, the control cycle, placebo was given to the patients and patients were asked to respond to the degree of severity and duration of pain along with other symptoms. During the second and third cycle, from two days before the onset of menstruation to 5 days after, one capsule containing 500 mg of RP to group 1, one capsule containing 500 mg of Favania to group 2, and one capsule containing 250 mg Mefenamic acid in 500 mg capsule sachets was administered to the third group every 8 hours.

**Results:** The mean age of the participants was  $24.8 \pm 3.37$  years. It has been reported that the severity of dysmenorrhea pain decreased in the groups. Before treatment, the average pain intensity in MA, RP and PO users were  $8.02 \pm 1.31$ ,  $8.62 \pm 1.30$  and  $8.62 \pm 1.21$ , respectively, and after treatment, pain intensity decreased significantly. The Paired Samples Test demonstrated that the changes in the intensity and duration of menstrual pain during 3 months of follow-up showed a significant difference in all the three groups of Mefenamic acid, Rivand, and Favania ( $P < 0.001$ ). Also, the volume of menstrual bleeding in Favania group was significantly reduced, which was more than the mefenamic acid group ( $p > 0.05$ ).

**Conclusion:** MA, RP and PO reduced menstrual pain. Rivand as well as Mefenamic acid is effective in relieving pain in girls with primary dysmenorrhea. Therefore, treatment with natural herbal medicines and non-synthetic drugs to reduce primary dysmenorrhea is recommended.

**Keywords:** *Rheum palmatum*; *Paeonia officinalis*; Mefenamic acid; Primary dysmenorrhea; Menstrual pain; Herbal medicine; Persian medicine

## Using the larvae of *Lucilia sericata* as a successful method for treating burn wounds

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**Background and Aim:** Larval therapy, a historical approach in burn treatment, has demonstrated efficacy in numerous nations; however, its effectiveness in Iran remains relatively unexplored. This study seeks to assess the wound bed preparation and skin graft acceptance facilitated by larval therapy, while also investigating the potential of Maggot Therapy (MT) in necrotic tissue debridement and healing promotion to mitigate the risk of limb amputation in severe burn patients.

**Methods:** This applied research was conducted at Shahid Motahari Accident and Burn Hospital, Tehran, involving five patients with burn ulcers. Among them, two cases resulted from electrical burns, two from flame burns, and one from contact with a hot plate. The therapeutic intervention comprised three distinct 48-hour sessions utilizing sterile *Lucilia sericata* larvae. Following each session, wound samples were collected using sterile swabs to assess bacterial contamination.

**Results:** After larval therapy, a progressive removal of necrotic tissue and formation of granulation tissue were noted, indicating adequate preparation of the wound bed for skin grafting. Subsequent to the surgery, the patient was discharged, and thorough monitoring revealed no indications of skin graft rejection.

**Conclusion:** The findings of this study demonstrate the efficacy of larval therapy in facilitating the preparation of an optimal wound bed for skin grafting. Considering its effectiveness, larval therapy is recommended as a viable treatment modality for burn wounds. Moreover, further research endeavors are advised to enhance and refine this therapeutic approach within our healthcare setting.

*Keywords:* *Lucilia sericata*; Burns; Wound; Maggot therapy

## Comparison of the Effect of Auriculotherapy, an Herbal Compound (Aslagh Capsule), and Metformin on the Clinical Symptoms of Polycystic Ovary Syndrome: Randomized Clinical Trial

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**Background and Aim:** Polycystic ovary syndrome (PCOS) is an endocrine disorder that affects women of child-bearing age, with a worldwide prevalence ranging from 6 to 20%. Considering the potential side effects of chemical medications and the need for long-term drug administration, complementary treatments such as acupuncture, auriculotherapy, and herbal medicine have been considered. Hence, this study was designed to compare the effects of auriculotherapy, an herbal component (Aslagh capsule), and metformin on the clinical symptoms of PCOS.

**Methods:** This is a randomized controlled clinical trial study, which allocated 24 women, aged 18–43 years old, with oligomenorrhea in PCOs, in a 1:1:1 ratio, to three groups

**Results:** A decreasing pattern in the duration of the menstrual cycle was observed in all three groups, but this was significant only in the auriculotherapy group. There were no significant differences between the three groups in acne and hirsutism scores. However, there was a significant reduction in excess hair growth and density of hair in the auriculotherapy group compared to the other two groups ( $P < 0.05$ ). Besides, in the auriculotherapy group, the reduction in thickness of excess hair at the end of the second and third months of treatment were marginally significant compared to the two other groups

**Conclusion:** Auriculotherapy and Aslagh capsule can be effective in reducing PCOS symptoms, similar to metformin. However, auriculotherapy is more effective than the other treatments in reducing the duration of the menstrual cycle, excess hair growth, and hair density.

*Keywords:* Auriculotherapy; oligomenorrhea; Persian medicine; Polycystic ovary syndrome; Vitex

## A traditional herbal formulation consisting of black seed oil, olive oil, and frankincense improved women's sexual function: A pilot clinical trial

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**Background and Aim:** Sexual dysfunction (SD) in women is a prevalent problem specially in reproductive ages which prevents them to experience satisfaction during sex. Forty-one percent of women experience sexual dysfunction in fertility age, which makes it a very common medical problem. In Iranian traditional medicine (ITM) manuscripts, various oral and topical compounds have been introduced to manage sexual dysfunction.

**Methods:** this study is a pilot clinical trial study, which was conducted to evaluate the efficacy of traditional herbal formulation on women's sexual function. The study consists of one group and the intervention was the same for all. 49 women aged 18- 35 years with sexual dysfunction who met the inclusion criteria were enrolled in this study. The women were treated by a topical herbal formulation of polyherbal oil which is based on the mixture of black seed (*Nigella sativa* L.), olive (*Olea europaea* L.), and frankincense (*Boswellia serrata* Roxb.). The intervention was used on the genital and inguinal area, low back and soles before bed time and before each intercourse from 14th day of the menstrual cycle for two weeks. In order to evaluate the patients, the female sexual function index (FSFI) questionnaire was completed at every examination session on the 1st, 7th and 14th days of the study and were compared as outcomes.

**Results:** Significant improvement in all parameters of the FSFI questionnaire including sexual desire, arousal, lubrication, orgasm, satisfaction, and pain was observed. Moreover, the comparison the scores of three FSFI questionnaires showed significant improvement in participants' sexual function after two weeks of intervention.

**Conclusion:** The topical polyherbal oil is an effective choice in sexual dysfunction and can be suggested as a therapeutic option for women suffering from SD.

*Keywords:* *Nigella sativa* L.; *Boswellia serrata* Roxb.; Sexual dysfunction; Orgasm; Decreased libido; Persian Medicine; Iranian Traditional Medicine

## Safoof-e-Almond-sugar improves memory and learning behavior in rat

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**Background and Aim:** Memory and learning are vital capabilities of brain which have important roles in personal and social human's life. Memory and learning abilities are at risk of decreasing by some factors such as getting old, high level of BMI and oxidative stress. Traditional medicines are recognized as inspiring sources of new development in cure and medicine. Persian medicine (PM) has suggested many recommendations by three approaches of lifestyle modifications, dietary considerations, and drug therapy to improve memory. Nuts consumption especially almond has high value in dietary considerations approach. Interestingly, new medicine has evaluated neuroprotective effect of almonds by laboratory and clinical studies. PM also recommended to consumption *Prunus amygdalus* (almond) with sugar to improve its neuroprotective effects. The aim of this work is to investigate the efficacy of almond-sugar safoof on memory and learning ability.

**Methods:** Almond extraction was prepared by maceration methods. The extract was investigated as secondary metabolites content by identification tests of alkaloid, tannin, anthraquinone and flavonoid. Male Wistar rats were used to measure behavioral parameters to correlate memory and learning abilities using elevated plus maze (EPM), open field (OF), and novel objects (NO).

**Results:** Almond-sugar safoof (800mg/kg) decreased in EPM the time spent in open arms. The almond-sugar safoof also increased the time of recognizing new things in NO test and number of crossing black squares increased in OF test.

**Conclusion:** This study shows that almond-sugar safoof consumption significant development in memory and learning abilities indexes. Almond-sugar safoof consumption improves maintaining long term memory, identification or preference, exploratory and motor activity indicators.

*Keywords: Memory; Learning; Persian medicine; Prunus amygdalus; Almond*



## Evaluation of Anti-inflammatory effect of *Lawsonia inermis* oil (preparation of Persian medicine) in ulcerative colitis in rats

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**Background and Aim:** Ulcerative colitis categorizes as a chronic inflammatory bowel disease, with a long course and vast range of lesions. Prevalence of afflicting ulcerative colitis has a progressive trend worldwide in recent years. In ulcerative colitis, inflammation mostly involves mucosa and submucosa of colorectal tissue, which results to symptoms of rectal bleeding, increased frequency of stool, bowel-movement urgency, and abdominal pain. Alkaloids, tannins, flavonoids, carbohydrates, quinone, phenolic compounds, coumarines, protein and fatty acids are reported as phytochemical profile of henna. Also, pharmacological studies have reported analgesic, anti-inflammatory, anti-oxidant, hypoglycemic, antibacterial, antiviral, antifungal, anticancer, hepatoprotective and stimulating immune system properties of henna. In Persian medicine henna has been suggested to treatment several disorders such as skin and hair diseases, headache and wound healing. Oils has an important role in Persian medicine. Persian medicine' literatures believe that oils have more potency than plants. Henna oil (fixed oil) is one of important oils in Persian medicine. The aim of this study was to investigate anti-inflammatory effect of *Lawsonia inermis* oil in ulcerative colitis in rats.

**Methods:** Henna oil have prepared by Gharabadin (traditional pharmacy book) method. Total phenol and total flavonoid were measured by spectrophotometer method. Male Wistar were divided randomize to seven groups (n=6). Ulcerative colitis was induced by acetic acid 4%. Henna oil (100, 400, 1600 µg/kg) was administered orally for 5 consecutive days. Then rats' colons were evaluated as macroscopic and histological studies. The level of MPO enzyme activity was measured by ELISA test.

**Results:** The total phenolic contents 198.26 µg gallic acid/ml and total flavonoid contents 140 µg quercetin/ml henna oil. Histological and macroscopic evaluation suggested that 1600 µg/ml henna oil decreased histological injuries significantly (p<0.001) and showed a significant (p<0.05) in colons' weight changes. Henna oil 400 µg/ml and 1600 µg/ml concentrations showed a significant decrease in level of MPO enzyme activity (p< 0.05 and p<0.01, respectively).

**Conclusion:** Our data showed that henna oil reduces the inflammatory and healing wound and lesion caused by ulcerative colitis in rats.

*Keywords:* Ulcerative colitis; *Lawsonia inermis*; Henna; Persian medicine; MPO; Rat

## Evening Primrose Oil as a Complementary Treatment in Increasing the Efficiency and Reducing the Side Effects of Chemotherapy for Breast Cancer

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**Background and Aim:** Nowadays, the use of natural products, especially medicinal plants, in the treatment of cancers has attracted the attention of researchers due to their effectiveness and few side effects. Evening primrose belongs to the Onagraceae family, and many studies have been conducted on its effectiveness. Various studies have shown the effectiveness of evening primrose on the reducing low-density lipoprotein level, autoimmune diseases, mastalgia disorders, skin, premenstrual syndrome, premenopausal, menopausal, postmenopausal symptoms. In this study, we intend to review the studies conducted on the effectiveness of evening primrose, as a medicinal plant in Persian medicine, on breast cancer.

**Methods:** As a search strategy and study selection, we searched the SID, PubMed and Medline databases until 2024 using related keywords (e.g., Evening primrose,  $\gamma$ -linolenic, Breast cancer, Chemotherapy, Combination therapy).

**Results:** Evening primrose is one of the medicinal plants with anti-cancer properties that has attracted the attention of researchers. Evening primrose oil is obtained from plant seeds and by cold pressing or solvent extraction methods; the obtained oil is used as a dietary supplement. Evening primrose oil contains 70-74% linoleic acid and 8-10%  $\gamma$ -linolenic acid.  $\Gamma$ -linolenic acid in evening primrose has anticancer properties and can inhibit cancer cells without affecting normal cells through anti-inflammatory properties, induction of apoptosis, and mitochondria-mediated death. Breast cancer is the most common cancer among women, with more than 2.3 million cases diagnosed and more than 685,000 deaths per year. There are various treatments for breast cancer, and chemotherapy is the gold standard treatment for breast cancer. Using evening primrose oil together with tamoxifen can increase the efficiency of chemotherapy and reduce side effects. In addition, the use of evening primrose oil with tamoxifen can arrest the cell cycle, inhibit angiogenesis, induce apoptosis and as a result increase the anticancer effect of tamoxifen on breast cancer cells. The use of evening primrose supplement together with fish oil supplement in the chemotherapy of breast cancer patients can improve the inflammatory status and lipid metabolism in treated patients by reducing inflammatory cytokines and changing fatty acids profiles.

**Conclusion:** Evening primrose as a medicinal plant in Persian medicine and due to its anti-inflammatory and anti-cancer properties can be used as a complementary treatment with chemotherapy for breast cancer patients. Although, finding the mechanism of its effect and its clinical use requires more studies.

*Keywords: Evening primrose oil;  $\gamma$ -linolenic; Breast cancer; Chemotherapy; Combination therapy*

## The Therapeutic Effects of Moxibustion: A Literature Review

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**Background and Aim:** Nowadays, due to the numerous side effects that drug therapies create in the long term, the importance of complementary and alternative therapies has increased. Moxibustion, a traditional Chinese method that was used in the past to treat, improve, and prevent diseases. In this method, medicinal herbs prepared in the form of moxa are burned on acupoints and the heat generated can improve the body's balance and alleviate symptoms. While most articles examine moxibustion for a specific disease, this review article discusses its types, forms, and effects on the body and various diseases.

**Methods:** Data were gathered from databases such as PubMed, Google Scholar, Cochrane Library and Elsevier, after conducting a search using MeSH keywords. A total of 10590 articles were identified, which was reduced to 6029 after limiting the search from 2018 to 2024. The titles and abstracts of the articles were initially screened, and full texts were retrieved for relevant studies. Exclusion criteria included studies with small sample size, low quality, uncertainty, non-scientific findings, and irrelevant topics. After reviewing 2060 articles, 60 eligible studies were selected.

**Results:** Moxibustion can be applied through direct and indirect methods. Both methods have been shown to influence the secretion and regulation of blood components, leading to reduced inflammation and boosted immunity. Moxibustion has positive effects on treating many diseases such as Osteoarthritis, Rheumatoid Arthritis, Primary dysmenorrhoea, Allergic rhinitis, and COVID-19. It may also be helpful in managing some conditions such as side effects of cancer and chemotherapy, correction of breech presentation, infertility, depression, chronic fatigue syndrome, and post-stroke rehabilitation. Moxibustion can create a synergistic effect when combined with other treatments. Depending on the specific condition and its severity, this method can be used as a complementary therapy.

**Conclusion:** studies have shown that moxibustion is effective in treating a variety of illnesses. It has been known to reduce symptoms, aid in recovery and enhance the quality of life. According to the importance of comprehensive and integrated approaches to treatment, utilize moxibustion into patients' treatment plans can serve as a complementary therapy option.

*Keywords: Moxibustion; Acupuncture points; Effect; Meridian*

## Enhancing Sleep Quality in Mothers of Preterm Infants through Damask Rose Aromatherapy

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**Background and Aim:** Mothers of premature infants often experience anxiety and disrupted sleep patterns, which can impact their overall well-being. While various pharmaceutical and non-pharmacological approaches have been explored to improve sleep quality, breastfeeding mothers face limitations in using common methods. Aromatherapy, a long-standing complementary treatment, has gained significant interest in recent years. This study aimed to evaluate the effects of Damask Rose (DR) aromatherapy on sleep quality in mothers of preterm infants.

**Methods:** A non-randomized process allocated 75 eligible mothers into intervention and control groups. The experimental group received 10% DR aromatherapy 20 minutes before bedtime for ten consecutive nights, in addition to routine care. The control group received routine care alone. Data collection included the Pittsburgh Sleep Quality Index (PSQI) and a demographic questionnaire.

**Results:** The intervention group demonstrated significant improvements in overall sleep quality and its sub-scales ( $p < 0.05$ ). Effect size analysis revealed that the intervention group's improvement (from  $8.31 \pm 1.82$  to  $5.62 \pm 1.91$ ) surpassed that of the control group (from  $9.95 \pm 2.89$  to  $9.47 \pm 3.30$ ).

**Conclusion:** This study suggests that DR aromatherapy may serve as a valuable supportive intervention in neonatal care settings, enhancing the sleep quality of mothers with preterm infants in NICUs.

*Keywords: Aromatherapy; Sleep quality; Premature infants; Mothers; Iranian traditional medicine*

## Herbal Medicine Use among General Population in Iran during the COVID-19 Pandemic

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**Background and Aim:** The COVID-19 pandemic has led to increased anxiety/depression and change in people's health behaviors and this study aimed to investigate health beliefs regarding using herbal medicine and its associated factors among Iranians.

**Methods:** A cross-sectional study on general population in Tehran was conducted using question survey consisting of demographic characteristics, beliefs toward herbal medicine use and telehealth and HADS questionnaire to address anxiety and depression disorders. All statistical analysis was done with SPSS software version 18 and, a p value of 0.05 or less was considered to be significant.

**Results:** The study included 619 participants with a mean age of  $36.58 \pm 10.74$  and a female rate of 61%. The overall use of herbal medicine was 384 (62%) that 170 (28%) were for prevention, 12 (2%) for treatment, 170 (28%) for relaxation, and 191 (31%) for other reasons. Using herbal medicine for relaxation and prevention were significantly associated with less anxiety while using herbs for treatment of COVID-19 had association with cardiovascular diseases and no family history of Coronavirus infection. Telehealth was significantly associated with using herbal medicine for prevention, treatment and relaxation.

**Conclusion:** The majority of Iranians use herbal medicine for different purposes for COVID-19 in Iran and this health behavior has a relationship with anxiety/depression, telehealth, family history of COVID-19, and cardiovascular diseases. The findings of this study would be of value for researchers and policymakers to improve health beliefs and behaviours during the pandemic in Iran.

*Keywords: COVID-19; Anxiety; Herbal medicine; Persian Medicine; Telehealth*

## Antimicrobial effect of chitosan nanohydrogel containing *Myrtus communis* essential oil on *Streptococcus mutans* and *Candida albicans*

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**Background and Aim:** Dental caries and oral candidiasis are among the most important and common oral diseases. Drug side effects and increasing resistance of microorganisms are among the reasons for researchers to find complementary and alternative methods for common antimicrobial treatments. The use of medicinal plants and natural nanoparticles can be used as effective methods against oral pathogens such as *Streptococcus mutans* and *Candida albicans*.

**Methods:** The essential oil of *Myrtus communis* L. (Voucher N: PMP-464) was prepared by distillation method and analyzed by GC-MS method. The nanogel containing the essential oil was made based on chitosan and tripolyphosphate and its physiological benefits were evaluated by SEM, FTIR, zeta potential, and DLS. MIC, MBC of the case essence, nanogel containing it and blank nanogel were investigated against *Streptococcus mutans* and *Candida albicans* by microdilution method.

**Results:** According to GC-MS, 25.65% of Myrtus essential oil contained Linalool. It has bacteriostatic and bactericidal properties against *Streptococcus mutans*, so that its minimum inhibitory and lethal concentrations are 625 and 2.57 µg/ml, respectively. The essential oil against *Candida albicans* had antifungal properties in such a way that its minimum inhibitory and lethal concentration (MFC) was equal to 312.5 and 1250 µg/ml. Also, the results showed that the formulation of the essential oil in the form of nanoparticles significantly enhanced its antimicrobial properties against these two oral pathogens, such that its MIC and MBC against *Streptococcus mutans* was 2.57 and against *Candida albicans* was 1.28 µg/ml.

**Conclusion:** According to the obtained results, the essential oil is suitable for antibacterial and antifungal properties, including natural medicines, which can be used in oral infectious diseases related to *Streptococcus mutans*, such as tooth decay and diseases related to *Candida albicans*. It means that all types of oral candidiasis should be used. The formulation of this nano essential oil can multiply its antimicrobial properties in the mentioned diseases.

**Keywords:** *Streptococcus mutans*; *Candida albicans*; Dental caries; *Myrtus communis*; Persian Medicine

## Paternal exposure to pre-conception stress and *Dracocephalum moldavica* extract altered sperm parameters and sex hormones in rat offspring

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**Background and Aim:** Stress is one of the leading and common causes of fertility weakness in both females and males. It disrupts reproductive function through hormones and altered gametogenesis by long-lasting sub-sequences on the offspring later in life. Herbal approaches can be used as alternative medicine to prevent stress harmful effects in offspring. The current study aimed to investigate the effect of simultaneous use of stress and *Dracocephalum moldavica* in pre-pregnancy period on reproductive system in parents and changes of sex hormones both in parents and offspring.

**Methods:** In this experimental study, 32 Males and 64 females' rats were divided into four groups as follows: control, stress, extract, and stress + extract. Treatment with either stress or *D. moldavica* took place during gametogenesis. After the treatment, the control and experimental subjects were mated. Pregnant females were kept in standard condition until delivery and weaning. All the male rats were sacrificed after mating and one epididymis was randomly removed and sperm parameters and blood levels of testosterone were assessed; in non-pregnant females and after treatment, the thickness of vaginal epithelium, vaginal pH, and blood levels of estradiol were measured. In pups, blood levels of testosterone or estradiol, litter size, and sex ratio were investigated.

**Results:** *D. moldavica* extract significantly reduced immotile, dead, and abnormal sperms in stressed males. In female offspring, estradiol blood levels increased significantly ( $p=0.002$ ) in stress + extract group compared to stressed pups; this was not true about testosterone in male pups. The sex ratio was changed among the groups; The highest number of female pups belonged to the stress group; however, this ratio was slightly lower in stress + extract rats.

**Conclusion:** The findings indicated that administration of *D. moldavica* extract concomitant with restraint stress before pregnancy, might be through the antioxidant effect, significantly attenuated adverse effect of stress in terms of sperm parameters in male parents and sex hormone modulating both in parents and offspring.

*Keywords:* Stress; *D. moldavica*; Sperm; Sex hormones; Pre-gestational period; Herbal medicine

## The effect of sumac fruit aqueous extract on wound healing: a review of in vitro studies

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**Background and Aim:** Wound healing is one of the most complex biological events after birth, and skin diseases are the third most common reason for referring to the clinic in developed countries. If there is a defect in wound healing, it can lead to chronic skin disorders and severely reduce the quality of life. So far, no medicine has been introduced that specifically accelerates and advances the natural process of wound healing in the body, and the price and side effects of these medicines are high. Therefore, reducing the complications of wound healing and the speed of its recovery have been researched aspects, and knowledge of inexpensive and compensable drugs with fewer side effects is needed. The aim of this study is to investigate the aqueous extract of sumac fruit in Persian medicine sources and related scientific articles on skin wound healing.

**Methods:** In this review study, the original sources of Persian medicine such as Ibn Sina's Qanun and Makhzan al-Adawiyah were reviewed. Also, related articles (2016 to 2023) were entered in the search sources in PubMed, Google Scholar, Science Direct, and SID. The words were sumac, inflammation, wound healing, and sumac fruit.

**Results:** The obtained data showed that the aqueous extract of sumac has antioxidant, antimicrobial and anti-inflammatory properties due to the existing molecules such as gallic acid, rosmarinic acid and kaempferol. The polar nature of these compounds is the main reason for the strong reparative activity observed for aqueous and hydro-alcoholic extracts prepared from different organs of sumac, especially dried fruits. The use of sumac plant increases wound healing and collagen density, which is due to the decrease in the activity of myeloperoxidase enzyme, tumor necrosis factor alpha, interleukin 6, and the increase of interleukin 10. Cytotoxic effect of sumac herbal extract on fibroblast cells has not been reported. The increase of interleukin 10 causes reduction in production of the aforementioned mediators, including tumor necrosis factor alpha, and thus improves the wound environment. The angiogenic and mitogenic properties of sumac significantly improve the wound. In the sources of Persian medicine, the property of reducing infection and improving wound healing has been mentioned for sumac fruit.

**Conclusion:** According to the favorable effects of the aqueous extract of this plant in new studies in animal models and sources of Persian Medicine, it is suggested that sumac fruit as a potential alternative drug in the medicinal treatment of skin ulcer should be tested and investigated in clinical studies on patients.

*Keywords: Persian Medicine; Herbal Medicine; Sumac; Wound Healing; Complementary Medicine*



## Avicenna and the anti-cariogenic medicinal plants: an evidence-based review

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**Background and Aim:** Dental caries is one of the most common diseases in the world, and cariogenic pathogens are considered one of its main factors. Due to the side effects of common antimicrobial drugs and the increase in resistance of pathogens, the use of medicinal plants is an acceptable complementary method in this disease. Due to the limited knowledge about the healing properties of medicinal plants, in this article, an evidence-based approach was tried to deal with the traditional treatments from Avicenna's point of view for dental caries.

**Methods:** At first, anti-cariogenic plants were extracted from Avicenna's view of the Canon of medicine. Then the In Vitro studies, animal studies, and clinical trials that investigated the anti-cariogenic properties of these plants were listed. After that, briefly, approved anti-cariogenic medicinal plants were assessed in terms of phytochemicals and active ingredients.

**Results:** Out of 30 proposed medicinal plants, 15 have been studied and their anti-cariogenic properties have been shown. Medicinal plants with priority from Avicenna's point of view under the title of Qabez plants, appear to be richer in phenolic compounds. Unlike terpenoids, the mechanism of phenolic compounds, rather than strong antibacterial properties against oral microorganisms, is inhibition of biofilm formation, remineralization of dentin, and anti-inflammatory effects.

**Conclusion:** Until now, there have been limited studies, especially clinical trials, on the properties of medicinal plants in dental caries. The use of traditional remedies in future studies can help in expanding knowledge in the field of application of natural products in dentistry.

*Keywords:* Dental caries; *Streptococcus mutans*; Medicinal plants; Natural products; Avicenna

## Fatty liver and its effective medicinal plants from the perspective of Persian medicine based on clinical evidence

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**Background and Aim:** In common medicine, the liver is considered a vital organ and the center of the body's metabolism. In Persian medicine, the liver is considered a noble organ and one of the main organs of the body (along with the brain and heart). On the other hand, fatty liver is the most common chronic liver disease in the world, and its prevalence is still increasing due to the wrong lifestyle. The purpose of this study is to investigate effective medicinal plants on non-alcoholic fatty liver from the perspective of Persian medicine based on clinical evidence.

**Methods:** In this study, the keywords of 'Fatty liver; Persian medicine; Medicinal plants' were searched through databases like ISI Web of Knowledge, PubMed and SCOPUS.

**Results:** Several studies have shown the effectiveness of some medicinal plants on reducing liver enzymes or improving the ultrasound grade in patients with non-alcoholic fatty liver disease. *Plantago major* Seed, Black Seed (*Nigella sativa*) and Lemon Balm (*Melissa officinalis*), *Carum copticum* seeds, *Rosa damascena*, Cinnamon, Nano-micelle curcumin, green cardamom, *Beta vulgaris* and Caper Fruit can be mentioned among these medicinal plants. Also, some of these medicinal plants have had a positive effect on the reduction of BMI index, serum insulin, TG, Chol, LDL, FBS and HOMA index.

**Conclusion:** Considering the effectiveness of some medicinal plants on reducing liver enzymes and improving the ultrasound grade in patients with non-alcoholic fatty liver in previous studies, it seems that the design of wider studies with a larger sample size based on the teachings of Persian medicine, can be effective on control and the treatment of this disease.

*Keywords:* Fatty liver; Persian medicine; Medicinal plants

## Application of herbal radioprotective agents in cancer therapy

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**Background and Aim:** One of the effective methods of cancer treatment is radiotherapy. Although ionizing radiation destroys tumor cells, their use can also cause damage to the surrounding normal tissue, which can ultimately disrupt the treatment process due to the occurrence of side effects, especially in normal tissue. For this reason, at the same time as suppressing tumor cells and increasing their sensitivity to radiation, to preserve normal tissue, a suitable radioprotective agent must be used that does not have toxicity or side effects for the body. Various studies have shown that some synthetic substances can have a protective effect against ionizing radiation damages, but these substances have not entered the clinic because of their high toxicity and numerous side effects. Meanwhile, the use of herbal and natural substances that have less toxicity and more availability and different effects in different biological processes can be investigated. Therefore, our current study aims to investigate the uses and mechanisms of herbal substances as radioprotective agents.

**Methods:** This study was conducted as a systematic review and various studies were searched through Google Scholar, Scopus, and PubMed databases. The keywords of radiation protection, herbals, natural substances, radioprotective agents, radiotherapy, and cancer were used without time and language limitations. Studies that investigated the role of herbals in radiation protection effects met the study inclusion criteria. After titles and abstracts reading and applying exclusion criteria, we reviewed the full texts of the most relevant studies.

**Results:** A total of 169 articles were obtained which 31 related articles were selected. The results showed that most studies focused on the antioxidant effects of herbal substances that can scavenge free radicals caused by radiation. Also, these substances can use cellular oxygen to sensitize the tumor to radiation, repair damaged DNA, proliferation and improve the function of stem cells that produce blood cells and the immune system, as well as prevent inflammation to increase radiation sensitivity and reduce side effects in normal tissues. Polyphenols are effective plant substances to deal with oxidative stress caused by radiation, which is found in citrus fruits, green and black tea, berries, turmeric, and grapes, which are also effective in the mechanisms mentioned above. Another group of studies has focused on the role of herbal substances in the healing of skin lesions caused by radiation, especially radiodermatitis. Meanwhile, some herbal substances such as aloe vera, olive oil, calendula, and curcumin had radiation protection effects on the skin through mechanisms such as local hydration, anti-inflammatory, antioxidant, and wound healing.

**Conclusion:** Among various synthetic radioprotective agents such as nanoparticles, which often have high toxicity, high cost, and limited access, the use of herbal substances that can protect the body from various effects of radiation and have lower toxicity has shown that can be an effective solution.

*Keywords: Radiation protection; Radiotherapy; Herbals; Natural substances; Radioprotective agents; Cancer*

## Changes in the expression of cardiac muscarinic receptor (M2) following chronic administration of silymarin extract in rat model of biliary cirrhosis

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**Background and Aim:** Biliary cirrhosis is one of the systemic diseases which progressively affects several main organ functions. Cirrhotic-induced cardiac damage is one of such systemic complications. Despite several progressions in the therapeutic management of disease, unfortunately, there is no selective therapeutic target(s) for liver rescue. In this regard, using some magic bullets such as silymarin for liver regeneration has been so hopeful. The present study was designed to investigate the effect of chronic administration of silymarin extract on cardiac expression of muscarinic receptor (M2) in the rat model of biliary cirrhosis.

**Methods:** 28 male Wistar rats were randomly divided into four groups including a sham-operated group and 3 experimental Bile Duct Ligated (BDL) groups including a surgical-induced BDL group and two Silymarin extract (SE) groups which received SE at 300 and 600 mg/kg/day starting the day after inducing BDL. The duration of the study was 4 weeks. After 28 days, serum levels of AST, ALT, and ALP were measured. Cardiac M2-cholinergic receptors mRNA expression was also determined using the q-real time RT-PCR technique.

**Results:** In comparison with the sham-operated group, serum levels of AST, ALT, and ALP were significantly raised due to induction of biliary cirrhosis. Analysis of cardiac muscarinic receptor expression also showed that BDL could induce receptor mRNA expression. 4 weeks of administration of SE, significantly reduced serum levels of AST, ALT, and ALP compared to the BDL group. Moreover, chronic administration of SE significantly affects the cardiac expression of the M2 receptor. Compared to the sham-operated group, administration of SE at 300 mg/kg/day was associated with a significant receptor down-regulation, while the higher dose (600 mg/kg/day) normalized it as high as the sham-operated value.

**Conclusion:** Induction of BDL damaged the liver as well as altered the mRNA expression of the cardiac muscarinic receptor and SE administration affected both liver enzymes and cardiac gene expression. Although chronic administration of either low or high doses of SE normalized liver enzyme levels, only a high dose of SE was able to normalize the cardiac expression of the M2 receptor.

*Keywords: Silymarin; Biliary cirrhosis; Muscarinic receptor*

## Investigating the role of medicinal plants in reducing the symptoms of dysmenorrhea

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**Background and Aim:** Primary dysmenorrhea refers to cramping and idiopathic (without underlying disease) abdominal and pelvic pain that starts several hours to a few days before menstruation and continues for 48-72 hours after that. The prevalence of dysmenorrhea in Iran is on average 50%. Due to the high prevalence of this condition, its economic implications, and the increasing tendency towards the use of herbal medicines in chronic diseases, this study was designed and conducted.

**Methods:** The present review study was conducted based on 12 selected articles from databases such as Civilica and Jihad Daneshgahi, using the keywords “dysmenorrhea” and “Iranian medicine” and “herbal medicine,” covering the period from 2007 to 2023. In this study, variables such as age of menarche, occupation, socioeconomic status, and quality of pain were analyzed.

**Results:** Given the prevalence of problems caused by dysmenorrhea for many women and the disruption it causes in their activities, numerous studies have been conducted to find herbal remedies to alleviate this common problem. The conducted studies have shown that the most effective plant in this regard is fennel or fennel essence. Furthermore, investigations have shown that the use of ginger, cinnamon, caraway, Shirazi thyme, chamomile, cumin, saffron, motherwort, hibiscus, lavender, and mint also have a significant effect on reducing dysmenorrhea symptoms. The combined use of such plants can also be effective in reducing dysmenorrhea symptoms, for example, the combination of fennel, chamomile, and ginger. Studies conducted to examine the mechanism of action of herbal medicines in decreasing these symptoms have shown that they are effective in decreasing prostaglandin levels, increasing beta-endorphin levels, blocking calcium channels, and improving blood circulation in the treatment of dysmenorrhea. These treatments have been found to have minimal side effects. **Suggestions for Future Studies:** Today, due to the side effects and low benefit-to-harm ratio of chemical drugs, patients prefer to use herbal medicines; therefore, it is suggested that further studies be designed and conducted to achieve the optimal dose and dosage of medication for the complete treatment of dysmenorrhea and other menstruation-related symptoms. It is also recommended to conduct a study on the analgesic and anti-inflammatory effects of the hydroalcoholic extract of rose petals, which has been tested on mice, on humans as well.

**Conclusion:** The present studies testify to the significant effect of plants in reducing the intensity and duration of dysmenorrhea symptoms.

*Keywords: Dysmenorrhea; Herbal medicine; Iranian Medicine*

## Therapeutic potential of garlic in Persian medicine; a review on ethnomedicinal application and pharmacology

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**Background and Aim:** Garlic (*Allium sativum* L.) is the oldest famous plants, have long been considered as a spice and botanical for the prevent and treatment of various diseases, such as hypertension, antimetabolic disorder, hyperlipidemia, and diabetes. This study aimed to review confirmed the ethnomedicinal uses and pharmacological properties of garlic, as well as to evaluate its toxicity.

**Methods:** The keywords “Seer” (Persian) and “Saum” (Arabic),” as well as English terms such as “antibiotic,” “garlic,” “*Allium sativum*,” “antimicrobial,” “bioactive compounds”, and other related keywords were searched in the PubMed, Google Scholar, and Web of Science databases from 2000 to 2024.

**Results:** Allicin is one of the main bioactive compounds in garlic; it has various antimicrobial activities such as antibacterial activity against a wide range of Gram-negative and Gram-positive bacteria, antifungal activity, particularly against *Candida albicans*, antiparasitic activity, including against some major intestinal protozoan parasites, and antiviral activity. The antibacterial activity of allicin is due to the inability of most bacteria to develop resistance against it, as its mechanism of action is entirely different from that of other antibiotics. Widespread use of antibacterial drugs in clinical settings, many microorganisms have become adapted to synthetic antibiotics and have become highly resistant over time. An important advantage of garlic is its effectiveness against hospital-acquired strains that often exhibit higher-than-average resistance to many antibiotics. Garlic is also the primary reason for the inhibition of fungal growth. However, research has shown that allicin from *Allium sativum* (garlic) exhibited toxicity towards the tested human cell lines, affecting their survival, proliferation, glutathione levels, and inducing apoptosis, indicating potential toxicity to normal human cells, including human lymphocytes, causing DNA damage and apoptosis. Therefore, determining the safe dose of this compound for clinical use is important.

**Conclusion:** These findings collectively emphasize the multifaceted antimicrobial properties of garlic and its effective use in the treatment of infectious diseases, positioning it as a valuable resource in the food and pharmaceutical industries for the production of nutraceutical products to combat microbial infections. However, further studies are needed to confirm the safe dosage required.

*Keywords:* Persian Medicine; Garlic; *Allium sativum*; Antimicrobial

## Investigating the nutritional and therapeutic uses of mung bean (*Vigna radiata* L.) from the perspective of Persian medicine and conventional medicine

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**Background and Aim:** Mung bean is one of the most widely used beans in most parts of the world. The purpose of this research is to express the characteristics of mung bean from the perspective of Persian medicine and compare it with new findings.

**Methods:** In this research, summative content analysis method was used to analyze Text books of Persian medicine and electronic resources. The method of summative content analysis is performed in seven steps. In the present study, searching with the keyword mash in reliable sources of Persian medicine and mung bean, mung bean sprout, *Phaseolus mungo* L. and *Vigna radiata* L., mung bean in PubMed, Google Scholar, MD Consult, Web of Sciences, SID, Iranmedex and Scopus It took place from the beginning of 2000 until April 13, 2024.

**Results:** Due to the presence of many phytochemical compounds, mung bean has become one of the widely used beans in the prevention and treatment of some chronic diseases in Persian and conventional medicine. This plant contains nutrients, including proteins, dietary fibers, minerals, vitamins and is rich in polyphenolic compounds. Many recent studies have identified mung bean's potential health benefits, such as its hypoglycemic, lipid-lowering, anti-hypertensive, anti-cancer, liver-protective, and immune-modulating properties. In Persian medicine, due to less bloating and less digestive complications compared to other beans, high nutrition and healthy blood production, it has been the focus of Persian medical experts. It is also used to relieve excessive body heat, lung diseases and cough, fever, digestive problems (diarrhea and constipation), headaches of hot origin, visual impairment, throat swelling, musculoskeletal problems and skin problems.

**Conclusion:** According to the conducted researches, it seems that mung beans, as one of the widely consumed pulses, has attracted the attention of researchers and the various products obtained from it can be used as prevention in the diet of all age groups and It should be used and paid attention to as a complementary treatment along with drug treatments for many chronic diseases.

*Keywords:* *Vigna radiata*; Iranian medicine; Mung bean

## The effect of *Melissa officinalis* and *Boswellia serrata* extracts on memory and cognitive impairments in the elderly: A systematic review study

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**Background and Aim:** With increasing age, the possibility of memory impairment and the occurrence of cognitive disorders increases significantly, so prevention of any kind of complications at this age is very important. Today, the use of herbal medicines to prevent memory defects and empower memory is considered. In traditional Iranian medicine, there are evidences in the use of *Melissa officinalis* and *Boswellia serrata* to improve memory. The aim of this systematic review is to investigate the effect of medicinal compounds containing *Melissa officinalis* and *Boswellia serrata* on the memory of the elderly.

**Methods:** Method: This is a systematic review. Searching for studies in Persian and English of 2012 until 2023 in the English databases PubMed, Web of Science, Scopus and in the Google Scholar and Magiran, SID. The keywords were Aging, elderly, older people, Memory, Cognitive, *Melissa officinalis* and *Boswellia serrata* and MESH equivalents using from the AND and OR operators. The selection criterion was articles that focus on the use of these compounds and their effect on memory in human samples.

**Results:** After evaluating 12 articles, four articles reviewed to systematic review. The findings indicated that the use of these herbal compounds was effective in the elderly with mild to moderate memory deficits. It has also been effective on behavioral symptoms and reduced restlessness.

**Conclusion:** Although the compounds containing *Melissa officinalis* and *Boswellia serrata* have reported beneficial effects for improving memory deficits, these studies have faced limitations such as small number of samples, doses and different tools for examining short follow-up periods. Future studies should pay more attention to the possible interactions between drugs and assessment in dementia, Alzheimer's and age-related cognitive deficits.

*Keywords:* *Melissa officinalis*; *Boswellia serrata*; Memory; Cognitive defects; Elderly



## Investigating effectiveness of an herbal formula and acupuncture on anthropometric indices of overweight patients compared to placebo: A randomized double-blind controlled trial

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**Background and Aim:** Considering the current lifestyle of most people, the prevalence of obesity among the population is much wider than in previous generations. The higher prevalence of obesity can lead to many complications, including cardiovascular disease and higher mortality rate. Despite the existence of treatment methods for obesity, the great desire of patients to use traditional medicine treatment methods, led us to conduct this study to measure the effectiveness of an herbal formula based on traditional Persian medicine and acupuncture on obesity.

**Methods:** After obtaining legal permissions from Tehran University of Medical Sciences (Ethics code: IR.TUMS.MEDICINE.REC.1400.1380) and registering the protocol of study (IRCT20171007036614N2), participants signed an informed consent. Firstly, patients were divided 2 strata, oral capsule and acupuncture, based on their desire, predicted compliance, and adherence to the treatment method. Then, patients in each group randomly received real intervention or its placebo using 4 block randomization method. Group 1 received either herbal medicine or its placebo and group 2 received acupuncture protocol or sham acupuncture, as placebo. Herbal capsule was made of *Cuminum cyminum* L., *Apium graveolens* L., *Ruta graveolens* L., *Trachyspermum ammi* L., *Origanum majorana* L., and sodium tetraborate and placebo capsules were filled by pectin. Participants were requested to take two 500 mg capsules 3 times a day for 2 months. In acupuncture group, patients received specific electroacupuncture method or its placebo 12 sessions within 2 months: 1st month two sessions per week and in 2nd month one session per week. For performing blindness, oral medicine was prepared by a third-party pharmacologist and acupuncture has been performed by a third-party specialist; hence: neither outcome assessor, nor patients were aware of the intervention or placebo group. Anthropometric indices were recorded before intervention, after 1 month, and after 2 months and data was analyzed using repeated measurements test by SPSS software.

**Results:** Total 200 patients were included in this study: mean age 42 years old, 57% females, and 70% married. There were no significant differences in demographic indicators between the groups ( $P>0.05$ ). Our findings showed that weight, wrist circumference, hip circumference, and body mass index (BMI) just improved significantly in acupuncture group ( $P<0.05$ ), the ratio of waist circumference to hip circumference just improved remarkably in herbal treatment group ( $P<0.05$ ), and arm circumference, chest circumference, thigh circumference, and waist circumference improved significantly in both herbal treatment and acupuncture groups compared to their placebo ( $P<0.05$ ).

**Conclusion:** Traditional Persian medicine herbal formula and acupuncture indicated positive effects on weight loss in overweight patients. Conducting further surveys with a larger sample size and laboratory measuring outcomes are recommended to elucidate wider dimensions of these treatment methods.

*Keywords:* Overweight; Persian Medicine; Acupuncture; Phytotherapy

**Investigating the safety and efficacy of clove (*Eugenia caryophyllata*)- based medicine and citalopram combination therapy for major depressive disorder:  
A randomized, double-blind, placebo-controlled trial**

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**Background and Aim:** Major depressive disorder (MDD) is a highly prevalent and disabling psychiatric disease. The prevalence of MDD among military service members is significantly higher than in civilians. Despite advances in treating MDD, incomplete treatment is still a common problem. In recent years, several studies have investigated the efficacy of complementary medicine, including herbs, along with standard antidepressants. According to the sources of Persian medicine, clove is one of the effective plants in the treatment of depression. The present study aims to evaluate the safety and efficacy of clove-based medicine and citalopram combination therapy for the treatment of MDD in male soldiers.

**Methods:** This was a double-blind, randomized clinical trial. Soldiers who were referred to the 505 psychiatry hospital between July 2021 and April 2022 and were diagnosed with MDD according to the Diagnostic and Statistical Manual of Mental Disorder, fifth edition (DSM-V), were evaluated for eligibility. Patients with Hamilton Rating Scale for Depression (HAM-D) scores of  $\geq 19$  and a score of  $\geq 2$  on item 1 of HAM-D were included. Eligible patients were randomized 1:1 to receive clove-based medicine or placebo 3 ml/day for six weeks. All patients were treated with citalopram 10 mg/day in the first two weeks, and then the dose was increased to 20 mg/day for the remaining weeks. The primary outcome measure was the changes in the HAM-D scores. The response to treatment ( $\geq 50\%$  reduction in the HAM-D score) and remission (HAM-D score  $\leq 7$ ) rates were considered as the secondary outcome measures.

**Results:** A total of 80 patients were randomly assigned to either citalopram+clove (n= 40) or citalopram+placebo (n= 40) groups. Thirty-three patients in the clove arm and 31 patients in the placebo arm completed the study. Patients receiving clove had slightly lower HAM-D scores at week 4 and 6 after the intervention compared to patients receiving placebo (P value= 0.046 and 0.042, respectively). Changes in HAM-D scores from baseline were similar among the study groups at all follow-up visits. Thirty-two patients (97%) in the clove group and 29 patients (93.5%) in the placebo group were responders (P value= 0.607). The rate of remission in the clove arm of the study (18 patients, 54.5%) was significantly higher than the placebo arm (8 patients, 25.8%) (P value= 0.019).

**Conclusion:** Clove combination therapy with citalopram is safe and might be effective in patients with major depressive disorder. Further studies are needed to more rigorously address the safety and efficacy of clove-based products in major depressive disorder.

*Keywords: Clove; Major depressive disorder; Persian Medicine; Soldiers*

## Exploring the Skin Benefits of *Polypodium vulgare* Linn. (Bisfaij): A Review

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**Background and Aim:** *Polypodium vulgare* Linn. (Bisfaij) has a long history of traditional use for various skin conditions. This systematic review aimed to evaluate the scientific evidence supporting its potential benefits for topical skin applications.

**Methods:** A comprehensive search was conducted in PubMed and Google Scholar, including articles published from 1949 to 2024 without any restrictions. Search terms included “*Polypodium vulgare* Linn.”, “Bisfaij”, and “skin”. Studies investigating the therapeutic effects of *Polypodium vulgare* for topical skin applications were reviewed.

**Results:** Findings suggest that *Polypodium vulgare* may offer several benefits for skin health: Sun Protection: Studies demonstrate its ability to reduce sunburn severity, erythema, and other UV-induced skin damage. Polypody extract consumption significantly decreased sunburn cells and pyrimidine cyclobutane dimers, indicating reduced tissue and DNA damage. Anti-inflammatory Properties: Polypody extract inhibits the penetration of mast cells, thereby potentially reducing inflammation, redness, and itching associated with skin conditions. Protective Effects: Evidence suggests a protective effect on Langerhans cells, crucial immune cells in the skin that fight infections. Psoriasis Treatment: *Polypodium vulgare* may offer a safe and effective option for managing psoriasis symptoms, potentially leading to complete symptom relief due to minimal side effects and high patient success rates.

**Conclusion:** This review provides promising evidence for the potential benefits of *Polypodium vulgare* in various skin applications, particularly for sun protection and managing inflammatory skin conditions. However, further research with larger sample sizes is needed to confirm these findings and establish optimal treatment protocols.

**Keywords:** Bisfaij; *Polypodium vulgare* Linn; Skin

## The prevalence of herbal medicine use and related factors among diabetic patients in Tabriz, Iran, 2023: a cross-sectional study

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**Background and Aim:** The use of complementary and alternative medicine, especially medicinal herbs, in general, and particularly by people with chronic diseases, such as diabetes, is increasing day by day. In this study, the primary objective was to characterize the prevalence and pattern of herbal use among diabetic patients in Tabriz, Iran, and the second objective was to investigate the factors related to the use of herbs among the same patients.

**Methods:** A descriptive cross-sectional study was carried out on 322 diabetic patients with random cluster sampling of specialized and subspecialized clinics in Tabriz, Iran. Interviews were conducted using a structured questionnaire from October 1, 2022, to April 23, 2023. The questionnaire with validity and reliability confirmation regarding the sociodemographic characteristics of participants, their diseases, use of herbal medicine, and related characteristics was completed by the traditional medicine assistant. Univariate and multivariate binary logistic regression analysis was performed to evaluate the association between various predictor variables with herb use. Data was analyzed using SPSS software (SPSS 21, SPSS Inc., Chicago, IL, USA).

**Results:** Out of 322 diabetic patients, 155 individuals (48.1%) used herbal medicines to lower their blood sugar. The most commonly used herbs included *Urtica dioica* (51.6%), *Abelmoschus esculentus* (14.8%), *Eryngium* sp. (11%), *Trigonella foenum-graecum* (9%) and *Cinnamomum verum* (9%). The chance of Herb use in women patients was 1.64 times (adjusted odds ratio (AOR)=1.64, 95% confidence interval (CI)=1.06 to 2.55) higher than male patients. With each passing year of diabetes diagnosis, the probability of using herbal medicines increased by 5 percent (AOR=1.05, 95% CI= 1.01 to 1.08). Diabetic patients who use herbal medicines significantly prefer to use their conventional medications alongside herbal remedies (P value <0.001) and only a small percentage of them prefer to rely solely on herbs.

**Conclusion:** According to the current study, the use of herbal medicines among diabetic patients in Tabriz, Iran, was prevalent. Gender, duration of diabetes, and patient preferences for the type of treatment were identified as predicting factors for herbal medicinal use among diabetic patients.

*Keywords:* Herbal medicine; Diabetes; Prevalence; Predictors

## In vitro investigation of antimicrobial effects of *Pimpinella anisum* (Anise) on oral pathogens

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**Background and Aim:** Dental caries are primarily caused by acidic by-products resulting from bacterial fermentation of dietary carbohydrates. Factors such as biofilm microbiology, salivary flow, fluoride exposure, and sugar intake significantly influence the development of caries, leading to complications such as pain, inflammation, and tooth loss, which incur substantial treatment costs. Alongside dental caries, oral candidiasis is another oral disease impacting the quality of life, especially in diabetic and immunocompromised patients, and is potentially linked to premalignant oral diseases. In recent years, there has been growing interest in traditional medical practices, including Persian medicine, as complementary approaches to managing oral disease. Persian medicine texts describe various medicinal plants, such as *Pimpinella anisum*, reputed for their potential benefits in promoting oral health. The ongoing research explores the antimicrobial effects of these plants against common bacteria associated with dental caries and the fungal pathogen *Candida albicans*, the leading cause of oral candidiasis.

**Methods:** Based on criteria such as accessibility, recognizability, absence of established effects, and emphasis on dental and gum-strengthening efficacy in Persian medicine texts, *P. anisum* was chosen for investigation. The *P. anisum* seeds were sourced from a local market in Zanjan, and its scientific names confirmed by the Department of Pharmacognosy at Zanjan University of Medical Sciences. *P. anisum* Essential oil (PAEO) was prepared from seeds using the Clevenger apparatus. The chemical composition of the PAEO was analyzed using Gas Chromatography-Mass Spectrometry (GC-MS). The antibacterial activity of the PAEO was assessed using the agar well diffusion method. At the same time, the minimum inhibitory concentration (MIC) and minimum bactericidal/fungicidal concentration (MBC/MFC) were determined using the broth microdilution method on a 96-well microplate.

**Results:** The mean essential oil yield of *P. anisum* seeds was 0.3 g oil/100 g dried seeds. PAEO contained predominantly oxygenated compounds (96.73%) and phenylpropanoids (91.53%). Major components of PAEO included Anethole (89.03%), Carvone (5.00%), and Limonene (2.26%). The PAEO exhibited significant antimicrobial properties, manifesting inhibition zones of 12 mm for *L. acidophilus*, 14 mm for *S. mutans* and *S. salivarius*, 15 mm for *S. sanguinis*, and 23 mm for *C. candida*, respectively. The MIC of PAEO was determined to be 1.82 mg/ml for *S. sanguinis*, *S. mutans*, *L. acidophilus*, 233.25 mg/ml for *S. salivarius*, and 29.16 mg/ml for *S. salivarius*. PAEO had no bactericidal/fungicidal effect on *C. candida* and *S. salivarius*. Nevertheless, it induced the bactericidal effect on *S. mutans*, *S. sanguinis*, and *L. acidophilus* in the same concentration of MIC (1.82 mg/ml).

**Conclusion:** This study's findings have demonstrated the notable antimicrobial properties of PAEO against oral pathogens. These results suggest that PAEO is a good candidate for the prevention and treatment of oral diseases. However, further research is needed to understand its efficacy and safety in clinical settings.

**Keywords:** Anti-bacterial agents; Antifungal agents; Volatile oils; Dental caries; Oral Candidiasis

## Investigating the Impact of Royal Jelly Consumption on Management of Polycystic Ovarian Syndrome

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**Background and Aim:** Polycystic ovary syndrome (PCOS) is the most common endocrine and metabolic disorder in women of reproductive age with a prevalence of 8-13% in Iran, which is a set of genetic and environmental factors leading to hormonal imbalances and hyperandrogenism in patients. According to the high prevalence of this syndrome and the efforts to find an effective substance to improve the sign and symptoms of this syndrome, and also the widespread benefits of Royal Jelly in the management of chronic diseases, this study was conducted with the aim of investigating the impact of Royal Jelly consumption on management of polycystic ovarian syndrome.

**Methods:** In this systematic review study to find relevant articles, search was done in the range of 2013 to 2024 with English and Persian keywords: Polycystic Ovary Syndrome (PCOS), Royal Jelly, Fertility, Hormone in SID, Magiran, Web of Science, Scopus, PubMed, Science Direct.

**Results:** According to the purpose of the study, 12 articles were examined on the basis of Inclusion and exclusion criteria and content proportionality. Due to the moral and practical constraints available to understand the physiology of the impact of substances in human studies, only 1 study was conducted on human samples, and other studies focused on animal models.

**Conclusion:** The results of studies indicate that the consumption of Royal Jelly in women with polycystic ovary syndrome can lead to promotion of folliculogenesis, increase in estrogen level with antioxidant effect on oxidative stress, anti-androgen activity and improvement of fertility and hormonal balance. It can also affect other PCOS-related issues such as insulin hormone resistance in the liver tissue of patients. Due to the limited number of studies in this field, it is recommended to conduct more studies, especially studies on human samples, in order to clarify the effect of Royal Jelly on polycystic ovary syndrome.

*Keywords: Polycystic ovary syndrome (PCOS); Royal jelly; Fertility*

## The effect of aromatherapy with lavender on vital signs and pain

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**Background and Aim:** Vital signs include temperature, pulse, blood pressure and respiration rate, in the United States, they added pain as the fifth vital sign. Their measurement and clinical evaluation are the first step for clinical examination. One of the approaches used to change the vital signs is the use of aromatherapy. The effects of lavender scent observed in controlling pain, reducing depression and other beneficial. This article aims to evaluate and summarize the results of clinical trials conducted on the effect of lavender aromatherapy on Vital signs and pain.

**Methods:** A systematic search of related controlled experimental studies was conducted in the main databases such as PubMed, Scopus, Science Direct and search machine Google Scholar in a period 2014-2024. The search strategy includes keywords Lavender, vital sign, blood pressure, pain, heart rate/ Aromatherapy. Repetitive and unrelated articles, studies published non-English languages, studies conducted on non-patients such as nurses are among the exit criteria.

**Results:** In general, a total of 18 reviewed articles have shown that Aromatherapy with lavender generally reduces vital signs in patients after oral surgery, before rhinoplasty, ERCP, and BPH, and in patients undergoing mechanical ventilation, as well as significantly reducing pain in osteoarthritis patients and after gynecological surgeries and caesarean section, before ERCP and during drain evacuation. According to the trials conducted, aromatherapy with lavender in palliative care and cardiac rehabilitation patients could not affect vital signs. The effect of this in ACS patients and after CABG are variable.

**Conclusion:** In general, it can be concluded that lavender aromatherapy in patients with acute problems has more effects on the control of vital signs and it can be used as a non-medicinal treatment with less side effects in improving vital signs.

*Keywords: Lavender; Vital sign; Blood pressure; Pain; Heart rate; Aromatherapy*

## The sleep-enhancing effect of jujube in Persian and modern medicine

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**Background and Aim:** Chronic insomnia is a common condition that affects around 30% of the general population. Insomnia can impair cognitive and physical functioning, cause daytime dysfunctions, and lead to health conditions like hypertension, cardiovascular disease, diabetes, and obesity. Herbal medicine may be effective for treating insomnia based on traditional remedies and some new evidence. Valerian, chamomile, and lavender are commonly used plant extracts for insomnia. Another one is *Ziziphus jujuba*, commonly known as jujube, which is an herbal plant used in Chinese traditional medicine for its sedative and anxiolytic properties.

**Methods:** To introduce the sedative effect of jujube in Persian medicine and its mechanism of action in modern medicine, we searched the main pharmacologic and therapeutic texts of traditional Persian medicine and databases PubMed, Google Scholar, Scopus, and Magiran.

**Results:** Jujube, or red date, is a commonly used herb in traditional Chinese and Persian medicine for respiratory, gastrointestinal, and dermatological disorders. In Chinese medicine, *Ziziphus jujuba* is also known for its sedative and hypnotic effects, which have been supported by various studies. It is rich in alkaloids and saponin which appear to trigger sleepiness through its effects on serotonin, and has been used to treat sleep disorders by regulating the nervous system related to gamma-aminobutyric acid (GABA). In Persian medicine, jujube is a fruit that holds a special place due to its moderate temperament. It is considered useful for cleansing and strengthening the liver, as well as fortifying the brain and heart in the presence of certain abnormal humors such as 'soda' and 'balgham'. Moreover, it is believed to help regulate blood temperament. Although in Persian medicine jujube is not directly prescribed for sleep disturbances, it can be useful for its blood and humor-temperament modulation and help the body promote the production of normal and effective medical spirit necessary for a good night's sleep.

**Conclusion:** Chronic sleep disorders can result in various complications, including high blood pressure, diabetes, obesity, and cardiovascular problems. Jujube, which has properties that modulate these metabolic complications, is a good choice as an herbal medicine for treating insomnia because of its sleep-inducing and sedative properties in traditional and integrative medicine.

*Keywords: Insomnia; Sleep disorders; Jujube; Ziziphus jujuba; Integrative medicine; Persian medicine*



## From *Arnebia euchroma* to Marhame-Mafasel medicine: The importance of Traditional Persian medicine in designing new drugs

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**Background and Aim:** Traditional Persian medicine (TPM), with a history of ten thousand years, has the potential to solve many of the current medical problems. In recent years, numerous studies have been conducted on the effects of various herbal compounds and different traditional medicine drugs on specific symptoms and various diseases. Knee osteoarthritis as one of the most common forms of arthritis, involves inflammation, fundamental changes in joint structure, pain, disability, and reduced quality of life for patients. The Marhame-Mafasel ointment, derived from TPM using reverse pharmacology and contains the *Arnebia euchroma* herb. The aim of this study is to investigate *A. euchroma* and various studies conducted on it.

**Methods:** In this narrative review, scientific databases such as PubMed, Google Scholar, Scopus, ISC, SID and Magiran were searched with *A. euchroma*, Marhame-Mafasel ointment, animal study and clinical study keywords.

**Results:** *Arnebia euchroma* from the family of Boraginaceae, distributed in Asia and dry region of Africa. Its prominent components are Shikonin and Alkannin with widespread pharmacologic properties such as antiinflammation, anti-microbial and anti-cancer effects. The Marhame-Mafasel ointment containing *A. euchroma* extract, derived from traditional medicine using reverse pharmacology, has positive and beneficial anti-inflammatory and analgesic effects on knee osteoarthritis patients according to multiple clinical trial studies, and without significant side effects, can enhance the quality of life for affected individuals. Results of animal studies showed a significant reduction in inflammation induced in the paw, synovial fluid, and ears of laboratory mice after using the joint cream ( $P < 0.01$ ). Statistically significant reductions were also found in inflammatory factors present in the serum of female rats, including serum levels of IL-6 (Interleukin 6), anti-collagen antibodies, and CRP (C-reactive protein), compared to the control group ( $P < 0.01$ ). Two skin sensitivity tests and desensitization tests did not show any signs of inflammation such as irritation, edema, and itching. Results of human studies comparing the effects of the Marhame-Mafasel ointment with placebo showed that although both drug and placebo had positive effects on patients after the treatment period but, the drug therapeutic effect in reducing pain and improving patient function were significantly higher than placebo ( $P < 0.01$ ). Another study based on the Marhame-Mafasel ointment efficacy on reducing pain and inflammation in knee osteoarthritis patients comparison to 1% diclofenac ointment showed significant improvements in both groups using Visual Analogue Scale (VAS) questionnaire and two parameters of pain and inflammation in the Western Ontario and McMaster Universities Arthritis Index (WOMAC) questionnaire, while joint stiffness related to the WOMAC questionnaire and inflammatory cytokines such as Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) and IL-6 were only significantly improved in the patient group using Marhame-Mafasel ointment ( $P < 0.01$ ).

**Conclusion:** The Marhame-Mafasel ointment containing *A. euchroma* extract, derived from TPM using reverse pharmacology, has positive and beneficial anti-inflammatory and analgesic effects on knee osteoarthritis patients according to multiple clinical trial studies, and without significant side effects, can enhance the quality of life for affected individuals.

**Keywords:** *Arnebia euchroma*; Knee osteoarthritis; Marhame-Mafasel ointment

## Frequency evaluation of the use of complementary and alternative medicine among patients with reflux (GERD) in Fasa, Iran

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**Background and Aim:** Gastroesophageal reflux disease (GERD) is a highly prevalent condition, affecting 10-20% of the adult population in Western countries. The economic burden associated with GERD is also substantial, owing to the costs of medications, medical consultations, and productivity loss. The use of CAM modalities for gastrointestinal conditions has increased steadily over the past decades. To determine the frequency of use of complementary and alternative medicine in reflux sufferers in Fasa city, Iran.

**Methods:** This is a cross-sectional-descriptive analytical study, during which 250 patients with gastric reflux in Fasa city were interviewed in terms of using traditional medicine and alternative medicine by using the I-CAM questionnaire, and one-sample t-tests were used to analyze the data and logistic regression was used.

**Results:** The results of the statistical analysis showed that gender has no significant relationship with the use of complementary medicine based on the chi-square test ( $p$  value= 0.825). Among the participants, herbal medicines were used, and mint and chamomile were the most popular among the participants. In terms of the consumption of vitamins and mineral supplements, vitamin D and multivitamins were the most consumed. It is clear that there is a significant relationship between the use of self-treatment and the gender of the participants, and clearly women use self-treatment more. Income level with choice of Treatment resources and the use of herbal medicines and supplements had a significant relationship, but there was no significant relationship with self-care. As can be seen, except for the resources providing complementary medicine and the use of self-treatment, other items have a significant relationship with the level of education. According to the above table, it can be concluded that the level of literacy has an inverse relationship with the use of complementary medicine and the level of education of people can be considered an important factor in the use of complementary medicine in patients with reflux.

**Conclusion:** According to the results of this study, it can be concluded that the use of complementary and alternative medicine methods in patients suffering from gastric reflux is a complex and multidimensional pattern. Examining the demographic characteristics of the participants shows that while some demographic characteristics such as income level Place of birth and education have been identified as factors influencing the choice of alternative medicine by people with reflux, some other characteristics such as gender have no significant relationship. In this study, specific methods of complementary and alternative medicine such as herbal medicines, vitamins, and food supplements were identified as popular and welcomed methods by the participants. Another important point is that the use of complementary and alternative medicine is not only limited to therapeutic interventions but also includes health promotion measures so a large number of people have turned to traditional medicine methods to strengthen their health and improve their quality of life

*Keywords: Complementary medicine; traditional Persian medicine; Reflux; Herbal medicine*

## Exploration of Genital Warts and HPV Infection from the Perspective of Iranian Traditional Medicine

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**Background and Aim:** Human papillomavirus (HPV) infection is one of the most common sexually transmitted infections in the world. HPV can be detected in 99.7 percent of cervical cancers. Cervical cancer is the second cause of leading to death for women of reproductive age in developing countries. There is not a completely effective treatment for HPV genital infection and related lesions now. In text books of Persian medicine, genital warts with the name of “Tholul-e-rahem” are mentioned in women’s diseases chapter. The present study explains this disease based on Persian medicine and investigates the effect of myrtle herbal suppository based on *Myrtus communis* on female with cervicovaginal HPV infections in a double-blind, randomized trial with placebo control

**Methods:** This study is a qualitative research conducted by searching reputable Persian traditional medicine books and Persian and English articles in databases such as Google Scholar, ScienceDirect, PubMed, Magiran, and the Scientific Information Database. The collected information on the symptoms, etiology, pathology, and treatment of genital warts was categorized. Then, as much as possible, the genital warts and precancerous changes in the cervix were correlated and explained from the perspective of Iranian traditional medicine.

**Results:** External genital warts correspond to “Tholul-e-rahem” in Persian traditional medicine in terms of symptomatology. For cervical intraepithelial neoplasia (CIN) changes in the cervix, which are diagnosed based on histopathological findings and lack specific clinical signs, there is no specific equivalent in Iranian traditional medicine, although they seem to have more similarity with uterine eruptions. From a pathogenic perspective, two factors, increased natural or unnatural material and increased organ attracting force, are considered in Persian traditional medicine. The material cause of genital warts is mentioned as thick dry phlegm, black bile (souda) mixed with, or a compound of black bile and phlegm. Perhaps the virus can be considered as a foreign and unknown entity for the body that, after entering the cell and with its help, manifests its pathogenicity. From the perspective of Persian traditional medicine, factors such as improper eating and drinking habits, sedentariness, any factor that hinders the analysis of extra materials in the body, warm uterine temperament, injuries to the uterus such as abortion, trauma, and childbirth can play a role in the occurrence of uterine tumors. The treatment of genital warts in Persian traditional medicine is based on cleansing the body from the causative agent of the disease, moisturizing foods recommendations, abstaining from foods that generate disease-causing materials, topical treatments, and physical methods to remove warts.

**Conclusion:** External genital warts in Persian traditional medicine are equivalent to “Tholul-e-rahem” and belong to the category of uterine inflammation (Oram). In addition to local treatments, cleansing the body and observing health maintenance measures are also helpful in treatment.

*Keywords: Genital warts; Tholul; Human papillomavirus; Vagina; Cervix; traditional Persian medicine*

### Chamomile as a multi-target drug for cardiovascular diseases: A medical hypothesis

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**Background and Aim:** Medicinal herbs are valuable resources for multi-target drug discovery. Chamomile (*Matricaria chamomilla* L.) is a medicinal plant mentioned in the traditional medical literature, including Persian references, and is used for the treatment of many ailments, including cardiovascular diseases

**Methods:** We searched research studies about chamomile or/and its components on mechanism and pathophysiology of three common types of CVD; hypertension, heart failure, ischemic heart disease, in electronic data bases.

**Results:** Studies demonstrate that chamomile and the mentioned components have therapeutic effects on cardiovascular diseases. Its components of chamomile could regulate oxidative stress, inflammation, apoptosis, vasodilation, and lipid metabolism

**Conclusion:** Thus, chamomile could be proposed as a candidate natural multi-target medicine for cardiovascular diseases. Further, multiple randomized clinical trial should be performed to evaluate the efficacy of chamomile for treatment of cardiovascular diseases.

*Keywords: Chamomile; Cardiovascular disease; Multi-target*

### Management of endometriosis-related symptoms with plant-based medicine: A review of clinical evidence

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**Background and Aim:** Endometriosis (EM) is a chronic inflammatory, non-malignant, and estrogen-dependent disorder characterized by the presence and growth of endometrial-like tissue outside the uterine cavity. EM has a high prevalence rate among women of reproductive age (10%–15%) and causes menstrual and pelvic pain. Complementary and alternative medical treatments for endometriosis have become popular due to the few adverse reactions reported. Considering the existence of a number of clinical trials and the need to establish integrated evidence for use in evidence-based medicine, this review study was conducted to determine the efficacy of herbal medicines in the treatment of endometriosis.

**Methods:** Electronic databases, including Web of Science, PubMed, Scopus, Google scholar, and SID have queried with the keywords “Endometriosis” AND “Herbal Medicine” OR “Herbalism” OR “Herb” OR “plant” OR “flavonoid” OR “phenolic compounds” OR “polyphenol” in the title and abstract from inception up to March 2024. Only clinical studies articles with English and Persian full-texts on endometriosis were included in our study. A manual search of the references of the retrieved articles were also evaluated for relevant studies and supplement the electronic search.

**Results:** Three clinical trial articles involving 198 women were reviewed to investigate the effects of herbal medicines, including garlic, silymarin, and curcumin, on symptoms of endometriosis. These studies were included as relevant papers. The results showed that garlic, by decreasing oxidative stress, prostaglandin production, and endometriosis cell proliferation, and increasing estrogen elimination, can reduce pelvic and back pain, dys-



menorrhoea, and dyspareunia, which are essential symptoms of endometriosis. Silymarin acts as an anti-inflammatory agent by inhibiting the migration of neutrophils to the site of inflammation, Kupffer cells, prostaglandins, leukotrienes, and the transcription factor NF- $\kappa$ B which regulates various genes involved in the inflammatory process. Additionally, curcumin does not affect the painful symptoms or quality of life of women with endometriosis, although it decreases the number of endometriosis stromal cells and inhibits cell growth in a dose-dependent manner in animal studies. In all studies, the medicines were administered orally. The duration of treatment for endometriosis ranged from 8- 12 weeks. In most cases, the effect on endometriosis was attributed to phenolic compounds, such as flavonoids and phenolic acids, which have reported anti-inflammatory, proapoptotic, antioxidant, and immunomodulatory functions. Moreover, some phytochemicals have been associated with a strong phytoestrogenic effect, modulating the estrogen activity.

**Conclusion:** Polyphenolic compounds-rich herbal medicines are potentially effective in management of endometriosis symptoms in spite of there are some limitations and bias in the studies. However, this beneficial effect should be further confirmed in large-scaled RCTs with rigorous methodological and well-reported trials.

*Keywords: Endometriosis; Herbal medicine; Phytotherapy; Pelvic pain; Quality of life*

## Clinical Trials Conducted on Herbal Remedies for the Treatment of Melasma: A Scoping Review

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**Background and Aim:** Melasma, also known as chloasma, is a common skin disorder characterized by acquired hyperpigmentation. Many patients with this condition prefer using herbal remedies instead of chemical agents. This study aims to review clinical trials conducted on the effectiveness of herbal remedies in treating melasma.

**Methods:** In this scoping review, we searched the PubMed, Scopus, Web of Science, Cochrane, SID, and Magiran databases for clinical trials on the efficacy of herbal remedies in melasma treatment until August 2023. We used keywords such as melasma, chloasma, complementary medicine, alternative medicine, Persian medicine, herbal remedies, and their MeSH-related terms to design the search strategy. We then reviewed and summarized the relevant articles.

**Results:** We found a total of 19 clinical trials examining the effectiveness of herbal remedies in treating melasma. The literature review revealed that licorice, rhubarb, a mixture of melon seed and chickpea, sorrel, Aloe Vera leaf gel, parsley, tomato, fern, olive, pine bark, and Indian gooseberry had positive effects in treating melasma. Licorice is the most extensively studied herbal remedy for melasma treatment. Some patients who used licorice, rhubarb, and parsley experienced redness and skin allergies.

**Conclusion:** Few studies have evaluated the effectiveness of herbal remedies in treating melasma. Further research, including clinical trials, systematic reviews, and meta-analyses, is necessary to assess the efficacy of herbal remedies and natural products, as well as their potential adverse effects.

*Keywords: Melanosis; Complementary therapies; Herbal medicine; Persian medicine; Clinical Trial; Review*

## The use of aromatherapy, massage and reflexology in patients requiring palliative care, a systematic review

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**Background and Aim:** Palliative care is used in chronic diseases with the aim of reducing the suffering of patients, and its purpose is to identify and treat pain and alleviate the physical, mental, spiritual and social problems of chronic patients. Complementary medicine has been proposed as one of the important aspects of palliative care. Aromatherapy, massage and reflexology are among the most popular complementary therapies used by people with palliative care needs. Therefore, this review study evaluates the use of aromatherapy and massage and reflexology by nurses in patients in need of palliative care.

**Methods:** In this systematic review evaluated clinical trials and interventional studies that effects of aromatherapy, massage and reflexology on patients in need of palliative care during 2017-2022. Keywords palliative care, aromatherapy, reflexology, massage, nurs\* Quality of life, fatigue, pain with OR and AND operators searched in data bases of PubMed, Psych info, Scopus, CINHALL, Science direct, Google scholar and SID.

**Results:** From 17 reviewed articles, ten English studies met the inclusion criteria. Studies have investigated the effect of aromatherapy (five studies) massage (one study) and reflexology (four studies) in different patients included kidney failure under hemodialysis, cancer, AIDS, multiple sclerosis, cardiac patients. Studies have shown that aromatherapy has positive and significant effect on fatigue, depression and sleep quality. In addition, reflexology was effective on pain relief, sleep quality, management of constipation and anxiety reduction. Massage was effective on constipation of patients in need of palliative care. However, it cannot be said with certainty that these complementary treatments are effective in palliative care.

**Conclusion:** Although the studies showed the positive effects of aromatherapy, massage and reflexology on the intensity of pain, anxiety, depression, sleep fatigue, and constipation of patients in need of palliative care. But considering the special conditions of this group of patients in receiving palliative care, we need stronger studies to investigate its consequences in these patients.

*Keyword: Aromatherapy; Massage; Reflexology; Palliative care; Nurses*

### Flatulence and the use of topical costus oil: a clinical trial

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**Background and Aim:** Patients hospitalized in orthopedic departments and especially those who have undergone surgery experience Flatulence. Most of the injectable and oral drugs of new medicine that are used to reduce Flatulence have side effects and patients refuse to use them after a while. For this reason, a study was conducted with the aim of using a herbal medicine for Flatulence in patients hospitalized in the orthopedic wards.

**Methods:** This study was a randomized clinical trial study with 90 patients from the orthopedic wards of Tehran Medical Sciences Hospitals who met the inclusion criteria. They were randomly placed in one of groups A, B, and C. The letter A represents the first intervention group (paraffin oil) and the letter B represents the second intervention group (costus oil). The letter C was control group. The control group received the common treatments prescribed by the treating physician. The intervention groups received paraffin oil or costus oil at random. The oils were coded in similar containers and provided to the samples of the intervention group. Abdominal massage training was provided for the research samples in the intervention groups and the client was advised to do it twice a day during 4 weeks in the morning (on an empty stomach half an hour before breakfast) and at night (half an hour before bed). They were trained to massage the oil with their palm locally and periodically on the abdomen. This was done daily for 4 weeks. Then, in the time intervals before the intervention, two weeks after the intervention, and four weeks after the intervention, the intensity of flatulence and the degree of abdominal distension in the intervention groups were controlled and checked by the self-report scale VAS.

**Results:** The adjusted mean of Flatulence intensity after controlling the confounding variable in the control, paraffin and costus oil groups was 3.88 (0.17), 2.86 (0.16) and 2.55 (0.15), respectively. The results of Benferroni's two-by-two test showed that the adjusted average of the swelling intensity of the paraffin group ( $p=0.0001$ ) and the costus oil ( $p=0.0001$ ) was significantly lower than the control group. There was a difference between the intensity of paraffin and costus oil. No statistical significance was observed ( $p=0.49$ ). Abdominal circumference was significantly different in at least one of the examined groups ( $p=0.0001$ ). The results of the two-by-two Benferroni test showed that the adjusted average of the abdominal circumference of the paraffin group ( $p=0.0001$ ) and costus oil ( $p=0.0001$ ) was significantly lower than the control group. Also, the adjusted mean abdominal circumference of the costus oil group was significantly lower than the paraffin group ( $p=0.0001$ ).

**Conclusion:** The severity of bloating decreased in both the costus oil and paraffin groups, but there was no significant difference between the two groups. Abdominal circumference decreased in both Paraffin and paraffin groups, but this reduction rate was higher in costus oil group, which shows that costus oil is more effective.

*Keywords: Flatulence; Costus oil; Massage*



## The Integration of Emergency Medicine and Traditional Medicine in Cardiac Care: A Review

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**Background and Aim:** Cardiovascular diseases remain the leading cause of mortality worldwide, necessitating effective and timely treatment. While emergency medicine plays a crucial role in acute cardiac care, traditional medicine (TM), with its rich history and holistic approach, offers a complementary perspective in managing chronic cardiac conditions. This review explores the integration of emergency medicine and TM in cardiac care, highlighting potential benefits and areas for further research.

**Methods:** A comprehensive literature search was conducted across reputable databases such as PubMed, ScienceDirect, and Scopus, utilizing keywords like “emergency medicine,” “traditional medicine,” and “cardiac care.” Relevant articles were retrieved and meticulously analyzed to identify and evaluate the evidence supporting the integration of TM in cardiac care.

**Results:** A review of the literature revealed several potential benefits of integrating TM into cardiac care. TM approaches, such as acupuncture, herbal remedies, and lifestyle modifications, may complement conventional therapies by addressing underlying risk factors, promoting overall well-being, and enhancing patient quality of life. For instance, acupuncture has been shown to alleviate chest pain, improve cardiac function, and reduce anxiety in patients with coronary heart disease. Herbal remedies may exhibit cardioprotective effects, potentially reducing blood pressure, improving lipid profiles, and enhancing heart function. Lifestyle modifications, including dietary changes, exercise regimens, and stress management techniques, advocated by TM practices, can significantly impact cardiovascular health.

**Conclusion:** The integration of TM into cardiac care offers a promising approach to enhance patient outcomes and improve overall well-being. While further research is warranted to fully elucidate the mechanisms of action and clinical efficacy of TM practices, their potential benefits, particularly in managing chronic cardiac conditions, merit further exploration. Collaboration between emergency medicine and TM practitioners can foster a more comprehensive and patient-centered approach to cardiac care.

*Keywords: Emergency medicine; Traditional medicine; Cardiac care; Acupuncture; Herbal remedies; Lifestyle modifications; Coronary heart disease; Cardiovascular health*

## The Role of Medicinal Herbs in Acute Wound Dressing in Prehospital Emergency Care

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**Background and Aim:** Acute wounds, a common occurrence in prehospital emergency care, require prompt and effective dressing to prevent infection and promote healing. While conventional dressings like bandages and gauze are widely used, they may not always provide optimal protection or address specific wound healing needs. Medicinal herbs, with their rich history and diverse therapeutic properties, offer a promising alternative or complementary approach to wound dressing. This review explores the role of medicinal herbs in acute wound dressing, focusing on their potential benefits and mechanisms of action.

**Methods:** A comprehensive literature search was conducted across reputable databases such as PubMed, ScienceDirect, and Scopus, utilizing keywords like “acute wounds,” “medicinal herbs,” and “prehospital emergency care.” Relevant articles were retrieved and meticulously analyzed to identify and evaluate the evidence supporting the use of medicinal herbs in wound dressing.

**Results:** A review of the literature revealed a wealth of medicinal herbs with potential benefits in acute wound dressing. These herbs possess various properties, including antibacterial, antifungal, anti-inflammatory, and wound-healing effects, which can contribute to effective wound management. For instance, honey, a natural antibacterial and anti-inflammatory agent, has been shown to promote wound healing, reduce infection rates, and minimize pain. *Curcuma longa* L., with its anti-inflammatory and antimicrobial properties, may aid in reducing inflammation, preventing infection, and promoting wound healing. *Aloe vera* (*Aloe vera* L.) has been extensively studied for its anti-inflammatory and wound-healing properties, demonstrating potential benefits in reducing pain, promoting tissue regeneration, and minimizing scar formation.

**Conclusion:** Medicinal herbs offer a promising alternative or complementary approach to acute wound dressing in prehospital emergency care, potentially providing additional benefits alongside conventional dressings. Their antibacterial, antifungal, anti-inflammatory, and wound-healing properties can contribute to effective wound management. Further research is warranted to fully elucidate the mechanisms of action and clinical efficacy of these herbs, ensuring their safe and effective integration into prehospital wound care protocols.

*Keywords:* Acute wounds; Medicinal herbs; Prehospital emergency care; Antibacterial; Antifungal; Anti-inflammatory; Wound healing; Honey; Turmeric; *Aloe vera*

## Navigating the Challenges of Complementary and Integrative Medicine: A Critical Review

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**Background and Aim:** Despite its potential benefits, the incorporation of CIM into mainstream healthcare is fraught with challenges. Regulatory frameworks, reimbursement policies, and cultural perceptions vary widely, posing obstacles to the widespread adoption and integration of CIM modalities. This review aims to identify and analyze the key challenges facing CIM and explore potential solutions to promote its acceptance and integration into healthcare systems.

**Methods:** This article is a scoping review using relevant keywords, databases such as PubMed (Medline), Web of Science and Scopus were searched.

**Results:** Based on the review, the challenges facing complementary medicine can be summarized as follows: **Regulatory Hurdles:** One of the primary challenges facing CIM is the lack of standardized regulation and licensure for complementary therapies. Unlike conventional medical treatments, many CIM modalities are not subject to rigorous regulatory oversight, leading to concerns about safety, efficacy, and quality control. Regulatory frameworks vary between countries and regions, further complicating the practice and integration of CIM into mainstream healthcare. **Limited Research Funding:** Another significant challenge is the limited availability of funding for CIM research. Compared to conventional medicine, CIM modalities often receive less funding from government agencies, private foundations, and pharmaceutical companies. This scarcity of research funding hampers the generation of robust evidence supporting the efficacy and safety of CIM interventions, hindering their acceptance by healthcare providers and policymakers. **Cultural Attitudes and Perceptions:** Cultural attitudes and perceptions towards CIM vary widely across different populations and geographic regions. While some communities embrace CIM as a holistic and natural approach to healthcare, others view it with skepticism or mistrust. Cultural factors such as religious beliefs, historical practices, and socioeconomic status influence individuals' preferences and acceptance of CIM, shaping their healthcare choices and treatment decisions. **Integration into Mainstream Healthcare:** Integrating CIM into mainstream healthcare systems presents logistical and organizational challenges. Traditional healthcare settings may lack infrastructure, resources, and expertise to accommodate CIM modalities effectively. Additionally, interdisciplinary collaboration between conventional healthcare providers and CIM practitioners requires clear communication, mutual respect, and standardized protocols to ensure safe and coordinated patient care. **Strategies for Addressing Challenges:** Addressing the challenges of CIM requires a multifaceted approach involving policymakers, healthcare providers, educators, researchers, and patients. Strategies include developing standardized regulatory frameworks, increasing research funding for CIM studies, promoting cultural competence and sensitivity among healthcare professionals, and establishing collaborative models of care that prioritize patient-centered approaches and interdisciplinary teamwork.

**Conclusion:** Complementary and Integrative Medicine holds promise as a holistic approach to healthcare, but its widespread adoption and integration face numerous challenges. By addressing regulatory hurdles, increasing research funding, promoting cultural awareness, and fostering interdisciplinary collaboration, healthcare systems can better incorporate CIM modalities and provide comprehensive, patient-centered care. Efforts to overcome these challenges are essential to realizing the full potential of CIM in improving patient outcomes and advancing public health.

*Keywords: Complementary medicine; Integrative medicine; Challenges; Critical review*

## The effect of Persian medicine herbal formulation in respiratory symptoms, pulmonary function and intestinal permeability of asthma's patients: A Triple-Blind Randomized Controlled Trial

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**Background and Aim:** Herbal medicines are widely used by asthma patients to control symptoms. This study investigated the efficacy and safety of Glasthma (a Persian medicine herbal formulation contained *Cydonia oblonga*, *Ziziphus jujuba*, *Glycyrrhiza glabra*, *Echium amoenum* and hazelnut) on asthma symptoms and intestinal permeability.

**Methods:** In this placebo-controlled triple-blind randomized clinical trial, 40 asthma patients were categorized randomly to Glasthma group (n=20) and control group (n=20). The Glasthma group received 15 ml of Glasthma syrup twice daily for 4 weeks. The same dosage of placebo syrup was administered to the control group. Respiratory symptoms, pulmonary function tests and 5-hour urine Lactulose to Mannitol ratio were assessed before and 4 weeks after starting treatment.

**Results:** Clinical symptom scores by asthma control test ( $P < 0.001$ ), asthma control questionnaire 7 ( $P < 0.007$ ), FEV1 ( $P < 0.001$ ) and MMEF25-75 ( $P < 0.002$ ) were significantly improved in Glasthma group compared to placebo group. Both Lactulose and Mannitol levels were significantly reduced in Glasthma group ( $P < 0.028$ ,  $P < 0.0000$ ), however, the changes in the ratio were not significant. No serious adverse effects were observed in both groups.

**Conclusion:** These findings suggest that Glasthma formulation may be effective in improving asthma symptoms and regulating the gut-lung axis.

*Keywords: Asthma; Intestinal permeability; Herbal Medicine; Phytotherapy*

**Factors affecting the improvement of primary dysmenorrhea:  
a secondary data analysis of the randomized clinical trial on the *Eryngium caucasicum* Trautv**

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**Background and Aim:** Dysmenorrhea, which is commonly known as painful menstruation, is a prevalent gynecological symptom among women of reproductive age. In Iranian menstruating women, the prevalence of primary dysmenorrhea is 38.3%. The most commonly used therapeutic modalities to manage primary dysmenorrhea are NSAIDs and OCPs. In addition to these, traditional complementary treatments such as herbal and dietary therapies, supplement intake, behavioral interventions, acupuncture, massage, and aromatherapy are also used to treat menstrual symptoms. This study was conducted to evaluate the effect of *Eryngium caucasicum* Trautv (Eryngo) on primary dysmenorrhea and to identify the factors that contribute to the improvement of primary dysmenorrhea.

**Methods:** A clinical trial was conducted to study the effects of Eryngo syrup, a placebo, and Ibuprofen on primary dysmenorrhea in women. The trial included 169 women between the ages of 15 to 30 years who had been diagnosed with primary dysmenorrhea at Babol University of Medical Sciences. The subjects were randomly assigned to receive 5 ml syrup of Eryngo, placebo, or Ibuprofen (200 mg) three times a day (15 ml/day), starting from one day before the onset of bleeding for five days. The severity of dysmenorrhea was measured using the Visual Analog Scale (VAS) at baseline, first, and second month to assess the improvement of dysmenorrhea, which was defined as a decrease of at least 2 mm in VAS score. The data was analyzed using SPSS software (version 27 for Windows) and the intention-to-treat (ITT) analysis. Repeated measure analysis was used to evaluate the effect of Eryngium on dysmenorrhea and multivariable logistic regression was used to assess the factors affecting pain improvement. A P value less than 0.05 was considered significant.

**Results:** The study results showed that there was no significant increase in minor side effects in the Eryngo group when compared to the placebo group. 4.2 (1.0) cm in the Eryngo group, 4.3 (0.0) cm in the Ibuprofen group, and 0.9 (0.1) cm in the placebo group ( $P < 0.0001$ ). No serious side effects were reported in all groups under study. After assessing the factors that affect improvement in dysmenorrhea, we found that the age of the participants was a significant factor. We observed that women aged 15 to 20 and 20 to 25 had a higher chance of improvement compared to women aged 25 to 30. The chance of improvement was respectively 3 and 4 times more in the former age groups compared to the latter (OR=3.30 and 4.11, P value=0.019 and 0.003, respectively).

**Conclusion:** Eryngo has been found to relieve dysmenorrhea as effectively as Ibuprofen. This means that Eryngo can be considered a new herbal remedy for the treatment of dysmenorrhea. Additionally, treating dysmenorrhea at an early age can be more effective, therefore taking Eryngo at a younger age can be beneficial.

*Keywords:* Dysmenorrhea; Herbal medicine; Complementary medicine; Influenced factors; Improvement

**Factors affecting the duration of treatment in functional constipation of children treated with *Cassia fistula* syrup using log-logistic regression**

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**Background and Aim:** Constipation is one of the complications of the new lifestyle. The spread of machine life, the reduction of human mobility, the change of diet towards foods with low fiber, and other lifestyle changes have led to the prevalence of constipation. Constipation is the second most common reason for visiting pediatric gastroenterologists, and its percentage is estimated at 25% of all visits. In this study, we aim to evaluate the potential factors that may affect the duration of treatment of functional constipation patients.

**Methods:** This study is a secondary analysis of the data available in the clinical trial of children with functional constipation, where the patients were randomly divided into two groups of 52 and 55 children and underwent two types of treatment (*Cassia fistula* syrup and PEG as standard treatment). Data were evaluated and analyzed using log-logistic regression using Stata v17 software.

**Results:** Out of 107 children aged 2 to 13 with functional constipation, 89.9% recovered. 93.8% in the group treated with cassia fistula syrup and 86.3% in the group that received PEG. In this study, no significant relationship was found between the type of treatment, gender, patient's weight, and the duration of the disease with the duration of the treatment using the log-logistic parametric method. However, the patient's age had a significant relationship with the duration of treatment ( $P=0.03$ ). Also, according to the results obtained in this study, the duration of treatment decreases by 3% for each year of increasing age of the patient.

**Conclusion:** Since the length of the treatment period decreases with age, it is suggested to consider the maximum length of treatment in younger children.

*Keywords: Survival analysis; Functional constipation; Log-logistic regression*

## Improving the amount of healthy sperm with garlic halva: case report

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**Background and Aim:** decrease of normal sperm is a sign of infertility in men, various treatment methods are available based on the cause of the disorder. However, this problem still persists and patients suffer emotional problems and economic costs. The current case report is the presentation of a case of male infertility with a laboratory sign of healthy sperm reduction, which treated with administration of an oral traditional Persian medicine product based on “Garlic”.

**Methods:** Case report

**Results:** The patient is a 33-year-old man who visited the traditional Persian medicine clinic of Imam Reza Hospital affiliated to Mashhad University of Medical Sciences. He had two children and his youngest child was 13 years old. His wife did not have any problem in terms of fertility in the examination conducted in medical centers affiliated to the university. Despite 18 months of unprotected intercourse, the couple had not been able to conceive. The patient mentions premature ejaculation, relative increase in sexual desire and relative weakness after sexual intercourse, which are partially improved by taking vitamins B; C and E but they have no effect on the low healthy sperm count. Modification of lifestyle and consumption of some type of garlic halvah were recommended for the mentioned patient. The amount of healthy sperm was about 2% for at least six months. His healthy sperm count was increased to 6.9%, 10 week after the treatment.

**Conclusion:** According to the results of previous studies about the effect of garlic plant on male infertility and its reference in traditional Persian medicine texts, perhaps by preparing better compounds and administering it to a greater number and variety of patients, better results were obtained.

*Keywords: Persian Medicine; Garlic; Male infertility*

## Ethnobotanical uses of wild almond in Historical village of Meymand

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**Background and Aim:** Ethnobotany is an interdisciplinary field that explores the relationship between humans and plants, along with their practical applications within specific regions or cultures. Iran boasts abundant plant diversity, and by studying its ethnobotany, valuable knowledge can be revitalized, even if only a few years of its existence remain. Meymand, a historical village in Kerman province, is a UNESCO World Heritage site known for its cave dwellings and rich plant life. From wild pistachio and almond trees to thyme and chicory, Meymand is truly one of Iran's natural treasures. The purpose of this writing is to introduce *Amygdalus scoparia*, commonly known as wild almond, along with its local names such as "Mar," "Alok," and "Talkhou" and explore its applications supported by scientific evidence.

**Methods:** This writing is part of an ethnobotanical field study conducted in Meymand under the supervision of the Ministry of Cultural Heritage, Tourism, and Handicrafts in 2007. The study's findings are compared and aligned with research from scientific databases such as Google Scholar and PubMed.

**Results:** The indigenous people of Meymand have a rich history of coexisting with plants, particularly wild almond trees. They consume the fruit as both sustenance and a snack after mitigating its bitterness. Additionally, the tree's gum serves as a remedy for pain relief. The villagers skillfully weave baskets from their woody twigs and utilize the boiled root extract for dyeing and tanning sheepskin. In recent studies, the wild almond fruit and its tree's gum have been further investigated.

**Conclusion:** This study provides a unique glimpse into the indigenous knowledge of Meymand, serving as a suitable platform for applied research in pharmaceutical, health, nutritional, and related industries.

*Keywords: Wild almond; Ethnobotany; Traditional medicine*



## A Comprehensive Review of Clinical Studies on Herbal Medicine for Human Papillomavirus Infection

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**Background and Aim:** Human papillomavirus (HPV) is the most prevalent sexually transmitted infection. HPV leads to hyperplasia and hyperkeratosis, which manifest clinically as genital warts, dysplasia, and anogenital cancers. Despite various therapeutic options available for HPV, none of them offer substantial promise. Additionally, some treatments result in side effects and recurrence. Consequently, the utilization of natural products as complementary treatments is gaining popularity. This overview compiles clinical trials on herbal remedies for HPV, facilitating future studies in this area.

**Methods:** PubMed, Cochrane, Google Scholar, and Scopus databases were searched for clinical trials based on related keywords such as Medicinal plant and Herbal medicine in combination with HPV, Human Papillomavirus, and Condyloma Acuminata. Based on the inclusion and exclusion criteria, Data were collected from 2000 to 2024.

**Results:** According to clinical studies, a wide spectrum of medicinal herbs as single or polyherbal formulations can be used to improve various aspects of HPV infection. immunomodulatory, antioxidative, antiviral, and anti-tumor properties of herbs such as *Allium sativum*, green tea, *Myrtus communis*, olive leaf and curcumin presumably contribute to their therapeutic effect.

**Conclusion:** Natural remedies derived from plants may offer beneficial effects in improving genital warts. However, additional studies are necessary to explore their mechanisms of action and ensure safety.

*Keywords: Human papillomavirus; Condyloma acuminata; Herbal medicine; Clinical trials*

## ***Zataria multiflora* essential oil and its Effects on Enhancing the Richness and Abundance of Beneficial Microbiome of Human Intestine**

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**Background and Aim:** The human intestine houses a huge microbial community, including gut microbiota, and Dysbiosis of the gut microbiota has been considered as responsible for the etiopathogenesis of many gastrointestinal disorders and various systemic disorders. Therefore, there is much interest to develop nonpharmacological, natural approaches that might enhance the richness and abundance of beneficial intestinal microbiota. *Zataria multiflora* essential oil has earned much attention from various sources for its potential to enhance richness and abundance of beneficial intestinal microbiota. This abstract summarizes the current available evidence on the impact of *Zataria multiflora* essential oil on enhancing richness and abundance of beneficial intestinal microbiota.

**Methods:** A comprehensive review of the literature was conducted by synthesizing the relevant articles which have investigated the effect of Shirazi thyme essential oil on the human intestinal gut microbiome. Electronic databases like PubMed and Google Scholar were searched thoroughly by using the following key terms: "Shirazi thyme essential oil," "gut microbiome," "beneficial microorganisms," and "microbial diversity." Published articles over the years 2000 to 2024 were considered, and only in vitro and in vivo studies investigating the effect of Shirazi thyme essential oil on the composition and function of intestinal microbiota of humans were selected.

**Results:** The review produced several studies that confirmed that *Zataria multiflora* essential oil contains properties that favor the growth of beneficial bacteria inside the human intestine. The essential oil contains bioactive compounds such as thymol and carvacrol that show antibacterial properties against pathogenic bacteria with no harmful effect on the growth of beneficial microorganisms such as Lactobacilli and Bifidobacteria. These beneficial microorganisms are associated with a range of health benefits, such as improved digestion, improved nutrient absorption, and immune response regulation. Human studies on the gut microbiota effects of Shirazi thyme essential oil support encouraging results. In comparison to just dietary supplementation, supplementation of *Zataria multiflora* essential oil has shown increased numbers and diversity of beneficial microorganisms, combined with gut microbiota composition shifts toward a more beneficial profile. The changes in gut microbiota composition have been associated with gut health markers, including a reduction in inflammation and an increase in intestinal barrier function, and modulation of metabolic processes.

**Conclusion:** The available evidence primarily points toward the effect of *Zataria multiflora* essential oil that may contribute to the promotion of beneficial intestinal microbiota. *Zataria multiflora* essential oil's antibacterial properties, along with its potential to encourage the proliferation of beneficial microorganisms, make it a potential natural tool for enhancing gut microbiota composition and function. Further, well-designed and high-quality human studies are needed to further elaborate on the proper dosing, duration, and safety of *Zataria multiflora* essential oil supplementation and to extend potential applications in the prevention and amelioration of gastrointestinal disorders.

**Keywords:** *Zataria multiflora* essential oil; Beneficial microorganisms; *Thymus vulgaris*; Antimicrobial; Gastrointestinal disorders

## A review of clinical trials subjected *Pistacia* species for oral diseases

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**Background and Aim:** Despite many efforts that have been made to improve oral health, as one of the important components of public health, this issue still remains as a great problem in the world. The aim of this review article is to give an overview and provide evidences from the clinical studies of *Pistacia* species in oro-dental healthcare. The plants of this genus have been used traditionally for thousands of years to maintain oral health and treat diseases. In addition, nowadays, they have received increasingly interest from both scientists and consumers.

**Methods:** A comprehensive literature search of the clinical studies published from 2000 until July 2023 was conducted on “PubMed”, “Scopus” and “Science Direct” electronic databases, using relevant keywords related to the purpose of this study. Finally, eight clinical trials encountered our inclusion/exclusion criteria and were included in this review.

**Results:** Based on the result of this systematic review *P. lentiscus*, *P. atlantica* and *P. vera* were three principal species which have been evaluated to determine their capabilities in the treatment of oral and dental diseases. In this way two main forms including chewing plant gum and mouthwashes from hull or gum essential oil were utilized. The majority of included studies, have been investigated antibacterial effect of *Pistacia* species specially against aerobic oral bacteria. In addition, they affect surface demineralization of caries-like lesions, salivary flow rate and acidity. No prominent side effects were reported in these clinical trials.

**Conclusion:** This review highlights that further studies in large populations with standard methodologies is required to validate the effectiveness and mechanism of *Pistacia* species products in controlling oral conditions.

*Keywords:* *Pistacia*; Oral diseases; Clinical trial

## Cost-effectiveness analysis of traditional Iranian medicine treatment in constipation

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**Background and Aim:** Constipation is a digestive disorder that can cause diseases and decrease the quality of life. Examining the cost and usefulness of different treatments can help in choosing between multiple options. This study was conducted with aim of comparing the cost-effectiveness of common and Iranian medicine for patients with constipation in Tehran.

**Methods:** A questionnaire was designed to evaluate the costs also, the Persian version of the EQ-5D-5L questionnaire as used to evaluate the desirability. Then, referring to two health schools of Iranian medicine in Tehran, questionnaires were given to patients whose first visit was to health schools (n=43) to measure the cost and usefulness of conventional medicine. Then, after three months, questionnaires were again given to the same patients to measure the cost and usefulness of Iranian medicine; Costs were calculated and applied from the perspective of society and quality of life with the QALY index. The incremental effectiveness cost ratio of the two treatments was calculated and compared with the acceptable threshold.

**Results:** By referring to two health schools of Iranian medicine in Tehran from November 2021 to March 2022, questionnaires were completed by 43 patients, and the total cost of traditional and Iranian medicine in Tehran for three months per patient was 9930000 respectively and 9070000 Rials, and the three-month average utility of common and Iranian medicine was estimated as 0.1967 and 0.2073.

**Conclusion:** Iranian medicine was determined as the dominant option with lower cost and higher usefulness in the treatment of patients with constipation in Tehran.

*Keywords: Common medicine; Iranian medicine; Cost-utility; Constipation; Economic evaluation*

## Aromatherapy, one of the ways of delivering medicine to the heart, based on Persian medicine and its evidence from conventional medicine

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**Background and Aim:** Persian medicine is one of the ancient holistic medical schools, which is based on precise philosophical principles. This medical school has been treating patients for thousands of years and has more than fourteen thousand written sources. One of the interesting topics that Iranian medical scholars have mentioned in their books is the different methods of drug delivery to different organs of the body. Aromatherapy is one of the methods of drug delivery that is of great interest to researchers today. In the sources of traditional Iranian medicine, aromatherapy is mentioned as one of the methods of delivering medicine to the heart. In this study, we examined the opinions of Iranian medical experts about this treatment method and their related evidence from the point of view of conventional medicine.

**Methods:** This study is a library review research. First, relevant keywords were searched in traditional Persian medicine sources, including Makhzan al-Adawieh, Tohfe al-Momenin, Qanun fi al-Tib, Zakhireh Khawarazmshahi, and the obtained information was categorized. Then, evidence of the effectiveness of aromatherapy treatments in the prevention and treatment of heart diseases was collected and analyzed from popular medicine sources from reliable databases including Scopus, PubMed, and Web of Science.

**Results:** The sages of Persian medicine consider aromatherapy using plants (which are often fragrant) such as apple (*Malus domestica*), Dill (*Anethum graveolens*), Myrtle (*Myrtus communis*), rose (*Rosa damascena*), Rose-hip (*Rosa canina*), Willow (*Salix aegyptiaca*) and *Cymbopogon olivieri* to be effective in strengthening the heart. In addition, it is said in the sources that the cardiac side effects of some drugs, such as *Ruta graveolens*, cause damage to the heart through smelling. Also, aromatics are recommended in the treatment of other heart diseases, including heart palpitations, dysrhythmias, and syncope. On the other hand, diseases such as depression, anxiety, and some types of sleep disorders have a cardiac origin from the perspective of Iranian medicine, and aromatherapy is also recommended for these diseases. In new articles, several interventional studies have investigated the effect of aromatherapy in heart diseases, which often evaluated variables such as anxiety, sleep quality, and pain in these patients. The largest number of studies have been conducted on aromatherapy with mint, lavender and rose. Several possible psychological and physiological mechanisms have been proposed regarding the effectiveness of aromatherapy on the cardiovascular system. Some of these mechanisms include changes in the autonomic nervous system (sympathetic and parasympathetic nerves), effects on the endocrine system (especially stress hormones secreted by the adrenal gland), direct effects on the cardiovascular system (for example, vasodilatation or cardioprotective effects), reducing stress and anxiety, and Olfactory-Limbic system interaction.

**Conclusion:** This study showed that aromatherapy, in addition to being proposed as a method of drug delivery to the heart in traditional Persian medicine, also has positive evidence in new research. This treatment method can be used as a complementary drug delivery method in heart diseases after evaluating the effectiveness in clinical studies.

*Keywords:* Persian medicine; Aromatherapy; Cardiovascular diseases; Drug delivery

## Mechanisms of action of curcumin in diabetic foot ulcer

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**Background and Aim:** The aim of this study is to review the mechanisms of curcumin effect on diabetic foot ulcers. Diabetic wound is a common complication of diabetes, and the effect of current treatment is still poor. The pathophysiology of diabetic wound is multifactorial, chronic inflammation and lack of tissue regeneration leads to impair wound healing in diabetes. Curcumin (active ingredient of turmeric) is effective in healing various types of wounds, especially diabetic foot wounds.

**Methods:** In this review, a series of articles published between 2007 and 2024 on Mechanisms of action of curcumin in diabetic foot ulcer have been examined. Through PubMed, Scopus, WOS, Science Direct and Google Scholar databases and search engines, a total of 30 English articles and 2 Persian articles were considered in this review.

**Results:** Curcumin has shown great potential in enhancing the healing of diabetic chronic wounds because of its immunomodulatory and pro-angiogenic properties. The Chitosan-CMC-g-PF127 injectable hydrogels laden Cur exhibited a swift wound repair potential by up-surfing the cell migration and proliferation at the site of injury and providing a sustained drug delivery platform for hydrophobic moieties. RC-Lips (red blood cell membrane (RBCM)-mimicking liposome containing curcuma) treatment significantly promoted wound healing and re-epithelialization while downregulating interleukin-1 $\beta$  (IL-1 $\beta$ ) and upregulating interleukin-10 (IL-10). Accelerating wound healing is due to its ability to regulate TGF- $\beta$ 1 signaling pathway.

**Conclusion:** Curcumin has many pharmacological effects, such as anti-inflammatory, anti-oxidation, antimicrobial and improving insulin resistance. Turmeric-derived nanoparticles can alleviate oxidative stress, promote fibroblast proliferation and migration, and reprogram macrophage polarization.

*Keywords: Curcumin; Diabetic foot ulcer; Turmeric; Mechanism*

### Explanation of the concept of resetting in traditional Persian medicine

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**Background and Aim:** Explaining the Concept of Jaa Andazi (resetting) according to the Persian traditional medicine textbooks.

**Methods:** Persian traditional medicine texts from the first Hijri century to the present have been qualitatively studied in a literature review and conceptually analyzed. Some models of resetting and release among Iranian traditional osteopaths (in Persian “Jaa Andaz”) have been collected and presented.

**Results:** The survey of dislocations (Dar-Raftegiha) in Persian traditional medicine presents a broader concept than addressing common dislocations in modern medicine. Dislocations, laxation, sub-sublaxation, spasms (classified under Tashanoj and Tamaddod), dislocations due to bad positioning, etc., are identified and treated as dislocations. Treatment includes lifestyle change, pharmacotherapy, and, notably, therapeutic interventions, with the most important type of therapeutic intervention being resettings. The foundation of resetting in Persian medicine, namely “Madd” (attraction) and “Radd” (repulsion), will be elaborated upon in detail.

**Conclusion:** Dislocations in Persian traditional medicine encompass a broad concept that involves addressing dislocations, laxation, sub-sublaxation, spasms, etc. The basis of resetting in Iranian medicine is founded on attraction (Madd) and repulsion (Radd).

*Keywords: Dislocations; Resetting; Joint pain; Persian medicine*

## The effect of massage on restless leg syndrome in hemodialysis patients

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**Background and Aim:** Individuals undergoing hemodialysis experience distressing symptoms such as restless leg syndrome (RLS), which subsequently leads to poor sleep quality. These symptoms sometimes result in psychological disorders and negatively impact their lives. Both pharmacological and non-pharmacological interventions have been studied to alleviate these complications. One cost-effective and side-effect-free non-pharmacological intervention is therapeutic massage. In this review, we explore its effects on RLS.

**Methods:** This study was conducted by searching databases including ScienceDirect, PubMed, Google Scholar, SID, and Civilica using keywords such as “restless leg syndrome” and “massage.” Articles published up to 2024 were examined. Among the 35 identified articles, 12 studies met the inclusion and exclusion criteria and were included in the review.

**Results:** The analysis of conducted studies revealed that the average severity of RLS symptoms in treatment groups receiving massage therapy was significantly lower than that in control groups. Some interventions also evaluated therapeutic massage using various oils, which also reported positive effects.

**Conclusion:** Considering the positive impact of massage therapy on reducing uremic RLS, it is recommended to promote and provide massage therapy in treatment settings. Additionally, educating the families of these patients about preventive measures against complications is crucial. Further research in this area is also warranted.

*Keywords: Massage; Restless leg syndrome; Hemodialysis*



## Effect of reflexology on the sleep quality of patients undergoing coronary artery bypass surgery: a review article

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**Background and Aim:** Cardiovascular diseases account for the highest number of deaths and are still the primary cause of death in the world. Many patients with coronary artery diseases who do not respond to drug therapy undergo coronary artery bypass surgery. After heart surgery, one of the main problems of patients is sleep related problems. Massage therapy is one of the non-pharmacological methods to solve sleep problems. Among complementary treatments, massage ranks third in terms of prevalence of use for patients. Therefore, the aim of this study is to determine the effect of reflexology on the sleep quality of patients undergoing coronary artery bypass surgery.

**Methods:** This study was systematic review. The search of Persian and English database was done in IranMedex, SID, Magiran, science direct, PubMed, Ovide, Elsevier, ProQuest respectively from 2010-2022. Keywords was massage therapy, heart, heart surgery, sleep quality, sleep disorder, reflexology. The inclusion criteria were interventional studies related to reflexology.

**Results:** From 8 reviewed articles, four were Persian and four were English. All studies measure the effect of reflexology on the sleep quality of cardiac patients. The sample size in the studies was minimum and maximum 30 to 90 people. In various studies, reflexology with kinds of oils had a significantly effect on the overall sleep quality of patients.

**Conclusion:** The findings showed the effectiveness of reflexology in improving the sleep quality of patients undergoing coronary artery bypass surgery. The studies had limitations such as the small number of samples, defects in sampling, random allocation and follow-up, as well as the difference in the duration of massage use, the type of oils and measurement tools. Overall, a significant improvement observed in the sleep quality of these patients. Therefore, reflexology can be used as a complementary approach to other therapeutic interventions in improving the sleep quality of these patients.

*Keywords: Coronary artery bypass; Complementary medicine; Heart surgery; Massage therapy; Reflexology; Sleep quality*

## Effect of foot reflexology on improving sleep quality in adults

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**Background and Aim:** Sleep is a requirement for human life and typically occupies 20-40% of the day. Sleep disorders, such as difficulty falling asleep, prolonged sleep delay, short sleep duration, sleep retention problems, early morning waking and daytime sleepiness, are a health problem in people's concentration and function. Sleep disorders have negative effects on cardiovascular health, metabolic health, mental health, immune health, pain, human function, cognition, injuries and mortality. Studies have shown that the effect of foot massage, which is a pressure process on different parts of the foot, can be effective in improving sleep quality, so the study aims to examine the effect of foot reflexology on improving sleep quality in adults.

**Methods:** Present study in 2023 reviewing 11 papers published in 2020 to 2023 in ScienceDirect databases and PubMed is published, which is examined with the keywords sleep, foot reflexology, aromatherapy.

**Results:** According to studies, foot reflexology has a controversial effect on improving sleep quality. Due to the growing tendency to improve sleep quality without the use of chemical drugs, the use of foot reflexology, which is considered a compressive medicine, can have a significant impact on improving sleep quality. According to the data obtained from the 11 articles examined; 3 articles on heart disease, 2 articles confirmed the good effect of massage therapy and one article reported little effect; also 2 articles on people with hemodialysis reported little effect of foot reflexology alone, and if accompanied by aromatherapy, lavender or sweet orange essence reported a great impact on improving sleep quality, and each of the cases studied was multiple sclerosis, spine and neck surgeries, which were used to treat sleep problems. Kidney transplantation and depression has a paper with positive results of foot reflexology performed.

**Conclusion:** Studies have shown that overall foot reflexology can improve sleep quality. However, if accompanied by aromatherapy, the essence of lavender or sweet orange has a great impact on improving sleep quality, and due to the growing tendency to use non-invasive, non-chemical methods, it is also an easy method, without the cost of equipment and, more importantly, no side effects on people; therefore, it is better for healthcare professionals to add foot reflectivity to their clinical practice and teach their patients to apply this technique themselves, which can improve self-management of sleep disorders and achieve better health outcomes.

*Keywords: Sleep; Foot reflexology; Aromatherapy*

## A systematic review of the effect of massage therapy and reflexology on vital signs

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**Background and Aim:** Vital signs include temperature, pulse, blood pressure, and breathing rate. Measuring and evaluating vital signs is the first step in clinical examination. One of the approaches to changing vital signs is the use of complementary medicine. The purpose of this article is to review the effects of massage and reflexology on vital signs.

**Methods:** A systematic search of relevant controlled experimental studies was conducted in major databases such as PubMed, Science Direct and Google Scholar search engine in the period 2013-2023. The search strategy includes key words massage therapy, reflexology vital signs, pressure, heart rate, respiratory rate. Repetitive and unrelated articles, studies published in non-English languages, studies conducted on non-patients are exclusion criteria. Finally, 17 articles out of 26 were selected.

**Results:** According to 17 studies reviewed in patients with heart problems, after surgery, as well as patients admitted to the ICU with a reduced level of consciousness, it was shown that massage therapy and reflexology have reduced blood pressure and improved the blood circulation of these patients, with This has variable effects on other vital signs such as heart rate, breathing and temperature.

**Conclusion:** The reviewed studies showed that massage therapy and reflexology can be used to improve vital signs, especially lowering blood pressure.

*Keywords: Massage therapy; Reflexology; Blood pressure; Temperature; Vital signs*

## The Effect of massage at the Hoku Point on the Severity of Pain of Fistula Catheterization in Hemodialysis Patients: A Randomized Clinical Trial

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**Background and Aim:** End-stage renal disease (ESRD) patients are exposed to pain during needle insertion every time they visit for vascular access. This pain is the most severe part of the hemodialysis-related stress. Colon pressure point or Hugo point is a pressure point located on the back of the hand between the thumb and index finger. Hugo point is the most important pain point in the body. Stimulating this point can reduce pain in any part of the body. This study aimed to investigate the efficacy of massaged at the Hoku point on the severity of the pain of catheterization in hemodialysis patients.

**Methods:** In this randomized clinical trial that was conducted from September to December 2023, 40 patients were randomly assigned to 2 independent groups (n= 20 people per group). This study was conducted in 3 stages. In the first session, intensity of arterial and venous puncture pain, without applying any intervention, was recorded using the numerical rating scale (NRS). In the second and third sessions before catheterization, It was massaged on the Hugo point for 10 minutes and the intensity of pain of arterial and venous fistula was immediately measured. Data analysis was done in Data Statistics (Stata) version 14 and Statistical package for social science (SPSS) version 26.

**Results:** The mean score of pain in the first session (arterial:  $8/30 \pm 1/49$ , venous:  $7/75 \pm 1/77$ ) was compared with the mean score of pain in the second (arterial:  $5/20 \pm 1/64$ , venous:  $4/75 \pm 1/64$ ) and third sessions (arterial:  $3/00 \pm 1/33$ , venous:  $3/30 \pm 1/38$ ). The results of repeated measure analysis of variance showed that the mean score of pain significantly reduced in the second and third sessions compared to the first session ( $P < 0.05$ ).

**Conclusion:** Massage at the Hoku point reduces the severity of pain of arteriovenous fistula catheterization and, thus, can be suggested as an effective non-invasive method for puncture pain relief in hemodialysis patients.

*Keywords:* Arteriovenous fistula; Hoku point massage; Hemodialysis; Pain

## The Effectiveness of Traditional Persian massage (Kermanshahi Style) on disability of lumbar radiculopathy: Quasi-experimental study

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**Background and Aim:** Massage is one of the most extensively employed therapeutic methods in Persian medicine for the treatment of back pain and its complications. To study the effectiveness of Kermanshahi Style massage in reducing lumbar radiculopathy disability this Quasi-experimental study was performed.

**Methods:** The current research is a quasi-experimental clinical trial. The intervention group (traditional massage) was sampled from Ostad Kermanshahi traditional massage clinic, while the control group (common treatment) was sampled from the neurosurgery clinic of Imam Khomeini Hospital. Using convenience sampling, 26 individuals who had referred to each of the aforementioned centers were selected until achieving the required sample size. Patients with radicular pain for at least 8 weeks before visiting either of the clinics were included in the study. The degree of disability was measured using the “Roland-Morris Low Back Disability Questionnaire (RMDQ)” in three sessions; at first visit, one month and three months after starting the treatment.

**Results:** The results established that the mean of RMDQ score decreased during the follow-up period, and that considering the statistical value for repeated measures analysis of variance (92.06) and p-value <0.001, the mean difference between the disability caused by lumbar radiculopathy in two measurements (end of the first month and end of the third month) is statistically significant.

**Conclusion:** Massage is more effective in reducing the disability caused by back pain compared to conventional treatment. In patients treated with this massage style, the disability caused by lumbar radiculopathy decreased to greater effects than the conventional treatment method.

*Keywords: Persian medicine; Iranian traditional massage; Persian massage; Sciatica; Lumbar radiculopathy; Kermanshahi Style*

## The effect of massage therapy with oil in infants hospitalized in the intensive care unit: a systematic review

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**Background and Aim:** Babies are known as a vulnerable age group and it is very important to provide medical care for this group. Massage for babies and infants is an important component of care in different societies, which is done traditionally, and among them, massage with oil. It has a special place. The aim of this study is to review the effects of massage therapy in hospitalized infants

**Methods:** This study was carried out in January 2024 as a systematic review by searching for keywords massage, massage therapy, oil, baby, premature babies and how to combine keywords in the search using (OR, AND) between 2010 and 2024 in internet databases. Including PubMed, SID, Science Direct, and Google Scholar search engine, the selection of keywords was done after reviewing the articles and matching with the entry and exit criteria, as well as screening and selecting the data 14 articles were studied based on the criteria of PRISMA guidelines.

**Results:** The conducted studies state that massage therapy reduces hospitalization complications and length of hospitalization of babies, especially premature babies in the intensive care unit, increases physical growth and weight gain and calorie intake, creates a sense of security, improves blood circulation, reduces the duration of crying and optimal functioning of the system. It is effective in reducing nervousness and sleep disorders as well as behavioral disorders. In addition to the mentioned cases, massage therapy leads to stress reduction, cortisol hormone secretion, and infection reduction in infants. Using topical oil during infant massage improves skin function and better temperature regulation, and saves energy to keep the body of infants and infants warm. It prevents which itself is a factor for better weight gain

**Conclusion:** Therefore, massage therapy training is suggested to the mother or the main caregiver of newborns during hospitalization or at the time of discharge and its continuous implementation for newborns in special care departments for newborns and at home according to the results obtained and can be part of the newborn care program in the country. be placed

*Keywords: Massage; Massage therapy; Oil; Baby; Premature babies*

## Past, Present, and Future of Wet Cupping (Hijama): A Bibliometric Approach

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**Background and Aim:** Cupping therapy, generally divided to two categories of wet cupping and dry cupping, has attracted the attention of therapists since ancient times. Wet cupping has two major types: 1) puncturing and cupping (PC) and 2) cupping, puncturing, and cupping (CPC), also known as Al-Hijamah. The difference between these two methods lies within the way the cupping is performed at the beginning of the process. The first method is common in China, Korea, and Germany, while the second method is often used in Iran and Arabic countries. The exact mechanism of this method is not fully discovered. However, due to its effectiveness in treating various diseases and reducing symptoms such as high blood pressure, musculoskeletal pain, and skin diseases like shingles, it has become popular among therapists and researchers. The aim of this study is to examine the growth and decline of research conducted so far, as well as to identify the best documents, authors, journals, organizations, and countries in order to discover emerging trends, cooperation patterns, research components, and knowledge gaps in this field.

**Methods:** Using a positivistic paradigm, we conducted a search of the Scopus database with a standard search strategy from inception to January 6, 2024. Following the PRISMA protocol, a total of 665 papers were identified in the primary search, with 241 ultimately included in the analysis. These studies were then analyzed using R software.

**Results:** The bibliometric analysis revealed a significant growth in scientific publications in the field of wet cupping, by two authors named Yameng Li and Ying Wang ranking highest in terms of scientific output in this area. China, Iran, and Saudi Arabia are the leading countries in terms of quantity and quality of studies in this field. Two Chinese universities and one Korean institution are recognized for having the highest production among all institutions in this field. The top three institutes with the most publication in this field is from America.

**Conclusion:** Therefore, with the increasing attention of researchers to this field and the identification of the best research components, it is hoped that this current study will serve as a foundation for future researchers to conduct further studies.

*Keywords:* Wet cupping; Hijama; Bibliometric analysis; Manual therapy; Traditional Medicine; Science Mapping

## Investigating the effect of reflexology foot massage on anxiety: A systematic analysis

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**Background and Aim:** One of the most common mental disorders is anxiety. Anxiety, as a natural adaptive response, can affect physiological reactions. In recent years, many researches have been conducted on ways to control anxiety. Drug treatment of anxiety is not highly recommended due to the severe side effects of these drugs. One of the most important non-drug interventions to control anxiety is massage. Foot reflexology is one of the most common methods of complementary treatments that has a great effect on reducing patients' anxiety. Foot reflexology is growing due to its benefits such as cost-effectiveness, absence of complications, and the satisfaction of patients and nurses from its implementation. Foot Reflexology, which includes pressure and massage on reflex points, is one of the six complementary therapies in the United States. The purpose of this study is to determine the effect of foot reflexology massage on the level of anxiety

**Methods:** The current research is a systematic review study, the information of which was analyzed by a comprehensive review of research texts, magazines and numerous articles available in reliable databases (Google scholar, sid, PubMed) from 2017 to 2024 and from the number of articles 10, have been reviewed and selected.

**Results:** This study showed that performing foot reflexology in patients can reduce the anxiety level of these patients. Considering that reflexology is an easy and applicable method without side effects, it can be used by nurses to reduce patients' anxiety. Foot reflexology massage can reduce obvious anxiety and improve the physiological indicators of patients. Reflex foot massage makes a significant change in reducing patients' anxiety and is a useful nursing intervention in patients that improves the level of care of these patients at a critical stage with minimal cost and without any side effects.

**Conclusion:** From the results of this study, it can be considered as a safe, effective, applicable and cost-effective nursing intervention, and also considering the effectiveness of this measure and the mentioned advantages, it is suggested to use this method to reduce the anxiety level of patients in the bed.

*Keywords: Anxiety; Massage; Reflexology massage; Foot reflexology massage*



## Leech therapy for pilonidal sinus diseases: A case report

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**Background and Aim:** Pilonidal sinus diseases often occur in the sacrococcygeal region and are associated with infection or chronic inflammation. Although this disease is benign, but due to a lot of pain, it disrupts the quality of life and daily work. The common treatment of pilonidal sinus diseases is surgery, which is more expensive and associated with risk of recurrence and postoperative infection. Also, hospitalization and long post-operative care are not favored by patients. Regarding to the increase complementary medicine usage for management of disease, in this research a case of a patient with pilonidal sinus disease, who was cured by leech therapy, has been reported.

**Methods:** A 28-year-old female patient complained of pain and swelling in the sacrococcygeal region, who had referred to a surgeon and was diagnosed with a pilonidal sinus infection. She was candidate for surgery. The patient was admitted to the traditional medicine clinic of the Faculty of Persian and Complementary Medicine in Mashhad.

**Results:** In the examination, skin redness, swelling, fluctuation and tenderness were observed without active discharge. The patient was under antibiotic therapy with ciprofloxacin and clindamycin. For the patient, 5 medium-sized *Hirudo medicinalis* leeches were placed on the swelling area. After one day, the pores created by the bites of the leeches provided a way for the pus to drain better. Chamomile extract dressing was also used for drainage and better healing of the wound for 6 days. With the discharge of secretions and the release of substances trapped in the pilonidal cyst, the healing process of the wound was improving. Antibiotic therapy continued until the wound was completely healed. After 10 days, the lesion was healed without discharge, redness and tenderness. This improvement is due to the presence of strong enzymes in leech saliva. Leeches secrete more than 20 identified bioactive substances such as collagenase, hyaluronidase, guamerin, hirudin, saratin, antiastasin, eglins, bdellins, complement, and carboxypeptidase inhibitors. They have anti-inflammatory, Anti-platelet Aggregation analgesic, anticoagulant, and thrombin regulatory functions, and antimicrobial effects.

**Conclusion:** According to the presented report, leech can be used as a complementary method in improving pilonidal cyst in people who do not want to do surgery. Leech therapy can reduce complications and enables the patient to return work quicker with less discomfort, and less cost. More clinical trials are needed to prove this treatment method.

*Keywords: Pilonidal sinus diseases; Leech therapy; Persian medicine; Hirudo medicinalis*

## Treatment with enema (Hoqne): From Ancient Times to the Present

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**Background and Aim:** Hoqne has a long history dating back to ancient civilizations such as Egypt, Greece, and Iran. According to Persian Medicine literature, it is a procedure in which fluids are injected into the lower bowel and uterus.

**Methods:** This study reviewed the therapeutic application of enema therapy in Persian Medicine textbooks. Moreover, electronic databases of PubMed, Google Scholar, Scopus, and ScienceDirect were explored for this purpose.

**Results:** In conventional medicine, the hoqne is known as an enema. Nowadays, this method is used much less frequently than in the past. In conventional medicine, an enema is most commonly used to relieve constipation and to cleanse the colon before a procedure or medical examination. It may also be used to diagnose certain conditions or to administer certain medications. In Persian Medicine, the enema has been used as an effective method of treating resistant constipation, kidney and bladder pain, arthritis and joint pain, gout, colon inflammation, intestinal parasites, headaches, dizziness, epilepsy, and many other conditions. Despite the great popularity of the enema among practitioners of traditional systems of medicine, it is viewed with skepticism in mainstream medicine, perhaps due to reports of some potentially adverse side effects.

**Conclusion:** With hoqne, as with any other medical procedure, some conditions must be strictly adhered to in order to achieve better results. These include the amount, temperature, and type of fluid composition, the time of the procedure, the number of times it can be performed and the necessary distance between them, the tools used, the way the body is positioned, the presence of the necessary knowledge and skills and the absence of prohibitions to perform the procedure. It seems that conducting more research on the effectiveness of enemas in treating disease and recording possible complications may lead to reducing this gap.

*Keywords: Hoqne; Enema; Clonic irrigation; Persian medicine; Complementary medicine*

## Study of therapeutic results of Fateh manual therapy on mild/moderate carpal tunnel syndrome

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**Background and Aim:** Carpal tunnel syndrome (CTS) is the most common peripheral neuropathy involving the median nerve. This disease is a common, chronic, debilitating and costly disorder, and various non-surgical methods are used to treat its mild and moderate types, and manual therapy is one of them. In this study, the effect of Fateh manual therapy on mild and moderate cases of this disease has been investigated.

**Methods:** In this clinical trial, 78 hands of 58 female patients with mild or moderate carpal tunnel syndrome were placed in two intervention and control groups. The intervention group was treated with splints, Fateh manual therapy and accompanying exercises, and the control group was treated only with splints. Treatment in the intervention group was subjected to Fateh's manual therapy for 6 weeks (once a week) and they also did two sports exercises at home daily (three times a day). During the study period, 4 people from the intervention group (6 hands) and 3 people from the control group (4 hands) dropped out of the study. Functional capacity and severity of symptoms were evaluated with the Boston Questionnaire and pain intensity and electrodiagnostic findings at the beginning and 10th week, as well as the level of patient satisfaction at the 10th week of the study. The significance level in this study is 0.05. Analyzes were performed using SPSS version 25 software.

**Results:** The data of 51 patients (68 hands) were finally analyzed. All patients were female. The age distribution was the same in both groups. In terms of severity of symptoms and functional capacity, the improvement of these cases was significant in the intervention group compared to the control group. Also, pain changes (pain reduction) in the intervention group were significantly higher than the control group. In terms of satisfaction, these values in the intervention group were significantly higher than the control group. But in terms of the values of electrodiagnostic variables (comparison between the values at the beginning and the end of the plan), we did not see any significant difference between the two groups, this was also true for the changes in these values and we did not see any significant difference in the changes in the values of the electrodiagnostic variables in the two groups.

**Conclusion:** Fateh's manual therapy is effective in reducing the symptoms of mild and moderate carpal tunnel syndrome.

*Keywords:* Carpal tunnel syndrome; Traditional medicine; Complementary therapies; Persian manual therapy

## The effect of foot reflexology on the fatigue of patients with multiple sclerosis

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**Background and Aim:** Fatigue with a prevalence of approximately 83% is one of the most common and debilitating symptoms of multiple sclerosis (MS) and causes negative effects on employment, socialization process, daily performance, adherence to treatment, and finally reducing the quality of life of a person. To relieve the symptoms of the disease, the use of complementary and alternative medicine methods is more popular among MS patients than the general population. Reflexology is one of the methods of massage therapy and the most common types of complementary and alternative medicine. Reflexology is applying appropriate pressure with the index fingers and thumb to specific points and areas on the body, especially the feet, which are related to the organs, glands and other parts of the body to improve relaxation and recovery. Therefore, this study aimed to investigate the effects of foot reflexology on fatigue in patients with MS.

**Methods:** In this review, articles were extracted by searching the keywords fatigue, foot reflexology and multiple sclerosis in Google Scholar, PubMed, Science Direct, Magiran and SID databases. Eight related articles were selected and reviewed.

**Results:** The studies mainly showed that the positive effect of foot reflexology on the fatigue in patients with MS. Although it was stated in a study that this massage only improved physical fatigue and did not make a significant difference in the overall fatigue, but the researchers emphasized that this technique can be useful along with other treatments to relieve fatigue and this method can be combined with therapeutic routine treatments as a useful and economical complement to care.

**Conclusion:** Foot reflexology is a non-invasive, non-pharmacologic, simple, affordable and low-cost nursing intervention and can reduce long-term fatigue in people with MS. This technique is a safe, effective method without side effects to reduce the physical and mental symptoms of people with MS. Reducing the level of fatigue of patients can improve mental health, relaxation and increase the quality of life. Considering the high prevalence of fatigue in these patients and the need to provide a solution, it is possible to suggest the use of this method along with drug treatments to specialists, nurses, MS clinic officials and patients.

*Keywords: Multiple sclerosis; Foot reflexology; Fatigue*

### ***Dalk and Ghamz as a complementary intervention in treatment of Depression***

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**Background and Aim:** Depression is probably the most common of psychiatric disorders. It is the leading cause of disability worldwide, and one of the top three causes of disease burden worldwide. About 60% of individuals meeting criteria, for depression symptoms in whole life. Clinical trials suggest a disturbance in central nervous system serotonin (5-HT) activity other neurotransmitters implicated include norepinephrine, dopamine, glutamate, and brain-derived neurotrophic factor. Despite the advances in medical science and various drugs that exist for the treatment of depression, antidepressant effect requires exposure of several weeks' duration, and also, transient relapse of depressive symptoms can be produced in more than 50% of cases, making, treatment of depression still a challenge. Therefore, reviewing historical manuscripts such as Persian Medicine (PM), can be helpful in finding new medical methods. The aim of this study was searching related chapters in PM manuscripts to find PM scholars treatment methods in the management of depression.

**Methods:** In this literature review we assessed psychological disease section in some main traditional manuscripts of PM, including "Canon of medicine" and "Teb Akbari", and data about Dalk and Ghamz and depression were collected

**Results:** They are three main approaches in management of depression in PM, includes lifestyle modification, medication, and manual therapy. PM scholars have been used manual methods such as Dalk and Ghamz (PM massage) besides medication to enhance anti depression treatment. Using Dalk and Ghamz can increase effects of anti -depressant medication in various mechanism such as improving blood circulation, increasing heat production and energy level, and finally helps to excretion of waste materials Studies have shown benefits of massage and acupressure in increasing dopamine, serotonin, cortisol, endorphins, improving the immune system with interleukins, and reducing pain. These studies confirm PM scholars' hypothesis about positive effects of Dalk and Ghamz as a complementary intervention in management of Depression.

**Conclusion:** It seems that Dalk and Ghamz can be useful as a complementary intervention to increase the effectiveness of antidepressant medications

*Keywords: Dalk; Ghamz; Massage Depression; Persian Medicine; Iranian*

## The effect of lavender oil inhalation and lavender herbal tea on the sleep quality, Fatigue, and pain of the hemodialysis patients: A randomized clinical trial

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**Background and Aim:** Considering the importance of reducing pain, fatigue, and sleep disturbance in hemodialysis (HD) patients to improve their quality of life and nurses' ability to use complementary medicine, this trial aimed to evaluate the effects of lavender aromatherapy and lavender tea on decreasing pain and fatigue and improving sleep quality in HD patients.

**Methods:** We conducted 2 weeks open-label, parallel-group, randomized controlled trial. HD patients were allocated to one of the three study groups: control (n=30), lavender inhalation (n=30), and lavender tea (n=30). At the baseline and the end of the study, Participants' sleep quality, fatigue, and pain was assessed. In the adjusted model and after removing the confounders (baseline values of scores of sleep disturbances, use of sleep medication, day time dysfunction, and total scores of PSQI), the Analysis of covariance (ANCOVA) test was used to compare the mean of variables between the study groups.

**Results:** Participants in the lavender tea group and lavender aromatherapy group had a lower score of subjective sleep quality ( $P<0.001$ ), sleep latency, sleep duration, use of sleep medication, day time dysfunction ( $P$  for all  $<0.001$ ), sleep disturbances ( $P=0.035$ ), Total score of PSQI ( $P<0.001$ ), fatigue ( $P<0.001$ ), and pain ( $P<0.001$ ) following the intervention compared to the control group (Table 2). Following the intervention, no statistically significant difference was observed between the lavender tea group and lavender aromatherapy group regarding the scores of sleep quality ( $P=0.428$ ), fatigue ( $P=0.570$ ), and pain ( $P=0.997$ ).

**Conclusion:** The total findings of this study showed that the use of essential oil and lavender tea can be useful in managing the problems of dialysis patients such as sleep disorder, fatigue and pain caused by needle insertion.

*Keywords: Hemodialysis; Lavandula; Fatigue; Sleep Quality; Pain*

## Feasibility of *Rumex alveolatus* metabolites for biosynthesis of CuSe nanoparticles against antibiofilm formation

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**Background and Aim:** The antimicrobial effects of herbal medicine have been widely studied and reported in various research articles. Herbal medicine formulas (HMFs) usually show stronger antibacterial activity than single herbs. The antibacterial activities of components from popular herbs in East Asia have been summarized and analyzed, Iranians have used traditional and natural remedies to cure various illnesses for thousands of years, with herbal medicine still retaining a prominent status in the country's healthcare system. *Rumex alveolatus* (RA) is a species of the genus *Rumex*, which is part of the Polygonaceae family. It is known for its medicinal properties and has been traditionally used for various health disorders; hepatitis, asthma, stomachache, anthrax, hypertension, pneumonia, cancer, and diabetes mellitus. *Rumex alveolatus* has shown antibacterial, antioxidant, anticancer, anti-inflammatory, antifungal, wound healing, anti-Alzheimer's, and hepatoprotective activities. The use of nanotechnology in herbal medicine can improve the bioavailability, binding receptor selectivity, and overall effectiveness of the active components in herbal drugs. By formulating herbal drugs in nanocarriers, the bioavailability and solubility can be enhanced, and the drug can be targeted more precisely to the desired site of action. In summary, the combination of nanotechnology and herbal medicine has shown great promise in enhancing the activity and effectiveness of herbal drugs, addressing the challenges faced by traditional herbal medicine, and providing a more targeted and efficient approach to treating various health conditions. We aimed to assay RA-CuSe nanoparticles properties against biofilm formation by *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*.

**Methods:** The extraction was performed by 10 g of dried *Rumex alveolatus* in 100 ml distilled water (DW) which overnight incubated in 50°C subsequently was dried. Then, 200 mg of RA extract, 0.2 g sodium selenide, 0.2 g sodium sulfide was mixed in 100 ml DW on thermo stirrer that adjusted on 80°C and mild rotation for 3 hours. Final solution was dried in 60°C. Characteristics of RA-CuSeNPs was confirmed by SEM, XRD, FTIR and DLS methods. The effect of RA-CuSeNPs on *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* was examined by the microdilution method. The results were defined as minimum biofilm inhibitory concentration (MBIC). RA-CuSeNPs were tested at 0.1 g/ml at the highest concentration subsequently with 2-fold dilution in other concentration.

**Results:** MBIC was defined as the lowest concentration of the agent that showed 50% or more inhibition on the bacterial biofilm formation. The MBIC of RA-CuSe nanoparticles is 780 µg/mL and 720 µg/ml for *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* respectively.

**Conclusion:** The efficient CuSe NPs biosynthesized by RA extraction has shown effective anti-biofilm formation properties against *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*. The results proposed further studies for usage of RA-CuSe NPs in hygiene products.

**Keywords:** Biofilm formation; CuSe nanoparticles; *Rumex alveolatus*

## Investigating the effect of Persian medicine consultation on the prognosis of patients with COVID-19 hospitalized in Shahid Sadoughi Hospital, Yazd, Iran

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**Background and Aim:** SARS-CoV2 is the COVID-19 main agent, which caused a global pandemic. Traditional medicine schools, including Iranian medicine, have provided approaches for patients suffering from it. These approaches are presented in Iranian medicine in the field of lifestyle change in six essential principles and non-essential principles and strengthening the body's temperament. Therefore, in this study, the impact of traditional medicine counseling on the prognosis of COVID-19 patients admitted to Shahid Sadoughi Hospital in Yazd was investigated.

**Methods:** In this retrospective analytical descriptive study, necessary data obtained from the files of COVID-19 patients hospitalized in the infectious department of Shahid Sadoughi Hospital in Yazd who received Iranian medicine advice in the form of setting a diet plan, as well as the control group who did not receive advice. The data was analyzed statistically after entering SPSS 24 software, the statistical test used in this study was Chi-square.

**Results:** This study was conducted on 220 patients with COVID-19 who were admitted to the infectious department of Shahid Sadoughi Hospital in Yazd. 110 people were consulted by Iranian medicine. The patients average age was  $53 \pm 15.97$  years and 59 cases (53.6%) had an underlying disease and 110 patients were not consulted by Iranian medicine. The average age of patients was  $53.55 \pm 16.83$  years, and 52 cases (47.3%) had underlying disease. The number of hospitalization days was  $6.1 \pm 2.9$  in the case group and  $10.85 \pm 8.98$  in the control group.

**Conclusion:** According to the investigations carried out in this study, Iranian medicine can be very effective in reducing the length of hospitalization of COVID-19 patients. Also, Iranian medicine can be effective in different fields of treatment in different departments alone or in combination with pharmaceutical treatments. Of course, this requires more studies in this field to show the real effect of these treatments.

*Keywords: Iranian medicine; Covid-19; Prognosis; Traditional medicine; Pandemic; Vaccination*



## Gut microbiome and neuropsychiatric disorders, Persian and modern medicine's perspectives

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**Background and Aim:** Recent research has demonstrated that dysbiosis of gut microbiota may be linked to various mental disorders, including anxiety, depression, Alzheimer's disease, Parkinson's disease, and schizophrenia. The BGM system (brain-gut-microbiota system), a complex network linking the brain, gut, and gut microbiota, is crucial in regulating mental and brain health. The object of this article is to demonstrate the connection between the gastrointestinal system and neuropsychiatric problems, taking into account both modern and Persian medicine.

**Methods:** The search was conducted in databases Google Scholar, PubMed, Scopus, PsycInfo, SID, and Magiran. Key text references in Persian medicine, "Canon of medicine" and "Exir-Azam," also were reviewed.

**Results:** The gut-brain relationship is bidirectional, meaning that the brain and gut influence each other in a two-way manner. This system not only impacts nutrient absorption and utilization but also has a significant effect on cognitive processes such as memory, attention, and decision-making. Additionally, it plays a role in mood regulation, neuroplasticity, and other important indicators of mental and brain health. Gut microbiota-produced dietary metabolites enter the systemic circulation and act as signaling molecules by influencing cell-to-cell interactions between gut microbes and cells in the CNS, particularly microglia, astrocytes, and neuronal cells, which ultimately affect cognitive function, mood, and behavior. It has been detected that the gut microbiome plays a crucial role in various brain development processes, including neurogenesis, myelination, microglial maturation, and the development and maintenance of blood-brain barrier integrity. Dysbiosis of gut microbiota disrupts the gut-brain axis pathways, which can lead to altered blood-brain barrier permeability and inflammation in the nervous system. The emphasis of the sages of traditional Persian medicine on improving nutrition and eliminating constipation to better respond to treatment in neuropsychiatric patients can be related to the role of microbiomes in mental disorders in modern medicine.

**Conclusion:** Both Persian medicine and modern medicine have shown that incorrect lifestyle, nutritional mistakes, and constipation are effective in the occurrence of neuropsychiatric disorders. Therefore, nutrition, lifestyle, and treatment of constipation and digestive problems are important in preventing, treating, and reducing the severity of neuropsychiatric diseases.

*Keywords: Gut microbiota; Brain-gut-microbiota system; Neuropsychological disorders; Modern medicine; Persian medicine*

## The efficacy of medicinal herbs in the treatment of obesity among psychiatric patients in Persian and modern medicine

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**Background and Aim:** The prevalence of overweight/obesity is significantly higher than the general population in many psychiatric patients. The highest prevalence of overweight/obesity is observed in major depressive disorder (MDD), schizophrenia, anxiety disorder, and bipolar disorder. According to a systematic review and meta-analysis in 2021, obesity may contribute to the high prevalence of physical health conditions and mortality rate in psychiatric patients. On the other hand, numerous studies have demonstrated a strong link between obesity and the prevalence of psychiatric conditions like depressive and anxiety disorders. It seems managing overweight/obesity in the psychiatric population can improve both their mental and physical health. Using medicinal herbs with known effective phytochemicals is an attractive and safe way to manage weight. According to recent studies, many medicinal plants can improve weight control, metabolic disorders, and psychiatric problems by alleviating oxidative and inflammatory pathways. To explore herbal medicine's efficacy in treating obesity among psychiatric patients, we conducted a narrative review.

**Methods:** Google Scholar, PubMed, Medline, EMBASE, and PsycINFO databases were searched to determine the probable mechanisms of overweight/obesity in psychiatric patients and identify the most common herbs used in obese psychiatric individuals. In addition, studying the main books of treatment and pharmacology in Persian medicine helped determine ancient doctors' opinions and treatment methods regarding obesity and psychiatric diseases.

**Results:** Disturbances in some biological pathways, such as oxidative stress and inflammatory pathways, play a role in both the development of obesity and psychiatric disorders. Therefore, treating obesity by managing these pathways in psychiatric patients can potentially improve or slow down the progression of the psychiatric disease while also benefiting the physical health of the patients. Some herbs that have shown neuro-psycho-protective and anti-obesity effects in experimental trials are berberis, green tea, black seeds, ginger, lemon balm, saffron, and Persian borage. Persian medicine believes that correcting temperament and general medical problems, such as obesity and gastrointestinal disorders, is an essential step in achieving effective treatment of psychiatric illness. Many herbal medicines prescribed to obese psychiatric patients in modern phytotherapy have been used in traditional Persian medicine.

**Conclusion:** The use of certain plants in Persian medicine for the treatment of psychiatric diseases has led to positive results in both the treatment of mental illness and metabolic problems in recent studies. Psychiatric patients may benefit from the opinions of Persian medical experts in controlling obesity. This issue requires more research and accurate clinical trials.

*Keywords: Psychiatric patients; Overweight; Obesity; Herb; Medicinal herbs; Persian medicine*

## SarvaMed-F: A Systematic Database of Persian Medicine Formulations based on Gharabadin Kabir

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**Background and Aim:** Persian medicine (PM) is a holistic system of medicine that emphasizes the use of lifestyle modifications and natural medicines, to treat a wide range of conditions. In recent years, there has been a growing interest in the scientific validation of PM. This is due, in part, to the increasing recognition of the efficacy of natural remedies in treating various diseases, and the surge in utilizing natural products and traditional medicines as a tool for drug discovery. The aim of this research was to create a database of PM formulations to help provide the ground for efficient use of this rich resource.

**Methods:** SarvaMed-F database was developed via both text mining and manual editing methods. Gharabadin Kabir, an encyclopedia of drug formulations written by Mohammad Hossein Aghili in the 18th century, was selected as the resource. After preprocessing this semi-structured resource, a text mining algorithm to identify the drug formulations along with their uses and preparation methods. Once the drug formulations had been identified, they were manually reviewed to ensure proper categorization of the text. Subsequently, UnaProd and the Iranian General Ontology (IrGO) were used for named entity recognition.

**Results:** The database of drug formulations based on “Gharabadin Kabir” contains 7,922 formulations in 378 drug groups and is a valuable resource for researchers and practitioners of PM. The database provides a comprehensive overview of the PM formulations and their uses. Additionally, the database can be used to identify new drug targets and to develop new treatments for various diseases.

**Conclusion:** Development of PM databases can help standardization PM texts and analysis of large amounts of data. SarvaMed-F is a valuable resource that can be used for further research and development in the field of PM, translational knowledge, and new drug discovery.

*Keywords: Persian Medicine; Text mining; Knowledge bases; Database; Biomedical ontologies*

## Visualizations articles retrieved with the mesh term of Persian and Arabic medicine: analysis altmetrics and scientometrics

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**Background and Aim:** Medical Subject Heading (MeSH) is a thesaurus of 30000 terminology that helps index and search PubMed using controlled medical vocabulary. Its medical terms are updated annually to reflect developing medical research. MeSH thesaurus terms “Medicine, Arabic” and “Medicine, Persian” were introduced in 1966 and 2022, respectively; these mean traditional concepts of medicine and associated methods reflected in medicine in Arab countries and PERSIA (traditional practice only; not for modern medicine). Today, a researcher can choose it as a medical keyword for articles and journals indexed in the Medline database. Traditional research for Persian medicine previously could be indexed as the term “Medicine, East Asian Traditional (1978-2021)”. For this term, PubMed automatically includes other terms such as Ancient Iranian Medicine, Iranian Traditional Medicine, and Persian Traditional Medicine. The purpose of this study is to illustrate and analyze articles on the subjects of Persian and Arabic medicine (retrieved with Mesh terms).

**Methods:** A descriptive cross-sectional study was carried out on articles using Altmetrics and Sciorometrics approaches. In this regard, we used PubMed and Scopus databases, and we illustrated the network of authorship, countries, and keywords. Then, we retrieved citations and altmetrics data in Scopus and Altmetric Explorer in April 2024. In Altmetric Explorer, total mentions in social media were divided into five categories: social media (Twitter, Facebook, Google+, Reddit posts, Sina Weibo, Pinterest, LinkedIn), other sources (Wikipedia, Videos, Q&A posts), news and blogs (News, Blogs), policy and patents (Patents, Policy documents), and academic sources (Faculty Opinions, Peer reviews).

**Results:** Results for Persian and Arabic medicine were 919 and 20 records. Eighty-three authors from 56 institutions collaborated in writing these Persian medicine articles, and out of 160 keywords for these articles, 110 were with mesh. One thousand four hundred twenty-three authors from 633 institutions collaborated in writing these Arabic medicine articles, and out of 1833 keywords for these articles, 546 were with mesh. We were able to reveal the trend of Persian and Arabic Medicine research for the future. Our findings showed a positive association between traditional bibliometrics and social media metrics such as the Altmetric Attention Score (AAS) in the Persian and Arabic of Medicine literature ( $p < 0.05$ ).

**Conclusion:** Our overview of the literature in the medical field allowed us to identify and examine gaps in the Persian and Arabic medicine of Medicine research. In particular, the role of MeSH in medical literature retrieval is to define relations between concepts so that interconnected concepts are gathered together and can be searched together. Researchers in this field should be aware of the editing of this topic in the medical thesaurus (Mesh) and use it as a standard keyword in their articles Also, more specific concepts can be automatically included in a search. Sharing research findings of articles in social scientific networks can be an effective way to increase the visibility of scientific research. In turn, it can positively impact the citation of articles - an essential factor in the world of research.

*Keywords: Controlled vocabulary; Altmetrics; Bibliometrics; Persian Medicine; Arabic Medicine*

### ***Hakim Gonābādī and the Treatment of Syphilis in the Safavid Era: An Analysis of the Therapeutic Approach in the *Daṣtoor ol-Elaaj****

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**Background and Aim:** Soltānālī Gonābādī was a prominent physician during the 10th century AH (16th century CE) of the Safavid era. In his book *Daṣtoor ol-Elaaj*, he addressed the treatment of syphilis (*atishak*) and shared his clinical experiences. The aim of this article is to examine Gonābādī's therapeutic approach to syphilis in the *Daṣtoor ol-Elaaj*.

**Methods:** This study is descriptive-analytical research. Data collection was conducted through a library-based method by studying historical texts and resources.

**Results:** In the *Daṣtoor ol-Elaaj*, Gonābādī categorized syphilis into four types and fully described the symptoms, signs, and pharmacological treatments for each type. He employed 69 single drugs (including 63 plant-based and 6 mineral-based) and 21 compound drugs in the treatment of this disease. The results indicate that Gonābādī was a pioneer in the diagnosis and treatment of syphilis, even preceding the work of Emad al-Din Shirazi, a renowned scholar of the period. His treatment methods had a significant impact on subsequent periods, and his views on syphilis were also cited in the *Tebbe Akbar* (12th century AH).

**Conclusion:** Gonābādī was a pioneer in the treatment of syphilis during the Safavid era and possessed valuable experience in this field. His perspectives on this disease are thoroughly discussed in the *Daṣtoor ol-Elaaj* and have been recognized by subsequent physicians.

*Keywords:* Soltānālī Gonābādī; Syphilis; *Ātishak*; Safavid Era; Persian Medicine

## Prevalence of Skin-Connected Organ Manifestations in Patients with Chronic Urticaria: A Cross-Sectional Study

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**Background and Aim:** In Persian medicine, the body's organs are interconnected, each with varying levels of importance. The heart, brain, liver, stomach, and uterus (in females) hold greater significance than the skin, which serves as an excretory organ. When disruptions occur in the body's primary excretory pathways, the body's innate power (Nature) redirects waste materials toward non-vital organs like the skin. This process can create an environment conducive to skin-related diseases, including chronic urticaria. The objective of this study is to investigate the prevalence of accompanying symptoms related to chronic urticaria in skin-associated organs, such as gastrointestinal issues, menstrual irregularities, and neurological symptoms.

**Methods:** A cross-sectional study involving 92 patients aged 12 to 65 years diagnosed with chronic idiopathic urticaria was conducted at medical centers affiliated with Iran's University of Medical Sciences between May 2020 and April 2021. The study analyzed the prevalence of primary complaints and accompanying symptoms using non-parametric Chi-square tests.

**Results:** The overall average age of patients was 37.60 ( $\pm 10.59$ ) years. In addition to chronic urticaria, patients reported other issues; 50% of patients had menstrual irregularities, 56.7% experienced constipation, and 61% had other non-constipation-related gastrointestinal problems. 48 individuals complained of symptoms related to the upper respiratory tract, such as rhinosinusitis or rhinorrhea.

**Conclusion:** An unhealthy lifestyle and improper digestion of food can alter the quality and quantity of humors, leading to their accumulation in the body. Nature combats this retention by directing waste materials to less vital organs, such as the skin, resulting in skin lesions. Therefore, promoting coordination and maintaining the health of the stomach, liver, uterus (in females), and brain are effective steps in managing inflammatory skin conditions.

*Keywords: Chronic urticaria; Persian Medicine; Integrative Medicine*

## An overview of the saffron effect on the male reproductive system

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**Background and Aim:** Saffron the stigma of *Crocus sativus* L. is a small perennial plant native to the eastern Mediterranean region. It is known as a “food medicine”, due to its applicability not only for its color and taste as a spice but also for the unique medicinal properties reported in both traditional and conventional medicine including its therapeutic properties in the male reproductive system. The purpose of the current study is to review the conducted studies on the effect of saffron on the male reproductive system.

**Methods:** Here in related articles were collected by searching saffron and its main phytochemicals including picrocrocin, crocin, crocetin, and safranal in addition to the male reproductive disorders in PubMed, ISI, and Scopus databases from 2000 till now.

**Results:** Following the search and stifle of the studies, 11 clinical, 30 animal and 4 in vitro articles were analyzed and tabled. Saffron and its phytochemical were able to affect a variety of male reproductive diseases including, infertility, varicocele, sexual disorders, premature ejaculation, erectile dysfunction, and benign prostatic hyperplasia as well as reversing and protecting testicular and sperm toxicity through different mechanisms.

**Conclusion:** According to the therapeutic capacity of saffron, it can be added to the diet of men with reproductive disorders as a medicinal food. Also, phytochemicals and various extracts of this plant can be used alone or in combination with other drugs as a medicinal product for male reproductive disorders.

*Keywords:* Carotenoids; Diet therapy; Urogenital diseases; Testicular diseases

## Liver correlation network: A concept of systems medicine in Persian medicine

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**Background and Aim:** Today, network science and the use of drawing communication graphs between different medical fields in the diagnosis and treatment of diseases have received much attention under the name of network medicine. The term network medicine was proposed by Albert-László Barabási. He determined the relationship between the disease and the different genes involved in the disease using a network representation and identified the magnitude of these links. Persian medicine has wide communication concepts about diseases. These concepts are determined by understanding the material causes of various diseases in the body's organs. From the point of view of Persian medicine, the material cause plays a major role in causing various diseases and disorders in multiple organs.

**Methods:** some important sources of Persian medicine, including “Canon of medicine” (al-Qanoun fil-Tibb) by Avicenna (980-1037 AD) and the “Book of Treatment” (Moalejat-e-Aghili) by Mohammad Hossein Aghili Khorasani Shirazi (18th century AD), have been reviewed to extract diseases and material causes ontologies. Therefore, the network between liver diseases ontology and other organs due to their causes were drawn by using the text mining software, RStudio.

**Results:** Scientists in this field, especially Ibn Sina (980-1032), explain many concepts related to the relationship between organs and diseases and their causes. Each of the organs of the body can be connected due to a common material cause at the same time or following a disorder in other organs. These connections play a greater role especially in the three main organs of the liver, heart and brain. The role of the liver in the metabolism and functioning of the whole body is very important. Therefore, the network connections between the liver and other organs mentioned by many Iranian medical scientists, including Ibn Sina, show that liver disorders can cause dysfunction, dys temperament, and disease in other organs of the body. This type of connection between liver diseases and other organs can be drawn by network software. The drawing of these connections shows the strength of the connection between different organs and the liver. The stronger connection between the liver and an organ, shows the more common causes of their diseases. This relationship will also occur in reverse. Based on these definitions and text mining of medical books using network software, strong connections between the liver and some organs such as the heart and cardiovascular system, the brain and the nervous system, as well as the chest and digestive system have been clearly shown. Fever also occurs significantly more in liver diseases.

**Conclusion:** Based on network medicine, several axes such as liver-kidney axis, liver-brain axis, liver-heart axis and liver-intestine axis can be explained with the concept of common material causes. It is useful to predict related diseases and helpful to treat them as well as prevent complications.

*Keywords: Ontology; Liver axis; Network medicine; Persian medicine; Systems medicine*



## Temperament of molecules in plant extract by similarity search

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**Background and Aim:** Plant extracts are complex mixtures containing a wide variety of natural compounds with different polarities and properties. determining the temperament of each molecule in extract that cause to the beneficial effects, has a novel interesting matter in recent years. In rational drug design, the concept of molecular similarity searching is frequently used to identify molecules with similar functionalities by looking up structurally related molecules in chemical databases. This research use from molecular similarity searching to evaluating the temperament of new molecules that extract from plants.

**Methods:** We searched in google scholar and PubMed to find the molecule similarity search tools and use from them to distinguish the temperament of new discovered molecule that extract from plants. This tools compare the structure of new molecule with well-known molecule, subsequently the temperament of new molecule can be predicted.

**Results:** There are various molecules in plants extract, that the temperament of them were determined, including phenolic compounds such as flavonoid, which much of them are hot and dry temperaments. Majority of Plants containing essential oils have hot and dry temperaments. the temperament of many molecule in plants not be diagnosed, by using from molecule similarity search tools such as ChemMine Tools, arXiv , DataWarrior , the temperament of novel discovered molecule can be determined with similarity searches. The results of this study suggest that plant extracts contain a diverse range of temperament molecules, which be predicted with similarity search.

**Conclusion:** Plant extracts are a rich source of bioactive molecules with diverse temperaments and properties. By using molecule similarity search tools, the temperament characteristic of these molecules determined, that is crucial for developing effective natural products and nutraceuticals.

*Keywords: Temperament of molecules; Similarity search; Traditional medicine*



## **Advancing Traditional Persian Medicine: Integration into Iran's Medical Research, Education, and Healthcare Landscape**

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In Iran, Persian Medicine (PM) stands as the predominant traditional healing system with a rich history spanning millennia. Over the past twenty years, efforts have been made to establish educational programs, research initiatives, standardization protocols, and regulatory frameworks within this domain. The integration of PM into medical education has yielded two significant advancements: the introduction of a PhD certification program and the implementation of a standardized curriculum catering to a broad spectrum of undergraduate students. Recent initiatives have seen initial yet promising strides towards incorporating PM into healthcare preventive strategies across both rural and urban settings. Furthermore, the proliferation of PM clinics, known as “salamatkadeh” in Persian, staffed by qualified physicians employing integrative treatment modalities, underscores the growing acceptance and utilization of PM in clinical practice. Noteworthy is Iran's distinguished standing in medicinal plant and traditional medicine research, ranking fourth globally for four consecutive years according to the SCImago Institution Ranking. Despite these achievements, there remain several critical steps to fully integrate PM into Iran's mainstream healthcare practices. Enhancing research methodologies, augmenting the quantity and caliber of research endeavors, and expanding PM's potential in preventive medicine are imperative tasks. In the realm of medical education, the development of specialized undergraduate courses tailored to disciplines like nursing and physiotherapy with a PM focus is essential. Challenges persist in terms of limited accessibility to PM clinics, particularly in smaller cities and even major urban centers across Iran. Additionally, efforts to bridge these gaps and further integrate PM into the broader healthcare landscape are crucial for realizing the full potential of this ancient healing tradition.

*Keywords: Iran; Integrative medicine; Healthcare; Medical research and education; Traditional Persian medicine*



## Becoming an Integrative Pediatrician: Training Pathways and Opportunities

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Training in integrative pediatrics involves various approaches to enhance pediatricians' knowledge and skills in this specialized field. Integrative medicine, characterized by its holistic and personalized nature, has garnered increasing interest in pediatric care for its focus on preventive health measures and overall well-being of children. This study aims to explore the diverse training programs available in pediatric integrative medicine. Pediatricians can pursue training in integrative pediatrics through various avenues. Participation in integrative medicine colleges offers a comprehensive learning experience covering pediatric methodologies and related topics. Training durations vary, ranging from 2 years and 1000 hours in Arizona to 4-5 years in Iran. Additionally, clinical fellowships, such as the one-year program offered by Stanford Children's in partnership with the University of Arizona, provide specialized training. Online courses, ranging from 70 to 200 hours, have also been developed by institutions like Arizona, Stanford, and the Academy of Pediatric Integrative Medicine. The American Academy of Pediatrics has shown support for pediatric integrative medicine by endorsing a section on complementary and integrative medicine. In conclusion, pediatric integrative medicine is an emerging and essential subspecialty. While various training programs exist, there is a need for more structured and comprehensive fellowship or residency programs in pediatric integrative medicine globally to ensure a sustainable and specialized approach in this field.

*Keywords: Child; Holistic; Institute; Integrative medicine; Lifestyle; Traditional Persian medicine*

## Harmonizing Herbal Remedies and Persian Medicine for Integrative Psychiatric Care

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The exploration of medicinal plants within the realm of psychiatry is steadily advancing. However, the integration of traditional Persian medicine (TPM) knowledge has the potential to significantly enhance the productivity of these studies. By harnessing the insights from TPM, researchers can uncover valuable pathways that could revolutionize the development of psychiatric treatments. One compelling avenue for exploration lies in the targeted utilization of invigorating drugs (*Moffarrahat*). By leveraging the knowledge embedded in TPM, researchers can pinpoint specific compounds present in these herbal remedies and explore their therapeutic potential in the context of psychiatric disorders. This approach not only opens up new possibilities for clinical studies but also paves the way for the creation of novel, natural-origin medications that could prove to be highly effective in treating a range of psychiatric conditions. In essence, by bridging the gap between modern psychiatric research and TPM, we have the opportunity to unlock a wealth of untapped therapeutic possibilities and potentially shape the future of psychiatric treatments as integrative psychiatry.

*Keywords: Herbal medicine; Integrative psychiatry; Psychiatric disorders; Traditional Persian medicine; Iran*



## **Integrating Traditional Persian Medicine in Ophthalmology Practice: Exploring Potential Fields**

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The integration of Traditional Persian Medicine (TPM) into modern ophthalmology practice presents a compelling avenue for enhancing patient care and exploring holistic approaches to eye health. Rooted in centuries-old wisdom and a comprehensive understanding of the interconnectedness of body systems, TPM offers a rich tapestry of herbal remedies, dietary recommendations, and lifestyle interventions that can potentially complement conventional ophthalmic treatments. This paper investigates various potential fields where TPM principles and therapies could be integrated into ophthalmology practice, including the management of common eye conditions such as ocular surface and retinal diseases. Additionally, it explores the role of TPM in promoting overall ocular wellness, emphasizing preventive strategies and personalized treatment approaches. By bridging the gap between ancient healing traditions and modern medical science, this study seeks to pave the way for a more integrative and patient-centered approach to eye care, drawing upon the diverse therapeutic modalities offered by both TPM and conventional ophthalmology to optimize visual outcomes and enhance the quality of life for patients with ocular conditions.

*Keywords: Traditional Persian Medicine; Eye; Ophthalmology; Integrative Medicine*

## **Culinary medicine concept based on the basics of nutrition in Persian Medicine**

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In the last 40 years, the term Culinary Medicine (CM) or Culinary Nutrition (CN) has been used as an emerging strategy in medical sciences and treatment systems to improve the quality of diet and reduce the burden of chronic diseases and promote healthy ageing. Culinary medicine is a low-cost and effective intervention that can be easily incorporated into people's daily lives. It seeks to obtain desirable health results in the society by integrating the art of preparing, cooking and serving food with medical science. Today, medical science emphasizes evidence-based lifestyle interventions for the prevention and management of noncommunicable diseases. Accordingly, diet-related interventions, now considered "food is medicine" (FIM), have gained attention in health care systems and healthcare teams need the knowledge and tools to effectively manage FIM services to enhance disease prevention and chronic disease management. According to the sources of Iranian medicine and the special attention they have paid to the role of food in maintaining health and treating diseases, the approach of using culinary medicine (CM), as one of the vital components of FIM, can be achieved by teaching proper nutrition and practical cooking skills. Persian medicine is a pioneer in this field by having basic concepts about food, medicine and nutraceuticals. The use of food or food abstinence is recommended as the first line of treatment in many diseases. It seems that according to the teachings of Persian medicine and paying attention to the temperament of food, a more specific view can be provided about the treatment of diseases.

*Keywords: Traditional Persian Medicine; Culinary medicine; Culinary nutrition*

## **A prelude on the importance of “inter-organ dynamic networks” in the “mind-body multi-stability” based on Hikmat-based medicine**

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Due to a long-lasting and deep misconception in understanding the content of ancient manuscripts of Hikmat-based medicine, some unverifiable propositions have prevalently been attributed to the sage physicians, based on which health is assumed merely to result from the qualitative temperamental equilibrium or from the quantitative balance of bodily humors. [Sometimes structural order of members is also added to it]; although ancient philosopher-physicians presented a model of the human living body which encompasses a complex order that has organized hierarchically from imperceptible fundamental single matters (elements) and the emergence states of their qualitative interactions (temperament), to further includes various perceptible bodily structures (humors, organs), and less perceptible corporeal structures (spirits) which ultimately bring about diverse dynamic physical and mental functions (actions) by types of bio-energy originated from the high soul. In this article, the author endeavors to first show how prevalent are the public fallacies of “nothing but”, and “false cause” and “magnifying” among the mass advocates and ignorant practitioners, and how far and deviated is the explanation of the complex events of human-being according to static temperamental/humoral patterns from the multifaceted and dynamic models presented by ancient polymath physicians, and then, with an integrative and interdisciplinary approach, introduces the most neglected essential inter-organ axes in the networks between chief organs (brain, heart, liver) and other organs (like stomach, gut, uterus, lungs, spleen) to show that the mental/physical multi-stability is the consequence of both linear and nonlinear interactions between various body organs that, despite diversity, difference or contrast in their texture, structure, and specific temperaments and functions, interact multi-directionally with each other and through this dynamic interconnectedness maintain the overall sustainability and resilience of the living human-being in confronting with the alterations of internal and external environments. The author also aims to explain how this multi-stability can unexpectedly become unbalanced and expose the health and survival of the living body to dissolution and collapse.

*Keywords: Hikmat-based medicine; Inter-organ axes; Multi-stability*

## **Rheological considerations in the rehabilitation of muscles and supportive connective tissue diseases: a review study based on Persian medicine literatures**

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One of the important factors in rehabilitating of muscles and joints is paying attention to the rheological aspects of body systems, including body fluids and vital forces (so-called Akhlat and Arvah and ghova in Persian medicine respectively). Muscles, tendons, ligaments, membranes and capsules are among the organs in which blood circulation, lymph, fluids and energy are of great importance. According to Persian medicine (PM), the lack of the movement of fluid and energetic structures of the body which is called sodeh is important not only in the prevention but also in the treatment and rehabilitation of connective tissue problems.

This study is a descriptive interpretive review research in which the viewpoint of PM on the movement of body fluids and energies was extracted from the literatures of PM and compared with the findings of recent studies published in English over the past 40 years. From the PM point of view, in a general classification, the cause of rheological disorders of body fluids and energies can be divided into 3 categories, including disorders of the Producing organs, receiving organs, and the flow path. The Producing organs in PM are named as the Raeiseh organs and one of their functions is Production and distribution the energy. The movement of energy is the basis for the movement of body fluids, including blood and lymph. Viscosity, condensation, volume and electromagnetic charge density of blood or body fluids or ducts are other effective factors in rheology. Vascular contractions, reduction of vessel diameter, and physical pressure exerted on vessels from surrounding tissues such as interstitial tissue, fat, muscle spasm, improper body position or posture, and cold are among the common factors in body fluid dynamics. In the rehabilitation of muscle tissue and supportive connective tissue, it is necessary to pay attention to the rheological aspects of body fluids in order to achieve the maximum therapeutic response. For example, decreasing the Stickiness and thickness of body fluids or improving the patient's psychological profile in order to change the body's energy distribution pattern, before performing rehabilitation actions can theoretically increase the success rate of rehabilitation. Paying attention to the rheological aspects of body fluid and energetic systems can improve the success rate of rehabilitation treatments in musculoskeletal and supportive connective tissue diseases.

*Keywords: Persian medicine; Body fluids; Rehabilitation; Perfusion; Rheology*





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