

Alcohol Abuse, Consequences, and Treatments from the Perspective of Traditional Iranian Medicine: A Review Study

Masoud Moghadari¹, Haleh Tajadini¹, Mohammad Setayesh¹, Mohadese Kamali¹

Review Article

Abstract

Background: Alcohol use has always been prevalent in human societies, but in many Muslim-majority countries, including Iran, national laws prohibit the consumption of this substance.

Methods: In this study, reference books on traditional Iranian medicine and electronic documents from Google Scholar, PubMed, and Scopus were searched for entries about the consequences and treatments of alcohol abuse.

Findings: Seminal books of traditional Iranian medicine refer to alcoholic beverages using two terms, namely, “khamr” and “sharâb” (wine). These sources indicate that the temperament of “sharâb” is generally warm but may vary depending on color, taste, concentration, and age. Traditional Iranian medicine views wine as a cause of multiple adverse effects on health.

Conclusion: Traditional Iranian medicine advocates the beliefs that no level of alcohol use is beneficial for health and that physicians should advise against alcohol consumption even in small amounts. Scholars of indigenous medical practices have long been opposed to the adoption of wine as a remedy or otherwise, as they believe that the benefits of alcohol are dwarfed by its harmful effects.

Keywords: Alcohol abuse; Medicine; Traditional; Alcohol drinking; Therapeutics

Citation: Moghadari M, Tajadini H, Setayesh M, Kamali M. **Alcohol Abuse, Consequences, and Treatments from the Perspective of Traditional Iranian Medicine: A Review Study.** *Addict Health* 2019; 11(3): 192-201.

Received: 25.02.2019

Accepted: 29.04.2019

1- Neurosciences Research Center, Institute of Neuropharmacology AND Department of Traditional Medicine, School of Traditional Iranian Medicine, Kerman University of Medical Sciences, Kerman, Iran
Correspondence to: Mohadese Kamali, Email: mohadesekamali0912@gmail.com

Introduction

Alcohol consumption has been a long-standing practice in human societies;¹ yet this behavior can result in adverse consequences. In 2016 alone, alcohol was the seventh cause of mortality and the leading root of morbidity among people aged 15 to 49 years; it accounted for 3.8% and 12.2% of deaths among women and men worldwide, respectively.² Despite these effects, over half of the world's population consume alcohol, with people spending more on this substance than any other recreational product, except tobacco.³ Alcohol consumption has long been recognized as a determinant of public health,⁴ but 2016 reports showed a more than 25% increase in the occurrence of alcohol abuse.⁵ Alcohol consumption is higher in Europe than other parts of the world⁶ and also is higher among men than women.⁷ Although alcohol consumption is common in developed countries,⁶ low- and middle-income nations with large populations exhibit a higher rate of alcohol-related mortality.⁷

Epidemiological studies indicate that Iran is also struggling with a serious substance abuse problem. The illicit products most commonly used in the country are alcohol, opium, and cannabis.⁸ A 2012 survey carried out by the Iranian Ministry of Health to identify the population of hidden substance abusers found that alcohol was the most widely abused substance in the country and that alcohol abuse was more prevalent among 18- to 30-year-olds than other age groups.⁹ Alcohol consumption is not prohibited by law in most countries,³ but many Muslim-majority nations implement very strict regulations on the use of substances, especially alcohol.¹⁰ In Iran, alcohol consumption among the Muslim population is forbidden, but non-Muslims are allowed to produce and consume alcohol in private.

Alcohol abuse is the cause of more than 60 different medical conditions, including both communicable and non-communicable diseases (NCDs), and is viewed as the third highest global health priority. Overall, alcohol use accounts for 4% of the global burden of diseases and has been rated the third most important factor for morbidity and premature death.³ It also contributes to the development of cancers,¹¹⁻¹³ with the number of alcohol-related incidences

growing in recent years.¹³ For instance, the consumption of alcohol is associated with the risk of developing breast cancer, particularly estrogen receptor (ER) tumors.¹⁴ A direct relationship may also exist between alcohol use and the incidence of melanoma, pancreatic cancer,^{15,16} and prostate cancer, as well as the increased risk of colorectal, gallbladder, and oral and laryngeal cancers.^{13,15} In the European context, scientific evidence suggests that prevalent alcohol consumption and the high carcinogenicity of ethanol metabolites in alcohol render this substance the main cause of esophageal cancer¹⁷ and increased risk of gastric cancer.^{15,18} Alcohol has also been shown to increase the risk of hepatitis, liver cancer, and diabetes.¹⁹ This substance and its metabolites are likewise associated with the onset of lung cancer.²⁰

The prolonged use of alcohol stimulates oxidative stress pathways and weakens the immune system. Therefore, patients suffering from alcohol use disorder (AUD) are sensitive to respiratory pathogens and pulmonary injuries. For example, these patients are two to four times more likely to develop acute respiratory distress syndrome (ARDS) and can potentially develop pneumococcal pneumonia.²¹ Heavy alcohol use increases the risk of cardiovascular diseases (CVDs)²² and raises the heart rate through the excessive activation of sympathetic nervous mechanisms, thereby elevating blood pressure and cardiovascular events in patients with hypertension (HTN). Alcohol-induced HTN may be one of the most common types of blood pressure disorders.²³ Alcohol should thus be prohibited as a substitute for a proper diet, exercise, and medication intended to reduce the risk of CVDs.²⁴ Alcohol use also elevates the risk of hemorrhagic and ischemic stroke.³ Evidence pointed to the high prevalence of alcohol use among people with epilepsy,²⁵ suggesting that this substance raises the likelihood of developing the disease.²⁶ Finally, alcohol is the most important risk factor for developing early dementia²⁷ and causes depression.²⁸

The indirect harms of alcohol equally abound.³ For instance, injuries from accidents involving motor and non-motor vehicles are frequent among alcohol users,²⁹ and drunk drivers are 17% more likely to cause a deadly accident.³⁰ Another incident that is indirectly related to alcohol abuse is drowning.³¹ Statistics showed that many

victims of drowning had a high blood alcohol level, prompting the call for the establishment of public health measures to control alcohol use among people who are involved in activities in or near water.³² Additionally, the rate of developing postoperative infectious diseases is three to four times higher among chronic alcohol abusers than non-alcoholic patients. These individuals also develop ulcers, urinary tract infections, tracheobronchitis, and pneumonia at higher rates than that observed among normal people - a development that reflects weakness in the immune system. Alcoholics are significantly more likely to have bleeding disorders, need a blood transfusion, and suffer from prolonged bleeding. Bleeding disorders in alcohol abusers are caused not only by liver dysfunction but also by problems that ethanol creates in thrombocyte function, which reduces hemostatic factors.³³ Alcohol poisoning even increases the risk of pathogen acquisition in burned patients.³⁴

According to the World Health Organization (WHO), almost all health systems around the world are facing the challenge of rising health costs, which is partly due to the growing burden of chronic diseases. As a result, patients and health care providers are calling for the revitalization of health services with more emphasis on self-centered care, which encompasses expanding the adoption of traditional and complementary medicine.³⁵ The WHO indicated that complementary medicine had a long history of contribution to general health and the prevention and treatment of illnesses, especially chronic diseases.³⁶ A rich branch of complementary medicine is traditional Iranian medicine, which is characterized by thousands of years of history in helping people maintain health and overcome common illnesses.³⁷ Reviewing sources of information on this practice as well as the beneficial and harmful effects of natural products according to these materials and categorizing the ways in which they contribute to disease prevention and treatment can provide valuable insights into the effective use of complementary medicine. This advantage is equally applicable to alcohol abuse and dependence, which are some of the oldest health problems in human societies and remain a major challenge despite tremendous progress in the field of medicine. These problems should be addressed through early intervention

and preventive measures at both individual and population levels. In view of these considerations, we reviewed reference books on traditional Iranian medicine in search of information about alcoholic beverages and their effects to formulate recommendations based on a combination of traditional and modern insights for the prevention and early treatment of alcohol abuse, its consequences, and its complications.

Methods

This review began with a search for reference materials on traditional Iranian medicine using "Khamr" and "Sharab" keywords and electronic documents from the Google Scholar, PubMed, and Scopus databases using "Alcohol abuse" keyword to find entries about the consequences of alcohol abuse. The reviewed reference books are as follows:

- Al-Qanun Fi Al-Tibb or Canon of Medicine (Avicenna-10th and 11th centuries AD)
- Exir-e-Azam (Mohammad Azam Khan-e Chashti-18th and 19th centuries AD)
- Mofarrah-al-Gholoob (Mohammad Akbar Arzani-11th and 12th centuries AD)
- Tibb-e-Akbari (Mohammad Akbar Arzani-11th and 12th centuries AD)
- Makhzan al-Adviyeh (Mohammad Hossein Aghili Khorasani-18th and 19th centuries AD)
- Tohfe-al-Momenin (Mohammad Momen Tonkaboni-17th century AD)
- Zakhire Kharazmshahi (Seyyed Ismail Jorjani-11th and 12th centuries AD)
- Kholase-al-Hekma (Mohammad Hossein Aghili Khorasani-18th and 19th centuries AD)
- Qarabadin-e-Kabir (Mohammad Hossein Aghili Khorasani-18th and 19th centuries AD).

Results

The books on traditional Iranian medicine refer to alcoholic beverages as "khamr" and "sharâb", both roughly translated as wine.³⁸⁻⁴⁵ In Islamic jurisprudence, "khamr" is defined as anything that interferes with one's ability to reason, but in practice, the word denotes "grape wine".⁴¹⁻⁴⁵ "Sharâb" pertains not only to wine but also to syrup made by boiling and filtering the juice of fresh or dried fruits and spices and mixing the end product with sugar or honey. In this article, the term "sharâb" is used to refer strictly to wine, as is done in traditional Iranian medicine.

Traditional Iranian medicine extensively uses the concept of “mizaj” (temperament), which is described as the quality resulting from the merging of four basic elements (water, fire, air, soil) and their interactions in the body. In this branch of medicine, each body consists of these four elements, and differences in their concentrations distinguish a given body from another. In other words, the amounts and proportions of these elements determine the temperament of a body. In traditional Iranian medicine, there are nine major types of temperament: moderate, warm, cold, dry, wet, warm and dry, warm and wet, cold and dry, and cold and wet.⁴³ These are explained in more detail below:

1- Substances that consist of more air and fire than any of the other elements have a warm temperament and are moderate in terms of wetness-dryness.

2- Substances that comprise more soil and water than any of the other elements have a cold temperament and are moderate in terms of wetness-dryness.

3- Substances that contain more fire and soil than any of the other elements have a dry temperament and are moderate in terms of warmness-coldness.

4- Substances that consist of more air and water than any of the other elements have a wet temperament and are moderate in terms of warmness-coldness.

5- Substances that contain more air than any of the other elements have a warm and wet temperament.

6- Substances that consist of more fire than any of the other elements have a warm and dry temperament.

7- Substances that incorporate more water than any of the other elements have a cold and wet temperament.

8- Substances that incorporate more soil than any of the other elements have a cold and dry temperament.

9- When a substance comprises all the elements in relative balance, it has a moderate temperament.

According to traditional Iranian medicine, the temperament of “sharâb” is generally warm but may vary depending on color, taste, concentration, and age. The worst type of wine is one that is cloudy and thick, tastes sour, and has a

constricting effect (a condition wherein substances are retained in an organ through the compaction and shrinkage of its components) and a bad odor because of the accumulation of vapors, sourness, or other reasons. Drunkenness from wine stems from the wine vapors that reach the brain before decomposition. Hence, people who have a weak, wet-tempered brain become intoxicated fast, but those who do not have such characteristic or have better control over their brains do not become inebriated easily as wine vapors likely decompose before affecting them. Considerable disagreement exists among scholars of traditional Iranian medicine in terms of the allowable amount of wine consumption. The amounts recommended by Galenus and Avicenna vary with temperament.⁴¹ Traditional Iranian medicine indicates that the consequences of drinking an excessive amount of wine and drinking poor-quality wine include sudden death, swelling of the throat, tonsils, liver, and spleen, stroke, epilepsy, madness, paralysis, meningitis, blurred vision and eye pain, diseases of the ear, nose, mouth, and tongue, toothache, fluid accumulation in the abdomen (ascites), hot fever, diarrhea, heart palpitations, shortness of breath, loss of libido, facial and body acne, food rotting in the stomach, bodily weakness, the formation of kidney and bladder stones, painful urination, weakness of the nerves,⁴⁰⁻⁴³ obsessions and bad thoughts, slowness or sluggishness, poor decision making, forgetfulness, diminished reasoning and intelligence, deterioration of the senses, irrational fear during sleep or even when awake, anxiety, gout, headache, and the formation of hot swellings in the organs.⁴³ One of the main effects of alcohol abuse is a hangover, which manifests in the form of shortness of breath, coldness in the organs, and nausea.^{40,41}

Consequences of excessive wine consumption and their remedies (Table 1)

Irritation of the esophagus and cardia: Drinking the juice of sour-sweet pomegranate (*punica granatum*) with pear juice while chewing on pomegranate seeds is helpful, but this should be done in moderation because these ingredients can cause flatulence and bloating. The following morning, wormwood (*artemisia absinthium*) syrup prepared by boiling wormwood in water with sugar should be sipped slowly along with cold water. The next meal of an afflicted person

Table 1. Consequences of wine drinking according to traditional Iranian medicine

Type of wine	Consequences
Fresh	Bloating and difficult digestion, phlegmatic diseases
Fragrant	Headache
Fresh, cloudy, and dark	Bladder stones
Sour-sweet	Difficult digestion, harm to nerves, madness
Wine in an amphora buried in the ground or in snow and ice and not been exposed to sunlight	Difficult digestion, cramps, chronic fever
Wine exposed to sunlight after boiling	Fast passage through digestive organs, fever
Aged	Harm to organs, stomach and intestinal ulcers, harm to senses and nerves
Condensed and aged	Difficult digestion
Foul-smelling wine	Harm to the body, headache, fatal disease
Used with water	Ascites and weakness of the organs

should be light and nutritious, such as chicken soup with verjuice and mint flavor.

Afterward, if no signs of fever, such as dullness, is observed, the person should take a bath. Drinking lemon (citrus limon) syrup (created by heating lemon juice with sugar) with rosewater and quince (cydonia oblonga) sekanjabin (prepared by heating a mixture of vinegar, sugar or honey, and quince juice), when not too sour, is better than wormwood syrup for increasing appetite and strengthening the stomach. Drinking myrtle (myrtus communis) syrup with lemon syrup and sekanjabin that is not excessively sour may also be helpful. The person should likewise drink rosewater instead of water.⁴⁰ To cure a hangover, the afflicted individual should drink rosewater syrup (made by boiling a mixture of water and rosewater) with cold water or whey with fruit paste (prepared by boiling fruit juice until it thickens).⁴¹

Excessive wine consumption: In this case, vomiting can be very helpful, and if the afflicted individual cannot vomit, he/she should drink large amounts of water alone or with honey to induce vomiting. After this, the person should take a bath, oil the body extensively with ointments, and then try to sleep.

Unconsciousness from drinking: This condition should be treated as soon as possible. Cold water and vinegar should be mixed and fed to the patient several times. Alternatively, honey can be mixed with water and the liquid sitting atop sour yogurt and fed to the patient. Afterward, the afflicted individual should be instructed to smell camphor (cinnamomum camphora) and sandalwood (santalum album) oil, and rose (rosa damascena) oil should be rubbed onto his/her

head. If wine is still in the stomach, vomiting should be induced before applying any remedies to eliminate the cause of the condition. Drinking large amounts of cold water can be helpful in inducing vomiting. If the stomach is already empty, vomiting should be avoided as this would irritate the stomach. To determine whether the stomach still contains wine, one should find out how much time has passed since drinking and feel the patient's stomach to determine whether it is full or empty.⁴⁰

Discussion

In the reviewed reference books, substantial space is devoted to a description of the properties of wine in general and as they relate to the preparation and use of singular and mixed remedies. In these works, the issue of drinking is discussed from two perspectives.⁴² First, from the perspective of Islamic jurisprudence, drinking wine is strictly forbidden and is considered a tremendous sin.⁴⁰⁻⁴² Second, from the standpoint of the medical profession, because physicians are obligated to treat every disease from which every patient suffers, these practitioners are required to explain the properties of wine as a remedy and its alternatives to patients.⁴⁰ In the Canon of Medicine, Avicenna repeatedly mentions the harmful effects of wine, and in his Ahdie treatise, he pledges that he would never drink wine even for the purpose of healing.⁴²⁻⁴⁷ Traditional Iranian medicine is replete with instances where authors recommend wine as a remedy and then suggest an alternative depending on expected effects (e.g., to reduce anxiety or accelerate the spread of another remedy in the body). One book, for example, proffers the following prescription: "to

be consumed with wine, sekanjabin, or honey water".⁴² Contrastingly, Avicenna recommends the following: "Apple (*malus domestica*) juice with a few leaves of basil (*ocimum basilicum*) and a small amount of wild rue (*peganum harmala*) can have the same remedial effects as wine, but without making the person drunk".³⁸ A notable exception in this regard is Kholase-al-Hekma (Mohammad Hossein Aghili Khorasani), wherein the author actively refrains from discussing how to use wine - a discussion that is included in every other reference book of traditional Iranian medicine,⁴⁴ especially given its effectiveness as a pain reliever.⁴⁰

As mentioned previously, scholars of traditional Iranian medicine have recommended several remedies for the effects of excessive wine consumption. For example, they suggested that using sour-sweet pomegranate, rosewater from the distillation of rose extract, wormwood syrup, lemon syrup, and quince sekanjabin can eliminate irritation in the stomach and esophagus.⁴⁰ These sources also indicate that sour-sweet pomegranate has a relatively moderate temperament (in terms of coldness and wetness), thereby making it a useful measure for eliminating heat in the bile and relieving the boiling of blood; it produces good blood, which is an effective laxative that cleanses the intestines, clears and strengthens the liver, prevents jaundice, strengthens the spleen, and eases heart palpitations and chest pain.⁴¹ A more favorable measure is to suck on pomegranate to make sure that the juice gradually passes through the cardia. Pomegranate should be sour-sweet because only sour pomegranate intensifies the burning sensation in the stomach and only sweet variety increases bile, which again exacerbates the burning sensation. Chewing pomegranate seeds can also strengthen the stomach.⁴⁰ Rosewater has a somewhat cold temperament with a slightly constricting effect, but it strengthens the brain, heart, cardia, and body in general.⁴¹ Wine increases the level of bile in the stomach, and excessive bile reduces the appetite, but wormwood syrup strengthens the stomach and restores lost appetite.⁴⁰ Wormwood has a warm and dry temperament and purges the stomach of excessive bile through urine secretion, cleans the chest and lung veins, effectively strengthens the stomach, restores appetite, and clears the liver.⁴¹

Quince sekanjabin and quince juice also strengthen the stomach and liver, increase appetite, improve digestion, and cleans the liver. It is especially good for people who have recently recovered from a disease. To make sekanjabin, the juice of ripe and fragrant quince should be mixed with an equal amount of white rock sugar and one-fourth of its weight in vinegar. The mixture should then be boiled under a mild flame until it reaches the consistency of honey. Honey can also be used as a substitute for rock sugar, but in either case, the resultant mixture should be left to cool and stored in a cold place.^{45,46} Because of the warm and dry temperament of wormwood syrup, it can interfere with the temperament of wine. Specifically, it can enhance the warm temperament of wine and thereby result in the production of excessive bile. Increased warmth and bile due to wine can be neutralized by lemon syrup and quince sekanjabin.⁴⁰ Cold water likewise curbs the warm temperament of wine and strengthens the cardia of the stomach.⁴⁰ Therefore, these syrups are recommended for consumption with cold water.

Taking a bath can put the body and brain at ease and help the body dissolve the harmful components of wine. A bath should be taken after a light meal because bathing with an empty stomach causes the gallbladder to empty into the stomach, whereas bathing with a full stomach causes poor digestion and blocks veins.⁴⁰ Myrtle syrup, which can be prepared by boiling the seeds of myrtle with water and sugar until it turns into a thick sauce, is also useful in this case.⁴⁰ Myrtle has a cool and dry temperament, a mild fragrance, and a constricting effect, which enable it to cleanse and strengthen the body, strengthen the heart, relieve heart palpitations, headache, and dizziness, and considerably strengthen the stomach.⁴¹ In traditional Iranian medicine, sandalwood and camphor oils are considered beneficial to the treatment of unconsciousness due to excessive drinking.⁴⁰ Sandalwood oil has a cool and dry temperament and strengthens the heart and stomach; it has constricting, antitoxic, and cheering effects and is beneficial in treating heart palpitations, memory loss and diminished intellect, and stomach and liver diseases. Camphor is similarly typified by a cool and dry temperament, refreshing and strengthening the heart and brain.⁴⁰

Evidence derived from conventional medical practice indicates that alcohol use is one of the world's leading risk factors for morbidity and declining health and that such consumption especially increases the risk of developing cancer and cancer-induced mortality.²³ Several studies on conventional medicine report that any use of alcohol, even in small amounts, negatively affects a person's health.^{23,48} Put differently, no level of alcohol consumption can be considered beneficial to health.^{2,48} In the main sources of traditional Iranian medicine, scholars advise against the use of wine.^{40,42,49} Given that driving and working under the influence of alcohol is unsafe, a necessary measure is to regulate alcohol consumption at individual and population levels.²⁹ Physicians should pay attention to the signs and risks of AUD during regular visits of their vulnerable patients.²⁴ Furthermore, alcohol abuse screening should be incorporated as part of regular medical procedures to ensure timely diagnosis, intervention, and treatment when needed. Governments should start enacting

policies for reducing alcohol consumption by the general population.²⁷

Conclusion

This study was aimed at highlighting the need for increased attention to the views of traditional Iranian medicine given its focus on preventing and treating illnesses and its potential to provide alternative insights into the benefits and harms of natural substances on the basis of centuries of experience and trial and error. Considering the popularity of traditional Iranian medicine in Iran, broader studies should be devoted to this subject as the instructions and practical remedies advocated in this medical field can improve the quality of life of patients with AUD.

Conflict of Interests

The Authors have no conflict of interest.

Acknowledgements

We would like to thank the reviewers for their valuable comments.

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مصرف مشروبات الکلی، عوارض و درمان از منظر طب سنتی ایرانی: یک مطالعه مروری

مسعود مقدری¹، هاله تاج‌الدینی¹، محمد ستایش¹، محدثه کمالی¹

مقاله مروری

چکیده

مقدمه: مصرف مشروبات الکلی و عوارض ناشی از آن همواره در جوامع انسانی وجود داشته و در طول تاریخ ثبت شده است. قوانین مصرف الکل در کشورهای اسلامی با کشورهای غربی تفاوت بسیاری دارد و مصرف آن در کشور ایران همچون بسیاری از کشورهای اسلامی دیگر، ممنوع می‌باشد.

روش‌ها: برای انجام مطالعه حاضر، متون کاغذی طب سنتی ایرانی قرون مختلف و مستندات الکترونیک در پایگاه‌های اطلاعاتی مانند PubMed، Google Scholar و Scopus با استفاده از کلید واژه‌های مناسب برای یافتن عوارض مصرف مشروبات الکلی مورد جستجو قرار گرفت.

یافته‌ها: در کتب معتبر طب سنتی ایرانی، برای بیان مشروبات الکلی از دو واژه «خمر و شراب» استفاده شده است. طبع شراب به حسب رنگ، طعم، رایحه، رقیق بودن و غلیظ بودن و تازگی و کهنگی آن در گرمی، سردی، تری و خشکی مختلف است، اما در کل گرم می‌باشد. از دیدگاه طب سنتی ایرانی، شراب عوارض گوناگونی دارد.

نتیجه‌گیری: از منظر طب سنتی ایرانی، هیچ سطحی از مصرف الکل باعث ارتقای سلامت نمی‌شود و پزشکان افراد را حتی از مقادیر اندک الکل نیز بر حذر می‌دارند. بر اساس منابع معتبر طب سنتی ایرانی، حکمای این مکتب طبی، مصرف شراب را به دلیل این که مضراتش نسبت به منافعی بیشتر بوده است، از قدیم‌الایام جایز نمی‌دانستند.

واژگان کلیدی: سوء مصرف الکل، طب، سنتی، نوشیدن الکل، درمانی

ارجاع: مقدری مسعود، تاج‌الدینی هاله، ستایش محمد، کمالی محدثه. مصرف مشروبات الکلی، عوارض و درمان از منظر طب سنتی ایرانی: یک

مطالعه مروری. مجله اعتیاد و سلامت ۱۳۹۸؛ ۱۱ (۳): ۲۰۱-۱۹۲.

تاریخ پذیرش: ۱۳۹۸/۲/۹

تاریخ دریافت: ۱۳۹۷/۱۲/۶

۱- مرکز تحقیقات علوم اعصاب، پژوهشکده نوروفارماکولوژی و گروه طب سنتی، دانشکده طب سنتی ایرانی، دانشگاه علوم پزشکی کرمان، کرمان، ایران

Email: mohadesekamali0912@gmail.com

نویسنده مسؤول: محدثه کمالی