

**THE IMPORTANCE OF TEACHING THE SCIENTIFIC FOUNDATIONS OF
TRADITIONAL MEDICINE TO THE YOUNGER GENERATION CONTENT:
SCIENTIFICALLY SUBSTANTIATING TRADITIONAL KNOWLEDGE AND
EFFECTIVELY CONVEYING IT TO THE YOUTH**

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Annotation: This article explores the integration and revival of traditional medicinal systems in Uzbekistan, particularly drawing from the teachings of the renowned Persian polymath Ibn Sina (Avicenna). It emphasizes the historical significance and contemporary relevance of traditional medicine, including plant, animal, and mineral-based treatments, in health diagnosis, treatment, and disease prevention. The paper highlights how educational institutions, especially medical schools in Uzbekistan, are incorporating traditional medicine into curricula, fostering scientific research and community engagement. It underscores the importance of intergenerational knowledge transfer, the preservation of biodiversity, and the need for blending traditional medicinal wisdom with modern scientific advancements. Surveys are proposed as a tool to understand public perception, student interest, and the utility of traditional medicine. The article advocates for curriculum reform and STEM integration to better align traditional knowledge with scientific learning, ultimately contributing to national identity, sustainability, and the health system's development.

Key Words: traditional medicine, Ibn Sina, Uzbekistan, medicinal plants, integrative medicine, curriculum development, ethnomedicine, STEM education, heritage preservation, intergenerational knowledge transfer, avicenna, oriental medicine, biodiversity conservation, medical education, cultural identity

The traditional medicinal practices in a community utilizes plant, animal and minerals either singly or in combination to diagnose, treat and prevent or manage illness. In world Ayurveda, Chinese medicine, Siddha, Kampo, Thai, Acupuncture, Unani, Jamu are some popular traditional medicinal system [1]. Uzbekistan is located at the center of Eurasian continent with various land features and diverse flora. Plant based medicines have been long used since many centuries. The era of Ibn Sina (Samanid dynasty) became a period of dawning stars in the field of science and literature and his work was later on translated and published in western world [2]. "The Book of Healing" written by Ibn Sina is an example of classical work on herbal medicines [3]. In 1999, the Uzbek ministry of Health legalized the use of traditional medicine by endorsing the Ibn Sina (Avicenna) Foundation. A scientific traditional medicine course on 'alternative treatments' was also established based on Ibn Sina scientific teachings [4]. Many of the medicinal plants described by Ibn Sina are well established in the traditional system of world and even some of them in scientific medicine also. Department of folk medicine have also been established in all medical schools since 1996. The students perform practical exercise, attend lectures and do individual work with main emphasis nonemergency situations [2]. The teachings of Ibn Sina signifies health of body maintained by orderly arrangement of seven vital physiological principles –arkan (elements), mizaj(temperament), akhlat (bodily humors), aaza(organs and system) arwah (vital spirit), afaal(functions) and quwa(powers or faculties). All these components can be regulated by human beings and thus are able to maintain good health [5]. Besides these four components thenar(fire), arz(earth), hawa(air) and maa(water) make the basic components of body as well as other creations on this earth [6]. The treatment

process establishes therapeutic regime to normalize the balance of external factors including air, water and food involved in diseases [7].

These scientific principles are essential for young generation to know and understand. The surveys should be conducted to evaluate the concept of traditional medicine and its scientific principles among student's and with the families of students and communities to gather information about traditional medicines. The surveys and their analysis will help to gather feedback, understand their perception on traditional medicinal system and will also help to improve learning experiences. These surveys can be feedback survey, behavioral surveys, perception surveys or needs assessments. All these types will help to prepare a data on the use of medicinal plants information, drawing interpretation on their usages and ensure engagement of students on their traditional knowledge on treating disease. These surveys will also help to strategically enhance the curriculum development, allocation of various resources to scientifically work on the formulations etc used in their traditional medicinal system [8]. The students can interact with their elders and gather information about traditional medicinal uses of plants and even can extend research work on that plant. They can observe and share their research objectives with their teachers [9]. The intergenerational knowledge on traditional medicinal system should be transmitted to children from their pre-adolescence as children learn quickly by observing and repeating procedures [10]. Organic farming can be promoted in schools and colleges along with techniques of tissue culture and synthetic seeds leading to bring out the sustainable solution for the growing demand of plants for plant based medicines [11]. There is need to highlight the importance of preserving the medicinal plant biodiversity in nation which will help students to understand deeply about natural products and alternative medicines enhancing their own rich traditional heritage [12].

In a study it was found that 69.9% students have studied Oriental medicine in their 5th year at Tashkent Medical Academy in Uzbekistan and 64.9% of them showed interest in moxibustion and acupuncture [13]. In India and China, the traditional medicinal sector is incorporating strict regulations and scientifically validating their traditional medicinal system in the light of modern science through research [1]. The concept of teaching and learning of traditional medicines has already been added in their chemistry curriculum [14]. However still in few countries much emphasis is laid on the concepts of western science promoting western biomedicines ignoring traditional medicines in their chemistry and other sciences curriculum [15]. The students' needs to be assisted to bridge gap between the concepts of traditional medicine by exploring extraction, isolation, purification and characterization of active constituents from plants [16].

The national values of each country varies from each other as mainly depends on religious, cultural and political identity. These also are influenced with cultural background, historical traditions, and realities of country [17]. The state education system here is dedicated to revive the traditional forms of education in all the fields specialty traditional medicine and art and culture in order to socialize the younger generation [18]. In order to imbibe the young generation with scientific foundations of traditional medicine the syllabus and curriculum at each level right from primary classes till medicinal education should be modified so that the students can keep pace with the latest developments of science and technology blending it with traditional medicinal system. In the current situation there is need to deeply study and analyses the heritage of traditional knowledge of Ibn Sina. A common strategy and development of Uzbek integrative medicine should be proceeded in an extensive manner. The traditional plants act as preventive, curative and preventive form as are used as paste, or consumed by drinking. This type of information can be put forward during teaching and learning process as well as it

can also contribute to design teaching /learning of science at various levels integrating with science technology, engineering and mathematics (STEM) [19]. The students imbibed with ancient traditional medicinal system along with cultural traditions will help to build up a harmonious society functioning in heritage, culture and environment and thus improving quality of life. Besides these the inclusion of teaching of traditional medicine to students also plays an important role in reconstructing the national identity of Uzbekistan globally as Ibn Sina is regarded as Father of Early Modern Medicine in western world [2,20].

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