

# Unani System Of Medicine And It's Development In Contemporary Healthcare: A Comprehensive Review

Asim Ali Khan<sup>1\*</sup>, Rajiv Janardhanan<sup>2</sup>, Jugal Kishore<sup>3</sup>, Ritu Karwasra<sup>1</sup>, Shazina Saeed<sup>4</sup>, B.C Das<sup>4</sup>, Nazeer Hasan<sup>5</sup>, Waleed H. Almalki<sup>6</sup>, Prashant Kesharwani<sup>5\*\*</sup>, W Selvamurthy<sup>7</sup>

<sup>1</sup>Central Council for Research in Unani Medicine, Ministry of AYUSH, Janakpuri, New Delhi- 110058, India

<sup>2</sup>Faculty of Medical & Health Science, SRM Institute of Science & Technology, Kattankulathur- 603203, Chengalpattu, Tamil Nadu, India

<sup>3</sup>Department of Community Medicine, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi-110029, India

<sup>4</sup>Amity Institute of Public Health, Amity University, Noida, Uttar Pradesh-201301, India

<sup>5</sup>Department of Pharmaceutics, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi -India- 110062

<sup>6</sup>Department of Pharmacology and Toxicology, Faculty of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia

<sup>7</sup>Amity Directorate of Science and Innovation (ADSI), Amity Group of Institutions, India

\*Address for correspondence:

\*Asim Ali Khan

Director General Central Council for Research in Unani Medicine, Ministry of AYUSH, Janakpuri, New Delhi- 110058, India

Email: [asim.ccrum@gmail.com](mailto:asim.ccrum@gmail.com)

\*\*Dr. Prashant Kesharwani

Assistant Professor & Ramanujan Fellow School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi,

India-110062 E-mail: [prashantdops@gmail.com](mailto:prashantdops@gmail.com)

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## Abstract

**Background:** Regardless of amazing advancements in contemporary science & technology, it is not possible to provide everyone access to high-quality healthcare. Traditional medicine, in particular Ayurveda and Unani medicine, is regarded as a major global provider of healthcare. This manuscript is aimed to provide the promulgation of Unani Medicine in contemporary healthcare system.

**Methods:** A in-depth literature analysis was successfully carried out from year 2006 to 2021 to collate the information on the advancement, growth and development of the Unani System of Medicine (USM). The search strategy was performed with recent surveys, articles and the numerous initiatives undertaken by the Ministry of AYUSH, Centre council in research in unani medicine (CCRUM) & other institutions on Unani education and research. Additionally, the updated market analysis (2020-2022) comprises import, export and trade data on Unani medicines is also described. From what we know, this review is the first of a kind to describe the domestic and global perspective of Unani medicine with and its global development.

**Results:** The multi-disciplinary, multi-centric research initiatives of the Ministry of AYUSH have resulted in an increase in medical facilities and education in the Unani System of Medicine. With 1748 Unani dispensaries and 3947 beds in Unani hospitals, the number of these facilities has grown at a 2.4% annual pace between 2011 and 2021.

**Conclusion:** There is tremendous growth in Unani as well as in herbal industry. Unani Medicines have shown their potential and need for better drugs and remedies against various diseases. The knowledge on import and export and the information on research and education enable to work more in this domain. These initiatives favour the World Health Organisation advocating Unani medicine as a better alternative system against various diseases.

**Keywords:** Global health, Traditional knowledge, Unani medicine, Herbal medicine, Diseases, Research & education

**Graphical abstract:**



**1. INTRODUCTION**

Economic progress and internal stability depend on a country's health, which is a necessary element of development. One crucial component of the evolutionary process is ensuring that the populace receives the bare minimum of healthcare. India has created a sizable healthcare infrastructure and workforce in the voluntary, public, and commercial sectors at the basic, secondary, and tertiary levels since gaining its independence (1). Numerous medical and paramedical organisations, such as those that practise Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), have produced qualified people resources. Notable accomplishments have been made in improving health standards, including life expectancy, newborn, maternal, and child mortality.

Guinea worm and smallpox were eradicated, and we believed that poliomyelitis would follow suit soon. Nevertheless, issues are numerous (2). Malnutrition affects a large percentage of youngsters. In addition to the ongoing and new hazards posed by the existing diseases, an unacceptable large number of people perish and suffer from them. Pregnancy and childbirth complications also increase misery with mortality (3).

It is indeed crucial to comprehend the direct connection between sickness and poverty. The advent of a costly and protracted disease can push someone who is not already impoverished into poverty. Even financially sound people can experience extreme stress due to illness. Healthcare costs that are too high might make poverty worse. It is prime need that the government should provide high-quality healthcare system which should be reliable and affordable. This especially keeps the wealthy from falling into poverty or lessens the misery of those who are already living in it. Expanding healthcare expenses and increasing population expectations are issues that the nation must address (4). Penetration of healthcare system in isolated rural areas is need of the hour. Given the severity of the issue, public health care must be changed into a reliable, easily accessible, and reasonably priced system of high-quality services (5).

Interest in holistic healthcare systems is on the rise once again, specifically in prevention as well as in treatment of non-communicable diseases, chronic lifestyle-related and systemic disorders. Currently, Western biomedical sciences is incredibly vast and have edge over traditional medical heritage, India can lead the world in the era of integrative medicine (6, 7). An important component in the AYUSH system comprises the Unani System of Medicine (USM), which meticulously deals with almost all aspects of the healthcare system. This system is holistic and based on the principle of temperament theory, that focus on the complete well-being of an individual. Unlike the allopathic system that focuses on curing the illness, these systems work on healing internal health as a whole (7).

USM is a confluence of modern and conventional medical practises from India, Iran, China, Egypt, Iraq, Syria, and various other east Asian nations. It was developed by Arabs and was originated from Greece (8-10). Greeks invented the USM, which Arabs then refined into a sophisticated medical science built on the principles of teachings from Jalinoos (Galen) and Buqrat (Hippocrates). Unani medicine was once referred to be Greco-Arab medicine. The Hippocratic notion of the four humours—blood, phlegm, yellow bile, and black bile—as well as the four important characteristics of the states of the live human body—hot, cold, moist, and dry—serve as the foundation for this philosophy (11). Further, the concepts of Greek were formulated as seven principles which are known as (Umoor-e-Tabbiya), which included the organs (Aaza), functions (Afaal), spirits (Arwah), temperaments (Mizaj), faculties (Qowa), humours (Akhlat), and elements (Arkan), This system holds that the body's constitution, health, and disease are caused by these principles (12).

Diagnosis in USM primarily based on a pulse reading and an assessment of the urine and stools. Followed by several therapies which includes Dietotherapy ('Ilaj-bi-ghiza'), regimental therapy ('Ilaj-bil-tadbeer'), surgery ('Ilaj-Bil-Yad') and Pharmacotherapy ('Ilaj-bi-dawa) (13, 14). World Health Organization (WHO) acknowledged the USM as an alternative medicine to tackle the human population's healthcare needs. USM is vibrant and vigorous today and is known in fifteen countries, including Afghanistan, China, India, Saudi Arabia, the UK, Nepal, South Africa, Bangladesh, Sri Lanka, Iran, Germany, and Pakistan (15-17).

This comprehensive review entails providing the developments in USM in healthcare, particular contribution to modern public health needs. The strategic interventions for promotion and wider utilization of USM. The thrust areas include strategic research programmes, technology upgradation in industry, utilizing the human resources of USM in healthcare programmes, promotion of best clinical practice to make USM more acceptable, accessible, affordable.

## 2. DATA & METHODS

A detailed systematic literature review from recent surveys and articles from Pubmed, Cochrane, Embase and Science direct from 2006-2021 were explored for developments of USM in healthcare. The articles gave insights into the morbidity trends of USM globally. Elaborative data available from different sources were collected

inclusive government wellness centres, morbidity profile, co-allocation centres, average expenditure, patient footfall and number of registered practitioners with educational infrastructure in India (18). The research greatly impacted the healthcare system with innovative novel technologies to treat patients. Therefore, the research in the Unani system is an imperative component and the current updates in research are also included in this review. In addition to this, the data sources from AYUSH in India 2020-2021 (19), CCRUM annual reports 2021-22 (20), Ministry of Commerce Trade data 2021-2022 (21), National Health Profile 2019 (22), Annual reports of Ministry of AYUSH (23) and Ministry of Health & Family Welfare (MoHFW 2019-2020 (24) and 2020-2021) (25)

## **2.1 Consumption, research and medical education in USM**

### *2.1.1 Ministry of AYUSH Initiatives in USM*

Unani medicine falls under AYUSH alternative medical systems; As discussed earlier it was thought to have originated in ancient Greece thousands of years ago but it is currently mostly practised in India. This medical approach uses complementary therapies, herbal treatments, and dietary modifications to address illness prevention and therapy (11). Al-Qanoon, a renowned work on medicine by Sheikh Bu-Ali Sina (Avicenna) (980–1037 AD), and work of Al-Havi by Razi (850-923 AD) both have descriptions of the USM. The treatment was based on the idea that human body has innate healing abilities that should be strengthened (12, 13). The Ministry of AYUSH, Government of India, took several measures towards this system's overall development, established various research institutions, educational institutions, hospitals, testing laboratories, and engaged qualified practitioners. With the most institutes dedicated to Unani education, research, and healthcare, India is one of the top nations that practise the USM. The USM cures ailments affecting the entire human body. Treatment of chronic illnesses and diseases of the liver, skin, reproductive, musculoskeletal, and immunological systems using Unani has proven to be quite effective (8). Nationwide, a vast network of Unani hospitals and clinics are in operation, mostly as a result of initiatives by the Central and State Governments.

In order to coordinate and support the, the

Ministry of AYUSH and National Medicinal Plants Board (NMPB), jointly works with Indian Medicines Pharmaceutical Corporation Limited (IMPCL) to ensure proper cultivation, conservation, and trade of medicinal plants (23, 26). The CCRUM conducts preclinical and clinical research, standardization for drugs, conduct surveys and cultivation of medicinal plants in several places, and additionally provides literary research (20, 23). The Traditional Knowledge Digital Library (TKDL) is a cooperative endeavour of the Council of Scientific and Industrial Research (CSIR), Government of India, and the Ministry of AYUSH, Government of India, to avoid biopiracy and the inappropriate use of traditional Unani remedies (27). It is indispensable for AYUSH to move swiftly in the areas of education, regulatory mechanisms, pharmacopeial standards, clinical medicine, public health, health products & services, and Research to address the increasing public demands for safe, quality, effective, integrative, and complementary healthcare on a national and international level.

### *2.1.2 CCRUM research programme on Unani medicines*

Currently, the USM contributes significantly to the country's healthcare delivery system through its hospitals, accredited practitioners, and educational and research organisations. CCRUM and its affiliated institutes were established by the Ministry of Health and Family Welfare. In 1979, it became a stand-alone entity with the exclusive purpose of initiating, advancing, coordinating, and developing scientific research in the USM (20). It is actively involved in numerous Unani medicine research projects, survey, clinical research, and Drug standardisation. Council comprises of a network consists of 23 institutes and units which are operational in various regions across the India.

The Council's institutional network consists of two Central Research Institutes of Unani Medicine (CRIUMs): In Hyderabad and another located in Lucknow; Additionally, CCRUM comprises of Regional Research Institutes of Unani Medicine (RRIUMs) which are eight in numbers and located in New Delhi, Srinagar, Chennai, Kolkata, Bhadrak, Mumbai, Aligarh, and Patna. Additionally, two Regional Research Centres (RRCs) are also functional under CCRUM which are located in Allahabad and Silchar followed by six Clinical Research Units (CRUs).

Furthermore, CCRUM has three co-location centres in New Delhi's allopathic hospitals that offer free Unani therapy (20-23). These includes Unani Specialty Center at Deen Dayal Upadhyay, Safdarjung Hospital and Dr. Ram Manohar Lohia Hospital. The CCRUM meets all requirements for Unani medicine-related healthcare

services and human resources. The Council is engaged in Multimodal Research Activities and has been responsible for important work developing USM in India (8-10, 15, 20). The below listed are the prime areas of Research/Programmes:

*Pre-clinical & Clinical Research:* The objective of Clinical Research at the Council is to develop new drugs as well as validate traditional Unani drugs and therapies by adopting significant modern research methodology and technology without neglecting the system's traditional character yet in keeping with the prevalent global standards, so the end results of research confirm to the highest evidence grades. Since its inception, the Council has been conducting Clinical studies of varied evidence grades.

*Fundamental Research:* The Fundamental Research programme of CCRUM has stressed the functional aspect of humour more. Studies on the Theory of *Akhlath* at CRIUM, Hyderabad, under the Fundamental Research programme of CCRUM New Delhi, provided with research methodology, quality and qualified research personnel, have created a preliminary contribution to the validation of the humoral theory and are also undoubtedly poised to establish evidence-based scientific support for the principles of the USM in the years to come (20).

*Survey & Cultivation:* In the drug research programme of the Indian systems of medicine, the council plans and conduct surveys of medicinal plants to extract out significant role. The following actions are carried out by the Council as part of this programme: a study of the distribution, availability, and threats of medicinal species facing extinction, as well as it suggests several measures for the conservation as well as protection of drug farms present in various agro-climatic zones of the nation; the maintenance of a herbarium and museum of medicinal plants; the categorising of data in order to create a database; the study of the medicinal plants in various forest zones of the nation.

*Literary Research:* The Council's research agenda was created in such a way that not only could the system rest on sound scientific principles and be accepted by the scientific community, but also that its philosophy could be reflected in its wealth of literature. The historical writings on the Unani System of Medicine are dispersed across both public and private libraries, finding it somewhat challenging for scholars and researchers to access them. Several libraries have a large collection of manuscripts. Before they were entirely destroyed, it was necessary to gather important information from some old manuscripts. Some manuscripts are very rare and old. Today's scholars have the responsibility to utilize full use of the information contained there. The Council has engaged the Literary Research programme in order to benefit from the extensive knowledge of ancient scholars, to have classic works and to have all the vital information of the Unani System of Medicine converted into national and international languages.

*Drug Standardization Research Programme:* The Drug Standardization Research Programme typically focuses on the development of Pharmacopeial standards of Unani medicines which are included in the National Formulary of the Unani Medicine (NFUM) and furthermore Essential Drugs were enlisted with proper monograph in the Unani Pharmacopoeia of India (UPI). The detail standard operating procedures (SOPs) for their production, then creating the Pharmacopeial standards were laid down in standard books. Furthermore, as a part of this programme, standardisation, and investigational analysis of Unani pharmaceuticals with estimation of microbiological load, pesticide residues, aflatoxin and heavy metals content were also carried out (15, 20, 23).

### *2.1.3 Institutes imparting medical education in the Unani System of Medicine*

The National Institute of Unani Medicine (NIUM), Bangalore, to offer a PG programme in Unani medicine. The Indian Medicine Central Council (IMCC) Act, 1970, which established the Central Council of Indian Medicine (CCIM) as a statutory authority, regulates the practise and education of the USM. (19, 23, 28).

## **2.2 Market Size in USM**

### *2.2.1 Unani Industries (Import, export & trade data)*

The Pharmacopeial Laboratory for Indian Medicine (PLIM), run by the Pharmacopoeia Commission for Indian Medicine, is operational since 1970 as an appellate laboratory for testing traditional medicines, which also

includes Unani medications, and developing pharmacopeial standards (PCIM). Several other MSMEs and small enterprises are involved in producing and marketing potential Unani medicines. The import as well as the export of Unani medicines, with the export of medicinal plants, are also included. We all know that Unani medicines are of herbo-mineral origin, so the involvement of medicinal plants is imperative, and the export of these is significant in the USM (21).

## 2. RESULTS

### 3.1 Research & medical education in USM

#### 3.1.1 AYUSH Ministry Initiatives in USM

Currently, India has an adequate growing infrastructure with 41 teaching institutions degree level (UG) education & training; 8 offer postgraduate (PG) courses in 15 specialities under the Ministry of AYUSH. As of 01.01.2020, 48248 (6.8%) belong to Unani System well tabulated in table 1. The Unani registered practitioners got significant increased by 1.4% from 1980 to 2020. Registered practitioners are 6.8%, and registered practitioners per crore population are 358 Unani doctors (table 2). The average annual growth rate in 2014-20 is 0.2%, in 1992-2020 is 0.7%, and in 1980-2020 is 1.4%. 770 AYUSH colleges with an admission capacity of 55712 for Undergraduate courses in India, Unani exhibits 7% of colleges with 6% admission capacity (fig 1). As of 1.04.2020, there are 56 Unani Colleges with an admission capacity of 3531 students and permitted seats of 2368 students imparting Unani education in India shown in fig 2. Out of 56 Unani Colleges, 43 Non-Government and 13 Government Colleges exists. As of 1.04.2020, there are 10 Post Graduate Colleges/ Institutions with an total capacity of 447 students and permitted seats of 335 students in the AYUSH system. There are Three exclusive Unani postgraduate colleges in India with total capacity and permitted seats of 85 and 107 students in a year respectively, which are distributed in Karnataka, Telangana and Jammu & Kashmir, (18-20). As of April 2013, the TKDL contains information on 274,020 pharmaceutical formulations gathered from the books of Indian systems of medicine, 154,015 of which are specific to the Unani System of Medicine (27).

#### 3.1.2 CCRUM research programme on Unani medicines

Over the years, the Council has crossed paths from prospective observational studies to Randomized Controlled studies. Clinical research studies have gradually evolved from insufficient evidence-based observational studies to updated multi-centre randomized controlled trials. Further, The Council has initiated highly evidence-based trials with objective evaluation criteria and distinct research outcomes. Amidst the different types of research, clinical trials are one of the major key to provide the efficacy and safety of the therapy, forming a bridge in the middle of research and clinical practice. Emphasis was laid on the clinical evaluation/validation of Single/Compound drugs and validation of Ilaj Bit tadabeer (regimenal therapy) in different disorders (20, 29).

The growth in research and education in the USM is due to the active role of CCRUM in researching Unani medicines, which is well-known and pioneering. To strengthen the traditional claims disease-based specialized monographs were includes which provide a strong scientific basis for using Unani drugs. The Council also participates in New Drug Development for emerging disorders of national importance. Validation of Ilaj bit tadabeer (Regimenal therapy), a non-invasive method used to preserve health to fulfil the objectives of clinical confirmation of Unani Pharmacopeial formulations/ Unani classical formulations; to validate the fast-acting drugs in clinical indications in the areas where Unani Medicine has strength. Because of the need for time, CCRUM has initiated Randomized Controlled Trials (RCT) on Vitiligo, Diabetes Mellitus, Hepatitis and Hypertension (30, 31). With the assistance of reputable institutions and organisations, research is carried out on contemporary scientific parameters without conflicting with the fundamentals of the UMS. Scientists from various fields, including virologists, experts in contemporary medicine, pharmacologists, statisticians, and more, participate in the research etc. The Council also invites projects from the researchers of its various institutes based on their interests and expertise to build capacity and increase research involvement. For this, the Council developed an intra-Mural research scheme in 2013, and projects have been allotted from 2014-15 (20).

Since its inception, clinical research is one of the core and esteem area of research. The Council initially focused on long-term observational studies as the scientific evidence of the usefulness of Unani was meagre at that time.

Various studies were conducted, and new studies were initiated from time to time. Keeping pace with the changing time, Council has focused on time-bound observational studies and single/double-blind Randomized Controlled studies (RCTs) since 2005 (18-20). The Council's clinical research programme typically aims to validate the effectiveness of the Unani treatments and medications, which have been used for centuries. In this context, the Council starts clinical trials involving both drugs and diseases. Through this work, the Council has made considerable strides in the effective treatment against many diseases which includes including Vitiligo (Baras), Bronchial asthma (Zeeq al-Nafas), Psoriasis (Da' alsadaf), Eczema (NarFarsi), Sinusitis (Iltihab-iTajawif -iAnf), Hyperlipidaemia (Kathrat-iShaum al-Dam) and Rheumatoid arthritis (Waja' al-Mafasil).

In addition to these, CCRUM has also conducted several clinical investigations on a variety of other diseases, such as leishmaniasis, infantile diarrhoea, infective hepatitis, leucorrhoea, filariasis, amoebic and bacillary dysentery, and others. In order to confirm the safety and effectiveness of formulations from the NFUM) from Essential Drug List (EDL) in treating various disorders for which they have been used for many years, validation of these formulations is also done (20). The CCRUM has conducted 111 studies for clinical evaluation of safety and efficacy in various disorders like Diabetes mellitus, Vitiligo, Sinusitis, Chronic Stable Angina, Obesity, Infective Hepatitis, Hyperlipidaemia, Eczema and Psoriasis, Rheumatoid Arthritis, among others, in addition to 187 studies for pharmacological safety and efficacy of single drugs and compound formulations. Clinical investigations on psoriasis, eczema, bronchial asthma, vitiligo, rheumatoid arthritis, sinusitis, and infectious hepatitis have produced significant results. Seventeen Unani formulas have been patented to the Council based on clinical studies, and the Indian Patent Office is now reviewing 43 applications for patents. However, several outbreaks of cholera, gastroenteritis, viral fever, dropsy, jaundice, dengue fever, conjunctivitis, and chikungunya have demonstrated the effectiveness of Unani medicines. Additionally, research has been done to confirm the effectiveness of various regimens of therapy for various disorders. Leeching (Taaleeq) and Cupping (Hijamat) have both been shown to be effective treatments for frostbite and osteoarthritis, respectively. Similarly, Standard Operating Procedures (SOPs) for several types of Regimental Therapy will be developed and evaluated for efficacy and safety (29-31).

### *3.1.3 National Institutes imparting medical education in USM*

The NIUM, located in Bangalore, is a prestigious institution run by the Ministry of AYUSH. This institute, founded in 1984, offers high-quality instruction, training, and research in the Unani medical system. NIUM offers PhD and postgraduate programmes. The institute's hospital offers various clinical services to patients for a range of conditions, including skin illnesses, neurological conditions, GI and hepato-biliary conditions, as well as mental and geriatric care (32).

## **3.2 Market Size in USM**

### *3.2.1 Unani Industries (Import, export & trade data)*

As of 01.04.2020, there are 8,014 production facilities in the nation producing Ayush medications. Ayurvedic medicine is produced in a maximum of 6,998 production facilities, whereas 576 are involved in manufacturing Unani drugs. The export values, as per trade statistics for Export Import Data Bank (Annual) with commodity-wise data on medicaments of Unani system (HSC code 30049012) for the year 2021-2022 (Apr-Feb) is 638.42 Lacs whereas for the year 2020-2021 is 541.69 Lacs (21). The medicants of the Unani system (HSC code 30039012) for the year 2021-2022 (Apr-Feb) is 23.82 Lacs, whereas for the year 2020-2021 is 33.66 Lacs. The import of Medicants of Unani System (HS code 30039012) for 2020-2021 is 77.20 Lacs. The import values, as per trade statistics for Export Import Data Bank (Annual) with commodity-wise data on the medicants of Unani system (HSC code 30039012) for the year 2020-2021 is 77.20 Lacs (tradestat.commerce.gov.in). India's total Import in year 2020-2021 is 291,595,770.04 Lacs and in 2021-2022 is 456,944,267.93 Lacs with 56.70% growth. There are 8,667 licensed Ayurvedic, Siddha, Unani and Homeopathy (ASU&H) drug manufacturers in India, of which 7,488 comply with prescribed GMP, whereas 1179 are reported to not compliant with prescribed GMP (21, 33-34).

### *MSME and large enterprises in the Unani System of Medicine*

Different Unani medicines manufacturing firms in various states with their turnover are shown in fig 2. The output ratio of AYUSH firms in the years 2015-20 is presented in fig 2. Unani manufacturing units consists of the organized sector consists of Medium enterprises (MSMEs), large, MicroSmall enterprises. There are one hundred fifty-six licensed units which manufacture Unani products in India, out of that approximately, 110 firms have stated that they're of less than 1 crore. There are 50 MSMEs which fall in category of Rs 1 to 5 crore turnover category (33). Key companies in the Unani system of medicines include Nature nurture, Hamdard, Shama, Rex Remedies, Dehlvi remedies, IMPCL and Multani pharmaceuticals. Others include Avni Herbals & Healthcare, Shifa Unani Ayurvedik Dawakhana & Trading, Co. SAB Bakhshi & Co., Green Labs, Shahi Laboratories Private Limited, Amar Pharmaceuticals, The Tayyebi Dawakhana Unani (Indore) Private Limited, and Dehlvi remedies which offers several Diet Supplements Herbal Health Care products, and Toiletries and with an approximate turnover of Rs 500 crore in the fiscal year 2021. IMPCL is manufacturing 332 Unani medicines for various disease spectrums. IMPCL recorded Rs 164.33 crore in 2020-21 (21, 34). Hamdard Pvt Ltd is responsible for the biggest share in the market in the domain of Unani medicines, with an annual turnover of approximately 800 crores in the year 2020-21 and total products as classical medicines (26), patented medicines (19), OTC Products (10), newly launched (16). Multani pharmaceuticals division has over 500 products in the market. Categories in Unani Market include herbal market, food supplements (Unani Aahar) and formulations (33, 34).

#### 4. DISCUSSION

Ayurveda, Siddha, and Unani, three traditional medical systems in India, have a long history of success, contemporary science has also recognised the significance of such therapy. Moreover, important novel medication sources are regarded to be Indian traditional medicine or medicinal plants. The public needs this treatment to become more widely accepted. India has taken a number of measures to promote this type of medicine and to incorporate it into clinical practise. Indian traditional medicine evidence-based integration into clinical practice offers quality healthcare to all (35-38).

USM is part of the AYUSH System, the government of India created a full-fledged Ministry of AYUSH on 9th November 2014 by upgrading the ISM&H with a mandate to propagate and promote Indian Systems of Medicine and Homoeopathy (39, 40). The Ministry is committed to infusing traditional medicine's wisdom with modern science's methodologies, thus aim to validate USM and other AYUSH systems scientifically and thus, represents them in the scientific idiom, so it could be easily related to modern lifestyles (41). In parallel to the multifaceted cultural evolution of our country, AYUSH medicinal systems have evolved and it is blessed with plethora of having traditional values in it. USM is herbo- animo- mineral in origin which includes herbal constituents around 90% followed by animal constituents which ranges from 4-5% and lastly it has mineral constituents in range of 5-6% (42-44). There is global growth in demand of herbal, complementary and traditional medicines The CCRUM one of the key players that has taken many initiatives which includes research in traditional Unani medicines.

The growth of the Ayush system has been significant in the recent past. For instance, the Budget of M/o Ayush was Rs. 1214.00 crores in 2015-16 which got increased to Rs. 3050.00 crores in 2022- 23 which shows growth of the ayush system. In the last seven years, the total budget allocation to Ayush Ministry has increased over four times from 691 Cr to Rs 3050 Cr. As per the Ayush in India 2019 report, Ayush colleges have increased from 495 colleges in 2010 to 735 in 2019. The number of National Institutes under the Ministry of Ayush has also increased recently. Further, Institute for Post Graduate Teaching and Research in Ayurveda (IPGT&RA) has been upgraded to the Institute of Teaching and Research in Ayurveda (ITRA) as an Institute of National Importance. The National Institute of Sowa Rigpa was established in Leh in 2020. The establishment of the Satellite Institute of the existing National Ayurveda, Unani, and Homoeopathy National Institute is ongoing at Goa and Panchkula for Ayurveda, Ghaziabad for Unani and Narella, New Delhi for Homeopathy. During 2014-2020 there was 17% growth of market size of the AYUSH industry which shows there is increase in global as well as domestic demand. The number of Ayush dispensaries has increased from 24280 in 2011 to 29091 as of 01.04.2019. Still, there is a vast scope of opportunities and growth in the Ayush sector and integrating the Ayush system into public health. There is a requirement for innovations in Ayush areas to enable growth and address existing issues that hinders growth. The expansion of medical education is that 48248 (6.8%) colleges belong to Unani System. Registered practitioners are 6.8%, and registered practitioners per crore population are 358 Unani doctors. The average annual

growth rate in 2014-20 is 0.2%, in 1992-2020 is 0.7%, and in 1980-2020 is 1.4%. 770 AYUSH colleges with an admission capacity of 55712 for Undergraduate courses in India, Unani exhibits 7% of colleges with 6% admission capacity (45-47).

Meanwhile, the expansion of Unani industries in trade plays a pivotal role in encouraging the UMS. The medicants of the Unani system (HSC code 30039012) for the year 2021-2022 (Apr-Feb) is 23.82 Lacs, whereas for the year 2020-2021 is 33.66 Lacs. The import of Medicants of Unani System (HS code 30039012) for 2020-2021 is 77.20 Lacs. The government is strengthening primary health centres (PHCs) as part of the National Health Mission while understanding the financial sustainability of USM services. Under the support of its government, Unani medicine has a significant impact on the development of India's healthcare system (47). Wherever available, Unani services are completely utilised, which helps to distribute the patient burden among the several co-allocation centres. Additionally, the vast majority of skilled Unani practitioners must be employed in public healthcare wellness centres and other national initiatives, which would assist India in achieving universal health coverage and provide employment for qualified students looking for positions in the public healthcare system (48-53). Lastly, the promotion of Unani practise should be done by including specialization and several health programmes.

## CONCLUSION

In summary, the publications affiliated to the Council's and publications in the domain of unani medicines can aid in utilising Unani medicines to their maximum potential while also preserving the nation's ethnomedical and biological wealth. The alternative medicine system with an integrated approach could be used as better efficacious in tackling many diseases. And thus, could be more beneficial for humankind.

## REFERENCES

1. Samal J. Role of AYUSH workforce, therapeutics, and principles in health care delivery with special reference to National Rural Health Mission. *AYU* 2015; 36(1): 5-8.
2. Vaidya AD, Devasagayam TP. Current status of herbal drugs in India: An overview. *J. Clin. Biochem. Nutr.*, 41, 1–11, July 2007.
3. Samal J (2015). Role of AYUSH workforce, therapeutics, and principles in health care delivery with special reference to National Rural Health mission. *Ayu* 36(1): 5-8.
4. Shankar D, Patwardhan B (2017). AYUSH for New India: Vision and strategy. *Journal of Ayurveda and Integrative Medicine*. 8(3): 137-139.
5. Ravishankar B and Shukla VJ (2007). Indian systems of Medicine: A Brief Profile. *African Journal of Traditional, Complementary and Alternative Medicine*. 4(3): 319-337.
6. Tilak, J.C. and Devasagayam, T.P.A.: Indian medicinal plants: a potential reservoir in health and disease, in *Contemporary Perspectives on Clinical Pharmacotherapeutics*, eds. By Kohli, K., Gupta, M., and Tejwani, S., Elsevier, New Delhi, pp. 29–43, 2006.
7. Dora Binod Bihari, Gupta Shalini, Sital Samrita, et al. Importance of AYUSH in present health care perspective. *Research and Reviews: Journal of Medical Science and Technology*. 2015; 4(3): 5–8p.
8. Husain A, Sofi GD, Dang R et al (2010) Unani system of medicine- Introduction and challenges. *Medical Journal of Islamic World Academy of Sciences*. 18:1; 27-30.
9. Lone AH, Ahmad T, Anwar M et al., (2012) Perception of health promotion in Unani herbal medicine. *Journal of Herbal Medicine*. 2: 1-5.
10. Unani system of medicine. *The science of health & healing* (2013). Department of AYUSH, Ministry of Health & Family welfare, Government of India, New Delhi, [www.indiamedicine.nic.in](http://www.indiamedicine.nic.in) ISBN 81-87748-35-4 2013
11. Hippocrates (1832). *Fusoolbuqratiyya* (the aphorisms of Hippocrates), translated into Arabic by Hunain ibn Ishaq. Calcutta: Education Press.
12. Galen. *Al-sana'a al-sagheera* (translation by Huanain ibn Ishaq). (1988) Cairo: Al-Hai'a al-Misriyya al-Aammali'l Kitab;
13. Galen. *Kitab jalinoosfi'lustuqussat* (translation by Huanain ibn Ishaq). (1986) Cairo: Al-Hai'a al-Misriyya al-Aammali'l Kitab.
14. Raheem A, Nazli T, Kishore J et al., (2020) Perception and practice of people about Unani medicine attending National Arogya Fair, Visakhapatnam, Andhra Pradesh. *J Adv Res in Ayurveda, Yoga, Unani, Siddha & Homeopathy*. 7(2): 16-24.
15. WHO benchmarks for the training of Unani medicine. (2022), 1-60 ISBN: 9789240042735. WHO benchmarks for the training of Unani medicine. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.
16. World Health Organization (2013). *WHO Traditional Medicine Strategy 2014-2023*. ISBN 9789241506090
17. World Health Organization (2019). *WHO Global Report on Traditional and Complementary Medicine 2019*. ISBN 978-82-4-151543-6.
18. AYUSH Sector in India: Prospects and Challenges (2021). *Research and Information System for Developing countries, Forum on Indian Traditional Medicine (FITM)*, Ministry of AYUSH, Government of India, ISBN: 81-7122-168-8.

19. AYUSH in India 2020. Planning and Evaluation cell. Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH). Government of India. assessed at [www.indianmedicine.nic.in](http://www.indianmedicine.nic.in)
20. Annual Report 2019-2020. Central Council for Research in Unani Medicine, Ministry of Ayush, Govt of India accessible at [https://ccrum.res.in/writereaddata/UploadFile/CCRUM%20Annual%20Report%20201902020%20\(English\)\\_1463.pdf](https://ccrum.res.in/writereaddata/UploadFile/CCRUM%20Annual%20Report%20201902020%20(English)_1463.pdf)
21. Trade Statistics, Export and Import data (2021). Ministry of commerce and industry. Department of commerce. Government of India. accessible at <https://commerce.gov.in/trade-statistics/> (accessed on May 24, 2021).
22. National Health Profile 2019, 14<sup>th</sup> issue. Central Bureau of Health intelligence. Directorate General of Health Services. Ministry of Health & Family Welfare, Government of India. WHO Collaborating Centre on Family of International Classifications (ICD-10, ICF & ICHI).
23. Annual Report 2017-18, Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH), Government of India accessible at <http://ayush.gov.in/sites/default/files/Ayush%20AR%202017-18-8.pdf> (accessed on July 3, 2018).
24. Health and family welfare statistics in India 2019-20. Government of India. Department of Health and Family welfare. Ministry of Health and family welfare. [www.main.mohfw.gov.in](http://www.main.mohfw.gov.in).
25. Health and family welfare statistics in India 2020-21. Government of India. Department of Health and Family welfare. Ministry of Health and family welfare. [www.main.mohfw.gov.in](http://www.main.mohfw.gov.in).
26. Department of AYUSH (2013). [Last accessed on 2013 Dec 10]. Available from: <http://www.indianmedicine.nic.in> .
27. Muthappan S, Elumalai R, Shanmugasundaram N et al., AYUSH digital initiatives: Harnessing the power of digital technology for India's traditional medical systems. *J Ayurveda Integr Med* 2022, 13(2):100498.
28. Ahmad E, Ansari AH and Khan RM. Prevalence of Bekhwabi (Insomnia) among the Elderly patients attending NIUM Hospital, Bangalore, India. *Journal of Community Medicine and Health Education*. 2016, 6: 476.
29. TC James, *Traditional Medicine Review* (2021); *Traditional Medicine in India: Regulations and Trade*. FITM, 1(1): 1-48.
30. Itrat M, Khan S. Evidence-base Unani Medicine (2016): Need of appropriate research methods. *Journal of Traditional Medicine & Clinical Naturopathy*. 5: 197.
31. [India.gov.in](http://India.gov.in) National portal of India (2019-2021). Scheme for Public Health Initiatives scheme of AYUSH.
32. Ansari AH, Zulkifl M, Ali M. An analytical study of concordance between Mizaj and diseases in adult patients of NIUM Hospital, Bangalore. *Ancient Science of Life*, Vol. 30, No.1 (2010) Pages 7 - 11
33. AYUSH and Alternative Medicine industry in India- Growth, Trends, COVID- 19 Impact, and Forecasts (2021-2026). Mordor Intelligence. 2021; 68 pages. ID 4828331.
34. Union Budget (2020-21)- Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH), Government of India accessible at <https://www.indiabudget.gov.in/doc/eb/sbe4.pdf>
35. Gurmet P, Sowa-Rigpa (2003): Himalayan art of healing. *Indian Journal of Traditional Knowledge*. 3(2): 212-218.
36. Report of the working group on AYUSH for the 12<sup>th</sup> five-year plan (2012-17). Government of India. Planning commission. Department of AYUSH. Ministry of Health & family Welfare. 2011.
37. Devi MS, Sathiyarajeswaran P, Kanakavalli K, Vinod NP, Baskar V (2021). Analysis of AYUSH studies registered in clinical trials registry of India from 2009 to 2020. *J Ayurveda Integr Med* 12(2): 346-350.
38. National Policy on ISM and H (2002). Department of ISM and H. New Delhi: Ministry of Health and Family Welfare, Government of India.
39. Itrat M. Methods of health promotion and disease prevention in Unani medicine. *J Educ Health Promot*. 2020 Jul 28;9:168. doi: 10.4103/jehp.jehp\_618\_19. eCollection 2020.
40. Khan TN, Itrat M, Ansari TH. Public health approach of Unani medicine to cope and stay safe in hot environmental conditions. *J Basic Clin Physiol Pharmacol*. 2021 Mar 15;33(3):235-241. doi: 10.1515/jbcpp-2020-0296.
41. Priya R, Shweta AS. Status and role of AYUSH services and use of local health traditions under the NRHM: A health systems study across 18 states. National Health Systems Resource Centre(<http://tinyurl.com/lnqorzt>). 2010
42. Ahmad W, Sofi G, Alam MA, Zulkifl M, Ahmad B. Understanding Holism in the light of principle underlying practice of Unani Medicine. *Rev Environ Health*. 2021 May 13;37(2):189-199. doi: 10.1515/reveh-2021-0009. Print 2022 Jun 27.
43. Concon AA. Unani medicine. *Am J Chin Med*. 1983;11(1-4):166-7.
44. Jabin F. A guiding tool in Unani Tibb for maintenance and preservation of health: a review study *Afr J Tradit Complement Altern Med*. 2011;8(5 Suppl):140-3. doi: 10.4314/ajtcam.v8i5S.7. Epub 2011 Jul 3.
45. Poulakou-Rebelakou E, Karamanou M, George A. The impact of ancient Greek medicine in India: the birth of Unani medicine. *Acta Med Hist Adriat*. 2015;13(2):323-8.
46. Ahmad E, Itrat M. Patient Satisfaction With Medical Services Provided at Unani Medicine Hospital, Bengaluru: A Cross-Sectional Study. *J Patient Exp*. 2020 Dec;7(6):1432-1437. doi: 10.1177/2374373520969001. Epub 2020 Nov 5.
47. Fazil M, Nikhat S. Exploring new horizons in health care: A mechanistic review on the potential of Unani medicines in combating epidemics of infectious diseases. *Phytother Res*. 2020 Nov 10. doi: 10.1002/ptr.6949.
48. Javed G, Kumar N. Bioethics in Unani medicine: Relevant quotes from Kamilussanah, a 10th century manuscript. *Indian J Med Ethics*. 2022 Jan-Mar;VII(1):1-8. doi: 10.20529/IJME.2022.003.
49. Monette M. The medicine of the prophet. *CMAJ*. 2012 Sep 4;184(12):E649-50. doi: 10.1503/cmaj.109-4228. Epub 2012 Aug 7.
50. Siddiqi T. Unani medicine in India. *Indian J Hist Sci*. 1981 May;16(1):22-5.
51. Parveen A, Parveen R, Akhatar A, Parveen B, Siddiqui KM, Iqbal M. Concepts and Quality Considerations in Unani System of Medicine. *J AOAC Int*. 2020 Jun 1;103(3):609-633. doi: 10.5740/jaoacint.19-0284.
52. Ansari AP. *'Ilāj bi'l-Tadbīr* (regimenal therapy): a core mode of Unani treatment. *J Complement Integr Med*. 2020 Aug 27;18(3):449-458. doi: 10.1515/jcim-2020-0048.
53. Lone AH, Ahmad T, Anwar M, Habib S, Sofi G, Imam H. Leech therapy- a holistic approach of treatment in unani (greeko-arab) medicine. *Anc Sci Life*. 2011 Jul;31(1):31-5.

Figure 1

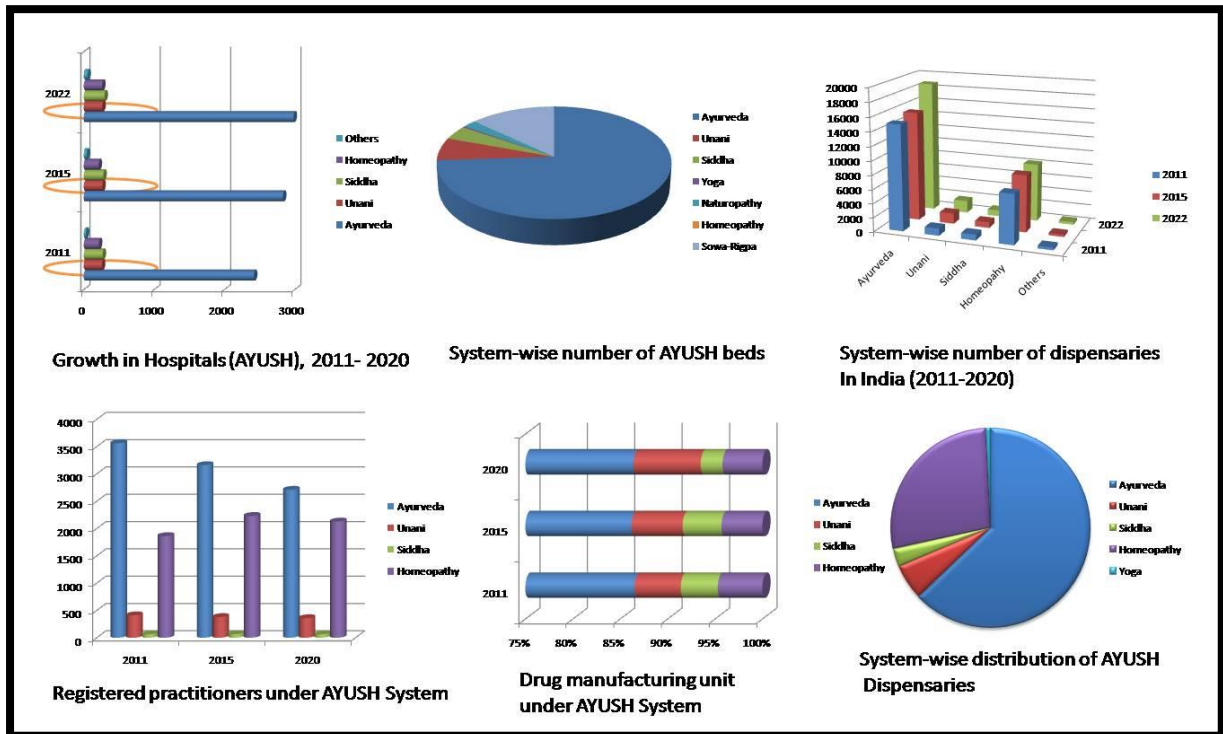


Figure 1: healthcare data on AYUSH

Figure 2

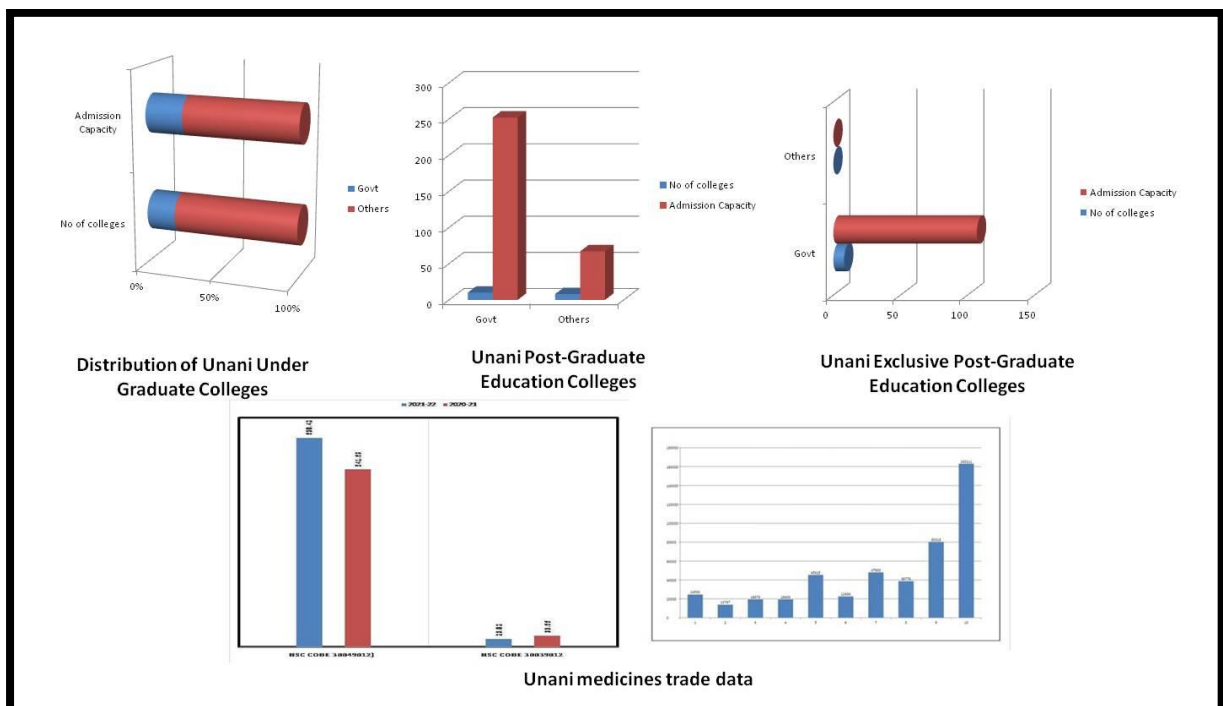


Figure 2 Distribution of Unani Under-Graduate Education Colleges; Distribution of Unani Post-Graduate Education Colleges; Distribution of Unani Exclusive Post-Graduate Education Colleges. Trade data statistics of Unani medicines.

Table 1: Summary of Health Care Facilities in Unani System of Medicine (Unit in Numbers, data is on 01.04.2020)

<b>1</b>	Hospitals	265
<b>2</b>	Beds	3947
<b>3</b>	Dispensaries	1748
<b>4</b>	Registered Practitioners (IQ & NIQ)	48248
<b>5</b>	UG Colleges	53
	Admission Capacity	3212
<b>6</b>	PG Colleges	18
	Admission Capacity	319
<b>7</b>	Exclusive PG Colleges	3
	Admission Capacity (Exclusive PG)	107
<b>8</b>	Total no of AYUSH Colleges	56
	Total Admission Capacity	3531
<b>9</b>	No of manufacturing Units	576

Table 2: Year-wise (2011-2020) data on healthcare infrastructure

<b>1</b>	2011	258	3684	1021
<b>2</b>	2012	259	3744	1147
<b>3</b>	2013	255	3489	1483
<b>4</b>	2014	260	3569	1485
<b>5</b>	2015	265	3623	1491
<b>6</b>	2016	264	3538	1489
<b>7</b>	2017	264	3478	1511
<b>8</b>	2018	267	3788	1657
<b>9</b>	2019	252	3495	1688
<b>10</b>	2020	265	3947	1748