

SCIENTIFIC GLOBALIZATION OF AYURVEDA IS THE NEED OF THE HOUR

*¹Dr. Murade Sarita and ²Joshi Nitesh

¹PG Scholar, ²Guide & Asso. Professor,
Department of Swasthviritta and Yoga, Sumatibhai Shah Ayurved Mahavidyalaya, Malwadi Road, Hadapsar, Pune
India-411028.

*Corresponding Author: Dr. Murade Sarita

Department of Swasthviritta and Yoga, Sumatibhai Shah Ayurved Mahavidyalaya, Malwadi Road, Hadapsar, Pune India 411028.

Article Received on 01/12/2022

Article Revised on 21/12/2022

Article Accepted on 11/01/2023

ABSTARCT

Since last one and half year *Ayurveda* has gained limelight never before. The pressure of pandemic has led to a big growth in the demand not only for *Ayurveda* medicines but for *Ayurveda* based nutrition and wellness food, *ayurvedic* preventive healthcare products also. As customers are getting proactive about health there is increase in tendencies like self-medication, unnecessary prolonged medication, using same medicine based on anecdotal information without physicians' opinion. Mass media, availability of herbal products in food store and super markets, medicines are made available without prescription. Lack of awareness about *Ayurveda* medicines too have some side effects this and many concerns like this we are lagging behind in effective monitoring of safety, toxicity and side effects of herbal products. According to WHO about 60% of the world's population relies on herbal medicine and about 80% of the population in developing countries depends almost totally on it for their primary health care needs. The herbal industry shares about US\$100 billion with decent growth potential worldwide. There is increasing demand due to popularity and acceptability of herbal medicine considering as a scope for upgradation of herbal medicine. Intensifying the scientific evaluation of herbal drug through clinical validation and coming forward as researcher instead sticking to the academics and practices only is necessary. The research has enlightened the points which can be helpful for seeking upgradation in *Ayurveda*.

KEYWORDS: Herbal Medicines, Challenges, Herbal farming, Globalization.

INTRODUCTION

Ayurveda is the ancient medicine system of India. *Ayurveda* aims to maintaining health of healthy ones and curing the disease of ill.^[1] It has potential to cure disease from its root yet it has some limitations too. Although there is gradual increase in the research work in field of *Ayurveda* it is not enough to match the growing demand of the herbal industry. Many graduate and postgraduate either turn towards academics or to the practice, very few choose to be a researcher in *Ayurveda*. Many experienced practitioners never came forward for various findings they have observe during their practice which can be beneficial not only for new practitioners but also for the upgradation of *Ayurveda* as a life science. We have attained growth as pharma industry like large number of ready to use formulations of various tablets, *Churn Kalpana*, *Kwath* combinations, *Asav-Arista*, *Ghruta*, *Tail*, *Bhasma* etc., stated in *Ayurvedic Samhita Granthas* are available for prescriptions. In one way this is success of our science in another way it hampering the individualized approach of *Ayurveda*. These ready to use products are causing lethargy in practitioners to read and use other combinations stated in *Samhitas* and thereby causing reduced quality of treatment to the very

individual. Use of single drug or relatively sufficient less drug combinations are neglected which may cause increase in the overall cost of the treatment. Various treatment modulation such as *Panchakarma* therapy, *Yoga*, *Naturopathy* can be use equally with the main course of the treatment. This will boost the speed of treatment and will help to reduce prolonged consumption of medicine.

To attain this upgradation there is equal need to preserve and promote the system of *Ayurveda* as it is most comprehensive, personalized; holistic and sustainable health system based on sound philosophical and scientific principle. *Ayurveda* is globally acclaimed for its preventive healthcare properties and treatment of many chronic lifestyle disorders. During 1980s, India was the largest supplier of medicinal plants to the European Economic community.^[2] According to Indian Pharmaceuticals Industry Report (May, 2021)- India is the largest provider of generic drugs globally. Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all the medicine in UK. Globally, India ranks 3rd in the terms of pharmaceutical production

by volume and 14th by value.^[3] Taking this as an advantage this is duty of every *Ayurveda* enthusiastic to assure the scientific globalization of the herbal medicine. Pandemic have done half work that *Ayurveda* have get enough attention worldwide. Rest work is to be done by *Ayurvedians* by proving every herbal product means not *Ayurveda*, it is a science itself. Also assuring the quality of drug delivery should mate as many as scientific norms without damaging the holistic principles of *Ayurveda*. Scientific delivery of *Ayurveda* to the world is need of an hour as many people relies on herbal medicine for nutrition, health care, looking it as rejuvenating science, prevention of disease, for cosmetics purpose and so on.

Numerous drugs have entered the international market through exploration of ethnopharmacology and traditional medicine.^[4] Traditional Indian medicine and Chinese medicine carry many generations observations that have well organized and documented data. China has successfully prompted its own therapies and drugs like ginseng, ma Huang and ginko with scientific evidences acceptable for the global community. But unlike China 'Herbal Revolution' by India just waiting to happen. According to WHO 2002, about 4 billion of people of the world population used herbal medicine and about 80% of the Asian and African countries for their primary health care.^[5] A survey of National Medicinal Plant Board in collaboration with ICFRE, Dehradun was conducted to assess the current demand and supply scenario of medicinal plants estimated that- 1) commercial demand of herbal raw drugs for the year 2014-15 has been 5,12000 MT 2) herbal raw drug export including extracts has been 1,34,000 MT 3) consumption by domestic herbal industry has been 1,95000 MT 4) Herbal raw drug used by rural households every year was 1,67,000. About 1178 medicinal plant species recorded in the practice of trade. Out of which 242 plant species are used in annual quantities of more than 100 MT. Above numbers are just stating that India can be a global leader in the herbal medicine category by scientific upgradation of traditional Indian medicine system. Here in this paper efforts have made to put some light on opportunities that lagging behind for the scientific upgradation of *Ayurveda*.

MATERIAL AND METHOD

Information from various scientific journals, research papers, internet media related to herbal medicine and its status in global market were reviewed. Various research articles suggesting lacunae in the development of *Ayurveda* and opportunities for the new researcher to filled this lacuna with the intensified research work in the field of *Ayurveda* for its sound as well as scientific development at global level also reviewed.

1. Upgradation in *Samhitas* and Their Understanding

Teaching techniques in the *Ayurveda* institutes must include scientific views of the classical principles rather than stucked to textual things. More books needed that can help to develop research wings, generating interest and give rise to newer ideas for research topics.

Civilization has evolved, and disease patterns have changed. Modern lifestyles, environmental change, exposure to modern technology/chemicals, behavior/mental changes, longer lifespan, and new microbial infections have changed the spectrum of disease and deformity. Further conditions are evolving, and the complexity of diseases is getting more severe. Even modern medicine struggles to keep pace with this constant change despite having a very organized, dynamic, and continuous research system. Only the thirst for knowledge and through intensified research, *Ayurveda* can stand strong for upcoming challenges.

2. Coming Forward as a Researcher

After completion of academic education many *Vaidya* turns either towards practice or to the academic rather being researcher. Many drop the idea due to absence of good research infrastructures and financial support to the researchers. Less availability of jobs, low payments, failure in earning good *Ayurveda* practices forces the practitioners to practice medicine clandestinely or even working in the modern private hospital where they employed as cheap workers.

3. Exchange of Knowledge

Elder *Ayurveda* practitioners may have come to know many newer findings, observation, new effective drug combinations during their clinical practices. Due to lack of communication or due to improper documentation of these findings; there remains a knowledge gap between *Vaidyas* of different generations. Bridging this knowledge gap can be lifesaving as well as can upgrade the *Ayurveda* as a science.

4. Identifying the Strength and Weakness

Identifying the graceful area and promoting it for further development as like *Ayurveda* medicines have proven effects on chronic diseases and many lifestyles' disorders effectively. Working equally on the weakened areas is important too, like generating new modulations or therapies for emergency treatment through *Ayurvedic* medicines.

5. Validation of Basic Principles

Intensified research work needed to prove and to make people believe that *Ayurvedic* basic principles have definite scientific value; thereby it will be possible to promote *Ayurveda* as a life science.

6. Acceptance of *Ayurveda* Medicines and Principles as Personalized Medicine System

Ayurveda is based on the individualized approach while treating a disease. Keeping this in mind a good practitioner should always be ready to think differently about the condition and happy to prepare new formulation suitable for patient instead of prescribing from available options from market.

7. Advancement in Research Methodology

Although there is increase in the research work in *Ayurvedic* system of medicine in past some years, yet not sufficiently evidence based to attain the acceptance at global market. Many good literary researches have done till date but the status of clinical research is questionable. Practitioners and post-graduation scholars should come forward for RCTs to find various solutions on classical chronic disorders as well newly diagnosed conditions. For understanding the mechanism of *Ayurveda* drugs at molecular level techniques like radio tracer, nuclear imaging can be used. Bioavailability studies of the *Ayurvedic* drugs is almost the neglected area in research field.

8. Challenges in Regulatory status of Herbal Medicine

As herbal medicines are used as preventive, curative, nutritional supplement, food and functional food, for various types of ailments it is important to address the safety and efficacy of the herbal drug. This can be taken care by understanding and following the standards provided by the WHO and regulatory bodies of the member countries. The FDA bears the burden to prove that an herbal medicinal product or “dietary ingredient” is toxic or not safe for use. Additional major challenge in many countries is the fact that regulatory information on herbal medicines is often not shared between regulatory authorities and safety monitoring or pharmacovigilance centers.^[6]

9. Minimizing Knowledge Gap about Herbal Medicine

There is false concept in society as well as in modern system of medicine that *Ayurveda* medicines works slowly hence have null or minimum side effects. There should be removal of misunderstandings and misconceptions about practical use of *Ayurveda* medicine. For sound growth of the medicinal system scientist form *Ayurveda* and modern must understand the each other and should help bringing awareness in the society too.

10. Pharmacognostic studies of medications need to be prioritized

Natural remedies are becoming more and more popular, in both developed and developing nations. The main source of healthcare is herbal medication, and in certain cultures, using herbs in traditional medicine is seen as an essential aspect of culture. Numerous of these commonly used herbal medications have not been adequately evaluated or regulated in their use. The selection of the safest and most efficient treatments as well as the encouragement of their prudent use become more challenging as a result, and understanding of their potential harmful effects is extremely restricted. Pharmacognostic investigations provide standardized parameters, confirm plant identification, allow for helpful alternatives, and guard against adulteration.^[7]

11. Factors Leading to Increased Use of Herbal Medicine for Self-Medication

The increasing use of herbs for self-medication by patients or individuals is also attributed to a number of other factors, including (I) patients' discomfort in discussing their medical issues and concern over lack of confidentiality in handling their health information, (ii) patients' concern over potential misdiagnosis and incorrect treatment by patients with non-specific symptoms or general malaise, and (iii) patients' lack of time to see a doctor; this is typically a factor where priority is placed.^[8]

12. Impediments to Effective Monitoring of Herbal Drug Safety, Toxicity, and Side Effects

The widespread belief that herbal medications or treatments are extremely safe and free of side effects is not only false but also deceptive. It has been demonstrated that a variety of unfavourable or unpleasant reactions can be produced by herbs, some of which can result in fatal or life-threatening diseases, severe injuries, or even death. Poisoning cases have been recorded in the literature in large numbers and with absolute certainty.^[10]

The majority of countries do not need any safety or toxicological testing before releasing herbal medications and associated goods onto the market. Many of these nations also lack efficient machinery to control production standards and procedures. Consumers can continue to get these natural products, without a prescription in the majority of situations, and the dangers of a subpar product are rarely acknowledged.^[9]

Particularly in underdeveloped nations where a large number of unlicensed and poorly regulated herbal items are openly and almost completely sold on the market. Furthermore, the widespread belief that natural goods are not poisonous and have no side effects frequently encourages incorrect use and uncontrolled consumption, which has also led to severe poisoning and immediate health issues. This false belief does not only exist in developing nations. It also exists in highly industrialized nations, where people frequently turn to "natural" items without having adequate knowledge of or access to information on the risks involved, especially in the case of excessive or long-term use.^[11]

There is no denying the complexity of the requirements, research protocols, standards, and methods needed to assess the safety and effectiveness of herbal medicines compared to traditional or conventional pharmaceuticals.^[12]

13. Constraints in Herbal Medicine Quality Control

Correct identification of medicinal plant species, particular storage, and unique sanitation and cleaning procedures for various materials are all critical requirements for quality control of starting materials,

according to good manufacturing practise (GMP) (WHO 2004, 2005b).^[6,13]

The difficulty in confirming the presence of all the plants or beginning materials is one of the main difficulties frequently encountered in the quality control of finished herbal medicinal products, especially combination herbal products (WHO, 2005b).^[16] So, unlike other pharmaceuticals, the overall specifications and procedures for quality control of final herbal products continue to be far more complicated (WHO, 2003, 2004, 2005b). WHO continues to advocate for the implementation of quality assurance and control measures, such as national quality specifications and standards for herbal materials, GMP for herbal medicines, labeling, and licensing schemes for manufacturing, import, and marketing, in nations where herbal medicines are regulated, in order to ensure the safety and efficacy of herbal medicines (WHO, 2003, 2004, 2005b).^[14,6,13]

14. Effect of Mass Media Advertisement of Herbal Product

In order to promote herbal products, the media is crucial. People should become aware that not all herbal products are related to Ayurveda or Ayurvedic medicine. As more people begin taking medication on their own, the quality of therapy has declined due to the availability of the pharmaceutical product (such as Chyawanprash). To prevent scientific concepts from being misunderstood and pharmaceuticals from being misused for self-medication, regulating bodies should be in place.

15. Promotion of Herbal Farming

Herbal plants should be gathered in accordance with the season designated for that herb, according to the Ayurveda Samhitas, and are most effective when grown from their natural habitat. Promoting herbal farming can significantly enhance the output of high-quality herbal plants and be helpful for accurate plant identification with fewer chances of adulteration. Farmers need to be made aware of the value of herbal farming and the different government programme available to promote it.

16. Ayurveda as a life style

Every Ayurveda practitioner keep advocating Ayurveda as life science itself. But many few of the Ayurveda practitioner living Ayurveda as a life style. There is need that development of community actually living and experiencing Ayurveda as a lifestyle so we can set an example and no more advocacy will be needed.

DICUSSION

World community is facing an unprecedented pandemic situation due to Novel Corona virus since last one and half year. In this crucial period Ayurveda have showed its potential and possibilities to be employed both for prevention and treatment of covid-19. Due the situation Ayurveda attain much attention worldwide. Providing an

important opportunity for learning and generating credible evidence.^[15]

But still there are many areas where *Ayurveda* as a science is lacking behind. Upgradation in *Ayurveda* is needed for its scientific acceptance as well as better understanding worldwide. To attain this upgradation there is equal need to preserve and promote the system of *Ayurveda* as it is most comprehensive, personalized; holistic and sustainable health system based on sound philosophical and scientific principle.

Obtaining newer teaching techniques, creating curiosity for experimental validation of various known principles and attaining their validation should be attain academic levels. Providing good research modules, various job opportunities in herbal and *Ayurveda* research sector will help to promote the upgradation of *Ayurveda* as science and will quenching the thirst for curiosity of researcher.

Timely exchange of knowledge between various generations of *Ayurveda* practitioners will be excellent source of upgradation in knowledge.^[16] Every science has its grace and limitation areas. Even more polishing grace area and successful overcoming of limitations areas with the help of extreme efforts in research and with growing technologies looks way more possible.

Treatment practices in *Ayurveda* based on the person - centered point of view which gives *Ayurveda* exclusive right to design specific treatment for every individual according to their condition rather sticking to the generalized approach for all.^[17] Keeping this in mind it is a duty of every *Ayurveda* practitioner to design medicine and treat patient as an individual and not to prescribe medicine from available sources at their comfort. This individualized approach will help us to develop cost effective treatments. This approach of practitioner will be useful for reduced self-medication among people as they will get aware that every drug reacts differently in different conditions.

Herbal farming is another neglected area in upgradation of herbal drug. With herbal farming adequate availability of specific medicine, reduction in chances of adulteration, preservation of the herbal drug from extinction, proper identification as well as regulatory status of the herbal drug can be achieved. Farmer should encourage for farming according to the biodiversity of medicinal plant in their region. There should be awareness that government is providing various schemes for herbal farming. Under 'Medicinal Plants' component of the NAM scheme supporting market driven cultivation of prioritized medicinal plants in identified cluster/zones with in selected districts of States and implemented in a mission mode throughout the country. As per the scheme guidelines, the support is provided for:

- Cultivation of prioritized medicinal plants on farmer's land.

- Establishment of nurseries with backward linkages for raising and supply of quality planting material.
- Post-harvest management with forward linkages.
- Primary processing, marketing infrastructure etc.

140 priority medicinal plants are allowed to be grown on farmer's property under this programme with subsidies at the rates of 30%, 50%, and 75% of the cost of their cultivation.

To promote Good Agricultural Practices (GAPs) and Good Field Collection Practices (GFCPs) in the cultivation of medicinal plants, the National Medicinal Plants Board (NMPB), Ministry of AYUSH, Government of India, also introduced the "Voluntary Certification Scheme for Medicinal Plants Produce (VCSMPP)" on November 22, 2017. The VCSMPP will strengthen the country's access to raw materials for certified high-quality medicinal plants, as well as promote their export and raise India's proportion of the world's herb exports.

Herbal drug is the half part of the *Ayurveda* lifestyle science. As previously stated, every herbal product is not *Ayurveda* and only herbal medicinal product also not *Ayurveda* too. It is a life science in true manner. *Ayurveda* emphasis in prevention of disease- and disease-free healthy life style at first place. To achieve this various regimen have stated by *Acharyas* under – *Dincharya, Rutucharya, Ahar, Rasayanas, Sadvritaa* etc., with application of this regimen in everyday life one should not only get healthy life but will be the part of healthy society at the same time. This way *Ayurveda* can be helpful in building of physical and social wellbeing of the individual. Hence the scientific globalization of *Ayurveda* could be the community development tool along with sound health of an individual.

CONCLUSION

From above discussion one can understand that Indian system of medicine lagging in the global market due to lack in research work or research modulations and less no of *Ayurveda* researchers. Various areas of drug development like safety, efficacy, quality control of drug, drug identification, pharmacological studies of drugs with their toxicity, adverse effects, untoward effects are yet to be determine. There is need of re-establishment of *Ayurvedic* principles for their better understanding and increasing quality of treatment in patient and thereby quality of living. Taking these needs as opportunities for the scientific development of *Ayurveda* as a science and obtaining successful research in this area will surely help in the scientific globalization of *Ayurveda* which is the need of the hour.

REFERENCES

1. Tripathi B, Charaka Samhita:Charaka-chandirka commentary. 1sted. Varanasi: Chaukhamba
2. Surbharati Prakashan. Sutrasthana 30, Arthedashmahamuliya Adhyaya; ver, 2004; 26: 565.
3. Holley J. and Cherla K The Medicinal Plants Sector in India: A Review international development research centre, 1998.
4. https://www.taxmanagementindia.com/visitor/detail_article.asp?ArticleID=6854 dated, 08-10-2021; 11: 25.
5. Patwardhan B, Warude D, Pushpangadan P, Bhatt N. Ayurveda and traditional Chinese medicine: a comparative overview. Evidence-based complementary and alternative medicine, 2005 Dec 1; 2(4): 465-73.
6. <https://www.frontiersin.org/articles/10.3389/fphar.2013.00177/full> dated 08-10-2021 11:40 IST
7. WHO ? WHO Guidelines on Safety Monitoring of Herbal Medicines in Pharmacovigilance Systems. Geneva, Switzerland: World Health Organization, 2004.
8. Chanda S. Importance of Pharmacognostic study of medicinal plants: An overview. Journal of pharmacognosy and phytochemistry, 2014 Jan 1; 2(5).
9. Studdert, D., Eisenberg, D., Miller, F., Curto, D., Kaptchuk, T., and Brennan, T. Medical malpractice implications of alternative medicine. J. Am. Med. Assoc, 1998; 280: 1610–1615. doi: 10.1001/jama.280.18.1610.
10. Bandaranyake, W. M. "Quality control, screening, toxicity, and regulation of herbal drugs," in Modern Phytomedicine. Turning Medicinal Plants into Drugs, eds I. Ahmad, F. Aqil, and M. Owais (Weinheim: Wiley-VCHGmbH & Co. KGaA), 2006; 25–57. doi: 10.1002/9783527609987.ch2.
11. Cosyns, J. P., Jadoul, M., Squifflet, J. P., Wese, F. X., and van Ypersele de Strihou, C. Urothelial lesions in Chinese-herb nephropathy. Am. J. Kidney Dis., 1999; 33: 1011–1017. doi: 10.1016/S0272-6386(99)70136-8.
12. UNESCO. Report of the International Bioethics Committee on Traditional Medicine Systems and their ethical implications. SHS/EGC/IBC-19/12/3 Rev. Paris, 8 February, 2013.
13. Zhou, J., Ouedraogo, M., Qu, F., and Duez, P. Potential genotoxicity of traditional Chinese medicinal plants and phytochemicals: an overview. Phytother. Res. doi: 10.1002/ptr.4942, 2013.
14. National Policy on Traditional Medicine and Regulation of Herbal Medicines. Report of a World Health Organization Global Survey. Geneva, Switzerland: WHO.
15. WHO Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants Geneva, Switzerland: World Health Organisation.
16. Yi Y., Lagniton P.N.P., Ye S., Li E., Xu R.-H. Covid-19: what has been learned and to be learned about the novel coronavirus disease. Int J Biol Sci., 2020; 16: 1753-1766. doi:10.7150/ijbs.45134.
17. Tripathi B, Charaka Samhita: Charaka-chandirka commentary. 1sted. Varanasi: Chaukhamba

- Surbharati Prakashan. Sutrasthana 25, Yajja Purushiya Adhyaya; ver, 2004; 40: 455.
17. Tripathi B, Charaka Samhita: Charaka-chandirka commentary. 1sted. Varanasi: Chaukhamba Surbharati Prakashan. Sutrasthana 1, Deergham Jeeviteeya Adhyaya; ver, 2004; 124: 46.