

Medical education in India: Time to encourage cross-talk between different streams

Kishor Patwardhan

Department of Kriya Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

ABSTRACT

Currently, India recognizes five different healthcare systems, collectively known as AYUSH (Ayurveda, Yoga, Unani, Siddha, Homeopathy), along with the conventional biomedicine. These systems have their own institutionalized structure for monitoring medical education and practice. However, because of the 'parallel' kind of policy model that is followed in India, there is no formal provision for any cross-talk between the professionals belonging to these different streams. This situation has not only given rise to mutual misgivings among these professionals regarding the strengths and weaknesses of each other, but also has led to a poor appreciation of the historical and socio-cultural connections these streams share with the community at large. To tackle these issues and to promote adequate participation of biomedicine experts in AYUSH-related research projects, 'introduction of an AYUSH module in the current curriculum of MBBS (Bachelor of Medicine and Bachelor of Surgery) program' has been proposed in this communication along with a possible roadmap for its implementation. It is also suggested that the experts in biomedicine be engaged for training AYUSH graduates in their respective specialties so that quality AYUSH education may be ensured.

Key words: AYUSH, biomedicine, cross-talk, medical education

India is a country where medical pluralism is officially recognized and encouraged. Currently, India recognizes six different healthcare systems along with the conventional medicine (also known as Allopathy or Biomedicine). India follows a "parallel" kind of policy model where the conventional biomedicine and other indigenous systems of medicine including Homeopathy (referred collectively as AYUSH: Ayurveda, Yoga, Unani, Siddha, and Homeopathy) are placed "parallel to each other."^[1] Because of such a policy, however, there is no official provision for cross-talk between the professionals belonging to these different streams during medical

education, research, and practice. This has in fact given rise to mutual misgivings among these healthcare professionals regarding the strengths and weaknesses of each other.

In this communication, I argue that it is the right time to encourage some kind of cross-talk among the professionals of different streams of healthcare systems in the Indian context to enable the nation to take care of its varied healthcare needs effectively. I further suggest that introducing an Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH) module in the current Bachelor of Medicine and Bachelor of Surgery (MBBS) curriculum would be one such concrete step that would help in building an atmosphere of mutual trust and mutual respect among the healthcare professionals of various streams, which would improve the healthcare delivery system of the country. Encouraging AYUSH institutions to hire biomedicine experts to give instructions in the areas of their expertise is another suggestion that will be discussed.

Address for correspondence:

Dr. Kishor Patwardhan, Department of Kriya Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi - 221 005, India.
E-mail: patwardhan.kishor@gmail.com

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THE CURRENT SCENARIO OF AYURVEDA, YOGA, UNANI, SIDDHA, AND HOMEOPATHY EDUCATION IN INDIA

According to a recent report, there are at present more than 500 undergraduate colleges that produce graduates

in AYUSH streams of medicine in India.^[2] The syllabi of these programs contain a huge number of topics related to conventional biomedicine. However, the number of AYUSH institutions asking the biomedicine experts to teach these topics to their students is extremely low. The governing bodies such as the Central Council of Indian Medicine (CCIM) and the Central Council of Homoeopathy too do not make it compulsory for such topics to be taught by the experts in the relevant fields. Therefore, the teachers teaching some AYUSH subjects also teach the relevant biomedical subjects such as anatomy, biochemistry, pathology, physiology, and surgery. Therefore, it can be assumed that the quality of instruction in these topics that AYUSH students receive is possibly inferior.

The scenario is different in the medical colleges because the governing council, Medical Council of India, does not think it is necessary to include even the essentials of AYUSH-related topics in the undergraduate or post-graduate curricula. Therefore, there exists a perceivable gap between AYUSH and conventional healthcare professionals when it comes to “awareness about the domain knowledge of each other.”

PROBLEMS WITH THE EXISTING SYSTEM OF MEDICAL EDUCATION AND PRACTICE

MBBS graduates do not know what interventions their patients might have been subjected to

It is estimated that about 60-70% of the population in India resort to one or the other AYUSH modalities of interventions for their day-to-day healthcare needs. AYUSH systems employ various kinds of interventions such as *Panchakarma* (five therapeutic procedures that include emesis, purgation, enema, nasal instillation, and blood-letting), dietetics, herbal preparations, herbo-mineral preparations, and so on. Graduates in conventional medicine, however, are not aware of these interventions. They are neither exposed to the theoretical constructs of AYUSH systems nor to their possible health benefits. They are not even exposed to their possible adverse effects. There is increasingly available literature on herb–drug interactions,^[3] food–drug interaction, and drug–drug interactions, and therefore, in all possibilities, these are being overlooked by the medical practitioners currently. Similarly, there have been several reports of heavy-metal toxicity due to substandard organo-metallic preparations, which is alarming.^[4] This situation, if left unattended, may not only create hindrances in the anticipated outcome but also might put patients at increased health risks.

MBBS graduates do not know when to refer their patients to AYUSH practitioners

Although there are several reports highlighting the positive outcome associated with AYUSH interventions in several health conditions, especially those related with chronic non-infectious diseases, graduates in conventional medicine do not know what kind of cases can be referred to AYUSH hospitals. Conditions such as fistula-in-ano, for example, are better treated with *Ksharasutra* therapy than with any other conventional method. However, the referral taking place even in such cases is only marginal. Similarly, several studies on the effect of Ayurveda interventions in conditions like rheumatoid arthritis have been published to which conventional medical graduates are not introduced.^[5,6]

MBBS graduates are not introduced to AYUSH modalities that can complement and enhance the clinical outcome

There are several studies indicating the possible beneficial role of AYUSH interventions when administered as “adjuvant” or “complementary” to the conventional therapies.^[7] Dietary interventions, *Panchakarma* and lifestyle modifications as per AYUSH modalities, can be reasonably supplemented along with many biomedicine interventions to enhance the clinical outcome.

MBBS graduates are not introduced to the recent advances that are taking place in AYUSH systems

Several interesting research findings related to AYUSH interventions are being reported widely in recent years in peer-reviewed scholarly journals. This is true not only with therapeutics but also with biology in general. Graduates in conventional medicine need to know some of these key advances so as to help their patients.

MBBS graduates are not introduced to the medical heritage of their own country

Systems such as Ayurveda, Unani, and Siddha are historically integrated into social and cultural domains of commoner’s life in India. Certain terms such as “heat” and “gas” that are commonly expressed by patients, have their roots situated in such cultural connections. Similarly, Sushruta’s practice of rhinoplasty was a milestone in the evolution of surgical practices. Contributions of Ayurvedic compendia to certain areas of physiology such as circulation are worth appreciating.^[8] Therefore, having some knowledge in the history and heritage of one’s own country definitely adds value to the medical practice.

AYUSH graduates do not receive instructions from qualified experts in the topics related to conventional medicine

In one of our earlier studies, we have noticed that Ayurveda students are not trained well in the essentials of physiology, pathology, and clinical diagnosis in general, and this possibly holds true for other AYUSH students as well.^[1] The reason for this situation in all probability is that AYUSH students do not receive these instructions from the experts in these fields.

Inadequate involvement of biomedicine experts in AYUSH research

An ideal research protocol for AYUSH streams needs the involvement of biomedicine experts; however, only a few biomedicine experts are currently interested and involved in pursuing research related to AYUSH systems. This is because they are not routinely exposed to these systems during their formal education. It is to be noted that AYUSH systems can still guide many areas of current sciences because they provide a larger fundamental conceptual framework that is aligned with “systems thinking.”

SUGGESTED SOLUTIONS

Introduce an AYUSH module in MBBS curriculum

Introducing an AYUSH module containing the essential introduction to these systems in the current MBBS curriculum would help in solving most of these problems. This module ideally must cover the following components:

1. Fundamental principles and theories on the basis of which AYUSH systems are evolved and practiced.
2. Historical evolution of AYUSH systems in India and the important contributions of these systems to the current sciences.
3. Introduction to the essentials of commonly practiced AYUSH interventions such as *Panchakarma*.
4. Essentials of AYUSH pharmaceuticals: common methods of preparation of AYUSH formulations, their key ingredients, and their pharmacological and toxicological implications.
5. Recent advances (fundamental and clinical) that have taken place in AYUSH streams.
6. Essential information regarding herb–drug/food–drug/drug–drug interactions related to commonly used herbs/drugs/dietary compounds.
7. Pharmacovigilance program of AYUSH and the information related to the major centers coordinating it.

Encourage instructions by biomedicine experts to AYUSH students in the relevant topics

Institutions like Banaras Hindu University have since long introduced such a practice. During their post-graduate years of study, Ayurveda students receive instructions by experts in Anatomy, Physiology, Pharmacology, Pathology, Microbiology, Biochemistry, and Medicinal Chemistry. However, such a practice needs to be encouraged everywhere so that AYUSH students receive standard instructions.

SUGGESTED ROADMAP

The government of India may identify a few institutions where AYUSH module could be introduced on an experimental basis. These institutions should preferably have a medical college and an AYUSH college under the same management, preferably in the same campus. Institutions such as Banaras Hindu University, where three faculties (Faculty of Medicine, Faculty of Ayurveda, and Faculty of Dental sciences) work under the same umbrella of Institute of Medical Sciences are ideal for such a venture to begin with. A few other institutions with a similar set up could be identified.

A group of experts may be asked to frame a module. This group should consist of experts from AYUSH, Pharmacology, Clinical Research, and Sociology. This group may be asked to come up with a course module containing the essential information in the form of an e-book. This should also include the links and addresses of important organizations and institutions that can facilitate further the acquisition of the required information on the issues addressed.

This module may be introduced either during final MBBS or during the internship period. Initially, fifty hours of contact lectures may be allotted and feedback from the instructors and students can be obtained. Alternatively, during every semester of MBBS, 10 h of contact lectures can be introduced to lessen the burden. This later scheme can even facilitate a horizontal integration with the subjects covered during a particular semester. For example, “AYUSH physiology” may be integrated with “Physiology and Biochemistry,” whereas “AYUSH pharmacology” and “AYUSH toxicology” may be integrated with “Pharmacology” and “Toxicology,” respectively.

Based on the feedback received from the students and instructors, suitable modifications can be introduced into the module, which can then be extended all over the country. To achieve a long-lasting impact, the recruitment of AYUSH faculty in medical colleges should be encouraged.

Similarly, the governing bodies such as CCIM should come up with norms making it essential for biomedicine experts to be recruited in AYUSH colleges to give instructions in their area of expertise.

As a long-term measure, a 10 year MBBS/MD/PhD “triple degree program” in “integrative medicine” might be introduced, wherein the essentials of all major streams of healthcare systems can be incorporated. This would certainly encourage more researchers to involve themselves with AYUSH systems.

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