

# The Need and Importance of Incorporating Academic Research Results in to the Curricula of Ayurveda in India

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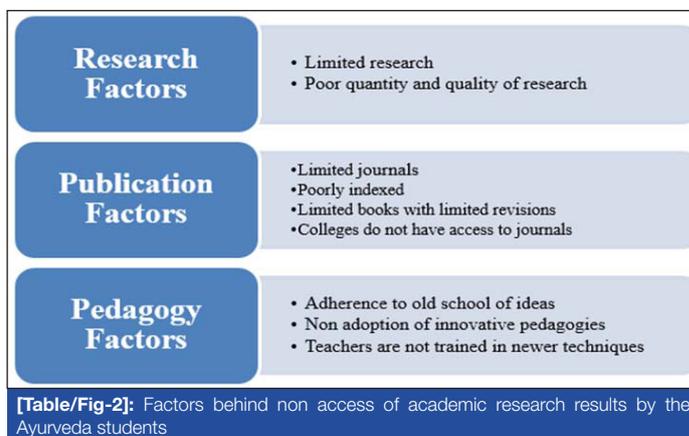
## ABSTRACT

Every year a noticeable number of MD and PhD students pass out from various Ayurveda colleges across the country. Each of these Post Graduate (PG) and doctoral students do submit a research thesis as a part of fulfillment of their respective degrees. As on 01/04/2015 there were 98 PG Ayurveda colleges in India with an admission capacity of 2441 seats each year. Moreover many of the post graduate institutes provide doctoral level (PhD) education which is primarily involved with research thesis. Such meticulous research carried out under the supervision of an academic expert should not go in vein and hence the research findings need to be slotted in to the respective areas and disciplines of Ayurveda syllabus. This will help in bringing in the latest scientific trends of Ayurveda to graduate students. Distressingly such practices are not in vogue in Ayurveda education system and most of the colleges follow the same stereotypic pedagogy using the classical texts of Ayurveda or their respective commentaries written decades back. Use of classical treatises and their respective commentaries offers very limited access to the recent scientific developments of Ayurveda as these commentaries are mostly one time efforts and do not undergo repeated revisions thus limiting the inclusion of present day innovations. In this commentary an effort has been made to understand the source, output, need and importance of such academic research finding with reference to their incorporation in to curricula of Ayurveda.

**Keywords:** Ayurveda, Curricula, Predatory Journals, Publication, Research

## INTRODUCTION

Indian System of Medicine finds its root in India. The system has evolved through a continuous process of transformation from its primeval Vedic form to the modern day Indian System of Medicine. The system has witnessed a paradigm shift from its oldest format of "Guru-Sishya-Ashram" tradition to the modern day medical education system formally taught in the schools of Ayurveda with the use of modern technologies. The present day Ayurveda has undergone many alterations as per the need of the day however important principles have remained unchanged [1]. This system of medicine has moved out of Indian Territory and made its presence felt in different parts of the world. The number of educational institutions has increased considerably both in public and private sector with high turnover of graduate and PG students. The rise of educational institutions not only increased the turnover of UG and PG students rather the same has also increased the number of doctoral students. As a part of fulfillment of their educational qualifications the PG and doctoral students need to carry out a research thesis in different areas of Ayurveda which ranges from many specializations in non clinical, preclinical and clinical subjects. The number of PG colleges has increased from 14 in 1992 to 28 in



2015 with an average annual growth rate of 6.3%. Similarly average annual growth rate of the admission capacity in PG institutions since 1992 to 2015 is 9.4% among Ayurveda colleges [2]. The [Table/Fig-1] describes a glimpse of current status of Ayurveda system of Medicine in India as on 1<sup>st</sup> April 2015. In addition the [Table/Fig-2] enlists the factors behind non access of academic research results by the Ayurveda students.

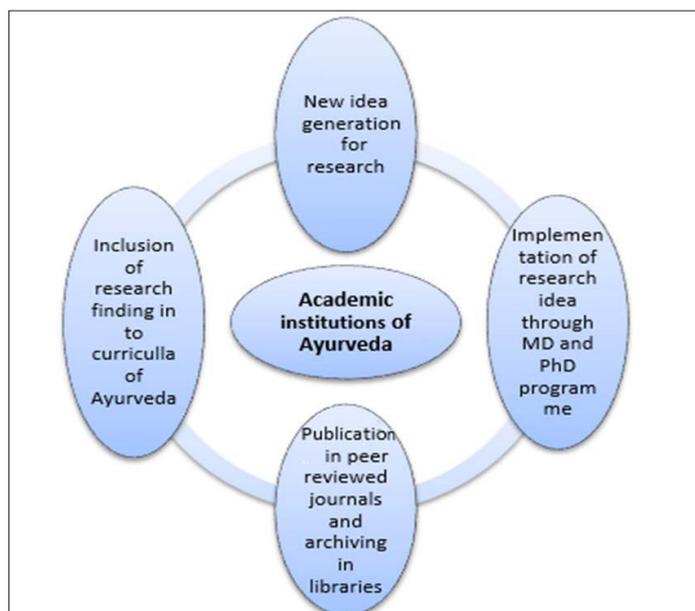
The [Table/Fig-3] depicts the cycle of events that an academic institution can involve with: from idea generation to inclusion of research results in to the curricula of Ayurveda.

## DISCUSSION

In this section an attempt has been made to identify the sources of Ayurveda research, the output of Ayurveda research and their publication in peer reviewed scientific journals, the need and importance of including Ayurveda research results in to the curricula of Ayurveda and the ways and means to do the same.

Glimpse of current status of Ayurveda system of Medicine in India	
Total number of Practitioners	399400
Total number of Hospitals	28.8
Bed strength	43170
Dispensaries	15153
UG Colleges	260
PG Colleges	100

**[Table/Fig-1]:** Glimpse of current status of Ayurveda system of Medicine in India  
# Source-Ministry of AYUSH, Govt. of India



**[Table/Fig-3]:** The cycle of events that an academic institution can involve with: from idea generation to inclusion of research results in to the curricula of Ayurveda.

### Sources/sites of Academic Research

The major sources/sites of research are the academic institutions where PG and doctoral programmes are offered. As a part of the partial fulfillment of these degrees candidates have to submit research thesis as a compulsory part of the program. As listed above there are 100 PG colleges in Ayurveda and the students undergoing PG education in these colleges should be completing their masters or doctoral thesis as a mandatory requirement of the course. However, the drafted theses of these PG and PhD students get piled up in their respective university/college libraries offering very limited access to students of Ayurveda beyond the campuses of these respective institutions. At the same time many of these research findings are being published in different scientific journals in the form of research articles however their quality has always been questioned leaving a few journals indexed in some good indexing portals such as Scopus, PUBMED, EMBASE etc., [3-5]. In addition to educational institutions many of the pharmaceutical and pharmacognostic researches are being carried out in various scientific institutions and research and development units in both public and private sectors. However incorporating the research results from private research laboratories may create intellectual property rights issue hence the same is not discussed here. Furthermore owing to lack of inclusion of research results in to the curricula the practicing physicians of Ayurveda come to know about latest developments of the scientific realm of Ayurveda from pharma representatives as a part of drug promotion. Similarly in very few instances the graduates come to know about the recent developments from scientific journal articles however the practice is very limited as Ayurveda scholars do not imbibe the culture of accessing scientific literature as the teaching methodology do not usually endorse such practices.

### Research Publication

Compared to the modern medical science, the dissemination of knowledge through scientific publication is relatively poor in the realm of Indian medicine. It has been observed during these days that a number of journals are being published in this domain in India; both in the name of Indian journals and international journals without having any international platform. At this present juncture finding a quality peer reviewed indexed journal in the realm of Ayurveda is a difficult job. Currently there are 3 PUBMED, 38 non-PUBMED and 4 Hindi journals available in the realm of Ayurveda [6]. It has further been observed that with in different systems of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Sidha and Homoeopathy) research publications in other systems except Ayurveda is negligible.

Dedicated journals pertinent to specific system of Indian medicine is hard to find. Scholars of other systems of Indian medicine depend upon relevant journals for publication of their scientific work. The total number of scientific publications in Ayurveda till April 2016 is 14664 [7]. The standard of most of these journals is a matter of great concern. In addition many of these journals are identified as predatory journals by Jeffrey Beall from the University of Colorado [8]. Given the situation, scholars in these systems of medicine and particularly Ayurveda, need to be sensitized about poor quality journals. Training programs on research methods, and scientific drafting skills to the researchers of Indian medicine should also be promoted [9].

### Need and Importance of Inclusion of Academic Research Results in to Curricula and Pedagogy of Ayurveda

Meticulous research carried out under the supervision of an academic expert should not go in vein and hence the results need to be incorporated in to the respective areas and disciplines of Ayurveda syllabus. This will help in introducing the latest scientific developments of Ayurveda to graduate students. It is generally believed that the science of Ayurveda is eternal and cannot be changed easily but there is no harm in getting updated with the recent scientific developments discovered in a modern way in modern schools of Ayurveda with the use of latest technologies. During the ancient times the Ayurveda scholars like Charak, Sushrut and Vagavatta could not explore the science in a modern way owing to limitations of modern instruments, equipments and technologies but now the world is witnessing a paradigm shift in terms of medical technology especially in biomedical research which can preferably be applied to the field of Ayurveda and the findings could be revealed to the aspiring Ayurveda professionals. This will help in bringing evidence based approach in to the practice of Ayurveda and keeping the practitioners abreast with the recent developments [10].

The research and new discovery is a continuous process in any given field of discourse. The results of such investigations should be incorporated in academic syllabus of respective disciplines for the betterment of the society at large. Several of standard treatment procedures are being developed and the efficacies of the drugs are ascertained by diligent research. However, these findings reported by the researchers have to be validated and if found fruitful the same can be put in to practices for the glory of the science and the benefit of the community. Every science has its own mechanisms to integrate such changes and is usually disseminated in conferences, symposiums, seminars and academic circles. Later these changes can become part of common practice.

### Ways to Include Academic Research Results in to the Curricula and Pedagogy of Ayurveda

There are several possible strategies that can be adopted to bring change in this direction. A policy and system level decision needs to be taken in order to revise the curriculum with the inclusion of recent developments in the system. The recent developments could be in the field of medicinal plants, pharmacognosy, Indian alchemy, other pertinent subjects and their applications in different clinical specialties. While doing major developments the non clinical and preclinical subjects should not be forgotten. This is equally important as with the growing pace of time students should also be able to recognize their specialization in the language that the world currently knows. There could be certain degree of resistance while doing so as the old school of Ayurveda believe that Ayurveda is eternal and comparing or testing it with modern tools and techniques would deteriorate the novelty of this ancient medical wisdom. However this is not true and the changes would definitely enrich the science and would create a platform where students would find the learning more interesting and up-to-date.

Secondly, opportunities should be created in academic institutions in order to lend greater access to the scientific advances of Ayurveda by the means of archiving the research publications through subscription to journals in the field of Ayurveda and complementary and alternative system of medicine as well. This can be done in two ways; subscription of hard copies or the online materials. At this digital era most of the peer reviewed journals have online portal and most of the journal articles are indexed in different indexing portals such as PUBMED, PUBMED CENTRAL, SCOPUS and EMBASE relevant to the field of Ayurveda and biomedicine. The academic institutions should have access to these portals, online libraries and electronic databases through appropriate channel.

In addition to these two important strategies pedagogic changes are the need of the hour. Ayurveda is no more an Indic and classical subject confined within Indian territory rather has reached many parts of the world. The current method of didactic lecture is no more sufficient enough and should include innovative teaching methodologies such as case study approach, journal clubs and group projects etc. These methodologies are hardly adopted in Ayurveda colleges in India and the adoption of same is expected to create learning more interesting among the Ayurveda students. Furthermore, individual level efforts by the teachers to implement these activities are the real challenge as most of the academicians of Ayurveda are not well versed with these methodologies. Hence, given the situation their training is mandatory.

Nevertheless, the usage of computers in Ayurvedic Colleges is very low. Modern data bases of scientific knowledge are stored electronically by various organizations. Geographical location is not a constraint to access this huge knowledge base. One can access from any part of the world to the updated developments in a mouse click with a subscription. Some of the knowledge data bases from reputed publishers are also open access for the benefit of mankind. However, to receive these benefits one should have the inquisitiveness for the new source of knowledge and be a computer literate. To facilitate this college administration should provide good computer laboratory and access to quality scientific data bases.

The Central Council of Indian Medicine (CCIM) has to identify the robust literatures based on scientific committee review and incorporate the same in suggested syllabus at undergraduate and postgraduate level. The universities with their learned academic advisory board can then do the further steps to make that happen. Albeit there are some mechanisms similar to this existing in India, but in actual the process is very beaurocratic and time consuming.

Many research become obsolete by the time they reach to the practicing doctors. Unlike allopathic doctors having regular Continuous Medical Education (CME) Ayurvedic doctors have a very few which act as an impediment for the dissemination of research in the ground level. However, inclusion of all research findings through various undergraduate and post graduate curricula would help in achieving the expected goals through CCIM and university efforts.

Together with all these efforts the students of Ayurveda can get greater access to the recent scientific developments of Ayurveda which is indeed the need of the hour.

## CONCLUSION

Incorporation of recent developments into the curricula of medical science is a very usual practice. This sort of practice is not observed in Ayurveda system of medicine which hinders the Ayurveda students from accessing the recent developments and up-to-date knowledge of Ayurveda. This should be a matter of concern as students lag behind as compared with their modern counterparts. Thus, it is important for the Government and relevant councils to mull over and bring necessary modifications in to this system to make the students of Ayurveda up-to-date and their learning interesting.

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