



# AN EXPERIENCE WITH 'RESEARCH PERFORMANCE PARAMETERS [RPP - 5]' FOR DEVELOPING ACADEMIC RESEARCH IN AN AYURVEDIC INSTITUTE

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## ABSTRACT

Research in medical educational institutions is of significance to develop skilled professionals and to contribute to health care delivery. High level of institutionalization has impacted Ayurvedic education, learning and research and even its practice. Ayurveda, based on vedic paradigm of principles of equilibrium is different from experimental and validation approach of conventional medicine. The academic research in Ayurveda is under pressure to perform.

Change mechanism in an academic environment is a challenge. Formation of an 'Ayurveda Research Cell [ARC]' helped the change process. Identification of performance parameters as publications [P1], projects [P2], processes & procedures [P3], products [P4] and patents [P5] provided orientation to the ARC activities. 'Manthan' a management tool when applied to this academic institute could remarkably improve individual performance and institutional outcome.

This unique, never before exercise in the academic field of Ayurveda can be used to overcome integration issues to develop research roadmaps.

**KEY WORDS:** Ayurvedic education, Ayurvedic research, Research Parameters, Manthan, Research Change Mechanism, Integrating Ayurveda, Ayurveda Institutionalization, Ayurveda Academic Research.

## 1. INTRODUCTION

Research is essential for development of any science. Research as a part of education helps to learn more, pursue interests and to develop the problem-solving skills. It is expected to challenge existing information in light of new and contribute to knowledge. To conduct research in higher educational institutions especially in medical professional institutions is important in view of its relevance to medical care.

In a medical institute in addition to teaching the faculty has also to undertake clinical, research and at times administrative activities. The role of a medical teacher therefore is important as a guide for mentoring a new professional for which one is required to remain updated to satisfy contemporary needs. Research is an important tool to this process.

Right from beginning research is considered an important component of post-graduate studies in the field of Ayurveda. Over last few decades the approach and methods have undergone qualitative changes. High level of institutionalization has impacted Ayurvedic education, learning and research and even its practice.

Having roots in *vedic* principles and on paradigm of principles of equilibrium which is different from reductionist, experimental and validation approach of modern day research, the academic research in Ayurveda is under pressure to perform.

## 2. BACKGROUND

### 2.1 Institutional Framework for Higher Education

India offers a variety of institutional systems in the field of higher education [Alok Chakrabarti, 2007]. This is reflected in variance of the courses and performance of the universities. The central government has taken several initiatives in establishing and funding few central universities, institutions of national repute and support such organizations. However, the higher education system remains primarily the responsibility of the state governments. Recently there is encouragement for private funding and national and international collaborations to bring in global competitiveness.

**Table 1. Different types of higher educational institutes in India**

Type	Number
Central Universities	20
State funded universities	217
Deemed universities	45
Private deemed universities	57
Private universities under state	05
Other private universities	10
Institutes of national importance	13

### 2.1 Research Importance at University Level-

Teaching, research and technical services form basis of university activities. Research capability means the ability of individuals, organizations and systems to undertake and disseminate high quality research effectively and efficiently [Rechiel R. et al.].

### 2.2 Mandatory Requirement of Research

University Grant Commission [UGC] guidelines expects the teacher to work conscientiously and with dedication to provide professional growth through continuous study and research and perform their duty through teaching, learning, seminar, tutorial and research work [UGC regulations, 2010]. As per UGC guidelines every teacher must earmark minimum of 6 hours for research activities out of the minimum 40 hours per week for 30 working weeks (180 teaching days) in an academic year [UGC regulations, 2010].

The new manual of 'National Assessment and Accreditation Centre'[NAAC] considers 250 out of 1000 marks for self-appraisal of 'Teacher Education Institutions' for research at the institute level and 150 marks for the affiliated institutes [NAAC, SSR, 2014].

Self-appraisal is an important part of the performance appraisal process where one evaluates own performance and gives related feedback with views. Here also 350 out of 1000 are earmarked for research papers, books, publications, projects, guidance and academic contributions. Research publications in indexed national journals are now mandatory for promotion to posts of professors and associate professors.

Recently (September 2015) introduced ‘National Institutional Ranking Framework’ [NIRF] outlines a methodology to rank institutions across the country. The parameters broadly cover ‘Teaching, Learning and Resources, Research and Professional Practices, Graduation Outcomes, Outreach and Inclusivity, and Perception’. Excellence in teaching and learning is closely associated with the research of the faculty and students. Equally, faculty members are expected to make their knowledge and expertise available to benefit the society and industry. To measure the quantity and quality of research output Peer-Reviewed Publications, Citations of Research, IPR and Patents, Collaborative Work, Research Funding and Consulting are adopted with 100 marks with a weightage of 0.40. [NIRF, 2015]

Thus research is being given much greater significance for faculty and institutional appraisal.

**3. RESEARCH IN AN AYURVEDA COLLEGE**

**3.1 Ayurved Institutes**

India has rich tradition of teaching and learning from Vedic period and the knowledge was transferred orally from generation to generation. Ayurveda was also taught in Gurukul system [Svoboda RE, 2004]. To patronize and promote these systems, the Government of India, in 1995, established a separate department for Indian Systems of Medicine and Homeopathy (ISM&H), which is now known as AYUSH (Ayurveda, Yoga, Unani, Siddha, Homeopathy) [Kumar S, 2000]. In 2015, the Government of India to encourage indigenous systems of Medicine has established a separate Ministry of AYUSH.

Ayurveda education in India is regulated by Central Council of Indian Medicine [CCIM], a statutory professional body established under the ‘Indian Medicine Central Council Act, 1970’ of Government of India. CCIM frames and implements the curricula and syllabi. At present, more than 320 Ayurvedic colleges offer a graduate level degree—“Ayurvedacharya” (Bachelor of Ayurvedic Medicine and Surgery (BAMS)) in India and 119 institutes offer post graduate courses in various specialties [ CCIM, India] [Table 2]. More than 3000 post-graduate research studies are undertaken in these institutes. However, the contribution of this huge number of studies to learning and knowledge addition and its impact on practice has been very limited.

**Table 2: Under graduate and Post graduate courses in Ayurved**

CCIM approved colleges	Number of college	Course offered
Ayurved college	320	UG- B.A.M.S.
PG Courses	119 [ 2899 Seats in 14 specialties]	M.D./ M.S. PG diploma
Ph. D. courses	09	Ph.D.
Ayurveda Universities of States	05	B.A.MS. M.D. M.S. Ph. D. P.G. Diploma

The present day research requirements have made it necessary for institutions to follow specific guidelines and mandatory norms as provided by academic authorities. As per Post-Graduate Regulations 2012, one research paper published/ accepted in research journals and one paper presentation in seminar is now mandatory for PG scholars [MSR, PG 2012]. Institutional research in Ayurveda like others comprises of (1) academic research at post graduate and Ph. D level, (2) funded research projects from government agencies and (3) funding from private sector, the pharmaceutical companies.

**3.2 College of Ayurved, Bharati Vidyapeeth University**

College of Ayurved [CoA] (est.1990) constituent unit of Bharati Vidyapeeth Deemed University, [BVDU] is approved by Central Council of Indian Medicine [CCIM] and Ministry of AYUSH, Government of India. College of Ayurved is offering under graduate (B.A.M.S.) course, the post graduate (M.D./M.S.) courses in fourteen specialties, Post-graduate Diploma in 6 subjects as also Ph.D. program in Ayurved and a Diploma in naturopathy and Yogic Sciences [BVDUCOA]. The BVDU has been re-accredited by NAAC, Bangalore and has received ‘A’ Grade.

Since the academic year 1999-2000 the College of Ayurveda started with the post graduate and Ph. D. studies in 3 specialties; 8 more subjects were added in 2000 and again 3 new post graduate courses started from 2007, thereby covering all 14 departments as per CCIM norms for post-graduate studies and 6 PG diplomas.

All the faculty members are M.D. /M.S., the mandatory post-graduate qualification required in their respective subjects, as per CCIM norms, 14 are post-doctoral and 38 are pursuing Ph.D.

The profile of 81 faculty members is provided in Table 2.

**TABLE 2 : Profile of Faculty- BVDU- CoA**

2.1 Age and Gender Group							
25- 30	31-35	36-40	41-45	45-50	51-55	56- 60	Total
[02+03] 05	[05+03] 08	[11+09] 20	[09+10] 19	[05+10] 15	[07+03] 10	[02+02] 04	[41+40] 81
2.2 Qualifications							
Ph. D.		M.D./M.S.			Pursuing Ph. D.		81
14		29*[ all 81 staff members are post graduate]			38		
2.3 Designation							
Professor		Associate Professor		Assistant Professor		81	
21		27		33			
2.4 Experience [in years]							
1-5	6-10	11-15	16-20	21-25	25-30	81	
08	27	13	11	20	02		
2.5 Research guide at Postgraduate level							
Professor		Associate Professor		Assistant Professor		Not yet recognized guide	
21		27		15		18	
(63) 81							
2.6 Research guide at Ph. D. level							
Professor		Associate Professor		Assistant Professor		Not yet recognized guide	
19		7		--		55	
(26) 81							

\*PhD and pursuing PhD Faculty is not included as M.D. /M.S.

#### 4. ISSUES RELATED TO ACADEMIC RESEARCH IN AYURVEDA

During last four decades the education in Ayurveda has undergone major changes with institutionalization and unprecedented increase in the number of institutes imparting Ayurvedic education as university affiliates. This institutionalization of Ayurvedic education adapted the norms as followed in regular medical faculty [R. H. Singh, 2005]. Initially, experience of a teacher in terms of years was accepted as the main criteria for academic acceptance and promotion and to qualify as guide to next generation of students. This gave rise to hundreds of job opportunities as Ayurvedic teachers. However, this has impacted the whole process of education and research in academic institutes as most of the teachers in Ayurvedic colleges had no exposure to research as defined and persuaded by modern day education processes. Ayurveda being built on different paradigm and the lack of any transitional mechanism to adapt to research as an important tool in an institutionalized modern education structure was lost by most. Interestingly, with institutionalization driven by predefined curricula and its framework the otherwise research interests persuaded by individuals and few institutes also got compromised. Research was and to some extent even now is perceived to be an alien process rather than a necessary academic tool for improvisation of knowledge and its applications [Narendra Bhatt, 2005]. An altogether universal, vedic paradigm of Ayurveda on one hand and established demands of method of research as followed by conventional (modern) medicine on the other hand further developed a mismatch in an institutionalized structure that is based on conventional medicine. The major issue was lack of any defined methodology suitable to undertake research in the field of Ayurveda. Lack of appropriate methodology brought in difficulties to think, consider, plan and execute research ideas. The lack of any transitional effort to evolve new research methodologies added to already complex situation leading to lack of interest, motivation and efforts. Only few with extra efforts and outreach could adapt to methodologies of research; that also mostly to suit and to fit into the methods as followed by conventional medicine adding to the gap between the two. Dependency on technologies and equipment added to issues where the Ayurvedic institutes does not have all facilities for the same. There is serious lack of interest or motivation and sincere efforts for research in most of the Ayurvedic institutes. Later when certain norms like publications and project proposals became mandatory, these while being followed lacked the rigor of scientific writing and presentation. The pluralistic and parallel approach has also lead to serious concerns about ability to identify relevant and meaningful subjects of research that can lead to innovation. Most of the faculty lack even basic orientation for research about systems to follow, methods to search and adapt and defining objectives and outcomes. A recent observation is the time required for administrative purposes for regulatory requirements where research rather than a sought after means is at times even feared due to its poorly perceived form and scope.

#### 5. RESOLUTION

In a fast changing environment research is expected to contribute to Ayurvedic learning and practice. The challenge lies in evolving integrative modalities to satisfy parallel paradigms of Ayurveda and conventional medicine. Research in Ayurveda assumes key-role to evolve integrated roadmap. However, integrating research as a part of Ayurvedic teaching and learning is a challenge. Ayurvedic institutes have to face challenges for adaptability and integration with mainstream mechanisms of research.

There is need for an inclusive process that will help motivate research among the faculty to develop confidence and capabilities for productive outcomes.

Having recognized this need the CoA took an initiative to appoint Dr. Narendra Bhatt as Honorary Research Director. Dr. Bhatt earlier was member of Faculty of Ayurved and 'Academic Council' of the BVDU, was chairman of the 'The Ethical Committee of BVU-CoA' and had been associated with some of the research activities of the university. Dr. Bhatt, a zealous researcher has more than 42 years of varied academic, research, clinical and industrial experience.

To begin with a series of meetings were conducted with each of the faculty members followed by few department-wise group discussions to comprehend the situation. These initial meetings and observations helped understand attitude towards research and reasons of poor performance. A need was felt to bring in major changes to develop interest in research among the faculty and bring in institutional atmosphere conducive to research. An 'Ayurvedic Research Cell [ARC]' was established to document, identify and address issues faced both at individual and institutional levels in a coordinated manner.

'*Manthan*' is a management tool developed by Dr. Bhatt for strategic change-management. *Manthan* looks at issues that inhibit growth and helps identify and examine these issues, both individual and organizational and encourages collective effort to search for solutions from within. It firmly believes in capability of every individual and helps to alleviate barriers and use one's own potential within the available organizational structure.

Though *Manthan* is meant for a business or an industrial organization it was decided to experiment with it for an academic institution to bring in changes within a specific period of time.

One of the main areas was to identify common objectives. For CoA, an academic institute Dr. Narendra Bhatt identified five performance areas named 5-'Ps' that

stands for Publication [P1], Projects [P2], Process or Procedure/s [P3], Product/s [P4] and Patent/s [P5]. These identified areas are an original thought of an inquiring mind in pursuit of solution to a problem of academic research for an Ayurved College to help identify needs and reach better and better level of inquiry. It also helped to develop different methodologies for different types of problems.

81 faculty members as a group represent a wide range of individual intelligence, adaptability, professional commitment and sense of responsibility to the job that were also found to be much influenced by other institutional environmental factors. Ayurvedic education, particularly research in itself provide is a big challenge due to lack of clarity about objectives of research and methodologies to follow. At ARC, rather than concentrating on individual strengths as suggested, a conscious decision was taken to address issues at institutional level with an objective to develop a positive environment for research where growth of the group will drive the growth of each individual. The concept of 5-Ps was developed with a view to provide common objectives. The ARC in a diligent but subtle manner chose to opt for a catalytic role rather than demanding.

Dr. Bhatt interacted with each faculty member, probed their interests, identified issues and capabilities and tried to motivate each within the interest observed and capability expressed. He provided guidance to address personal academic issues, about selection of subjects, suggested topics, helped write concepts and format preparations, methodologies to use and even helped identify the funding or outside agencies wherever needed. However, ARC refrained from providing any ready to operate tool; rather putting the onus of developing it on the individual or the group. The whole process was documented and special templates were designed for follow up and monitoring.

#### 6. AIM AND OBJECTIVES

**6.1 The Ayurveda Research Cell [ARC] defined its main aim as follows.**

*'TO EVOLVE RESEARCH AS A PART OF ACADEMIC ACTIVITIES WITHIN THE REALM OF AYURVEDA, CREATE AWARENESS AND ACCEPTANCE OF ITS ACADEMIC ROLE, BRING IN OBJECTIVITY, HELP APPLY RIGHT METHODOLOGY AND THEREBY IMPROVE RESEARCH OUTCOME'*

**6.2 Following objectives were monitored to streamline ARC activities.**

- To stimulate thought processes & newer approaches within the academic field of activity
- To develop individual research skills and capacity
- To encourage group activities
- To create an interesting research environment

#### 7. METHODOLOGY-TEMPLATES

Three templates, formats 1, 2 and 3 were prepared to focus respectively on individual, group and the institutional requirements. These three templates were interlinked to record, develop and strengthen individual capabilities, group dynamics and the institutional growth respectively.

##### 7.1 ARC Activities

The ARC activity comprised of-

- Regular fortnightly meetings with individual faculty member
- Departmental group meetings as required
- Documentation in the form of minutes
- Follow up on predesigned templates
- Mini-workshops on specific research subject/s
- A major full day workshop

##### 7.1.1 Step 1

- Details of MD / Ph. D. and its Publication Status
- Details of Guided PG / PhD Outcome & its Publication Status
- Details of Ongoing / To be initiated PG studies
- Projects Undertaken and Its Outcome
- Reasons of non-publication / Non performance

##### 7.1.2 Step 2

Special templates were designed to compile and follow up data at (1) Individual, (2) Departmental and (3) Institutional level. These three were interlinked with common objectives in the form of P1 to P5.

##### 7.1.3 Step 3

Over detailed discussions the capabilities as individuals, as groups and as a department to work for research were observed.

Following points were attended during the meetings and group discussions.

- Does faculty regularly attended the discussions and actively participated?
- Does the faculty show creativity during discussion?
- Does faculty accept the challenge enthusiastically?
- Does faculty try to give new ideas or concepts and try to go beyond conditioned setups, think about all the possible options and think out of the box?
- Does faculty try to help others or motivate others during group activity?
- Does faculty try to apply knowledge or skills in new situations?
- Do they appreciate the ideas and qualities of others and feel comfortable sharing his ideas with others?
- During the discussion does the faculty often says, I'll never win, I'm just not qualified for research?
- Do they choose an activity/task according to his ability during a group work?
- Do they become argumentative during discussions?
- Does faculty show disrespect to the system or discipline of the institute?

**7.2 Parameters**

After evolving the templates for the content follow up and outcome analyses the following parameters for each faculty member were observed and analyzed in a strictly confidential manner.

The parameters analyzed were -

- I. Interest/Initiative
- II. Thought Process
- III. Skills/Method
- IV. Traits / Dynamics
- V. Commitment
- VI. Potential

These parameters were evaluated by three individual observers on a scale of 0 to 5 as (5 = excellent; 4=very good; 3=good; 2= satisfactory; 1=poor and 0=fail.)

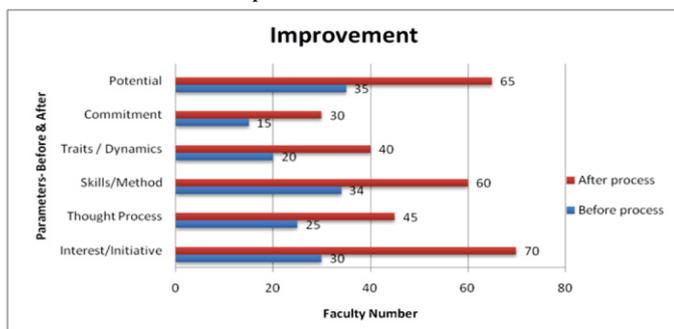
**8. OBSERVATIONS**

Of the 81, 41 male and 40 female, faculty members in three designations of professor (21), associate professor (27) and assistant professor (33) and having varied experience of more than 25 years to less than 5 years; the following interesting observations emerged.

**8.1 Individual Responses**

The initial individual gradations were a matter of serious concern. The overall changes in the six parameters to gauge individual responses provide positive changes of more than double gradation as were observed after the ARC process. There is increased interest, thought processes and eagerness to look for methodologies. The potential seems to have improvised with mainly younger faculty members. Even the comparatively elder group is found to be taking more interest having realized the need and better acceptance of research as a part of academic work. The most important observation is reduced resistance to research. This has encouraged ARC to move forward with optimism. A careful review of individual scores it was observed that a small number of individuals contributed to negative scoring thereby reducing the overall gradation. In view of norms of confidentiality followed it is now decided to attend to these individuals from case to case basis while continuing the group approach for the rest. The question required to address is to undertake any mandatory activity that ideally should be avoided. However, in view of the influence that these few individuals can have on the institutional performance will have to be weighed for relevant means by the authorities. The ARC will continue its defined objectives with focus for institutional outcome.

**Graph 1 – Changes in the individual response to ARC process over a period of 18 months**



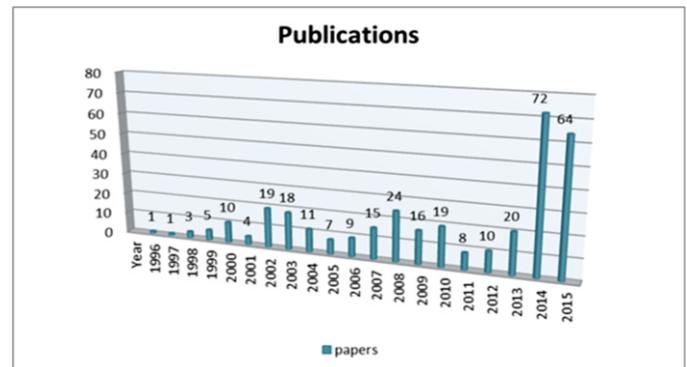
**8.2 Publications [P1]**

More than 550 post graduate studies were undertaken at the post graduate level. Only 10 % this research work was published or presented as papers in conferences. Since 1999 up to 2012, starting of post graduate studies and with 61 post-graduate guides only 180 papers were published of which only 5 % were in regular journals; most others were as articles in regional magazines or in proceedings of conferences or in journals without any qualitative review mechanism. It was interesting to observe that most of the faculty had not published their own post graduate or PhD studies. This was observed to be either due to poor quality in terms of objectivity or lack of confidence to get it published. Lack of positive outcomes or clear validation of hypothesis due to poor designs contributed to non-publication.

A joint critical review and analysis was used to initiate the dialogue with each faculty member. Several of good quality unpublished work was encouraged for publication. This not only provided significant yield of publications, a multifold rise in number (Graph 2), but helped analyze weaknesses in their research approaches and outcomes. It helped overcome prevailing situational weakness by open discussion rather than acceptance of it as an unavoidable means. It helped to look for means and methods within the present framework and limitations in which academic research in Ayurveda gets entangled. It helped us surface this inherent problem in a clearer manner without being felt shy off. The ARC encouraged and helped to look for solutions. It helped to understand how a little extra effort can help derive satisfying outcomes. During academic years 2013 – 2015 more than 150 research papers were published in peer review journals.

The quality of most of the publications was observed to be wanting. The ARC after this initial positive quantitative outcome has decided to put its efforts for quality publications with focus on newer approaches based on Ayurvedic paradigms so as to enable better research outcomes.

**Graph 2 Publication of papers by faculty- 1996-2015**



**8.3 Projects [P2]**

Research projects are important developmental tools at academic institutes. Research projects offer opportunities to the faculty and the post graduate scholars to develop skills, provide training to focus research activities in a time bound manner and make available resources that enhance activities. Successful implementation of a research project gives confidence to persuade and deal with new research ideas.

At CoA two major projects were initiated in 2004 and 2009 worth Rs.25, 00,000 and Rs. 20, 00,000 respectively. Several projects supported by industry collectively worth about Rs. 15, 00,000 were undertaken. Three major projects and few other projects though submitted to the Department (now Ministry) of AYUSH and to UGC in 2012 and 2013; however did not get any sanction. BVU offers projects having cost of not more than Rs. 50,000 every year.

It was observed that most of the faculty members (except very few) were less interested and less confident of developing research proposals. The indifference to research as an academic activity was obvious. Lack of clear objectives and methodologies and lack of desire to take on responsibility contributed to apathy.

At ARC a systematic effort was made in the form of suggestions of topics, helping develop methodologies and deriving expected academic or clinical benefits to generate interest in small project proposals. Efforts were made to excite with new ideas and newer application of their past studies, observations or experiences. Having received good response a special request was made to the honorable vice chancellor who sanctioned additional amount to cover larger number of applications. 14 out of 17 applications received the grants and these projects are now in progress. Again this year 23 applications have been made awaiting approvals. These applications being restricted to associate and assistant professors only helped generate more interest in research.

Presently the ARC efforts are on to ensure that each of the 14 departments develop major research proposals within a time period before beginning of next academic year. Efforts are also made for interdepartmental and inter-institute joint research proposals.

**8.4 Outcomes in the context of other parameters**

To bring in an environment for research ARC took measured steps to encourage publication of papers [P1] and initiation of projects [P2]. The next three parameters, namely processes, products and patents could be attended in a small way only in view of lack of preparedness. ARC could achieve following.

**8.4.1 Books** - Exchange of ideas, teamwork and working for a common goal are necessary for good research. ARC succeeded in initiating three proposals of writing of texts – books in contributory manner. First draft manuscript of a text about ‘Asian Medicine’ is now undergoing editorial scrutiny. Similarly, another text related to glossary of classical clinical terminology is being attended to by a group of faculty. These efforts not only encouraged teamwork but contributed to help broaden the base of inquiry and how to use these inquiry tools in day-to-day academic activities. An effort to develop an E-journal on specific subject has been though partially attended is in need of long term commitment of skills and resources.

**8.4.2 Specialty Clinics and Camps** - Good clinical research is probably the most confidence building exercise for a medical institute. Clinical research in Ayurveda is faced with challenges of methods and modalities [Narendra Bhatt, 2015]. A critical observation at CoA hospital was poor availability of required number of patients where several research personnel chase the same population. ARC suggested to start specialty clinics in the areas of Arthritis and Diabetes so as to enable the faculty to choose the eligible patients. Though resisted initially for administrative and coordination issues the clinics have been started.

The suggestion about organization of medical camps in surrounding areas has yet to take off.

**8.4.3 ICT** – E – governance is an accepted mode of administration. Use of information technology (IT) is now prevalent in every aspect of academic activities and research. ARC helped identify and encourage faculty to examine possibilities of use of IT. It was considered appropriate to use the available resources of the College of Engineering where two proposals were initiated; one related to e-governance of a department in the CoA and other to develop database on medicinal plants and formulations. However, both these proposals remained incomplete due to poor coordination between the institutes. ARC aims to complete these two proposals in nearer future with alternative arrangement. Despite the failure it is satisfying to observe generation of a new thought process for possible technological collaborations.

**8.4.4 Equipment development** – Ayurveda offers specific therapies in the treatment of several diseases. On several occasions ARC observed issues related to cumbersome methods to administer therapies by the researcher that led to poor documentation and reduced patient compliance. ARC encouraged and got involved into considering newer designs of apparatus / equipment and helped the researchers to outsource and develop modified easy to use that will help better documentation of benefits of the treatment and better patient compliance. Such three newly designed mechanical tools are being standardized for regular use.

This not only resolved the issue of administration but helped creating excitement of novel concepts.

**8.4.5 Patent Ideas**

There is always interest in the idea of developing a patent. Research oriented towards patent requires careful planning, patience and clarity of methods. Several of the faculty members are now ready to explore these possibilities. ARC aims to encourage and provide all the required assistance in this important process.

**8.4.6 Outcome**

Over a period of two years the following outcomes were observed.

Qualitative effect	
Faculty Taking interest in discussions-	60 %
Negativity convert into positivity	80- 85 %
Negative response- faculty yet not taking interest in research	10 %
Quantitative effect	
publishing papers in peer reviewed journals	50 %
publishing papers in indexed journals	15 %
Minor projects – ongoing	28
Department interested for major project	08
Institutional out come	
within department positive atmosphere and communication increased	
Special OPDs	One (1Proposed)
Books proposals	Three
Processes	Four
Products	Five

**9. DISCUSSION**

Research as a necessary part of institutionalized academic learning and training at post-graduate level of Ayurvedic education has yet to take a desirable shape. Lack of adaptability of the system having different paradigm is the biggest challenge faced by the policy makers and the administrators.

As in most Ayurvedic colleges the ARC observed that discussion with the faculty on research caused a sense of anxiety in most whereas there was indifference by some or even a sense of disdain by few.

Research as an accepted tool for learning, growing and training was lacking. The ARC made efforts to identify basic issues and looked for solutions from within. ARC activities were focused on bringing in a positive environment and acceptance of research as a desirable rather than shunned form of academic development.

Most challenging areas were about bringing in objectivity and learning to evolve methodologies.

With right leadership and efforts the performance parameters provided direction for ARC activities in a measurable manner. The ‘Manthan Model’ as applied to an academic institute helped identify five Ps, namely Publication [P1], Projects [P2], Process & Procedures [P3], Products [P4] and Patent [P5] as a part of academic research. The formats as a part of ‘Manthan’ process helped to measure individual and group efforts. Though variable individually the ‘Manthan’ served the purpose well with positive outcomes for the institute.

Practically every ARC meeting tried to stimulate new ideas to provoke thought processes. Of several ideas the faculty could help initiate several activities either individually or jointly. Several faculty members responded with their own out of the box thinking that were encouraged. In several cases the ARC could bring in confident that research discussions and deliberations increased teaching and training capabilities. This was more obvious when ARC could contribute to expanding clinical activities and help develop areas to focus on clinical research. Carl Rogers famous for his innovative ‘Client-centered therapy’ applied the same to education and said that education is "facilitation of learning" and educator is "facilitator of learning" thus bringing in a to recognize and accept his own limitations [Rogers CR, 1969]. The ARC methodology identified with the faculty to recognize and overcome research related issues and thereby helped to foster their individual capabilities.

Ayurved compendium Charak Samhita explained that teachers should be with much practical experience, with hands on knowledge, communicates far more effectively. They should be well equipped with every essential tool [Charak Samhita, 1984]. The four desirable factors in teachers namely, ‘warmth, enthusiasm, use of discovery-learning methods, and high level of cognitive organization’ are also qualities of teachers [Gage NL, 1972]. Manthan process helped many faculty members to adopt changes. This in turn helped them to practice new teaching styles and improve teacher student relationships. Faculty reported that their confidence is increasing and their fear for research is decreased.

These results suggest that motivation and appreciation process helped to improve performance both at individual and institutional levels. The outcome showed that teachers’ knowledge about research grew during the whole process and that their attitudes to research became more affirmative. ARC approach helped the faculty to become aware of research opportunities in their own subjects of teaching that were not thought earlier. Efforts by ARC to improvise communication between faculty members and departmental collaborations received positive responses.

The ARC efforts encouraged new ideas; and in a way succeeded to inculcate collective ideas like write a book or plan increased number of collaborative projects. Ideas to develop or modify therapeutic tools or instruments generated lot of interest.

**What next?**

It must be noted that much desirable is yet to happen. Overall process was time consuming and required sustained efforts. It was very slow. This was mainly due to serious apprehensions. Quality considerations at all levels does remain an area of concern. This being a basic issue will need interactive mechanisms. ARC plans more number of interactive meets in coming times. ARC is now in a position to take specific qualitative and subject specific tasks. ARC activities in its next phase will accelerate the process towards the 5 performance parameters. ARC is now in a position to initiate major projects that will help build up research as a dynamic and inherent part of the academic activities.

The future success of ARC would be to become an ongoing institutional process running on its own in coming times with collective efforts and defined goals.

**10. CONCLUSION**

Change mechanism in an academic environment is challenge. The challenge is of greater significance when it requires paradigm shift in the basic attitude towards research as a part of faculty development as in case of an Ayurvedic institute faced with need to adapt to research integration. Formation of an ‘Ayurveda

Research Cell [ARC] in an Aurvedic institute helped the change process.

A well-studied plan to identify 5 Ps, five performance parameters, defined in terms of publications, projects, processes & procedures, products and patents provided orientation to the ARC activities. The preparation of three templates provided common interlinked objectivity for institutional research development.

'*Manthan*' as a management tool as applied to an academic institute could remarkably improve individual performance and institutional outcome. Positive attitude to research, acceptance of research as necessary part of academic activity, openness to new thoughts and recognition of need to look for methodologies and solutions beyond mechanical procedures were the most positive outcomes of this effort.

This unique, never before exercise in the academic field of Ayurveda can be used to overcome integration issues and to develop dynamic research roadmaps.

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