Conference Report

AYUSH research for New India: Vision and strategies

1. Background

The Center for Complementary and Integrative Health (CCIH), Savitribai Phule Pune University (SPPU), Pune, had organized a national symposium titled ‘AYUSH Research for New India: Vision and Strategies’ on 4th August 2017 to mark its inception. The National Health Policy (NHP) 2017 has strongly advocated mainstreaming the potential of AYUSH in public health. The symposium followed NHP recommendations which highlight strategies to meet national health goals through protocol driven integrative practices, creating scientific evidence for AYUSH practices and indicates the necessity for capacity building using the critical mass of competent professionals through quality education. Considering these points, the symposium focused on the value of AYUSH research in effective implementation of NHP 2017 for realizing the dream of New India. The function was attended by many eminent scientists and luminaries from diverse sectors including AYUSH, biomedicine, humanities and various other scientific disciplines.

2. The symposium

The inaugural session set the tone for the symposium. Dr. Bhushan Patwardhan, Director, CCIH, commended the Ministry of AYUSH and Department of Health Research (DHR) for various...
reforms and mentioned the need for developing strategy for effective implementation of NHP 2017 and a clear roadmap towards addressing health needs of New India. Dr. Soumya Swaminathan (then Director General of ICMR and Secretary of Department of Health Research) shared the ICMR’s Vision 2030 which is based on five important pillars viz. human resource development, data repositories development, practice and evidence interface, translation of evidence into policies and leveraging traditional knowledge. All are important in transforming India’s health scenario. She discussed the need for visionary and strategic plans for demonstrating impact of integrative health approaches. Dr. Rajesh Kotecha (Secretary, Ministry of AYUSH) addressed the gathering and updated AYUSH Ministry’s initiatives for quality improvement, transparency in governance and capacity building. He stressed upon the Ministry’s commitment for progress of the sector. The DHR and AYUSH Secretaries indicated a mutual commitment and steps for mainstreaming potential of AYUSH for a healthier India.

Dr. Nitin Karmalkar (Hon’ble Vice Chancellor, SPPU) chaired the inaugural session and assured support of the University for AYUSH research and training activities.

3. Thematic consultation

More than 100 experts representing AYUSH systems, public health, biomedicine and science disciplines attended the national consultative meeting to discuss vision and strategies for AYUSH research. The consultation covered important dimensions of AYUSH research in the following thematic groups:

1. National Health Policy Highlights for AYUSH Research
2. National Priorities for AYUSH Research
3. Strategies for Research Capacity Building
4. Research Strategies for AYUSH in Public Health
5. Strategies for Integrative Research and Translation

In order to make the best use of valuable time of invited delegates, the facilitators of the thematic groups worked with experts prior to symposium. The groups exchanged their thoughts and documents through online discussions and tele-conversations based on which background papers and notes were developed prior to the consultation and, strategies pertaining to respective themes emerged from this exercise. The key points of the thematic consultations are as follows:

3.1. National policy highlights for AYUSH research

This group included many senior scientists, and senior officials of the AYUSH Ministry. The participants discussed development of implementation framework for NHP 2017 recommendations. Considering India’s rich tradition of medical pluralism, the group called for clarity in understanding of pluralism and integration. The group discussed broadly the strategies and principles for the promotion of AYUSH research. Mechanisms to improve understanding and cross talk between research councils and development of inter-departmental agenda were emphasized. A need for creating an alternate paradigm for research which is acceptable for modern community, development of a lexicon to communicate across scientific sectors was felt by the group.

Generation of evidence and research should be catered to the end user needs and increasing consumer demands. Strategies for end user oriented research felt as an important priority. Integration of healthcare services at local level with improved access is a pressing need. Research is also required for micro-level planning and implementation. It should prioritize augmenting quality, safety assurance system for services and products through a whole system approach considering the epistemology of AYUSH. The changing demographic transition calls for integrative health framework especially to address the challenge of non-communicable diseases. Research should prioritise studying classical medicines which are in use for a long time. Considering community practices, there is a need for tribal knowledge research and generation of evidence through systematic studies on documentation of clinical experiences. Research on sustainable production systems and value chains are important from the perspectives of consumers. Strategies for enhancing international collaborations and scientific publications are also required.

The group further discussed need and approaches for improving AYUSH and medical education, which is the foundation for quality research. Foundation, core and bridging courses within AYUSH systems and across the medical systems need to be designed. Innovative training initiatives like Vaidya-Scientist program must be encouraged.

3.2. National priorities for AYUSH research

The group focused on criteria to define research priorities and recommended that these priorities can be based on health statistics, unmet needs; focus on preventive and promotive aspects of health; boosting fundamental research, promotion of public-private partnership culture, increasing global acceptance and cost effectiveness of AYUSH systems.

The priorities may be categorised as research on health, concepts and drugs. Health research related priorities include data mining and clinical evidence building through documentation and its review by an independent committee. Research component should be interdisciplinary and follow whole system approaches with preventive, promotive and personalized medicine. The group recommended that research on selected actionable diseases should include ‘omics’ approaches for studying responses and adverse events of interventions and also to understand modern biology. Research areas should be prioritized considering strengths of AYUSH systems in preventive strategies for Non Communicable Diseases and healthy ageing as well as promoting maternal and child health. Acknowledging the history of clinical practice of AYUSH systems, reverse pharmacology and reverse pharmacogenomics approaches should be adopted.

Several other areas discussed as research priorities were quality of life improvement, studying taxonomy of diseases, integrative approaches among AYUSH systems and environmental impacts on health and disease, research on Ayurveda concepts (Dosha, Dhatu Ojas), pharmacological profiling of concepts of Rasa, Dravya, Guna and Karma, studies on Aushadhi that go beyond drugs and explore effects of Satavayaja and Daivayayapashraya Chikitsa and research on ‘Ayurmetrics’; measurement and validation of parameters is needed for clinical research of Ayurveda. Developing guidelines for reporting research is one of the important priorities. The group also discussed initiating research in research methodology, and development of guidelines for reporting AYUSH research as one of the priority areas.

Drug related research that includes relevant modern approaches, probing into concepts of plant biology through ‘omics’ approaches, chemobiology, phytoinformatics need to be initiated in the context of Ayurveda understanding. The lessons from projects like New Millennium Indian Technology Leadership Initiative and Science Initiatives in Ayurveda suggest need of interdisciplinary approach as a research strategy.

The experts recommended that there is a need for capacity building in research methodology and innovative research methods. A task force and research review committee should be formed for fast track co-ordination.
3.3. Strategies for research capacity building

The group included researchers, clinicians and academicians. They discussed initiatives and approaches of research capacity building for institutions and research capabilities related to enhancing skills of available human resource. The experts suggested having a national resource center for Ayurveda research as a nodal agency for research governance that will operate via a hub and spoke model. The Center will have a dynamic scientific advisory body for training of researchers. Trainings are to be made mandatory for all research guides. Inter-departmental coordination within Institutes will impact effective research. A policy and strategy for long term, continuous training of human resources needs to be planned.

Few experts also felt that research cannot be a compulsion. Research capacity building should include processes for developing research aptitude, and training in transdisciplinary research approaches. Training modules for diverse research areas and cadres of personnel should be developed. The system must provide incentives and career opportunities to researchers. The group appreciated the current PhD fellowships scheme initiated by AYUSH Ministry. This scheme is sure to motivate students for research and also provide them an opportunity to pursue research in mainstream science institutes. The fellowship programs for AYUSH researchers and basic sciences are needed to promote scholarship and research capacity building.

3.4. Research strategy for AYUSH in public health

The group included academicians, clinicians, and policy makers. The participants discussed policies, case studies, experiences, and models of public health in the perspective of AYUSH concepts and philosophy.

The strengths of AYUSH systems should be implemented in public health perspective. It was acknowledged that people are already using AYUSH based practices. Anthropologically, there are strong linkages between great traditions of healing (like Ayurveda) and little traditions (local health approaches). AYUSH systems focus on preventive and promotive aspects and help to understand the root causes of diseases, which goes beyond conventional management. Each of the AYUSH systems has its own strengths but their combinations like Ayurveda and Yoga can improve national health indicators. There are various opportunities for the AYUSH sector to contribute to public health research. The NHP 2017 emphasizes on integrative medicine and traditional knowledge. The strengths of AYUSH colleges should be utilized in public health context. The co-location and stand-alone AYUSH facilities under NRHM are becoming effective in many states.

The priority areas in public health perspective are lifestyle and non-communicable diseases, anemia, ante-natal, post-natal and neonatal care, and geriatric care. Modern medicine has limitations in these areas and the strengths of AYUSH systems like health protection and promotion can be utilized. There is a need to explore concepts of Swasthavritta, Dinacharya, Ritucharya and Sadvritta for improving community health. The research strategies should involve documentation of practices and experiences of integrating AYUSH and public health. The experiences of NGOs, practitioners and government programs should be studied. Integration of AYUSH with public health needs a social science connection. It will be helpful to systematically assess public health needs and available resources.

The challenges include varied epistemological positions across disciplines (e.g. neonatal care), lack of rigor in research, lack of support from health department, incentives for AYUSH practices, negligible to absent policy level integration of AYUSH with public health department and limited exposure of AYUSH students in public health.

These challenges can be addressed through systematic and strategic efforts such as training for graduates regarding public health and research methodology, developing training modules, defining outcome measures and development of AYUSH protocols, which can be administered through public health system, establishing cohort studies for AYUSH interventions for health outcomes. There is a need to start teaching AYUSH concepts of Swasthavritta from school level. An AYUSH Epidemiology Network is needed to generate epidemiology data in the context of AYUSH concepts and construct.

3.5. Strategies for integrative research and translation

The group included scientists, teachers, practitioners and industry representatives. Integrative research as a multi-disciplinary approach to problem solving by involvement of multiple sciences was discussed. Integrative research comprises of modern sciences and AYUSH domains along with their vertical, horizontal and tangential integration. It includes translation of basic research into real therapies for patients, link the research laboratory to patients' bedside without any disconnect. Translation refers to 'Lab to Clinic to Industry to Policy to Population'. Thus, the group discussed challenges and possible solutions in domains related to academics, industry, clinical practices, public education and capacity building.

The challenges for laboratory sciences include reductionist approach, generating evidence, handling intellectual property (IP) issues pertaining to AYUSH and questions about pre-clinical evaluation of AYUSH products. The group felt that reductionist approaches are partially useful for target compound analysis, multi-disciplinary thinking/experimental design can address evidence related challenges, and a debate is necessary for finding appropriate models for pre-clinical evaluation. The group suggested that development of IP/regulatory advisory services is a separate topic and that needs a focused discussion.

The challenges for clinical application include how to bridge the gap in clinical evidence, derivation of appropriate methodologies, how to gain novel insights into disease patho-physiology through AYUSH treatment modalities, and development of rational combination therapies for non-communicable diseases like cancer and diabetes. The challenges about prioritization of research questions and define the level of evidence for clinical application were also discussed. The group recommended focus on AYUSH pharmacopeidemiology and Reverse Pharmacology, need for multi-disciplinary thinking, dialogue between different knowledge domains, focus on Ayurvedic Biology, and the need for openness to debate/regulatory challenges.

Considering the epistemology, the nature of evidence can be different as consensus, congruent and concurrent through clinical studies. The experts suggested development of common protocols for Ayurvedic practices through task forces.

The industry specific challenges are how to incentivise industry participation and how to improve issues pertaining to Ayurceutics. These can be addressed by creation of favourable regulatory environment, relook at national biodiversity policy, development of guidelines on AYUSH themed clinical research, encouragement of Industry-Academia collaborations, development of AYUSH clusters, adopting successful models for funding (e.g. DBT-BIRAC), and creating a separate Food and Nutrition Safety Board for industry specific issues.

The concerns about public education and acceptance are ensuring transfer of factual information to the public at large, mechanisms for safety tracking in the stake-holders, and creation of pool of current databases. This can be addressed by improving the quality of journals, promoting integrative research publications, providing prizes, recognition, scholarships for integrative research, appropriate coverage of research findings through media, publishing special issues of reputed journals and ensuring funding from private sector.
The group discussed measures for capacity building of AYUSH sector. Interdisciplinary research concepts should be introduced in curricula, training in research methodologies and organizing theme-based workshops can be important for the creation of interdisciplinary research networks/consortia.

4. Conclusion

The expert groups recommended that the NHP 2017 should be implemented with inclusive approaches and an open mind. The AYUSH Ministry has the best policy, dynamic leadership and the most favorable environment. It is time to demonstrate the potential of AYUSH systems in improving health indicators. Development of a critical mass of outstanding clinicians and researchers from contemporary health sciences and AYUSH systems has to be given priority. India has institutions and experts committed to AYUSH practices and research. Utilization of AYUSH in community is a dynamic phenomenon that needs continuous research. The challenge for all the stakeholders is to deliver outcomes and transform health status of people through AYUSH approaches. A strong science-policy-practice interface is needed for innovation and development of AYUSH today. The interface should drive research priorities, funding mechanisms, human resource development research with its translation from concepts to practices. An effective framework for implementation of the NHP 2017 will be crucial in achieving its expected goals.

The symposium was a modest effort to evolve a scientific network for the vision of a healthy New India. It witnessed unique confluence of three generations of AYUSH experts involving visionary thought leaders with rich experience and wisdom, teachers and scientists with high quality expertise and passion, and young students and researchers with enthusiasm and innovative minds representing the future generations.

The symposium was dedicated to late Dr. Sharadin Dahanukar in recognition to her seminal contributions to Ayurveda research.

Participants of thematic groups (Names in alphabetical order)

**National policy highlights for AYUSH research**

Shri. Ajit Sharan, Ex-Secretary, Ministry of AYUSH, New Delhi.
Dr. B N Gangadhar, Director, NIMHANS, Bengaluru.
Prof. Darshan Shankar, Trans Disciplinary University, Bengaluru.
Prof. M K Sridhar, SVYASA University, Bengaluru.
Dr. Manoj Nesari, Advisor, Ministry of AYUSH, New Delhi.
Dr. Narendra Bhatt, Indian Association for Study of Traditional Asian Medicine, Mumbai.
Dr. Rajesh Kotecha, Special Secretary, Ministry of AYUSH, New Delhi.
Shri. Ranjit Kumar, Joint Secretary, Ministry of AYUSH, New Delhi.
Ms. Shailaja Chandra, Ex-Secretary, Dept. of ISM&H (AYUSH), New Delhi.
Dr. Sowmya Swaminathan, then Secretary, Department of Health Research and then DG ICAR, New Delhi.
Shri Ranjit Kumar, Joint Secretary, Ministry of AYUSH, New Delhi.
Prof. T C James, Research and Information System for Developing Countries, New Delhi.
Dr. V M Katoch, Former Secretary, DHR and DG ICAR, New Delhi.
Dr. Vijay Bhatkar (Chancellor, Nalanda university).
Dr. Girish Tillu, CCIH, Pune (Facilitator).
Dr. P M Unnikrishnan, United Nations Nation (Facilitator).

**National priorities for AYUSH research**

Dr. Ashok Vaidya, Director, Kasturba Health Society-Medical Research Centre, Mumbai.
Dr. Arvind Chopra, Director, Center for Rheumatic Diseases, Pune.
Dr. Debrupad Chattopadhyay, Director, ICMR-National Institute of Traditional Medicine, Belagavi.
Prof. K Sathyamoorthy, Director, School of Life Sciences Manipal University, Manipal.
Prof. Kalpana Joshi, Head, Biotechnology, Sinhgad College of Engineering, Pune.
Dr. Nirmala Rege, Professor, G S Medical College and KEM Hospital, Mumbai.
Dr. Ram Vishwakarma, Director, Indian Institute of Integrative Medicine, Jammu.
Dr. Rama Jaysundar, All India Institute of Medical Sciences, New Delhi.
Dr. S P Thyagarajan, Sri Ramachandra University, Chennai.
Dr. Passang Topchen, Central Council of Tibetan Medicine, Dharamsala.
Dr. Supriya Bhalerao, IRSHA, Pune (Facilitator).
Dr. Uma Chandran, CCIH, Pune (Facilitator).

**Strategies for research capacity building**

Prof. Bhushan Patwardhan, Director CCIH, SPPU, Pune.
Dr. Jayant Deopujari, Ayurveda Physician, Nagpur.
Dr. M S Baghel, Professor of Ayurveda, Jaipur.
Prof. Medha Deshpande, Ex-Professor of Economics, Pune.
Dr. Pawan Kumar Godatwar, Professor, National Institute of Ayurveda, Jaipur.
Dr. Sanjeev Rastogi, Professor, Govt. Ayurveda College, Lucknow.
Prof. Sharad Deshpande, Former Tagore Chair Professor, IIAS, Shimla.
Dr. Tanuja Nesari, Professor, All India Institute of Ayurveda, New Delhi.
Dr. Vishnu Joglekar, Professor of Ayurveda, Pune.
Dr. Kishor Patwardhan, BHU, Varanasi (Facilitator).
Dr. Sriranjini Jaideep, MSRISA, Bengaluru (Facilitator).

**Research strategy for AYUSH in public health**

Dr. Aarti Nagarkar, Asso. Professor, ISHS, SPPU, Pune.
Prof. Anita Kar, Director, ISHS, SPPU, Pune.
Dr. Abhay Kudale, Asst. Professor, ISHS, SPPU, Pune.
Dr. K Satya Lakshmi, Director, National Institute of Naturopathy, Pune.
Dr. M D Gupte, ICMR Chair in Epidemiology, Pune.
Prof. R K Mutatkar, The Maharashtra Association of Anthropological Sciences, Pune.
Dr. Rajesh Dixit, Scientist, ACTREC, Mumbai.
Mr. Suresh Jungari, Asst. Professor, ISHS, SPPU, Pune.
Dr. Umesh Tagade, Asst. Director AYUSH, Maharashtra State, Mumbai.
Dr. Nilangi Sardeshpande, Pune (Facilitator).
Dr. Sarika Chaturvedi, CCIH, Pune (Facilitator).

**Strategies for integrative research and translation**

Dr. Angeline Jeyakumar, Asst. Professor, ISHS, SPPU, Pune.
Dr. Ashwinikumar Raut, Director, Kasturba Health Society-MRC, Mumbai.
Dr. C K Katiyar, CEO Healthcare Emami Ltd, Kolkata.
Dr. G G Gangadharan, Director, M S Ramaiah Indic Centre for Ayurveda, Bengaluru.
Dr. H S Palep, Dr Palep’s Medical Research Foundation.
Dr. Lal Hingorani, CMD, Pharmanza Herbals, Vadodara.
Dr. Manish Gautam, Scientist, Serum Institute of India, Pune.
Dr. Pulok Mukherjee, Professor, Jadavpur University, Jadavpur.
Dr. Rama Vaidya, Reproductive Endocrinologist, Kasturba Health
Society-MRC, Mumbai.
Dr. Urmila Thatte, Professor and Head, Clinical Pharmacology,
SGSMC and KEMH, Mumbai.

Dr. Geetha Krishnan, Medanta, New Delhi (Facilitator).
Dr. Hrishikesh Rangnekar, Pune (Facilitator).
Dr. Santosh Dixit, Prashanti Cancer Care Mission, Pune (Facilitator).

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Santosh Dixit.

Girish Tillu
Vaidya Scientist Fellow,
Center for Complementary and Integrative Health,
Savitribai Phule Pune University,
Pune – 411007, Maharashtra, India
E-mail: gtillu@gmail.com

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