

Recommendations of National symposium on “*Integrative Medicines and Health: From Basic to Translational Research*”

Anupam Guleria¹, Krishna Mohan Poluri², Sunil Kumar³, Dharmendra Kumar Tiwari¹,
Sandeep Kumar Singh¹, Shilpy Sharma⁴, and Dinesh Kumar^{1,*}

¹Centre of Biomedical Research, SGPGIMS, Raibareli Road, Lucknow, India

²Department of Biotechnology, Indian Institute of Technology, Roorkee, Uttarakhand, India

³Faculty of Biosciences, Institute of Biosciences and Technology,
Shri Ramswaroop Memorial University (SRMU), Barabanki, India

⁴Department of Biotechnology, Savitribai Phule Pune University (Formerly University of Pune),
Pune, Maharashtra, 411007 India

*Corresponding Author's Email: dineshcbmr@gmail.com

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Integrating natural healthcare systems with evidence-based medicine is an emerging approach to help people with different intractable and chronic clinical conditions such as cancer, diabetes, and many other neurological, respiratory, cardiovascular, and autoimmune diseases. The approach also referred as integrative medicine has the potential to improve the quality of life and help in achieving and maintaining physical, emotional, and spiritual health. Translational Biomedical Research Society (TBRS) founded in the year 2019, strives to promote communication and integration of traditional and standard healthcare systems through bridging the gap by creating a dialogue. Working in this direction, TBRS organized a national symposium on “*Integrative Medicine and Health: From Basic to Translational Research*” during December 4-6, 2020. This meeting was jointly organized by the Centre of Biomedical Research (CBMR), Lucknow and Faculty of Biosciences Institute of Biosciences and Technology, Shri Ramswaroop Memorial University (SRMU), Barabanki, UP through online mode. The purpose of the symposium was to bring conventional and complementary approaches together for developing holistic healthcare managements to ensure healthy lives for all at all ages. The meeting was attended by several stalwarts in the field of basic and applied biomedical research, healthcare practitioners, clinical researchers, eminent young scientists

and students (starting from undergraduate to PhD level) and involved significant deliberations that emphasized on the need of inclusion of natural healthcare systems to modern medical care system through evidence based translational biomedical research (as depicted in **Figure 1**).

The inaugural session of the symposium was graced by the presence of eminent scientific dignitaries and healthcare practitioners including Professor Alok Dhawan (Director, CBMR), Prof. MLB Bhatt (Former Vice Chancellor, King George Medical University, Lucknow), Prof. Rajavashisth Tripathi (BHU, Varanasi), Prof. Sanjeev Rastogi (Head, PG Dept of Kaya Chikitsa, State Ayurvedic College, Lucknow), Prof. Vikas Agarwal (Dept. of Clinical Immunology, SGPGIMS, Lucknow), Dr. Gaurav Pande (Dept. of Gastroenterology, SGPGIMS, Lucknow) and Padmashree Prof Ramakrishna V Hosur. The keynote lectures were delivered and detailed comprehensive discussion happened on various aspects of integrative medicines and possible roadmap for their use in routine clinical settings. The key recommendations from the dignitaries suggested during the symposium were following:

- 1 Integration of traditional medicine systems such as Ayurveda, Unani, Siddha, and Homeopathy to the

modern scientific research system is an exquisite way for the management of mechanistically complex life style diseases including a range of autoimmune inflammatory diseases. Therefore, University Grant Commission (UGC) should include a mandatory/ elective course on herbal / ayurvedic medicines and their integrative use in modern medicine at every level of UG/PG and PhD in all Life Sciences schemes to promote the research on integrative medicines. This will further attract young minds to choose research in integrative medicine as one career option.

- 2 There is need of training Ayurvedic graduate and post-graduate students in different aspects of biomedical research. For this, it was suggested that national funding agencies should start fellowship-based short-term exchange training programs between selected Ayurvedic institutions and advanced biomedical research Institutes of the country.
- 3 There is need to start faculty exchange program

between identified academic universities and research institutions where the faculties may be given an exposure to cross disciplines for mutual learning.

- 4 Modern scientific tools are required for developing scientific evidences underlying efficacy of Ayurvedic and other natural healthcare systems in addition to evaluating their safety and compliance aspects at preclinical and clinical levels. In this regard, there is need of establishing translational biomedical research labs well equipped with advanced experimental tools and techniques for developing evidence based integrated medicines for their worldwide use.
- 5 Depending upon the epidemiology, the leading research institutions and advanced research centers of the country (including CBMR) should set up AYUSH labs for conducting research and developing human resource in the interdisciplinary aspects of integrative medicines.

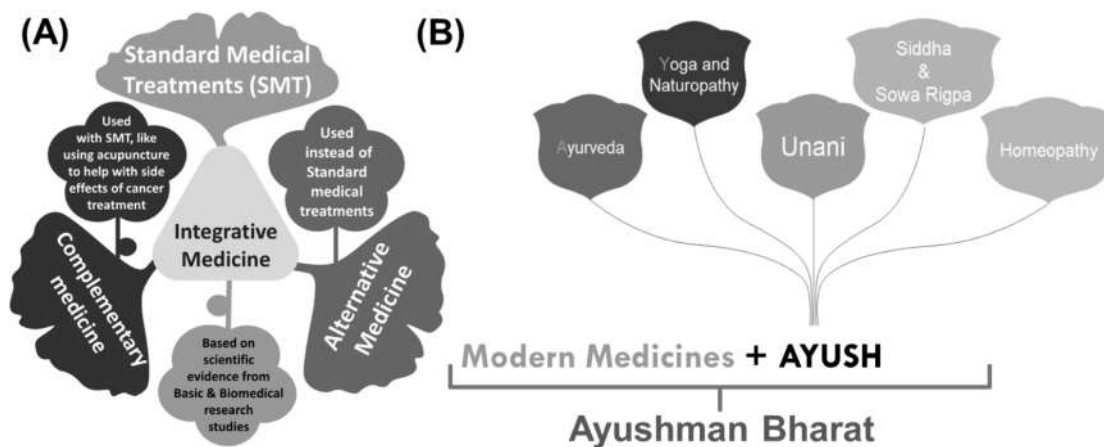


Figure 1: (A) Schematic depiction of Integrative Medicine (as per the details available on the Website of NIH-National Cancer Institute: <https://www.cancer.gov/about-cancer/treatment/cam>). (B) Integration of AYUSH systems of healthcare management with modern medical care systems for progressing towards Ayushman Bharat mission.

On the first day of the Symposium, Dr. Abhay Narayan Tiwari (Secretary Arogya Bharti, Avadh Prant) delivered his presentation on the importance of *Swarnaprashana* (- An Ayurvedic Immunization Programme for boosting Immune system) during the process of growth and development in children for the benefits of improving

immunity, intellect, digestion, metabolism, fertility, skin texture, physical-strength, and life-span. The second day of the symposium started with the keynote address of Prof. Uday Chand Ghoshal (Dept. of Gastroenterology, SGPGIMS, Lucknow) about image recognition artificial intelligence to detect a specific disease and how it is

revolutionizing the field of medical diagnostics through improving the diagnostic and prognostic screening of patients and automatically prioritising urgent cases. On third day of the symposium, meeting was presided by Padmashree Prof. Ramakrishna V. Hosur who emphasized the use of herbal mixtures with life style interventions to address all the psychophysiological needs of the individual. Further, he introduced a new terminology i.e. herbalomics – a new science which deals with studying the holistic (i.e. physical, emotional, and spiritual) aspects of integrative medicines. Dr. Dinesh Kumar (President TBRS) stressed on the use of Ayurvedic medicines for the treatment of diseases which often occur in the middle or late age of a person and involve epigenetic changes (i.e. altered gene expressions without a change in the genotype due to variation in DNA methylation, histone modification, chromatin remodeling, and altered expressions of micro RNAs (miRNAs; refer to small non-coding RNA molecules that “silence” or stop the functioning of mRNA). Varying environmental factors, diet (*ahara*), sleep (*nidra*), exercise (*vyayama*), education (*spiritual*), and stressful life events (*vichara*) and social connectivity cause epigenetics modifications and influence the person’s phenotype (*vikruti*, a state of imbalance or abnormal phenotype). Epigenetic changes can be systemic or local (i.e. at the level of tissue or organ) and lead to different kinds of diseases such as cancer, cardiovascular, respiratory, neurological and rheumatic diseases. Ayurveda aims to exquisitely restore the healthy phenotype (i.e. true self or inherited traits) through suitable corrections in the epigenome. The role of epigenetics changes in the pathogenesis of metabolic diseases was also emphasized by Prof. Rajavashisth Tripathi (BHU, Varanasi). He also talked about the importance of gut microbiota in mediating these changes.

The symposium also provided a platform for undergraduate and graduate students to interact with biomedical scientists, medical doctors and clinical researchers and exposed them to the recent developments in the medical science and Ayurveda. During TBRS-2020, TBRS-Award for “research excellence in Biomedical sciences” has been conferred to Prof. Sanjeev Rastogi (Head, PG Dept of Kaya Chikitsa, State Ayurvedic College, Lucknow), Dr.

Manishi Mukesh (Principal Scientist, National Bureau of Animal Genetic Resources (NBAGR), Haryana; and Dr. Krishna Mohan Poluri, Associate Professor, Department of Biotechnology, Indian Institute of Technology Roorkee (IIT-Roorkee), Uttarakhand. Apart from these, best performer awards were presented in the oral presentation, poster presentation and science quiz categories to young scientists, research scholars and UG/PG students for their research aptitude, and for motivating the younger generation to pursue a research career in the area of integrative medicine.

Concluding remarks

In conclusion, the symposium provided an interdisciplinary platform for researchers, biomedical scientists, and healthcare practitioners to present and discuss about the complimentary strategies to improve the efficacy of the regular allopathic medication. In the year 2020, the whole world faced an unprecedented situation arose due to SARS-CoV-2 pandemic. Despite worldwide efforts to contain it, the pandemic spread all over the world (with more than 2.31 million deaths as of February 05th, 2021 as per WHO report; <https://covid19.who.int>) and imposed an unwavering commitment – from the scientific community – to harness all knowledge systems available globally to combat such dreadful pandemics in future. India has a rich heritage of traditional medicine systems such as Ayurveda, Unani, Siddha, and Homeopathy. However, the mechanistic understanding about the biological activity of majority of these formulations is still lacking to reinforce their integration to modern care systems. Further, the safety and efficacy (in addition to dose and quality parameters) data for majority of these traditional medicines is far from sufficient to meet the criteria needed to support their world-wide use as a pharmaceutical (or nutraceutical) product. Therefore, it is important to establish the scientific rationale for their world-wide therapeutic use, especially in the management of critical illnesses. For this, there is an unmet need of interdisciplinary collaborations between the biomedical scientists, clinical researchers and healthcare practitioners to create scientific evidences for integrative use of traditional and modern care systems. This symposium paved a way towards this noble objective of social impact.