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Role of Multidisciplinary Approach in Research Innovation in *Ayurveda*

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Abstract: ***Ayurveda works on true health care rather just providing disease management only. In today's scenario there is massive rise in scenario of antimicrobial body resistance and Ayurveda can provide the best approach of defending ourselves. But the Research in field of Ayurveda is at the level of infancy which can be matured up by multidisciplinary approach in field of Ayurveda. Ayurveda Research will always be at margins but by adopting few measures, it can go beyond the boundaries like new innovative therapeutic approaches which are not earlier mentioned in Samhitas must be worked on along with a joint effort of Ayurveda physicians, scientists from other areas, data managers and engineers for new instrumentation and tools development. The articles and ideas should come out from the published section to incorporate section and a cumulative effort to make that idea worldwide should be worked upon. This can bring out the outcome which is cost effective for public, and which is centrally focused on patient centric approach. The nano-technology in collaboration with Ayurveda can bring such wonderful outcomes in form of Ayurveda Medicinal products. The Genomics branch of science can help in resolving many hidden genetic concepts of Ayurveda like Matrujadi Shad Bhavas that can be helpful in treating many genetic diseases. This paper highlights the role of multidisciplinary approach in field of Ayurveda Research so that we can gain the future territories of Ayurveda.***
Keywords: Ayurveda, Genomics, Multidisciplinary, Research.

I. INTRODUCTION

Ayurveda is one of the traditional systems of medicine that practices holistic principles primarily focused on personalized health which originated in India. *Ayurveda* is commonly referred as 'Science of Life' because the Sanskrit meaning of "*Ayu*" is life and *Veda* is science or knowledge.[1] *Charaka Samhita, Sushruta Samhita* and *Ashtanga Hridaya* of *Vagbhata* are main classics, which give detailed descriptions of over 700 herbs and 6,000 formulations. *Madhav Nidan* (~800 AD), a diagnostic classic, provides over 5,000 signs and symptoms.

Life in *Ayurveda* is conceived as the union of the body, senses, mind and spirit. The concept of *Prakriti* or individual nature has a central role in *Ayurveda* therapeutics. With over 400,000 registered *Ayurveda* practitioners, the government of India has a formal structure to regulate its quality, education, and practice.[2] Innovation is rarely a solo act.In order to fuel up the breakthrough innovations increased use of multidisciplinary team work is required.*Ayurveda* works on true healthcare rather just disease management. So there are lots of hidden research possibilities within it.

II. LITERATURE REVIEW

Research methodology is a way to systematic collection, analysis, and interpretation of data to solve a research problem. India does not need to prove the validity of *Ayurveda* to its people, authorities and own scientific community because it is a recognized traditional medical system of the country.[3] There is a need of fundamental research in *Ayurveda* to refresh and upgrade the tremendous knowledge diluted through time predominantly during the British rule. This kind of research will certainly upgrade the fundamental knowledge of *Ayurveda*, which will be benefited not only to Indians but also to foreign nationals. This will assure *Ayurveda* to be practiced with its whole possible and allowed to gain wide recognition. Research is a process that converts data into information, information into knowledge, and knowledge into wisdom. In the present scenario[4], *Ayurveda* Research are failing in this aspect as these are unable to disseminate the knowledge gained from the exercises.

The glorious past of the research methodology of *Ayurveda* is based on the tools of examination known as *Pareeksha* and inspired from the philosophical term *Pramaana*, which refers to the evidence.[5]

These tools of the examination include the direct observation (*Pratyaksha*), the inference (*Anumana*), and the authoritative testimonies or literature (*Aptopadesha*). The modern-day research also depends on these three basic tools whose efficacy has been augmented by the utility of the scientific and technologically innovative devices.[6] These methods of investigations have been planned to develop the backbone of the *Ayurveda* system in the form of basic principles under the fundamental research. The quality research on *Ayurveda* basics with advanced scientific techniques can expand the knowledge and path of current medical science. Predominantly, drug research done in the field of *Ayurveda* in the last six eras have not enriched the *Ayurveda* understandings or *Ayurveda* concepts.[7] However, this research has created a better understanding of Ayurveda by the modern medical fraternity. Now, it is the time to define *Ayurveda* itself that whether the use of herbs only is *Ayurveda* or the use of herbs and other treatment sense modality as per *Ayurveda* principles is actually the *Ayurveda.* The research methodology should be planned and adopted accordingly.[8]

At the time of determining research methodology in *Ayurveda* following things should be kept in mind[9]-

1) Basic differences between *Ayurveda* and modern science should be considered when designing the research protocols.
2) The main concern must be given to the classical approach of *Ayurveda.*The cataloguing and analyzing of original manuscripts related to *Ayurveda* is need of time. Validation and Restabilization of traditional facts and theories scientifically can open new doors in Research field.
3) Research protocols should be designed on the basic concepts of *Ayurveda,* i.e., *Prakriti, Agni, Dhatu, Srotas, Rasayana, Shat-kriyakala, Agni bala, Oja bala, Mano bala,* etc.
4) The Research work should involve experts both from *Ayurveda* and biomedical specialties.
5) The holistic and integrative approach involving body, mind, and spirit should be considered for research.
6) Before starting the clinical studies; a complete knowledge about diagnosis of the disease, materials to be used, process to be adopted, and accurate dosage form is highly needed.To formulate new drugs from *Ayurveda* texts and prove their efficacy and to standardize the drug manufacturing process can enhance the Research process.
7) The approach of personalized medicine should be followed during treatment. Research methodology in the advancement of *Ayurveda* varies with each assignment or project. The major areas of research can be divided into five major areas, namely Literary, Fundamental, Drug, Pharmaceutical and Clinical research. Although there is no single way to conduct research, certain methods and skills can make research efforts more efficient and effective.[10]

III. ENCOURAGEMENT OF RESEARCH ON *AYURVEDA* FUNDAMENTALS

Fundamental research needs to be done in the fields of *Ayurveda* Physiology, Pathology, Pharmacology (fundamental and clinical) and Pharmaceuticals. The basic concept of *Srotovijnana* (knowledge of channels) as a main matrix of *Ayurveda* biology has been highlighted both by fundamental and applied knowledge.[11] A living body is a system which comprised innumerable channels designed as an inner transport system for a variety of functions. The health and disease depend on the system of *Srotas,* which is prone to lose its function by various factors including erroneous food and lifestyle. *Ayurveda* developed a therapeutic technology for *Samshodhana* (bio-purification) familiarly known as *Panchakarma* therapy.[12] *Ayurveda* can be better understood through Philosophy and Physics rather than modern Biology because the study of the full spectrum of the *Srotas* can help to define the phenomenon of relationships in structural and functional biology.Moreover, the fundamental concept of *Ayurveda* for a perfect health including restoration and maintenance can also be understood through quantum theory.[13]The fundamental research in *Ayurveda* caters demands of the society and the medical fraternity; the modern scientific research has been initiated in *Ayurveda* in the field of basic principles. The aim of basic research in *Ayurveda* is to explore the scientific innovations and opportunities in fundamental concepts of *Ayurveda.* The fundamental research includes replacement of faith and suppositions with the scientific reasoning complimented with the facts and figures. The objectives of the investigation in the fundamental research are categorized into the human body (*Purusha*), the disease (*Vyadhi*), the medicine (*Aushadha*), and the right time for action (*Kriyakala).*[14]

There is a vast scope for research in all the eight branches of *Ayurveda* from an interdisciplinary perspective. In each of this collaboration with other basic and allied sciences some research has been done, but no noteworthy outcomes are noted.[15] Many plausible important areas of *Ayurveda's* unique theories are till date unexplored. Hence, a totally new aspect should be adopted for research in *Ayurveda* science and therapeutic framed specifically. These aspects need collaboration with experts of *Ayurveda,* basic sciences as well from contemporary and allied sciences.[16] Some areas for interdisciplinary collaboration in the branches of *Ayurveda* are listed below. Fundamental science (*Samhita Siddhant*) Conceptual and explanatory or interpretive study in the basics, namely *Dosha, Dhatus, Mala, Agni, Ama. Ojas and Srotas, Marma, Prakriti* as well in *Rasa-Guna-Veerya-Vipak-Prabhava* is needed.

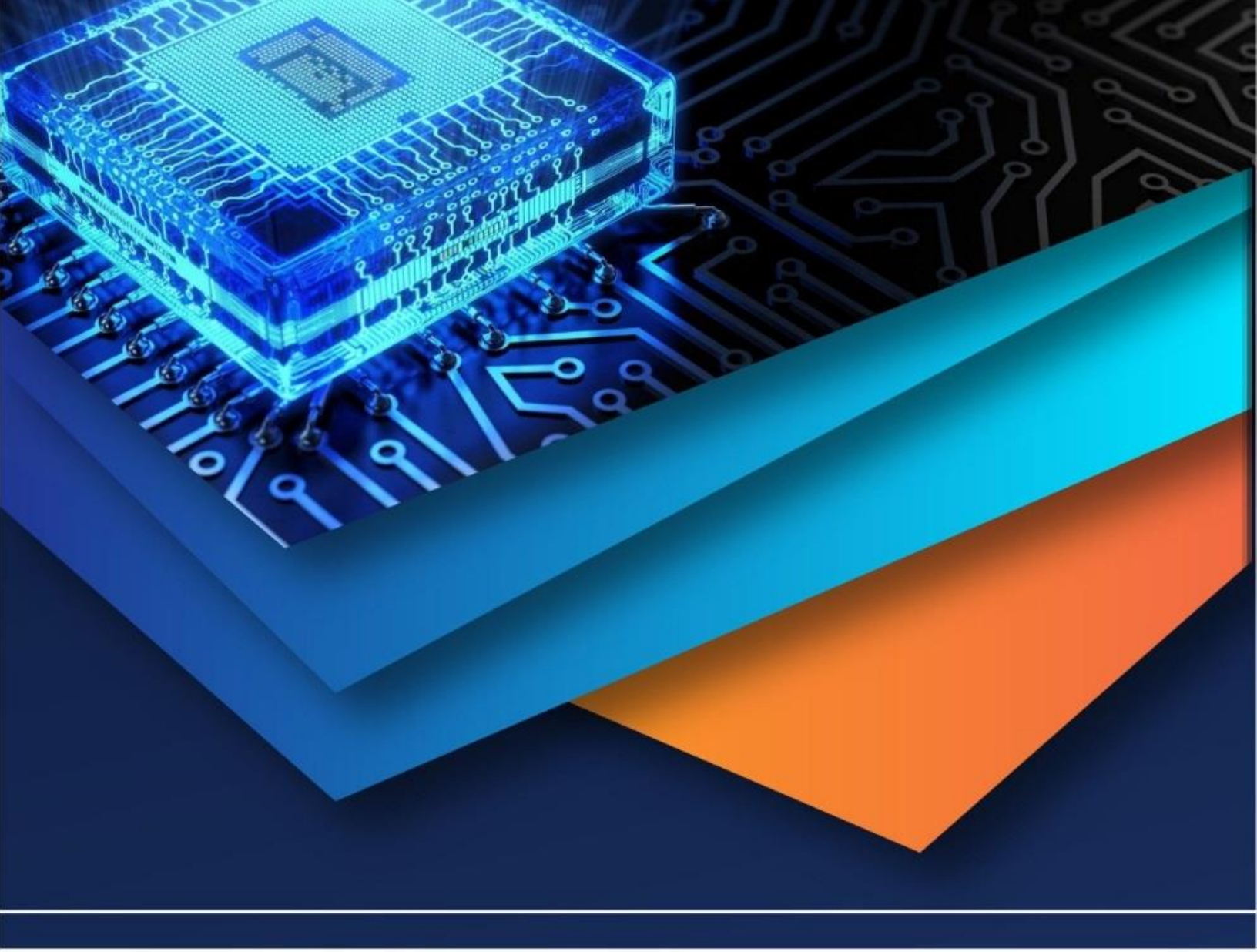
This will help to create an appropriate interface for the development of specific research methods for easy understanding. Pharmacology (*Rasashastra* and *Bhaishajykalpana*) Inclusion of knowledge about botanicals,[17]zoological, and mineral sources with respect to physiological, pathological, toxicological aspects is the specialty of *Ayurveda. Ayurveda Vaidya's* use various compositions, formulations, and dosage forms with knowledge of therapeutic and untoward effects of these substances. In the area of drug research by adoption of reverse pharmacology (clinic to laboratory) approach one can understand mechanism of action of the *Ayurveda* drug at various biological levels and optimize efficacy, safety, and acceptability of that drug.[18] By interdisciplinary involvement of pharmaceutical science, molecular level action of Herb-mineral preparation can be targeted.[19] In the past studies, many medicinal herbs are evaluated in this manner. Few examples are anti-stress, anti-anxiety, apoptogenic activities of specific medicinal plants.

IV. CONCLUSION

Today's *Ayurveda* physician must have a creative communication with medical professionals from different systems of medicine. However, many of the *Ayurveda* students lack a robust functional theoretical foundation. There is a lack of exposure to recent advances and to disciplines like public health, cell biology, epidemiology, biomedical engineering, pharmaceutics, clinical pharmacology, immunology, statistics, and information technology.[20]As in contemporary research methodology all these disciplines play a crucial role, integrated approach in these areas is required. Interdisciplinary approaches between the contemporary and *Ayurveda* line of treatments will help to achieve holistic health strategy which will be a step towards the achievement of global recognition. Integration with other AYUSH systems like Homeopathy, Unani, Siddha, Sowarigpa, Yoga must be also considered. allied therapies like physiotherapy integrated with *Panchakarma* and *Yoga* can be beneficial in disease management. A critical framework is required to facilitate cross-disciplinary collaborations toward practical applications in field of Ayurveda Research. The mutual exchange of resources between academicians, clinicians and people from various departments can be directed toward growing the Ayurveda research program for mutual benefit. To conclude, it is important to remember that today's interdisciplinary research often ends up as tomorrow's "traditional" discipline.

REFERENCES

[1] Semwal DK, Mishra SP, Chauhan A, Semwal RB. Adverse health effects of tobacco and role of Ayurveda in their reduction. J Med Sci 2015;15:139-46.
[2] Lad V. Ayurveda, the Science of Self-Healing: A Practical Guide. 2nd ed. New Delhi: Lotus Press; 1987.
[3] Jacqui W. Herbal products are often contaminated, study finds. BMJ 2013;347:f6138.
[4] Humber JM. The role of complementary and alternative medicine: Accommodating pluralism. J Am Med Assoc 2002; 288:1655-6.
[5] Basisht G. Exploring progression of Ayurveda. Ayu 2011;32:445-7.
[6] Baghel MS. Need of new research methodology for Ayurveda. Ayu 2011;32:3-4.
[7] Sharma PV, editor. Charaka Samhita of Agnivesha, Sutra Sthana, Ch. 11, Ver. 2. Varanasi: Choukhamba Orientalia; 1995. p. 114.
[8] Patwardhan B. The quest for evidence-based Ayurveda: Lessons learned. Curr Sci 2012;102:1406-17.
[9] Morandi A, Tosto C, Sartori G, Roberti di Sarsina P. Advent of a link between Ayurveda and modern health science: The proceedings of the first international congress on ayurveda, "Ayurveda: The Meaning of Life-Awareness, Environment, and Health" March 21-22, 2009, Milan, Italy. Evid Based Complement Alternat Med 2011;2011:929083.
[10] Singh RH. Integrative Medicine, Special Monograph. New Delhi: Choukhamba Surbharti; 2009.
[11] Hankey A. The scientific value of Ayurveda. J Altern Complement Med 2005;11:221-5.
[12] Jayasundar R. Ayurveda: A distinctive approach to health and disease. Curr Sci 2010;98:908-14.
[13] Sharma PV, editor. Sushruta Samhita, Sutra Sthana, Vol. 1, Ch. 1, Ver. 22. Varanasi: Choukhamba Visvabharati; 2013. p. 16.
[14] Patwardhan B, Vaidya AD. Natural products drug discovery: Accelerating the clinical candidate development using reverse pharmacology approaches. Indian J Exp Biol 2010;48:220-7.
[15] Vaidya AD. Reverse pharmacological correlates of Ayurvedic drug actions. Indian J Pharmacol 2006;38:311-5.
[16] Kola I, Landis J. Can the pharmaceutical industry reduce attrition rates? Nat Rev Drug Discov 2004;3:711-5.
[17] Sudha VB, Ganesan S, Pazhani GP, Ramamurthy T, Nair GB, Venkatasubramanian P. Storing drinking-water in copper pots kills contaminating diarrhoeagenic bacteria. J Health Popul Nutr 2012;30:17-21.
[18] Datta HS, Mitra SK, Patwardhan B. Wound healing activity of topical application forms based on Ayurveda. Evid Based Complement Alternat Med 2011;2011:134378.
[19] Dwivedi V, Anandan EM, Mony RS, Muraleedharan TS, Valiathan MS, Mutsuddi M, et al. In vivo effects of traditional Ayurvedic formulations in Drosophila melanogaster model relate with therapeutic applications. PLoS One 2012;7:e37113.
[20] Bhowmick TK, Suresh AK, Kane SG, Joshi AC, Bellare JR. Physicochemical characterization of an Indian traditional medicine, Jasada Bhasma: Detection of nanoparticles containing non-stoichiometric zinc oxide. J Nanopart Res 2009;11:655-64.



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