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FUNDAMENTAL CONCEPTS, MEDICATION, AND RESEARCH METHODS OF AYURVEDA

Dr. Naresh Lohiya[1]*, Dr. Devendra Singh Chahar[2], Dr. Rameshwar Lal[3] and Dr. Sankalp Sharma[4]

[1]M.D. Scholar Agad Tantra Department, P.G. Department of Agad Tantra, PGIA, DSRRAU, Jodhpur.
[2]Associate Professor & HoD Department of Maulik Siddhant PGIA, DSRRAU, Jodhpur.
[3]Assistant Professor & Department of Maulik Siddhant, PGIA, DSRRAU, Jodhpur.
[4]Assistant Professor Department of Maulik Siddhant, PGIA, DSRRAU, Jodhpur.

***Corresponding Author: Dr. Naresh Lohiya**

M.D. Scholar Agad Tantra Department, P.G. Department of Agad Tantra, PGIA, DSRRAU, Jodhpur.

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ABSTRACT

Ayurveda is an ancient Indian medicine system that has been used for thousands of years to treat various ailments. However, there is a lack of knowledge regarding the foundational concepts and medications of this system, as the Western medical system has reached a high level due to proven research and advanced technology. This review focuses on the basic concepts, medications, and research methods of the traditional medicine system, focusing on the fundamental principles of the Ayuda system. The primary purpose of this review is to provide a brief overview of the fundamental concepts and medicines of traditional medicine, as well as the recent advances in pharmacogenetics and pharmacovigilance of various herbal medicines.

KEYWORDS: Ayurveda methodology, research, rasayana, traditional medicine.

INTRODUCTION

Ayurveda is the oldest surviving traditional Indian medical system, rooted in a strong philosophical and experimental foundation. It is a discipline that focuses on a comprehensive view of health and individualized medical care. It is recognized as a comprehensive medical system that encompasses physical, psychological, philosophical, ethical, and spiritual wellness. Ayurveda views each cell as an important manifestation of pure intellect, which is why it is referred to as a self-healing science. Furthermore, herbal treatment plays a crucial role in this Indian traditional medical system, in addition to the self-healing philosophy. Around 70-80% of the global population uses unconventional herbal remedies for their treatment, as stated by the World Health Organisation. The public's interest in complementary and alternative medicine is mostly driven by the rise in side effects associated with synthetic drugs, the absence of definitive treatments for several chronic conditions, the high expenses of new medications, microbial resistance, and the emergence of new disorders. Ayurvedic medicine is highly effective yet, the mode of action, pharmacology, pharmacokinetics, and pharmacovigilance of many major Ayurvedic pharmaceuticals are not fully understood. Furthermore, the thorough understanding of the fundamental principles of Ayurveda is not widely accepted in scientific circles because of insufficient proof. Currently, there is a need to validate the fundamental concepts and medications of the Ayurveda system using advanced research methods, as the Western medical system has reached a high level due to proven research and advanced technology. Advancements in research methods are crucial for promoting Ayurveda.

Why is the Ayurvedic System of Medicine falling behind?

Ayurvedic medicine is generally more successful than allopathic treatment for most chronic conditions. Yet, Ayurveda's appeal is limited as most people worldwide favor modern medicine for its quick ailment alleviation over Ayurvedic remedies. An increasing number of individuals are turning to alternative treatments due to growing awareness of the potential toxicity of allopathic drugs and the high expenses associated with healthcare. Ayurvedic scientists should focus on improving the core competency of Ayurveda while maintaining its essential principles, instead of trying to compete with Western medicine. Several key factors contributing to the decline of Ayurveda are as follows.

Youthful Ayurvedic scholars, while eager, are uncertain about their perspectives on the future of Ayurveda. Furthermore, they are uncertain about how to effectively showcase their valuable study findings on Ayurveda. Only a few organizations possess a well-developed

research infrastructure dedicated to conducting unique studies in Ayurveda. We need proficient researchers with expertise in contemporary technology to carry out advanced and high-quality research in Ayurveda.

Biomedical Scientists often exhibit a lack of cooperation, and willingness, and harbor undue skepticism and bias. Over a thousand Ayurvedic postgraduates graduate annually and join the academic and professional fields. Only a select handful opt for a career as an Ayurvedic researcher.

The Ayurvedic teaching has remained unchanged for the past 50 years, and the texts have not been updated with new research approaches. These are some key issues that must be considered in Ayurvedic research for its progress.

Enhancement of Research Methods

Research methodology is the systematic process of collecting, analyzing, and interpreting data to address a research issue. India does not need to demonstrate the legitimacy of Ayurveda to its citizens, government, and scientific community as it is an acknowledged traditional medicinal system of the nation. A fundamental study on Ayurveda is necessary to revitalize and enhance the extensive knowledge that has been diminished over time, especially during the British colonial era. This research will enhance the foundational understanding of Ayurveda, benefiting both Indian and foreign individuals. This will ensure that Ayurveda is practiced to its full potential and gains widespread attention. Research is the systematic transformation of data into information, information into knowledge, and knowledge into wisdom. Currently, Ayurvedic research is struggling to effectively share the knowledge acquired from the studies.

Ancient methods of research in Ayurveda

Ayurveda's research methodology in the past was founded on examination tools called Pareeksha, influenced by the philosophical concept of Pramaana, which pertains to proof. The examination tools consist of direct observation (Pratyaksha), inference (Anumana), and authoritative testimonials or literature (Aptopadesha). Modern research relies on three fundamental instruments, whose effectiveness has been enhanced by the use of advanced scientific and technological devices. The investigations have been designed to establish the foundational concepts of the Ayurveda system through fundamental study. High-quality study on fundamental Ayurvedic principles using advanced scientific methods has the potential to enhance the understanding and progression of modern medical science. Drug research in Ayurveda during the past sixty years has mainly failed to enhance Ayurvedic knowledge or conceptions. These studies have enhanced the modern medical community's comprehension of Ayurveda.

Now is the moment to determine whether Ayurveda involves solely the use of herbs or if it encompasses the use of herbs along with other treatment methods based on Ayurvedic principles. The study approach should be carefully developed and implemented. When determining the research approach in Ayurveda, some factors should be considered. Consider fundamental distinctions between Ayurveda and modern science when developing research methodologies.

Prioritize the ancient method of Ayurveda. Research methodologies should be based on fundamental Ayurvedic ideas such as Prakriti, Agni, Dhatu, Srotas, Rasayana, Shatkriyakala, Agnibala, Ojabala, Manobala, etc. The research should include professionals from both Ayurveda and biomedical fields. Before commencing clinical trials, it is essential to examine a comprehensive and integrated approach that encompasses the body, mind, and spirit. A thorough understanding of disease diagnosis, materials, procedures, and precise dose forms is crucial. A personalized medicine approach should be implemented in treatment. The research approach in the progress of Ayurveda differs for each job or project. Research can be categorized into five main areas: literary, fundamental, drug, pharmaceutical, and clinical research. Various methodologies and skills can enhance the efficiency and effectiveness of research, even if there is no universally prescribed approach.

Promotion of research on Ayurvedic principles

Research is required in Ayurvedic physiology, pathology, pharmacology (both fundamental and clinical), and medicines. The fundamental and applied knowledge of Ayurvedic biology emphasizes the notion of Srotovijnana, which refers to the knowledge of channels. A live organism is a complex system with several channels that serve as an internal transport system for various activities. Health and disease are influenced by the Srotas system, which can be disrupted by variables such as incorrect diet and lifestyle choices. Ayurveda created a treatment method for biopurification called Panchakarma therapy. Ayurveda can be more comprehensively explained through philosophy and physics rather than current biology by examining the complete range of the Srotas to elucidate the concept of relationships in structural and functional biology. Ayurveda's core principle of achieving optimal health through repair and upkeep aligns with the principles of quantum theory.

Ayurveda's fundamental research meets the needs of society and the medical community, while the current scientific study has begun exploring underlying concepts in Ayurveda. The goal of basic research in Ayurveda is to investigate scientific advancements and possibilities in the core principles of Ayurveda. Basic research is replacing beliefs and assumptions with scientific reasoning supported by facts and data. The investigation in fundamental research is to categorize objectives into the human body (Purusha), the disease (Vyadhi), the

drug (Aushadha), and the appropriate time for action (Kriyakala).

Resolving disputes in Ayurvedic medicine

Ayurvedic treatments can sometimes have harmful consequences. An analysis of a random sample of professionally manufactured Ayurvedic medications bought online revealed that about 21% of them contained measurable amounts of lead, mercury, and arsenic. Rasa shastra medicines were about twice as likely as non-Rasa shastra remedies to contain measurable quantities of highly hazardous metals. Reports must be handled promptly to resolve the concerns and prevent additional harm to the legacy. Ayurvedic medications need to be thoroughly standardized before being marketed.

Advancements in personalized medicine through contemporary technology Ayurveda treatment focuses on holistic healing of the human body, while the Western medical system typically focuses on a curative approach. It is essential to develop a new medical system model by integrating both healing and curative approaches. Personalized medicine has the potential to significantly enhance the value of healthcare by predicting illness risk, halting disease progression, and optimizing therapy management. Advancements in pharmacogenetics and pharmacogenomics can assist healthcare providers in achieving personalized medicine goals. Personalized medicine is prescribing the appropriate medication for the particular ailment that is afflicting a single individual. This notion will enhance the efficiency of clinical studies by decreasing costs associated with side effects and ineffective medicine prescriptions for specific genotypes.

Enhancement of the quality of herbal medications

Ayurvedic Rasayanas such as Medhya, Jeevaniya, and Lekhaniya are mostly derived from herbal ingredients. Several herbs like Ashwagandha, Shatavari, Guduchi, Amalaki, and Bhallataka are recognized Ayurvedic Rasayanas that have been demonstrated to be immunomodulators. Adjuvants are necessary for weak immunogenic vaccinations, and Ayurvedic rasayanas may provide more effective and safer immunological medicines that can serve as adjuvants in these vaccines and cancer treatment.

Herbal extracts with medicinal significance are crucial due to their diverse structural and chemical properties. Over 120 unique phytochemicals derived from various plants possess the potential to act as life-saving medications. These chemicals were discovered by screening only 6% of all plant species using chemical and pharmacological methods. The National Institute of Health has initiated an in-depth study on anti-inflammatory properties found in turmeric, ginger, and Boswellia, utilizing insights from Ayurvedic practices. Traditional knowledge has been utilized to assess a variety of plants for their potential in cancer treatment. Furthermore, certain immunomodulating medications from traditional medicine offer new possibilities to enhance the range of therapeutic options.

Consistency in the chemical composition and bioactivity of herbal pharmaceuticals is crucial for their safe and effective usage, as quality is paramount for the safety and efficacy of plant-derived medicines. Ayurvedic remedies mostly consist of polyherbal mixtures, and ensuring effective quality control remains a significant concern. Currently, Ayurvedic medications have low acceptability in the foreign market. Procedures and techniques are necessary to analyze the content and potency of these medications (extracts or formulations). Therefore, it is necessary to ensure the consistent quality of Ayurvedic products.

CONCLUSION

The expense of health care is steadily increasing, making it difficult for many to afford health coverage. Medications are expensive for economically disadvantaged countries such as India and pose challenges in Western countries because of multiple adverse effects. The medicine should be considered as a final resort for treatment, with initial preference given to natural healing methods such as Ayurveda. Ayurvedic therapeutic methods like Panchkarma help prevent the emergence of disease. Ayurveda possesses numerous benefits, although it is hindered by little scientific data and inadequate study techniques.

Creating standards for methodology in Ayurveda demands significant effort from both scholars and practitioners who need to possess the required expertise and drive for the job. Ayurveda must maintain its uniqueness, or it will eventually become a historical footnote in the field of medicine. Research is time-consuming but essential for advancing Ayurveda globally. Working in a coordinated and unbiased approach can enhance Ayurveda. However, it is a harsh reality that current research has not yielded significant benefits for Ayurveda, as most of these studies are focused on integrating Ayurveda with modern bioscience. A sophisticated research technique is urgently required to validate Ayurvedic principles and treatments.

Allopathic and Ayurvedic therapies have very different approaches. Ayurveda is a holistic system that emphasizes maintaining and restoring health with minimal side effects, focusing on overall well-being. In contrast, allopathy primarily suppresses symptoms with numerous side effects due to its analytical approach to physiology. Allopathy significantly contributes to emergency medicine, diagnostic procedures, and surgery, areas where Ayurveda is not as advanced. Both systems must complement one another for the benefit of those who are ill. Ayurveda necessitates further research in the realms of basic principles and diagnostic methods rather than focusing on pharmacological research. Currently, the research technique of Ayurveda requires additional

developments to enhance the development and promotion of Ayurveda.

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