

## Ayurveda in the New Millennium: Emerging Roles and Future Challenges

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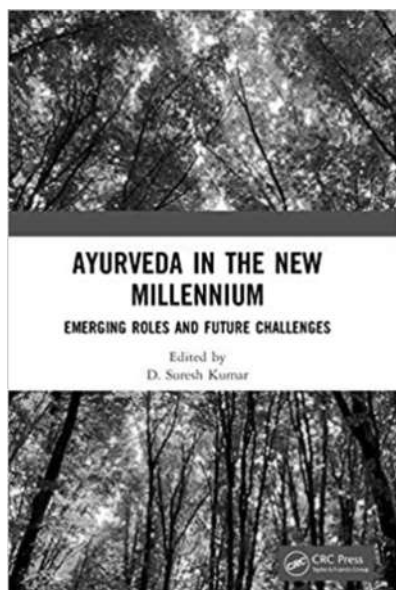
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This book has come at the right juncture i.e., ‘Third decade of third millennium’, because the entire human ecosystem is witnessing huge transformations due to the impact of SARS-CoV2 on various walks of life. The tagline of the book *Emerging Roles and Future Challenges* is contextual to the present pandemic where Ayurveda realised the challenge and emerged as a significant player.

The editor’s quote *Ayurvedo raksati raksitah (He who protects Ayurveda shall, in turn, be protected by it)* in the opening pages of the book, which is his version of the original Sanskrit phrase from Mahabharata and

Manusmriti i.e., *dharmo raksati raksitah (He who protects dharma shall, in turn, be protected by it)* may be understood as the editor’s conviction that, whose ever uphold the *Modus vivendi* advocated by Ayurveda, further protected and prevented from falling sick.

This book is contributed by 26 contributors having expertise in respective areas, and contains eleven chapters. The book attempts to account the progress of Ayurveda from past to present in various areas and tries to identify the blocks in Ayurveda to have a global reach. It further suggests pragmatic solutions to address them eventually to have a global reach.

The editor of this book is a zoologist by profession, born in Kerala which is a homeland of Classical Ayurveda, and completed his higher studies from BHU, which is a true depiction of “unity in diversity” (UNIty-diVERSITY) where all the field of science work in an integrated manner and place for Integrated Ayurveda. This may be the reason for the inner instinct of the editor to get attracted towards Ayurveda and to bring this perfect blend of different experts and their thoughts in a book form with a clear message of ‘Ayurveda for all’.

First Chapter highlighted the historical importance of Ayurveda and its course of growth over the time. Interaction and influence of Ayurveda on Unani, Siddha,

and Greco-Arabic medicine from the perspectives of their mutual benefits in terms of inclusion of new clinical entities, concepts and plants along with adoption of new dosage forms is also highlighted. The chapter finally call for revival of the culture of inquisitiveness to promote Ayurveda.

Various regulations concerning the commercial manufacture of Ayurvedic medicines is discussed in the second chapter. This chapter also discussed the Licensing rules, conditions laid down for classical and proprietary formulations, labelling of products, and Good clinical practice guidelines for clinical trials in Ayurveda, Siddha and Unani medicine (GCP-ASU). The chapter highlighted the need for revision of First schedule of Drugs and Cosmetics Act, 1940 so that other popular texts like *Vaidyamanôrama*, *Yogamritum* and *Cikitsâmañjari* may get inclusion in the list of prescribed texts.

Third chapter mainly dealt with various steps from procurement and pre-processing involved in the industrial production of important classical dosage forms. It is argued that modern production technologies affect the quality and efficacy of ayurvedic medicines. The author expressed his concern about, no systematic evaluation has been made to determine if, and to what extent, modern production and monitoring techniques influence the efficacy of ayurvedic medicines. The chapter called for standardization of manufacturing protocols. The Acts related to the manufacture of Ayurvedic medicines, especially the Drugs and Cosmetics Act, 1940 need to be amended so as to incorporate provisions for correcting this problem.

Chapter four detailed many quality control methods that are employed at present for assuring the quality of ayurvedic medicines and also expressed concern about persisting problems such as heavy metals in ayurvedic pills, souring of fermented liquids and irrational substitution of ingredients in formulae. Authors have highlighted that, thin-layer chromatography (TLC) technique is an inexpensive and sensitive tool for quality control of herbal medicines. The chapter concluded with an

emphasis on the need for the quality control of crude drugs and finished products and proposed that stability studies for the assessment of shelf-life of Ayurvedic drugs should urgently be done using physicochemical tests and fingerprinting techniques to maintain the quality of finished products.

In chapter five, scientific rationales for the use of 20 single herb remedies for variety of ailments, and also the role and importance of Anupana (co-administered adjuvants) in the modulation of single drug effect is discussed. The chapter concluded with a suggestion to generate evidence for the claims of single herbs through clinical studies. Results accrued from such studies can facilitate the application of medical knowledge to the fortification of food and beverages as well.

Chapter six dealt with the various biological effects of 58 representative ayurvedic formulations of seven different dosage forms. They pointed out that, when viewed through the perspective of Western medicine, the biological actions of these medicines are brought about by the numerous organic compounds belonging to classes like glycosides, saponins, tannins, alkaloids, phenols, flavonoids, terpenoids, and lactones etc. In view of this, chapter concluded that, majority of ayurvedic formulations are complex mixtures of various herbal ingredients, their quality control through physico-chemical parameters may not be feasible, except in a few simpler formulations. So, biological quality control of ayurvedic medicines, using model organisms needs to be defined. The upsurge in the popularity of Ayurveda calls for stringent Research and Development and quality control of ayurvedic medicines so as to take Ayurveda through the new millennium.

Chapter 7 narrated that systematic organization of Ayurvedic knowledge is itself a proof of high order of learning and distinguishes it from the folk medicine. Ayurveda utilizes its own unique framework with regard to evidence generation. Much of the evidence in Ayurveda are described as self-styled longitudinal cohort studies because knowledge and skills passed through succeeding generations with the observations carried forward from

one generation of investigators to another. This chapter offers some suggestions for the optimization of ancient wisdom and the generation of knowledge using newer technology. Re-appropriation, revalidation, and research synthesis are the methods to optimize the old concepts. To generate new evidence, authors have prioritised different areas for clinical research in Ayurveda. The observational strength of Ayurveda needs to be utilized in generating trusted evidence and filling the gaps in contemporary knowledge. The chapter concluded that the challenge for Ayurveda, is to develop its own distinctive systems for the development and use of medical evidence.

Chapter 8 provides an overview of the flora of the country, detailed insight into Indian medicinal plants, and different methods to conserve the important, threatened, traded medicinal plants. This chapter also provides examples and success stories of conservation of some of the important threatened medicinal plants with restricted distribution. It also illustrates that the main reasons behind the existing threats to medicinal plants are loss and degradation of habitat, illegal trade, over-exploitation, over-grazing, human settlements, climatic disasters, and avalanches. The chapter concluded with a call for an urgent need to conserve the threatened and important species if Ayurveda is to survive.

Chapter 9 highlighted the revival of the public interest in complementary medicinal systems due to the side-effects associated with synthetic drugs, high cost, drug resistance, lack of treatment for various chronic diseases and other emerging diseases. A brief review on the role of nutraceuticals in chronic diseases such as diabetes, arthritis, etc., is also given in the chapter. In this regard lot much to be learned from Ayurveda with respect to nutraceuticals and cosmeceuticals, due to their easy availability, biodegradability, and cost-effectiveness, and fewer side-effects. Ayurveda offers the opportunity of developing nutraceuticals and cosmeceuticals that can offer protection from chronic diseases, improve health and longevity, and enhance beauty.

Tenth chapter presented the global scenario of Ayurveda

in relation to its acceptance and regulation and some of the main points that represent the difficulties of presenting ayurvedic medicine to Western countries. The author observed that Ayurveda was first presented to the Western public for its “wellness potential” and not as a cure. Self-regulating Ayurveda wellness is the current practiced form in almost all Western countries because Ayurveda is not yet recognized as a medical system in many countries. The author pointed out that there are four fundamental problems for Ayurveda concerns practicing and propagating Ayurveda in Western countries. Using TCM as an example, he elaborated that TCM was never presented as a wellness system; it was presented as a traditional medical system complete in its own right. He also pointed out too many inconsistencies and unrealistic goals in the WHO *Benchmarks for Training in Ayurveda*. He highlighted that, the “Swiss model of legalizing ayurvedic medicine as a huge step in the right direction”. As whole, this chapter describes what ails Ayurveda in the West and how to bring order to the scene. The author suggested that it would be better if the Indian government could standardize the educational content and material which would, in turn, standardize Ayurveda throughout the world.

Editor authored chapter 11, attributed two reasons for the renewed interest in Ayurveda throughout the world, first one is a major shift in global healthcare management policy and another one is enthusiasm generated by several spiritual organizations. This Ayurveda renaissance has sparked an interest in understanding the theoretical constructs of Ayurveda. The author pointed out that, despite the growing interest in Ayurveda, a closer look at the system prevailing in India reveals that it is suffering from many shortcomings discussed in this chapter. The Author concluded that application of modern technology, without sacrificing the principles of Ayurveda is the best approach to the advancement of Ayurveda.

The current millennium is driven by digital technology. But the Integration of digital technology in the growth of Ayurveda is very minimal. “Ayurveda in the New

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millennium”, could have been more gratifying if it had also included a chapter on the information technology can be used for the growth and appropriate dissemination of Ayurveda.

This book is a gratifying read for the quality and variety of its contents related to contemporary Ayurveda. It is definitely a treasure of knowledge which may be of much interest to scholars of Ayurveda and other traditional, complementary and alternative systems of medicine. It will serve as a useful bridge to bring Ayurveda into mainstream medical system globally. The editor and all the contributors

of book deserve much praise for their serious efforts to underline challenges before Ayurveda in the new millennium and suggesting some bold steps to handle them.

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