



CAN AYURVEDA BE AN EVIDENCE BASED MEDICINE?

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ABSTRACT

The concepts of EBM empower us to formulate appropriate clinical questions, appraise the literature using the hierarchy of evidence and apply the study results to their practice. With the ever increasing demands to adopt EBM in practice, healthcare providers require educational resources that present the concepts of the EBM, research methodology and guides to publishing medical research in a simple and easy to understand format.

EBM also promotes critical thinking by clinicians. It requires that clinicians have the open-mindedness to look for and try new methods scientifically supported by the literature and it asks the clinical interventions be scrutinized and proven effective. In addition, EBM offers ways to critically evaluate the enormous amount of medical literature for value. In this way, clinical interventions and treatments are not just accepted because someone speaks of their anecdotal effectiveness, but a rigorous standard is applied to scientific data to determine whether the information has merit and applicability.

Ayurveda is an Ancient Asian practice. It's a traditional medical system used by a majority of India's 1.1 billion populations. Ayurveda is being seen as a rich resource for new drug development by modern day pharmacologists. Ayurveda, the science of life is a branch of Atharvanaveda. It has eight specialized branches such as kayachikitsa (internal medicine), Salakya (ENT), salya tantra (ayurvedic surgery), Agada tantra (toxicology and forensic medicine), bhuta vidya (treatment of psychic diseases), kaumarabhrutya (paediatrics), rasayana tantra (rejuvenation treatments) and vajikarana (aphrodisiacs).

KEYWORDS: EBM, Ayurveda, Literature, Research.

INTRODUCTION

Evidence Based Medicine (EBM) is defined as the systematic approach for finding and analyzing published data for the basis of clinical decision making.^{1, 2} It is also defined as the integration of the best research evidence with clinical expertise and patient values to make clinical decisions.³

This concept is very important for physicians as they are required to use the current research findings and data to diagnose and treat patients. Though, due to the quick pace of modern day research, keeping up with current research findings may be a challenging and daunting task, this is where EBM comes in, as it effectively bridges the gap between modern day research and physician.¹ Essentially, EBM is about asking important questions based on the patient needs, finding and appraising the relevant data and then using that data and conclusions in everyday clinical practice.⁴

The evidence referred to in EBM is patient centered and clinically relevant research found in the medical literature on diagnostic tests, treatment techniques, preventive programs, and prognostic markers.

EBM focuses on research dealing with the day-to-day practice of patient care. The evidence may prove or disprove previously accepted methods or demonstrate new ways of care that are more accurate and effective and less harmful. EBM also recognizes that the research literature is constantly changing. What the evidence points to as the best method of practice today may change next year. The task of staying current although never easy is made much simpler by incorporating the tools of EBM into everyday practice.⁵

Evidence Based Medicine Since Ages

Ancient era: The ancient era involved the use of anecdotes which were transmitted primarily through the authoritative means and through stories.⁴

Renaissance era : The Renaissance era which began during the 17th century coincided with the challenges and objections to popular theories.² Among these, the concept of bloodletting was one of the procedure through which some quantities of blood was being drawn from an individual to

prevent or cure disease. This was a common tool used to cure disease and illness during 16th and 17th century which dates back to Egyptian era and later spread to Greeks and Romans. This concept was beginning to be questioned during 17th century. Near the end of the 19th century, the practice of bloodletting vanished as it was deemed an ineffective tool against disease.⁶ most importantly, due to the conflicting evidence; physicians stopped the use of the procedure.²

This shows the importance of keeping current with new findings in research. And on the other hand, even though evidence against bloodletting was found in the 17th century, it was still used until the late 19th century. This brings about another important characteristic of EBM which deals with the fact that evidence is neither easily nor rapidly translated into practice.⁴

Dr. James Lind, during 1700s discovered the disease scurvy and cured it by the administration of lemon and orange fruits which is said to be caused due to vitamin C deficiency.^{2, 7} at first, due to lack of data, the use of lemons and oranges as a cure for scurvy was limited and remained speculative. However, due to his discovery, clinical trials were conducted and evidence was gathered. By this scurvy became better understood and treatments became incorporated in clinical practice.² this was one of the first moves away from clinical expertise and towards EBM.⁴

Transitional era

Ernest Amory Codman of the transitional era, is being called the pioneer of evidence-based medicine. This era began during the mid to late 19th century and lasted till about the 1970s.

Codman's concept was the development of "end result" which recorded the characteristics of the patients before and after the treatment in the card of 8.⁸ this card was then brought back to the hospital one year later and the treatment was evaluated on the terms of overall success. This was extremely important as this provided the hospital, A means to compare the various treatments given by the surgeons for patients and to determine the most efficient and successful.^{2, 8} Due to Codman's work, registries were created to record

outcomes of research and establish important standards. This was very important in the modern era of EBM.⁴

Modern era: The modern era of EBM began during the mid to late 20th century with the involvement of two important figures: Archie Cochrane and David Sackett. This era was very important for EBM as it led to the biggest development of what we now know as randomized controlled trials (RCT).^{2,9} Cochrane was effectively the first to show the importance, significance and effectiveness of using RCTs for assessing treatments.²

AYURVEDA

Ayurveda is the science of life.¹⁰ It is a system of traditional medicine native to India¹¹ and a form of alternative medicine.¹² In Sanskrit, *āyus*, meaning "longevity", and *Veda*, means "related to knowledge" or "science".¹³ The earliest literature on Indian medical practice appeared during the Vedic period in India,¹² i.e., in the mid-second millennium BCE. The *Suśruta Saṃhitā* and the *Caraka Saṃhitā* are encyclopedias of medicine compiled from various sources from the mid-first millennium BCE to about 500 CE and are the foundational works of Ayurveda.¹⁴ Over the following centuries, ayurvedic practitioners have developed a number of medicinal preparations and surgical procedures for the treatment of various ailments.¹⁵ Current practices derived (or reportedly derived) from Ayurvedic medicine are regarded as part of complementary and alternative medicine.¹⁶ Ayurveda stresses a balance of three elemental energies or humors: *Vāyu* (air & space – "wind"), *pitta* (fire & water – "bile") and *kapha* (water & earth – "phlegm"). According to ayurvedic medical theory, these three substances – *doṣas* (literally that which deteriorates) are important for health, because when they exist in equal quantities, the body will be healthy, and when they are not in equal amounts, the body will be unhealthy in various ways. Up to 80% of people in India use either Ayurveda or other traditional medicines.¹⁷

In 1970, the Indian Medical Central Council Act which aims to standardize qualifications for ayurveda and provide accredited institutions for its study and research was passed by the Parliament of India.¹⁸ In India, over 100 colleges offer degrees in traditional ayurvedic medicine.¹⁹ The Indian government supports research and teaching in ayurveda through many channels at both the national and state levels, and helps institutionalize traditional medicine so that it can be studied in major towns and cities.²⁰ The state-sponsored Central Council for Research in Ayurvedic Sciences (CCRAS) has been set up to research the subject.²¹ To fight biopiracy and unethical patents, the Government of India, in 2001, set up the Traditional Knowledge Digital Library as repository of 1200 formulations of various systems of Indian medicine, such as Ayurveda, Unani and Siddha.^{22,23} The library also has 50 traditional ayurveda books digitized and available online.²⁴ Central Council of Indian Medicine (CCIM) a statutory body established in 1971, under Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health and Family Welfare, Government of India, monitors higher education in Ayurveda.²⁵

Several international and national initiatives have been formed to legitimize the education and practice of ayurvedic medicine as CAM in countries outside India, the WHO policy of traditional medicine practice²⁶ and standardized benchmarks for training of Ayurvedic practitioners,²⁷ the European Federation for Complementary and Alternative

Medicine²⁸ and the European Ayurveda Association²⁹ There are two PubMed-indexed journals focusing on Ayurveda, the *Journal of Ayurveda and Integrative Medicine (JAIM)*,³⁰ and *The International Journal for Ayurveda Research (IJAR)*³¹

IMPORTANCE OF EVIDENCE-BASED MEDICINE

With the immense and rapid developments in medicine, doctors and qualified medical personnel are forced to deal with the large quantities of relevant research findings in order to maximize health care. To aid in their quest to find relevant research studies, it is important that there are simplified and efficient means to collect the relevant information. A relatively new framework, known as evidence-based medicine, was developed for clinical problem solving to help ease the undue stress put on the physicians.⁴ The foremost reason for using EBM is to improve the care delivered to our patients. Evidence-based medicine provides clinicians, the tools for finding and analyzing the quality of the evidence so that they can benefit from the work of other clinicians described in the medical literature. The literature may also provide answers to new and unfamiliar clinical problems that arise in the clinic.

EBM also promotes critical thinking by clinicians. It requires that clinicians have the open-mindedness to look for and try new methods scientifically supported by the literature, and it asks for clinical interventions to be scrutinized and proven effective. In addition, EBM offers ways to critically evaluate the enormous amount of medical literature for value. In this way, clinical interventions and treatments are not just accepted because someone speaks of their anecdotal effectiveness, but a rigorous standard is applied to scientific data to determine whether the information has merit and applicability.⁵

APPLICABILITY OF AYURVEDA AS AN EVIDENCE-BASED MEDICINE

Interest in and use of complementary and alternative medicine has recently expanded in many countries around the world. Population-based studies in developed countries such as Australia, Scotland, UK, Taiwan, Singapore and the United States of America (USA) report that one-half to two-thirds of adults use complementary therapies.³²⁻³⁶ Ayurveda, one of the alternative medicines and the science of life which is 5000 yrs old exists even today only because of its authenticity. In the last decade, lot of interest has been generated in the medical world regarding Ayurveda and other traditional medicines.³⁷ However, all these efforts have led to the enrichment of knowledge of the ayurvedic medicine and inclusion of some Ayurvedic herbs in modern materia medica.³⁸

Though ayurveda is on rise, some of the research scholars do not consider ayurveda as an EBM due to the lack of quality clinical trials (RCT's) and enough paper publications. As quoted in one of the study, various researchers feel that the conventional clinical trial regimen is not fit for Ayurveda.³⁷

In one of the study, it has been opined that Ayurveda is based on 5000 years of clinical practice, hence in place of conventional evidence-based medicine (EBM) clinical trials, practice-based clinical trials should be organized for Ayurveda.³⁹ Baghel et al opines that the regime of EBM clinical trial with its evidence-based hierarchy is not fit for Ayurvedic clinical trials. EBM clinical trial regimens limit the use of *Prakriti*, *Dosha Anubandha-Anubandhyatwa*, *Arambhaka* and *Anugami Dosha Vikalpa*, *Swanidana Prakopa Awaranajanya Prakopa*, *Prakriti SamaSamveta-Vikritishamasamveta*, *Amavashtha-pakvavastha*, which leads

to variation of dose, dosage form, *Aushadhikala*, *Anupana*, *Sahapana*, *Pathyapathya*, therapeutics like *Panchakarma* procedures to be adopted, etc. Hence, if the desired results of actual clinical practices are to be recorded, the protocols should be prepared on these lines, supported by EBM suitable for the purpose. Ayurveda requires research in the areas of diagnostic principles of Ayurveda so that the Ayurvedic diagnosis can be made more pinpointed leading to more effective treatment strategies.³⁷

The notion that the clinical judgments should be based on the best available research is not new. In fact, this concept can be found in writings as far back as the mid-19th century.⁴⁰ The clinical trials in Ayurveda are needed for **a.** Revalidation of facts enumerated in Ayurvedic classics leading to the explanation of fundamental principles; **b.** to find out better treatment modalities for the existing diseases and for newer diseases; **c.** to standardize the treatment procedures scientifically and **d.** to establish dose, duration, indication and side-effect profile of any given drug.³⁷

From the above studies, it can be understood that the Ayurvedic science can also be considered as an EBM as all the treatments are practiced since 5000yrs, research based and are described in the most authentic books after being applied on large number patients and said to be effective. Though, many post graduation centers are conducting various research works in ayurveda, its not getting highlighted due to lack of publications and therefore the ayurved fraternity is still behind in creating the awareness of the science among the society. As quoted in baghel's study³⁷ practiced based clinical trials of evidence based medicine should be designed for ayurveda. Ramsundar rao⁴¹ states that Ayurveda has to be brought to the public and common man, government must give proper place to Ayurveda which is indigenous to this soil, ayurvedic colleges and research centres have to be opened on par with allopathic medical colleges, the products prepared in these colleges and pg centers must be given proper encouragement, the techniques and skills of surgery described in the science must be modernised to suit the present day conditions, proper publicity, propaganda and manufacturing and marketing of ayurvedic surgical instruments and appliances should be made freely available to the practitioners. Considering all these facts, it can be said that the science can be considered as an EBM as it is practiced since 5000yrs till today and it is time-tested.

CONCLUSION

Most of the ayurvedic scholars always have a query in the mind regarding the consideration of the science as an **EBM**. Hope this paper clarifies and gives them an answer to certain extent. From the above studies, it can be concluded that ayurvedic science is an evidence based medicine. Though its time-tested, still can be made accepted as an EBM in future by conducting more number of quality control RCT's, paper publications, revalidation and standardization of the treatments and its mechanisms according to present day's research principles and suitable to present day's diseases.

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