



Opinion note

Research methodology in Ayurveda – advances and recommendations

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ABSTRACT

Like any other science, even the science of Ayurveda envisages certain principles and concepts that have been either imbibed or developed from different contemporary fields of knowledge that were existing during its development phase. Hence, the system had grown based on the concepts that were proposed and propagated by the Darshanas (Philosophies) which were suitably modified for the development of many other concepts suitable to explain and apply various technical, conceptual and practical queries. These concepts became the basis of the whole science upon which it stands even today. But today, the scenario has changed and the acceptance of any fact or science is through an evidence-based system. Hence time requires that even though there are many instances where Ayurveda has proved to be a better option that can give cure even to the toughest of health problems, it is quite necessary that they are properly researched and the data is well presented to make it get the recognition that it rightfully deserves. The present paper deals with what and how we can develop the research modules to cater for the present need of Ayurveda.

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INTRODUCTION

Research methodology is defined as a systematic collection, analysis and interpretation of data to solve a research problem (Chauhan et al., 2015). This is a necessity to validate and establish any facts such that the belief and confidence in the given fact are optimum. It is not only applicable to the subjects and matters that are presented as modern recognized fields but to all the past and present fields or systems. Even Ayurveda is not an exception to this rule. A research methodology helps to validate and even develop the system such that it can be properly understood, interpreted and also optimized for better and unlimited benefits.

Like every science or system, even Ayurveda is based on certain concepts and principles. Undoubtedly, these principles are basically obtained from the different concepts that were embedded in the philosophical texts. These philosophies are in turn subsidiaries or even part of the Vedic literature and thus are intervened into the culture and tradition of India. This mingling is to such an extent that the system of Ayurveda is known to be part of Atharvaveda itself (Rao and Shastri, 2010). The concepts that were taken from these philosophies were used as the basis for further modification and devising its own principles such that it can evaluate and explain the various problems that arise during the practice of Ayurveda. This showed that there was intense research and discussions before the adoption of any concept into the system. But as the days and conditions are quite different from the past when it was recorded, it is always necessary to re-establish

it so as to establish confidence and relevance in the present context.

DIFFERENT FIELDS OF RESEARCH METHODOLOGY

Generally, a research methodology includes different stages starting from the recognition of a research problem, followed by suitable evaluation with analysis and ending with drawing a suitable conclusion. Based on the study type, medical research can be categorized into 3 types namely Basic, Clinical and Epidemiological. This can further be classified into interventional and non-interventional (Röhrig et al., 2009). Basic research is the one which deals with the theoretical or literary evaluation and its application (Kapoor, 2016). It is that part of the study which evaluates the possibility of any concept, drug action, physiological, biochemical, effects, etc. The clinical study can be categorized into observational and interventional where the observational is more of a diagnostic study or single case report while interventional is the different phases of clinical trials. Lastly, epidemiological research is similar to that of clinical study but with a large number of populations covering huge areas like field study or surveillance, monitoring, etc. (Kapoor, 2016). Other than scientific and technical know-how as to how research is to be conducted there are other factors that play a major role in determining the study, they are funding, staffing and practical feasibility (Röhrig et al., 2009). With the evolution of Evidence-Based Medicine (EBM), medical research has evolved to re-establish and

validate the facts and remove the myths more effectively (Kapoor, 2016).

EARLIER AYURVEDIC RESEARCH METHODOLOGIES

Research work has been going on in Ayurveda in the past as well, due to which this science has evolved over time. It was just a Upaveda (a subsidiary text of the Vedas) of Atharvaveda (Rao and Shastri, 2010) from where it evolved and thereafter it got recognition as a separate entity of knowledge named Ayurveda due to substantial research work. This can also be understood by the increase in the inclusion of medicinal herbs and the effective use of the same in various texts of Ayurveda (Sharma, 1984). The mention of the symposiums (Shastri, 1995) in these texts of Ayurveda for analyzing the disease and their suitable remedies are examples of how the facts and figures were discussed and adopted by concluding these serious discussions. Even during the medieval ages, the system was thriving to the extent that the inclusion of more potent and highly effective Rasashastra formulations was adopted. The texts like Rasaratna Samucchaya are the prominent ones that gave notable contributions to it. The effective use of the poisonous substance by detailing the processes that are required to make it suitable for medicinal use is a standing example of how deep the research and analysis were done. The references from the literature also explain four tools that are used for doing research or in other words to obtain knowledge. These are known as Pramanas and they are Pratyaksha (direct observation), Anumana (analysed inference), Yukti (critical analysis of data and drawing of conclusion) and Aptopadesha (Authentic references or Authoritative testimonies) (Shastri, 1995). The application of these tools was applied to the experiences and the data sets that they had to analyze the existing research problem. Such processes and procedures gave rise to concepts and practices in Ayurveda like the Shadrasa principle in the Atreyabhadraakapya chapter of Charaka Samhita. In this chapter, different opinions are given in the description while evaluating the possibilities of different varieties of Rasa was discussed and lastly ending with the 6 Rasa theory (Shastri, 1995). This is seen in almost every theoretical discussion of the text Charaka Samhita.

EXISTING AYURVEDIC RESEARCH METHODOLOGIES

Ayurveda, as of today is facing greater and totally different challenges compared to the past. Today we are believed to be using around 8000 herbs as medicine in Ayurveda (Mahesh, 2009). These enormous numbers of plants have led to adulteration and wrong identification. Hence the challenge of having a correct identity has also become an extra challenge today. The research studies have thus been developed in an interdisciplinary way with fields like Botany, Pharmacognosy and Phytochemical studies being taken up by different research institutes along with experimental and clinical studies. Still, many of the research studies have not been either published or not done properly due to defective methods. Over the years due to the emergence of a stronger Ayurvedic Drug Industry and a sense of the need for better-quality

assurance along with effectiveness, the need for the robust research activity is seen. As a result, the stakeholders have adopted the Randomized Clinical Trial (RCT) and other existing methodologies of contemporary medical science for the purpose. This methodology, though became a norm, didn't fulfil the purpose of Ayurveda to a major extent and was found to be unfit due to the dynamic nature of disease management that is more or less individualized (Thakar, 2018). It is probably for this reason that there is more emphasis on establishing a better methodology of study protocols and understanding of Ayurvedic concepts and principles. Even the method of reverse pharmacology which was considered a relief for Ayurveda also had fewer implications thus the present methodologies have been partially or completely unsuitable and even unaffordable for Ayurvedic Research. Even the protocols of research scholars are poorly designed with too many flaws which may be due to poor financial assistance or other resources necessary to make it more stringent (Thakar, 2018). Thus, with these factors and challenges, Ayurvedic research has been poorly done in the past and is still far from being a robust one to date.

DISCUSSION

From the different available literature, it is a rude reality that the research in the field of Ayurveda is lacking a robust nature due to which it has not been able to establish itself convincingly like the contemporary system of medicine. This is a great shortcoming to the field even though it has many times worked wonders in curing certain cases which are designated as the ones that have only palliative care or none by contemporary science. Moreover, the holistic nature of the approach that the science of Ayurveda holds emphasizes that the treatment is also to be planned in such a way that it not only cares about the disease but also the diseased both concerning body and mind. Hence the examination pattern is laid down for both the disease and diseased through Roga (evaluation of the disease) and Roga pareeksha (evaluation of patient) respectively (Gupta, 1997). Even the basic concepts that have evolved and developed are from those that have a great philosophical background out of which the most prominent were the Shaddarshana (6 Vedic philosophies) (Mishra, 2004). The difference between a philosophical science and a materialistic science is that the former considers every physical and abstract element while drawing the concepts while the latter is more like a mathematical calculation concentrated on the physical attributes. Hence reproduction of the facts will be a challenging affair compared to the latter ones while proving the concepts.

Thus, a research methodology for Ayurveda can be broadly classified into 3 major types, i.e. Theoretical, Analytical and Applied Research (Fig. 1). The theoretical research will be dealing with different aspects of Ayurvedic theories and concepts. It will also broadly include interdisciplinary research including basic sciences along with contemporary medical sciences that help in the establishment of the concepts and principles of Ayurveda. The research segment also should include a literary review right from the philosophies to the present-day works. The analytical research should include the use of analytical methods that help to analyse the concepts and principles

both qualitatively and quantitatively. This gives a further boost to the concept and principles of Ayurveda. Finally, applied research is to have a better application of the principles and concepts that have been established through analytical research. As shown in Fig. 1, an overview of the different types and subtypes in the research fields is given that will be useful for Ayurvedic science for fundamental and advanced research. This gives the stakeholders of science a better understanding and confidence in the field, promotes the practice of the same and also ability to

reproduce the results more convincingly and comprehensively. Even the integration of different disciplines is necessary for having a better research understanding than any standalone ones. As enlisted in the classification of research, it can be observed that relevant integration of different fields is necessary to obtain a convincing result and understanding which may be in any category of research that ranges from understanding and designing a concept to its analysis and application for the betterment of medical sciences.

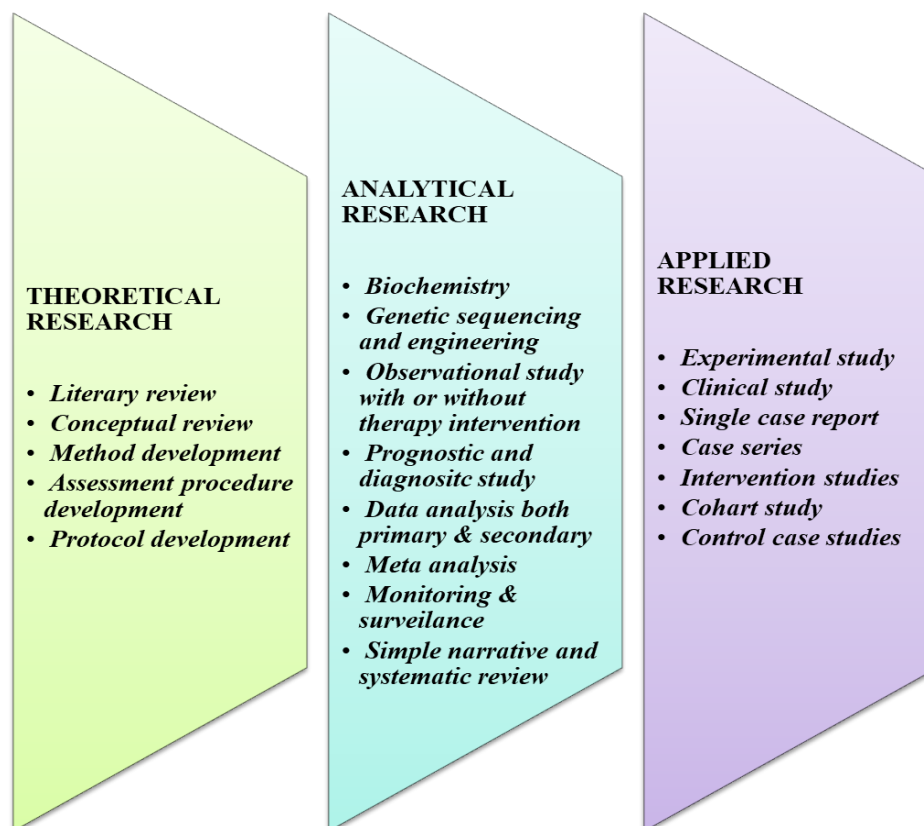


Fig. 1. Different fields of research and their sub-areas

The protocols should thus be designed in such a manner that it envisages the philosophical and materialistic components present in the principles and concepts of Ayurveda. Ayurveda being a very complex and multidimensional science imbibes the different influencing components into medical science. This can be seen in the evaluation of a drug action as per Ayurveda which is exemplified in the study of Balya action (Mahesh and Shreevidya, 2014). When a multidimensional approach is given to the protocol covering every aspect of the research problem, then the study will fulfil the holistic component of Ayurveda.

CONCLUSION

From the above, it can be concluded that for a suitable study with respect to Ayurveda a detailed protocol that is devised on the basis of the philosophical and contemporary scientific background is necessary. It is also to be noted that a multidimensional and multidisciplinary approach will be more useful in obtaining a comprehensive protocol that helps to understand, authenticate and also prove the relevance of Ayurveda in the world arena. The bisecting of

the principles and concepts of Ayurveda into sub-components that facilitate the study on the basis of the protocols that are devised and present in contemporary science has to be avoided as it serves nothing much to Ayurveda but many times lead to confusion and improper interpretation. Instead, the protocols devised by thorough theoretical research and analytical research will lead to the proper application of the principles and concepts of Ayurveda. Only this will lead to a greater understanding and acceptance of Ayurveda.

CONFLICTS OF INTEREST

The author(s) declare(s) no conflicts of interest.

DECLARATION

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