

**Scientific Research approach in Ayurveda****Dr. Manisha Chandniha**

Asst.Professor

Department of Samhita Siddhant, K.j.Institute of Ayurved & Research Centre,  
Kashiba Ayurvedic Hospital, Savli, Vadodara, Gujrat.**Abstract:**

Research is organized search for knowledge. Research is an art of scientific investigation. It is a process of knowing new facts and verifying old facts by the application of scientific method to natural phenomenon. It is essential to understand how Research is conducted, documented, exhibited and interpreted scientifically. In ancient time Acharyas have got fully knowledge of research concepts, we get many number of references regarding Research in various instances they did practical trials, clinical documentation which have fully tested even at that period there will not be sufficient development of the technology. In Charaka Samhita Charakacharya has described characteristics of good researcher which can be correlated with modern research methodology. Charakacharya has given lot of contribution with respect to modern research methodology in Vimanastana as well as in Sutrastana. In Ayurveda there are many synonyms of research one of them is Anusandhana which means the study of cause and effect relationship between Dravya, Guna and Karma after several observations and through verifiable examinations arrival at final conclusion. The concepts of Pancha-avayava-vakya are five ancient steps for establishment of fact, which makes Siddhanta (theory). The critical scientific approach of Ayurveda is based upon knowledge of Pramana which can be considered as scientific tools of Research

**Keywords:** Research, Research methodology, Anusandhana, Pramanas

**Introduction:**

**R**esearch is organized search for knowledge.

Research means searching for the existing phenomenon putting in the scientific and logical manner. In ancient time Acharyas have got fully knowledge of research concepts, we get many number of references regarding Research in various instances they did practical trials, clinical documentation which have fully tested even at that period there will not be sufficient development of the technology. In Charaka Samhita Charakacharya has described characteristics of good researcher which can be correlated with modern research methodology. Charakacharya has given lot of contribution with respect to modern research methodology in Vimanastana as well as in Sutrastana. In Viman sthana Pramana, Panchavayava, Tantryukti etc. many tools has described in ancient time. In this modern era of science and technology globalization is taking place almost in every sector. Every discipline of knowledge has started to expand its dimensions.

**Need for Research in Ayurveda:**

- To review & revive (use again) the classical literature of Ayurveda.

- To explore the historical aspect of Ayurveda.
- To develop evidence based support on the efficacy of Ayurveda products and practices.
- To generate data on "safety standardization & quality control for Ayurveda products & practices.
- To evaluate effectiveness of various formulations described in particular condition.
- To assess effectiveness of particular treatment, in order to improve the quality of therapy provided to patient.
- To upgrade Ayurveda time to time, keeping in view the new disease & health related problems
- Developing day by day/emergency management of diseases.

**Research definition in Ayurveda:**

- अन्वेषण - Desire to search
- गवेषण – to search with help of all sense organs
- पर्येषण –to search from all dimensions
- अनुसन्धान – अनु = to follow,  
संधान = Appropriate knowledge
- मंथन –churning to know the facts

6. **विमर्श** –re appraisal or critical comments
7. **तंत्रयुक्ति** –methods of logical thinking & scientific presentation
8. **प्रतिपत्ति** –understand things in their right perspective

**Classical methods of Research-**

1. Concepts of Pratyaksha (direct perception by senses), Anumana (logical inference), Yukti (logic) and Aptopadesha (textual reference) Pramana. Chaturvidha pramana.
2. Dravyatah (Quantitative examination), Gunatah (Qualitative examination), Karmatah (Functional examination)- Pareekshana paddhati.
3. Aushadhayoga Pareekshana paddhati
4. Atura Pareeksha paddhati (Trivida, Chaturvida, Shaddvida, Ashtavida and Dashavidha)
5. Dashavidha pareeksha bhava (Dushyam, Desham, Balam, Kalam, Analam, Prakriti Vayaha, Satva, Satmya, Ahara and Avastha).
6. Tadvidya sambhasha, Vadamarga.
7. Tantrayukti

**Scope for Research in Ayurveda:**

1. **Theoretical Research**
2. **Experimental Research**
3. **Clinical Research**

**1. Theoretical Research:**

Theoretical research in the fundamental principles of Ayurveda, it has a potential for vast paradigm shifts in the health sector.eg.

- Concept of **Dosha**
- Concept of **Dhatu**
- Concept of **Mala**
- Concept of **Agni**
- Concept of **Avarana**
- Concept of **Ama**
- Concept of **Panchmahabhuta**

**2. Experimental Research:**

Meticulous observation of the patients symptoms and signs and complaints (Pratyaksha). (Rogi pareeksha, Roga Pareeksha, Prayogashalala pareeksha.) Various experiments can be done in Ayurveda using modes of evidence explained in Ayurvedic texts like:

1. **Pratyaksha, Aptopadesha, Anumana**
2. **Trividh Pariksha**
3. **Dashvidh Pariksha, Astavidh Pariksha**

**3. Clinical Research:**

- Offers most important domain for developing new protocols.
- Ayurvedic bed side observation & management is very rich, but relatively unexplored.
- Clinical Research is directly related to patient & clinical trials of medicines.

**Three Aspects of Ayurvedic clinical research:****1. Curative aspect: treatment of disease without developing complications.**

Eg. Efficacy of chandraprabhavati & mustadi kalp in management of mutraghat; Efficacy of chitrakadi vati in Grahni

**2. Promotive aspect: Rasayana & Vajikaran**

Eg. Efficacy of agastya haritaki rasayana in kasa/yakshma patient, Efficacy of Asvagandha in Klaibya.

**3. Preventive aspect: health maintainance - (yoga, maintaining hygiene)****CONCEPT OF PRAMANAS AND THEIR ROLE IN RESEARCH :**

The thing can be divided into 2 that is true and untrue and these can be explored by adopting four methods of Pramanas they are Aptopadesha- Scriptural testimony, Pratyaksha- Direct observation, Anumana – Inference, Yukti- Reasoning. There are various methods of gaining knowledge they are

- **Aptopadesha (Scriptural testimony)** - Knowledge through teaching of authoritative resources like textual references. Take example of Sthoulyaroga acharya Charaka and other vividly discussed in classics, understanding of the disease by the help of Apta- Aptavachana is –Aptopadesha
- **Pratyaksha (Direct observation)** - Knowledge gained from perception through senses. When a patient approaches a physician then thorough History taking, Examination, Investigation by Pratyaksha
- **Anumana (inference)** - Knowledge attained by way of reason and logic. After administration of treatment when patient came for follow up analyzing the changes

before treatment when he came for follow up here we applying Anumana paramana that whether the drug is effective on the disease or not.

- **Yukti (Reasoning)** - Knowledge by the virtue of ingenuity (creative imagination). Planning the treatment based on the diagnosis.

**Research Parameter in Ayurveda:**

1. **Research:** Anusandhan<sup>3</sup>: synonyms: anveshana, gaveshana, paryeshana.

2. **Tools:** Hetu<sup>4</sup> or Uplabdihikaran or Karana. It includes four types of pramana. *It is the theme explaining universal process of conduction and appraisal of any kind of research.*

- a. Pratyaksha
- b. Anumana
- c. Aetihya
- d. Yukti

3. **Methodology:** Materials and Methodology or factors of protocol development : Yukti is process of management of thoughts, ideas, concepts and course of action.

Though there are subtypes of clinical research; due to practical modifications in accordance with the focal issue; basic understanding of methodology or rules for all the types does not change. The important factors in methodology are drug, equipment or instrument, patients, disease condition under study and setting of the study. Specification of all these are listed as below:

- ◆ **Karan-** The word denotes any material which can be a medicine tools like enema bag, surgical instrument, medicinal leech etc. with reference to context. The quality assurance of the drug<sup>41</sup> is done based on soil type, cultivation and harvesting techniques etc. or that of instrument carries utmost importance and is written in detail. The prescription method of the medicine under study is specified according to the rules of drug administration with respect to time of day and food intake.
- ◆ **Karyayoni** – Here it is expected that the framework of the disease condition under study should be stated clearly. The classification of disease has importance. Whether it is curable or incurable that needs continuous treatment; whether new or chronic, systemic or local. The

cardinal signs and symptoms under consideration should be defined precisely. Method of examination of the particular condition should be described.

- ◆ **Aturadesha** – A rational understanding of any human being is achieved depending on some basic parameters. These are 'Prakriti, vikriti, sara, samhanan, praman, satmya, satva, aharshakti, vyayamshakti, vaya' which help putting any person in a typical set, for better judgement of the effect and to reduce the bias generated from extraneous or sometimes attribute variables. The method gives accurate results because each factor considered here has a significant role in both healthy and disease conditions. Careful selection of patients considering all factors together leads researcher more close to true results. The outline is comparable to selection and exclusion criteria of patients according to the set classification.
- ◆ **Bhoomidesha** : Study location which gives idea about the natural climatic conditions, as well as of genetic or racial makeup and socio-economical status of the subjects in study. Identification of co-existence of humans and drug in a given setting is important from the viewpoint of symbiotic relationship. Specific atmospheric conditions in different seasons have role in efficacy and certain therapy procedures are conducted in specific season only.
- ◆ **Karya, Karyaphal and Anubandha** : These are measured with respect to the topic under study. For example, burning sensation is one complication of diabetes [prameha-vataj-madhumeha]. Yashad bhasma is effective in controlling the burning significantly. This is interpreted as yashad bhasma has some control over madhumeha samprapti.

4. **Results :**

Karya avasthantara. This is co-related with objectives for which research activity is conducted. This may be interpreted as expected effect/ end result. Positive change in disease leading to promotion of health.

5. **Analysis :**

Karyaphala and Anubandha Confirmation of broader aim or baseline principle that is persistent for reasonable duration of time [efficacy]. The result may be good or bad. It is important to consider dimension of time to know recurrence or non-recurrence. Prediction of

maintenance of healthy status after stopping of treatment.

**6. Discussion:** Sambhasha Vada

**7. Conclusion:** Siddhant or Nirnaya

**8. Panchavayava:**

- **Pratijna-** The Hypothesis to be proved
- **Hetu-** The casual element
- **Udahaarana-** The data or example in support the Hypothesis
- **Upanaya-** Verification/ testing to establish correlation
- **Nigama-** Conclusion

**9. Other Principles:**

- **Upakarana-** Introducing the problem
- **Upasamhara-** The Hypothesis
- **Apurvata-** Indication of originality
- **Abhyasa-** Synopsis in support to Hypothesis
- **Phala-** Result Probability
- **Artha vada-** Observation of study
- **Upapatti-** Establishing the truth

**Importance of Research in Ayurveda:**

1. Only the facts established after careful investigations, observations, experimental studies, supported by accurate data with proper statistical analysis can only convince the public about the validity of any single statement.
2. Ayurveda is gaining global acceptance. Interest in Ayurveda & its public demand is rapidly increasing. Such demand only be fulfilled by developing an appropriate research methodology.
3. Research is important to further improve safety standardization & quality control for ayurveda products & practices; for easy administration and rapid action.
4. Research is useful to assess the relative effectiveness of health care programmes in order to determine the allocation of the resources in health settings.

**Problems Encountered by Researchers in Ayurveda:**

- No fixed universal dose of ayurvedic drugs as it is prescribed according to Doshavastha, Sharirabala, Agnibala, kosta of patient.
- Hence difficult to do a clinical study with Ayurvedic drug.
- No quantitative measures for Ayurvedic basic parameters like *Vata, Pitta, Kapha, Agni, Ama* etc.
- Difficult to consider Ayurvedic aspects like Doshavastha, Sharirabala, Agnibala etc . while evaluating drugs in animal models.

- Patient often consume allopathic medicine along with ayurveda at same time. Hence difficult to establish that the result has come from which medicine.

**Conclusion:**

- Different steps of Research, Methods, process has been dealt in different context of Ayurveda.
- Chaturvida pramans plays very important role and they are considered as Research tools.
- Understanding of these competently and application and analyzing these fact by using skill of the Researcher.
- Improve safety standardization & quality control for ayurveda products & practices.
- Acharya charak has described many classical tools for research like panchavayava, dashvidh pariksha, chaturvidh pramana etc.

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