

UNDERSTANDING RESEARCH METHODOLOGY UNDER AYURVEDIC PARLANCE

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ABSTRACT

Research is a search for knowledge to educate the Research process among students and scholars and get acquainted with all basic aspects of Research methods and methodology. 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. Establishing the old facts with the present knowledge is nothing but Research. To make Ayurveda wide acceptance and to make globalization Research in Ayurveda with standard protocol is need of hour.

KEYWORDS: Research, Research methodology, Anusandana, Pramanas

INTRODUCTION

Research as a common parlance refers to search of knowledge. All other system got recognition as they conduct regular research and updates their science and became popular. Every science/ disciples started to expand in its dimensions by doing research in their respective specialty and they are in progress. For the development of science and scientific world research has got prime importance in the modern time. Ayurveda the Ancient science which has got thousand years history, practicing in a systematic way in order to prove scientifically to this world to create confidence in the society and make acceptable, and for globalization evidence research is required. To get wide acceptance by the society one should develop Standard protocol, Sufficient Evidences,

Standardization and Uniform practices. Ayurveda is scientific no doubt, but in the present era to make evidence based medicine to say with more authenticity for acceptance Research with standard protocol is need of the hour.

RESEARCH WORD MEAN-Comprises of two words

Re- once again and **Search-** Act of searching (search in terms of knowledge based on keen observation). Nothing but searching once again is Research.

According to Dictionary Word web¹

1. Systematic investigation to establish facts.
2. A search for knowledge.^{2,3}
3. Attempt to find out in a systematic and scientific manner.

ETYMOLOGY⁴:

The English words search and research are derived originally from the French word ‘**Cherche**’ and ‘**recherché**’ the prefix-‘re’ means again or once more. This is a key instinct for all living organisms, especially human beings for survival and welfare.

Research can be conducted any branch of science or any branch of knowledge.

DEFINITION OF RESEARCH⁴:

1. Defined as a Scientific and Systematic search of information on specific topic.
2. Establishing the old facts with the present knowledge.
3. Searching for the existing phenomenon and putting it into scientific and logical (correct and valid reasoning) manner.
4. Verification of old facts and finding out new facts (Invention-is inventing and Revalidation- Giving evidence).

RESEARCH COMPRISES⁵:

1. Defining and redefining problems
2. Formulating Hypothesis or suggested solutions
3. Collecting, organizing and evaluating data
4. Making deductions and reaching conclusions and
5. Lastly careful testing the conclusions to determine whether they fit the formulating Hypothesis.
6. Hypothesis- A proposal intended to explain certain facts or observations or Solution for suggested problem.

RESEARCH METHODOLOGY⁶:

The term methodology refers to systemic procedure for carrying out an activity and in the context of medicine implies a set of rules which broadly specify-

How knowledge should be acquired, presented and evaluated.⁷

It is the way to solve research problems systematically. It has many dimensions and research methods are one among them.

Research methodology is the science of studying how research is done scientifically; in fact it is the grammar of science. A system of methods in particular field is the methodology. It is also defined as the methods or techniques which are used by the researcher during the course of studying Research problem are termed as Research methodology.⁸

ANUSANDHANA (RESEARCH)^{9, 10}:

Anusandhana is a term commonly used in Ayurveda and allied literature for discovery in general.

Comprises of - **Anu-** anantara that is afterwards and **Sandhana-** Finding out. The study of cause and effect relationship between Dravya, Guna, and Karma after several observations and through verifiable examinations, arrival at final conclusions as Anusandhana. Anu to follow and Sandhana is samyak gyana that is appropriate knowledge. To link the interrupted ancient thoughts and to read in between the lines is called Anusandhana.

1. If some vital (Performing an essential function in the living body) thing is lost in due course of time, the efforts initiated to trace out the lost thing is Anusandhana.¹¹

2. In other words “Anusandhana” means restoring or re-establishing ‘Karya karanabhava’ that is cause and effect relationship thereby acquiring “Yathartha gyana”.

3. Another meaning for Anusandhana is binding together the bits of information gathered through search and research.

4. In Ayurveda literature much of the information relevant to a particular subject is not mentioned under single heading or chapter, but the information is scattered in different sthanas and so on.

Therefore much of the research especially literary is based on collecting the information on a particular topic or subject this made the term Anusandhana.¹²

TABLE SHOWING SYNONYMS:

| Other terms or equivalent terms used for word Research are ¹³ | Specific term used for <i>Anusandhana</i> : ¹⁴ |
|--|---|
| <ol style="list-style-type: none"> Investigation- The work of inquiring into something thoroughly and systematically Invention- The act of inventing Enquiry- A search for knowledge Exploration- A careful systematic search Verification- Additional proof that something that was believed (some fact, hypothesis or theory) is correct Discovery- The act of discovering something Quest- The act of searching for something new | <ol style="list-style-type: none"> Anveshana- Search unknowing thing Charaka Anusandhana- Binding the bits of information Eshana- Probing (Inquiry or investigation) Gaveshana- Searching for missing Jignasa- Curiosity to know things Manthna- Churning to get amrita Nirikshana- Observation Parishodhana- Searching Punarvimarsha- Re- appraisal Parikshana- Experiments Vimarsha- Literary criticism |

TABLE SHOWING AIMS AND OBJECTIVES¹⁵:

| Aims | Objectives |
|---|---|
| <ul style="list-style-type: none"> Invention-A creation (a new device or process) resulting from study and experimentation Revalidation-Prove valid; show or confirm the validity of something Establishing the old facts with present knowledge Analyzing sequence Logical application of Fundamentals <p>In Ayurveda</p> <ol style="list-style-type: none"> Desire of Absolute knowledge Desire of better standard living | <ul style="list-style-type: none"> To identify the problem To collect the information To form the Hypothesis <p>In Ayurveda</p> <ul style="list-style-type: none"> Maintenance of health and treatment of disease. To investigate principles of Ayurveda and find out ways of practical application. To prove Ayurvedic principles in a scientific way. To study the cause and effect relationship. Solutions for current problems like Autoimmune, metabolic and new emerging diseases. |

H₀ – Null Hypothesis, H₁- Research Hypothesis

To test the Hypothesis, to accept or reject the hypothesis and to note the results.

Scope¹⁶:

1. The present generation wants a scientific clarification (removes obstacles to understanding) for everything that is happening around the world.
2. Ayurveda is being an ancient medical science, is formulated on the scientific parameters available in those times.
3. Other system or contemporary sciences growing by conducting Research regularly in the field of Biology, Physiology,

Pathology Pharmacology, Bio chemistry with valid information. This created necessity of Research in Ayurveda.

4. To develop evidence based support on the efficacy of Ayurveda drugs, procedures and practices. To generate data on safety, standardization, and quality control for Ayurveda products and practices. To review the rare classical literature and historical aspects of Ayurveda. To investigate the fundamental principles of Ayurveda.
5. To generate data on various aspects of Ayurveda, Standardization of drugs as well as finished products.

TABLE SHOWING NEED, CHARACTERS, AND QUALITY OF RESEARCHER¹⁷

| Need: | Characteristics of Research: | Quality of Research: |
|---|--|---|
| 1. Development of methodologies (The system of methods followed in a particular discipline) | 1. Aims to find out new facts | 1. Logical (Based on known statements) thinking |
| 2. Evaluation and Recording | 2. Logical (Based on known statements) and objective orientation | 2. Highest integrity |
| 3. Improve quality and value of research | 3. Based on personal observation and experimentation | 3. Spent long time |
| 4. Appropriate evaluation methods are the need of hour to say excellence in research. | 4. Experts in research field | 4. Sincere to his work |
| | 5. Quest (The act of searching for something) for Answer | 5. Optimistic- always positive (Expecting or presenting the best possible outcome) approach |
| | 6. Requires lot of patience | |
| | 7. Maintain Records & Reports | |

Classical methods of Research

1. Concepts of Pratyaksha (direct perception by senses), Anumana (logical inference), Yukti (logic) and Aptopadesha (textual reference) Pramana. Chaturvidha pramana Cha,Su.11/17 p.n 152-154
2. Dravyatah (Quantitative examination), Gunatah (Qualitative examination),

Karmatah (Functional examination)- Pareekshana paddhati.

3. Aushadhayoga Pareekshana paddhati
4. Swastha Su.Su.15/48- Atura Pareeksha paddhati (Trivida, Chaturvidha, Shaddvidha, Ashtavida and Dashavidha) Cha. Su, Cha. Vi., Su.Su.10
5. Dashavidha pareeksha bhava (Dushyam, Desham, Balam, Kalam, Analam, Prakriti,

Vayaha, Satva, Satmya, Ahara and Avastha). A.H.SU.12/67-68

6. Tadvidya sambhasha, Vadamarga. Cha. Su

7. Tantrayukti (Techniques of expositions) Su.Ut.65

Fundamental concepts of Research in Ayurveda¹⁸

Concept of Panchamahabhuta and Tridosha theory

Concepts of Rasa, Guna, Virya, Vipaka, Prabhava and Karma

Concept of Prakruti- Saradibhava, Ojas, Srotas, Agni, Ama and Koshta

In Ayurveda qualities of Researcher¹⁹:

Vidya vitarka vignanam smriti tat paratkriyaha /

yasate shaddgunasya na sadhyamiti nivartate ||

Purushartha.

1. Vidhya- Knowledge

2. Vitarka- Reasoning

3. Vignana- Scientific method

4. Smriti- Memory

5. Kriya- Practical approach

According to Acharya Sushruta- Satata adhayana, Vada, Paratantra avalokana, Tadvidya sambhasha will enhances Buddhi and Medha²⁰.

Historical background of Research in Ayurveda:

1. The spread of Ayurveda is itself a great Research phenomenon.

2. A person is born to achieve Chaturvidha Purusharthas i.e, Dharma, Artha, Kama and Moksha. To attain this life span of hundred years is required.

3. In ancient time people died very early due to various diseases without achieving *sampurana*.

4. Maharshi Bharadwaj organized a conference in the Himalaya and inviting all sages to find out ways and means to eradicate diseases.

5. To restore Deerghayu so as to achieve the four fold objectives of life (Chaturvidha Purusharthas).

Evidences of Researches in Ayurvedic Classics:

1. The quest of Longevity began in the Himalaya that will be described as the world's First Health conference.

2. Bharadwaj approached- Lord Indra to learn Ayurveda- he propagated to various Maharshis. The same scientific tempo of analysis, synthesis and discussion clearly visible later period of Punarvasu atreya and his student.

3. *Agnivesh krutetantra Charake*

Pratisamskrite Dridabala

Agniveshakrita--- Charaka pratisamskrita---

---- Dridabala sampurana.

Agnivesha tantra - Charaka redacted it by re- editing it. The same process of revision and addition was undertaken successfully by Dridabala. He added one- third portion of Charaka *samhita* and made it complete and comprehensive. This shows spirit of literary research in Ayurveda.

4. The invention and inclusion of fast acting Rasaushadis, popularly known as Ayurvedic antibiotics. This shows drug research and drug development was prevalent in those days.

5. Adaptations and further development of "Nadi pareeksha" during the period of Acharya Sharangadhara. This reflects on going fundamental research in Ayurveda.

6. Developing the disease concept and treatment for new disease like Phiranga

including Madhushnuhi. This shows ongoing clinical research in Ayurveda.

7. Charaka samhita is basically a problem solving guide where both student and teacher discuss every problem. This exhibits teaching methodology in Ayurveda.

Ancient Research methods: The means of investigation in ancient science were the

Pramanas (Parameters): The problem to be investigated is called Pareeksha in Ayurveda and Prameya, Sadhana, Karana and Upakarana in the Darshana parlance.

Aim and Objectives-

1. Prevention and cure of diseases
2. Means (tools) & Methods- Chaturvida pramanas and Support- Tantrayuktis, Tadvidyasambasha

| Ancient devices five qualities of logic and their modern equivalents: <i>Nyaya school of thought</i> ²¹ | Seven principles for presenting the problems in a particular method <i>Mimasakara</i> |
|---|--|
| <ul style="list-style-type: none"> • Pratijna- The Hypothesis to be proved • Hetu- The casual element • Udaharana- The data or example in support the Hypothesis • Upanaya- Verification/ testing to establish correlation • Nigama- Conclusion | <ul style="list-style-type: none"> • 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- |

Tantrayuktis (Literary techniques):

Tantrayuktis are important and essential techniques to grasp true meaning of the Samhita granthas. Acharya Sushruta clearly stated that these are the tools to acquire *Tantrasara* (Essence of Samhita) and research abilities. These help in clarification of shastra in 3 ways:

1. Shabda (Literary aspects),
2. Artha (Concept aspects)
3. Nyaya (Practical application aspects)

Tantrayuktis are the tools for literary research, fundamental research and clinical research. Further these helps to elaborate the hidden meaning concepts and discover the hidden meaning between the lines. If one is not fully aware of these Tantrayuktis he may not understand the samhita knowledge in true spirit.²²

Clinical studies in ancient times:

According to Charaka there are 3 means of open to physician for ascertaining disease-

A. Theoretical knowledge (Aptopadesha) of possible causes and symptoms of all known disease (Nidana, Lakshana and Chikitsa explained by the acharyas for different Vyadhi).

B. Meticulous observation of the patients symptoms and signs and complaints (Pratyaksha). (Rogi pareeksha, Roga Pareeksha, Prayogashalala pareeksha.)

C. Inference based on previous experience (Anumana). In the absence of one or more of the 3 aids, the physician cannot come to a true conclusion.

CONCEPT OF PRAMANAS AND THEIR ROLE IN RESEARCH²³:

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.

Pratyaksha (Direct observation)- Knowledge gained from perception through senses.

Anumana (inference) – Knowledge attained by way of reason and logic.

Yukti (Reasoning) – Knowledge by the virtue of ingenuity (creative imagination).

PRATYAKSHA AND ANUMANA:

Some objects fall within the power of perception of our senses (Pratyaksha) while other being very minute are out of the reach of these sense organs Inference (Anumana) is the only instruments of recognition. The mode of study of these various spheres by inference (assumption) which is two folds-

1. From gross objects to its minutest forms or particles (Analysis).

2. From the minutest particles to its final stage of gross or finished form (synthesis).

For validity or reliability, pratyaksha and anumana, both should be free from misconception that is why aptopadesha is required as the base for these means.

APTOPADESHA:

1. Ayurveda has laid great emphasis and gives priority to the shastras, rishivachans or

aptavachanas for validity and reliability because Ayurveda considers shastra as eternal truth- invariable, unchallenged and final.

2. It believes in the validity of shastras because the authors of the shastra were endowed with superior intellect, sharp and crystal clear vision, supra sensory perception and possessed unbiased judgment. Whatever explained in the shastra is nothing but absolute truth.

3. The above discussed pramanas are the blue print basis of the ancient medical system. In general this is the methodology adopted in Ayurveda.

4. Therefore the scientific methods recommended by Charaka for the study of Ayurveda are- Aptopadesha, Pratyaksha, Anumana and Yukti.

APTOPADESHA-Take example of Sthoulyaroga acharya Charaka and other vividly discussed in classics, understanding of the disease by the help of Aptavachana is –Aptopadesha

PRATYAKSHA- When a patient approaches a physician then thorough History taking, Examination, Investigation by Pratyaksha.

YUKTI: Planning the treatment based on the diagnosis.

ANUMANA: 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.

RESEARCH CONCEPTS IN AYURVEDA²⁴:

The priority areas of research in Ayurveda are

Concept base: Panchamahabhuta and Tridosha theory

Concepts of Rasa, Guana, Veerya, Vipaka, Prbhava and Karma

Concepts of Prakriti- Saradibhavas, Ojas, Srotas. Agni, Ama and Koshta.

Disease base: The scope of Research areas are

Highly infectious diseases like Swine flu, Dengue fever, Chikoon gunya, Diabetes mellitus, Hypertension, Obesity, HIV, STD and so on.

TABLE SHOWING RESEARCH PROCESS/ SYNOPSIS / DISSERTATION/RESEARCH PROTOCOL WRITING ^{25, 26.}

| Steps for Research process: | Research process in Ayurveda |
|---|--|
| <ul style="list-style-type: none"> • Formulating the research problem • Extensive literature survey • Developing the working Hypothesis • Preparing the research design • Determining the sample size • Collecting the data • Execution of the project • Analysis of Data • Hypothesis testing • Generalization and interpretation • Preparation/presentation of the result with conclusions | <ul style="list-style-type: none"> • 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- Mimasakara |

DISCUSSION

1. Priority areas of Research in Ayurveda

Concepts base-Study of fundamentals like

1. Study on Prakruit
2. Panchamahabhuta and Tridosha siddhanta
3. Agni, Koshta, Srotas, Ama,
4. Rasa, Guna, Veerya, Vipaka, Prabhava etc...

Disease base-The area should be need for hour like

1. Highly infectious diseases like H1 N1 as health promotive aspects
2. Dengue fever
3. Chikyun gunya
4. Diabetes mellitus, Hypertension
5. Obesity, HIV, STDs..... As preventive aspects, new drug discovery,

CONCLUSION

1. In Ancient times the treatments told by acharyas are timely tested they holds good till today. Many references available in samhitas regarding evidences for research.
2. Different steps of Research, Methods, process has been dealt in different context of Ayurveda.
3. Chaturvida pramans plays very important role and they are considered as Research tools.
4. Innumerable Research clues have been explained by acharyas in samhita granthas in various instances. Understanding of these competently and application and analyzing these fact by using skill of the Researcher.
5. To create confidence amongst Ayurveda practitioners and make acceptable by the

people and for globalization evidence based practices is need for hour.

REFERENCES

1. www. Dictionary Word web.com 29.12.2016, 21.08pm
2. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N. 14
3. C.R.Kothari, Gaurav Garg Research Methodology- Methods and Techniques 3rd edition, 2014 new age International limited, Publishers, New Delhi. P.N.1
4. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N. 14
5. C.R.Kothari, Gaurav Garg Research Methodology- Methods and Techniques 3rd edition, 2014 new age International limited, Publishers, New Delhi. P.N.1
6. C.R.Kothari, Gaurav Garg Research Methodology- Methods and Techniques 3rd edition, 2014 new age International limited, Publishers, New Delhi. P.N.6-7
7. Prof Suresh babu Comprehensive Research Methodology for Ayurvedic Scholars 1st edition, 2013 Chaukhambha orientalia, Varanasi. P.N. 11-12
8. C.R.Kothari, Gaurav Garg Research Methodology- Methods and Techniques 3rd edition, 2014 new age International limited, Publishers, New Delhi. P.N.6-7
9. Prof-P.V.Sharma Ayurvediya Anusandhana paddhati- 2nd edition 1997 Chaukhambha orientalia Varanasi. P.N.3-4
10. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N. 19-20
11. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N.19-20
12. Prof Sureshbabu Comprehensive Research Methodology for Ayurvedic Scholars 1st edition, 2013 Chaukhambha Orientalia. Varanasi. P.N. 9
13. www. Dictionary Word web.com 29.12.2016, 21.08pm
14. Prof Sureshbabu Comprehensive Research Methodology for Ayurvedic Scholars 1st edition, 2013 Chaukhambha orientalia Varanasi. P.N. 10 and Prof-P.V.Sharma Ayurvediya Anusandhana paddhati 2nd edition 1997 Chaukhambha orientaliya, Varanasi. P.N.3-4
15. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N. 20
16. Prof Sureshbabu Comprehensive Research Methodology for Ayurvedic Scholars 1st edition, 2013 Chaukhambha orientalia, Varanasi. P.N.
17. Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd

edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N.18

18.Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N.82-86

19.Kashinath shastry, Vaidya Yadavaji trikamaji Acharya, Agnivesha Charaka samhita Chakrapanidatta virachita Ayurveda dipika vyakhyana hindi Sutrasthana chapter 9th verse 21, 4th edition Chaukhambha Sanskrit samsthana, Varanasi. 1994. Cha.Su.9/121, P.N.137.

20. Kaviraj Ambikadatta Shastry, Sushruta, Chikitsasthana 28th chapter, 27th verse Ayurveda Tatvasandipika vyakyana 10th edition, Varanasi Chowkambha Sanskrit Sansthan. 1996. Su.Chi., P.NO. 126 and Vangasena, Vangasena samhita, Rasayana adhikara 508th verse Jain Sankarlalji Vaidya, Mumbai Khemraj Srikrishnadas publishers; 1996. P.N.954

21.Kashinath Shastry, Vaidya Yadavaji trikamaji Acharya, Agnivesha Charaka samhita Chakrapanidatta virachita Ayurvedadipika vyakhyana hindi Vimana sthana chapter 8th verse 30-34, 4th edition Chaukhambha Sanskrit samsthana, Varanasi. 1994. Cha.Su.9/121, P.N.636- 638

22. Kaviraj Ambikadatta Shastry, Sushruta, Uttaratntra 1st chapter, verse 3, Ayurveda Tatvasandipika vyakyana 10th edition,

Varanasi Chowkambha Sanskrit Sansthan. 1996. Su.Ut.65/3, P.NO. 492

23.Kashinath shastry, Vaidya Yadavaji trikamaji Acharya, Agnivesha Charaka samhita Chakrapanidatta virachita Ayurvedadipika vyakhyana hindi Sutrasthana chapter 11th verse 17, 4th edition Chaukhambha Sanskrit samsthana, Varanasi. 1994. Cha.Su.11/17, P.N 152-154

24.Prof Sureshbabu Comprehensive Research Methodology for Ayurvedic Scholars 1st edition, 2013 Chaukhambha orientalia, Varanasi. P.N.20-21

25.C.R.Kothari, Gaurav Garg Research Methodology- Methods and Techniques 3rd edition, 2014 new age International limited, Publishers, New Delhi. P.N.9-18

26.Dr. Subhash Ranade, Dr. R.R. Deshpande. Authors Dr. Sachin Sarpotdar, Dr. Santosh Bhor and Dr. Ila. Bhor Research Methodology and Medical Statistics 3rd edition, 2015, published by Girish D.Gandhi Manikarnika publication, Pune. P.N. 24-32

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