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CROSS SECTIONAL STUDIES: NEGLECTED ASPECT IN AYURVEDA RESEARCH

Anand Katti

Associate Professor, Department of Samhita Siddhanta, Govt Ayurveda Medical College and Hospital, Bengaluru, Karnataka, India.
Email ID ayurvedananda@gmail.com

ABSTRACT

Research is creative and systematic work undertaken to increase the stock of knowledge. It involves the collection, organization and analysis of information to increase understanding of a topic or issue. Research has several facets. From searching innovative ideas and concepts, to establishing their veracity, to eventually finding their application for the betterment of human beings and the world they live in. Research in Ayurveda is still nascent. Ayurveda research is headed in various central and state sponsored institutes, various universities and most academic institutions. A glance at the kind of researches undertaken would prompt anyone to believe that most of clinical researches are interventional studies where one intervention is compared with standard or placebo. There are many studies which is single group interventional studies also. Interestingly the number of observational studies is very dismal. A cross sectional study, a variety of Observational study, involves looking at data from a population at one specific point in time. There is need to utilize this method of research in connection with Ayurvedic interventions in National programs, in ayurveda education, to create Ayurveda based evidence in tandem with evidence-based medicine, to generate health data and health statistics on ayurvedic indicators.

Keywords*: Research In Ayurveda, Cross Sectional Studies, Survey Studies, Observational Study.*

1. INTRODUCTION

Research is very nascent in ayurveda. Still there is a section of Ayurvedists who deem Ayurveda is a complete science, there is no scope of research as there is no possibility of adding anything substantial or any new knowledge in the vast substratum of ayurveda wisdom. It is also important to know that need of systematic research in ayurveda is well appreciated and acknowledged by every stake holder of Ayurveda. Therefore, research methods and biostatistics as teaching subject is introduced in the undergraduate curriculum itself. Research is defined as careful consideration of study regarding a particular concern or problem using scientific methods. According to the American sociologist Earl Robert Babbie, research is a systematic inquiry to describe, explain, predict, and control the observed phenomenon. It involves inductive and deductive methods.

A clinical study involves research using human volunteers, with the intention to add to medical knowledge. Which is either an interventional study or a descriptive study?

Interventional studies are testing whether a specific intervention (such as a drug, device, or behavioral change) affects health-related outcomes. Different groups of people are assigned at random to receive and not receive the potential intervention in a process called randomization. Typically, the group that does not receive the intervention receives either the current standard of care or a placebo, depending on the condition. Interventional trials are also typically blinded, meaning that participants are not aware if they are in the control group or receiving the intervention, or double-blinded, meaning that both the researcher and the participants are not aware.

Observational studies, on the other hand, assess health outcomes in groups of participants according to a research plan or protocol. In this kind of study, researchers ask patients with the same disease or treatment plan to be observed over a period of time. During this time, researchers watch how patients are responding to their treatments and take into account different variables that patients might be exposed to. A patient registry, commonly found on patient advocacy sites, is a type of observational study that collects information about patients' medical conditions and/or treatments to better understand how a condition or treatment affects patients in the real world.

Ayurveda research is headed in various central and state sponsored institutes, various universities and most academic institutions. A glance at the kind of researches undertaken would prompt anyone to believe that most of clinical researches are interventional studies where one intervention is compared with standard or placebo. There are many studies which is single group interventional studies also. Interestingly the number of observational studies is very dismal. Observational studies are further categorized as Cohort, case control and cross-sectional studies.

Cohort study[1] is a form of longitudinal observational study used in medicine for analysis of risk factors and follows a group of people who do not have the disease and uses correlation to determine the absolute risk of subject contraction. A case control study[2] is a type of observational study in which two

existing groups differing in outcome are identified and compared on the basis of some supposed causal attribute. and Cross-sectional studies are observational study that involves the analysis of data collected from a population or a representative subset, at one specific point of time.

On conducting a preliminary screening of Ayurveda researches employing cross sectional study design, the researches themselves are very scare and limited. The screening was done on various databases like pubmed, scopus etc. Even In Clinical trial registry of India, no ayurveda research with cross sectional study design is registered. In this background analysis of scope and benefits of cross-sectional researches in ayurveda becomes relevant.

2. CROSS SECTIONAL STUDIES[3]

It Is a type of observational study that analyzes data from a population or a representative subset at a specific point of time. They often used to measure the prevalence of Health outcomes, understand determinants of health and describe features of population.

Cross sectional studies are usually inexpensive and easy to conduct. In a cross-sectional study investigator measure outcomes and exposures of the study subjects at the same time. It is described as taking snapshot of a group of individuals. Cross sectional studies differ from a case control studies in that they aim to provide data on entire population under study, whereas case control studies typically include only individuals who have developed a specific condition and compare them with a matched sample often a tiny minority of the rest population. Unlike in case control studies or cohort studies the subjects in a cross-sectional study are simply chosen from an avail population of potential relevance to the study question.

Cross sectional studies have been mainly used to understand the prevalence of a disease in this type of studies researchers typing describe the distribution of variables in a population they may assess the prevalence of a disease or association of an exposure to an outcome in a population

Cross sectional studies are also used to infer causation. At one point in time the subjects are assessed to determine whether they were exposed to the relevant agent and whether they have the outcome of interest. Some of the subjects will not have been exposed nor have the outcome of interest. This clearly distinguishes this type of study from the other observational studies (cohort and case controlled) where reference to either exposure and/or outcome is made.

The advantage of such studies is that subjects are neither deliberately exposed, treated, nor not treated and hence there are seldom ethical difficulties. Only one group is used, data are collected only once and multiple outcomes can be studied; thus, this type of study is relatively cheap. Many cross-sectional studies are done using questionnaires. Alternatively, each of the subjects may be interviewed.

3. IMPORTANCE OF CROSS-SECTIONAL STUDIES

Cross sectional studies are used to assess the burden of disease or health needs of a population. These are primarily used to determine the prevalence. Prevalence equals the number of cases in a population at a given point in time prevalence is vitally important to the clinician because it influences considerably the likelihood of any particular diagnosis and the predictive values of any investigations[4]

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Cross-sectional designs are used for population-based surveys and to assess the prevalence of diseases in clinic-based samples.

These studies can usually be conducted relatively faster and are inexpensive. They may be conducted either before planning a cohort study or a baseline in a cohort study.

These types of designs will give us information about the prevalence of outcomes or exposures; this information will be useful for designing the cohort study. However, since this is a one-time measurement of exposure and outcome, it is difficult to derive causal relationships from cross sectional analysis. We can estimate the prevalence of disease in cross-sectional studies.

MERITS OF CROSS-SECTIONAL STUDIES

1. Relatively quick and inexpensive to conduct
2. No ethical difference
3. Data on all variables are only collected at one time point
4. Multiple outcomes and exposures can be studied
5. Many findings can be used to create an in-depth research study
6. Diagnosing or staging a disease
7. Establishing normal lab values from normal subjects
8. Evaluating different methods of doing the same thing for example examining the relationship between histology slides and MRI findings of carotid arteries
9. These are studies are conducted either before planning a cohort study or a baseline in a cohort study. These types of designs will give us information about the prevalence of outcomes or exposures; this information will be useful for designing the cohort study
10. These study designs may be useful for public health planning, monitoring, and evaluation. For example, sometimes the National AIDS Programme conducted cross-sectional sentinel surveys among high-risk groups and ante-natal mothers every year to monitor the prevalence of HIV in these groups.

DEMERITS OF CROSS-SECTIONAL STUDIES

1. Unable to measure the incidence [6]
2. Difficult to make a casual inference
3. Associations identified might be difficult to interpret
4. Unable to investigate the temporal relation between outcomes and risk factors
5. Not good for studying rare diseases
6. Susceptible to biases such as non-responsive bias and recall bias
7. Since this is a 1-time measurement of exposure and outcome, it is difficult to derive causal relationships from cross-sectional analysis
8. Rare conditions cannot efficiently be studied using cross sectional studies because even in large samples there may be no one with the disease.
9. The most important problem with this type of study is differentiating cause and effect from simple association
10. These studies are also prone to certain biases. For example, we wish to study the relation between diet and exercise and being overweight/obese. We conduct a cross-sectional study and recruit 250 individuals. We assess their dietary habits, exercise habits, and body mass index at one point of time in a cross-sectional survey. However, individuals who are overweight/obese have started to exercise more or altered their feeding habits (eat more salads). Hence, in a cross-sectional survey, we may find that overweight/obese individuals are also more likely to eat salads and exercise more. Thus, we have to be careful about interpreting the associations and direction of associations from a cross-sectional survey.
11. The prevalence of an outcome depends on the incidence of the disease as well as the length of survival following the outcome. For example, even if the incidence of HIV (number of new cases) goes down in one particular community, the prevalence (total number of cases – old as well as new) may increase. This may be due to cumulative HIV positive cases over a period. Thus, just performing cross-sectional surveys may not be sufficient to understand disease trends in this situation.

4. RELEVANCE OF CROSS-SECTIONAL STUDIES IN AYURVEDA

Cross sectional studies have many utilities and applications in Ayurveda, few among them are discusses hereunder.

To include Ayurvedic interventions in National programs

Cross sectional studies generate huge data and show the trends in terms of behaviors of participants. A positive trend should always be welcome. Many ayurvedic practices are just limited to clinicians, set of patients under him or to a locality. For eg hundreds of thousands receive Swarna bindu every month and data obtained through a cross sectional study can help convert this into a national health policy. So is the case with anutaila nasya. Anutaila nasya according to ayurveda is a daily regimen and many are practicing it. A cross sectional study on those who are doing it can convince the health benefits and scientific world would again embark anutaila importance in daily life. Anjana is one more practice that can be subjected to this kind of data generation. Like this, value and benefits of many ayurveda practices can be put forth the scientific world.

In Ayurveda Education

Ayurveda education has seen many ups and downs. Various committees constituted by the government have time and again brough out reforms, but haven't been greatly successful in achieving their objective and creating an ideal ayurveda Vaidya. In this back ground to understand the students, teachers' academic administrators' problems cross sectional studies become important. Cross sectional studies can give an idea of knowledge

skill and practices of teachers. The first-year experiences of students can be recorded, following which academic policies can be modified progressively periodically.

To create Ayurveda based evidence in tandem with evidence-based medicine

This is very much needed. A researcher faces a problem in the beginning itself when he has to decide sample size. As of today, we don't have data towards the incidence and prevalence rate of many ayurvedic diseases and we largely rely on data of modern medical science. For example, incidence rate of diabetes becomes the incidence rate of prameha. But prameha as such includes many other diseases other than diabetes mellitus. Hence there is big necessity to elicit the incidence and prevalence rate of all diseases documented in ayurveda literature. Only when that happens, we can generate ayurveda based evidences in the world where everyone is after evidence-based medicine.

It is also necessary to generate data relating to incidence of nidana for a disease among population of sufferers. Incidence of purvarupa for a given disease across the population, rupa, upadrava etc.

To generate health data and health statistics on Ayurvedic indicators.

It is also important to have data of the population in terms of dehaprakruti. Prakruti is an important concept of Ayurveda and couple with good prakruti would give birth to good progeny. Hence to develop a healthy and strong society the prakruti data becomes important. Number of people of vataprakruti vatapittaprakrti and so on would greatly help the policy makers. Prakruti wise lifestyle and therapeutic measures like rutushodhana, can be applied to mass will can work wonders. This can then be extended to variables related to manasa prakruti also.

5. CONCLUSION

Cross sectional studies are a neglected component in Ayurveda research. Cross sectional studies have certain definite benefits and those benefits cannot be obtained by any other method of research. Cross sectional studies should be conducted in Ayurveda to generate large data that can help decide the national programs like Suvarna prasha. In ayurveda education, to know the Knowledge awareness and practices of teachers and to record student experiences periodically. It also helps generate the health statistics on ayurveda parameters that help in future researches of Ayurveda.

REFERENCES

[1] Dr. Bilal Ahmad Wani and Dr. Shaheen Ahmad Mir. Basics of Research Methodology and Medical Statistics for Ayurvedic Scholars. Edition 2021 Jaipur, Ayurveda Sanskrit Hindi Pustak Bhandar.P 195

[2] Dr. Bilal Ahmad Wani and Dr. Shaheen Ahmad Mir. Basics of Research Methodology and Medical Statistics for Ayurvedic Scholars. Edition 2021 Jaipur, Ayurveda Sanskrit Hindi Pustak Bhandar.P 195

[3] Dr. Bilal Ahmad Wani and Dr. Shaheen Ahmad Mir. Basics of Research Methodology and Medical Statistics for Ayurvedic Scholars. Edition 2021 Jaipur, Ayurveda Sanskrit Hindi Pustak Bhandar.P 195

[4] Xiaofeng Wang, PhD; and Zhenshun Cheng, MD. Cross sectional studies strengths, weakness and recommendations. Chest journal, 2020, 158(1S) : S65-S71, P. S67

[5] https://pubmed.ncbi.nlm.nih.gov/32658654/

[6] Xiaofeng Wang, PhD; and Zhenshun Cheng, MD. Cross sectional studies strengths, weakness and recommendations. Chest journal, 2020, 158(1S) : S65-S71, P. S67

[7] https://pubmed.ncbi.nlm.nih.gov/32658654/

[8] CJ Mann, Observational research Methods. Research Design II: Cohort, Cross sectional and Case Control Studies. Emerg Med J 2003; 20:55

[9] CJ Mann, Observational research Methods. Research Design II: Cohort, Cross sectional and Case Control Studies. Emerg Med J 2003; 20:56