Kipling Principle/Method (5W+1H) in Research

Hundred years ago, the celebrated English poet and author, Rudyard Kipling (1865–1936), promoted his **'six honest men'** – the use of six questions—as a guide for better assessment of problem and its solution. Here is Kipling's clever poem:

I kept six honest serving men
They taught me all I knew
*Their names are **What**, and **Why** and **When**;*
*and **How** and **Where** and **Who**.*

5W1H are questions whose answers are considered basic in information gathering or problem solving. They are detailed in Table 1.2.

Table 1.2: Implications of 5W1H questions

Research questions	*Research implications*
Why	Research objectives
Who	People—researchers and Research subjects
What	Research Ideas
Where	Location—event occurred or research to be done
When	Situation
How	Research methodology/ planning

Acronym of RESEARCH—Characteristics of Ideal Research

Authors of this manual have introduced acronym of research, reflects characteristics of ideal research, which is given in Table 1.3.

Table 1.3

R	Review of Literature
E	Economical
S	Scientific and Specific
E	Ethical
A	Achievable and Applicable
R	Reviewed thoroughly
C	Creative (novelty)
H	Hypothesis proven

1. An early phase based on ritual and magic.
2. A rational phase based on the creative imagination.
3. A modern phase based on experimental design and laboratory investigation.

The earliest narrative describing a medical trial is found in the Book of Daniel, which says that Babylonian king Nebuchadnezzar ordered youths of royal blood to eat only red meat and wine for three years, while another group of youths ate only beans and water. The experiment was intended to determine if a diet of vegetables and water was healthier than a diet of wine and red meat. At the experiment endpoint, the trial accomplished its prerogative: the youths who ate only beans and water were noticeably healthier.[8]

Scientific curiosity to understand health outcomes from varying treatments has been present for centuries, but it was not until the mid-19th century when an organizational platform was created to support and regulate this curiosity. In 1945, Vannevar Bush said that biomedical scientific research was "the pacemaker of technological progress", an idea which contributed to the initiative to found the National Institutes of Health (NIH) in 1948, a historical benchmark that marked the beginning of a near century substantial investment in biomedical research.The NIH provides more financial support for medical research that any other agency in the world to date and claims responsibility for numerous innovations that have improved global health.[9]

The historical funding of biomedical research has undergone many changes over the past century. Innovations such as the polio vaccine, antibiotics and antipsychotic agents, developed in the early years of the NIH lead to social and political support of the agency. Political initiatives in the early 1990s lead to a doubling of NIH funding, spurring an era of great scientific progress.

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[8] Collier, R. (6 January 2009). "Legumes, lemons and streptomycin: A short history of the clinical trial". Canadian Medical Association Journal. 180 (1): 23–24.

[9] Retrieved from http://www.scienceguide.nl/201212/basic-research-the-pacemaker-of-progress.aspxon August 27, 2017.

Table 2.1: List of Noble laureates 1901–2017 *(Contd.)*

Year of Award	*Names of Scientists*	*Discovery*
1988	Sir James W. Black, Gertrude B. Elion and George H. Hitchings	"For their discoveries of important principles for drug treatment"
1989	J. Michael Bishop and Harold E. Varmus	"For their discovery of the cellular origin of retroviral oncogenes"
1990	Joseph E. Murray and E. Donnall Thomas	"For their discoveries concerning organ and cell transplantation in the treatment of human disease"
1991	Erwin Neher and Bert Sakmann	"For their discoveries concerning the function of single ion channels in cells"
1992	Edmond H. Fischer and Edwin G. Krebs	"For their discoveries concerning reversible protein phosphorylation as a biological regulatory mechanism"
1993	Richard J. Roberts and Phillip A. Sharp	"For their discoveries of split genes"
1994	Alfred G. Gilman and Martin Rodbell	"For their discovery of G-proteins and the role of these proteins in signal transduction in cells"
1995	Edward B. Lewis, Christiane Nüsslein-Volhard and Eric F. Wieschaus	"For their discoveries concerning the genetic control of early embryonic development"
1996	Peter C. Doherty and Rolf M. Zinkernagel	"For their discoveries concerning the specificity of the cell mediated immune defence"
1997	Stanley B. Prusiner	"For his discovery of Prions - a new biological principle of infection"

(Contd.)

Similarly, the completion of the Charaka Samhita by the stalwart Dridhbala by addition of 41 chapters in various sections has been accomplished by the selective and collective methodologies.[2]

AYURVEDIC CLASSICS

1. Charaka Samhita

- It is the oldest and the most authentic treatise on Ayurveda. It is a classical textbook of internal medicine, i.e. Kayachikitsa
- Medical ethics and etiquette are the professional values and protocols that bind medical practitioners such as physicians, doctors, nurses, primary health providers and other health care practitioners to the best practices in the profession. These are discussed and detailed in Charaka Samhita under the heading of "*Padachatushtaya*", "*Vaidyavritti*", etc.,
- Concept of '*Rasayana*' (senescence and rejuvenescence) and its clinical applications are introduced.
- Study of microbes, its afflictions and management strategy dealt under heading of "*Krimi*"
- Concept of Public health and its consequence and possible ways to control them are dealt under heading of "*Janapadoddwansam*".
- Symposiums of Ancient acharyas: Ancient sages, desirous of knowledge about uncleared topics assembled and proposed the different issues for discussion among themselves. There were seven symposiums documented in Charaka Samhita. They are
  - Ayurvedavatarana Parishad
  - Vatakalakaliya Parishad
  - Rashipurush ēvam rogotpattivishayak Parishad
  - Rasa-ahara-vinishchayartha Parishad

[2] Vaibhav D and Harish PJ. The philosophy of Nyaya, epistemology and Ayurveda research methodology. International Journal of Herbal Medicine 2016; 4(1): 59-63