

For example, the study might explore the best ways to treat people with colon cancer. By studying cancer cells from patients, researchers may be able to determine the specific genetic mutations (changes in gene sequence) that caused the normal, healthy cells to become cancerous, and may help doctors decide on the best drugs to prescribe or surgeries to perform. Clinical research today may help other doctors in the future screen their healthy patients before they ever develop cancer.⁶

Health Research

Health services research is a “multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately, our health and well-being.”⁷

Synonyms of Research—*Shabdaparyay*

Synonyms of research are given in Table 1.1.

Table 1.1: Synonyms of research	
<i>The word ‘research’ as Noun</i>	<i>The word ‘research’ as verb</i>
The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.	Investigate systematically.
Synonyms: Investigation, experimentation, testing, exploration, analysis, fact-finding, examination, scrutiny, scrutinization, probing; groundwork; <i>rare</i> indagation, experiments, experimentation, tests, enquiries, studies, analyses, work	Synonyms: Investigate, conduct investigations into, study, enquire into, make enquiries into, look into, probe, explore, analyse, examine, scrutinize, inspect, review, assess, study, read, read up on, pore over, delve into, dig into, sift through

⁶ Retrieved from https://www.genome.gov/10000771/on_March_23,2017.

⁷ Retrieved from <https://www.ahrq.gov/funding/training-grants/hsrguide/hsrguide.html> on March 23, 2017.

strength of selected drugs that are manufactured, distributed, and sold by the licensed manufacturers in pan India. Development of API, AFI and Standard Operating Procedures (SOPs) for manufacturing of classical ayurvedic formulations, adoption of modern instrumentation and technology in pharmaceutical processing and quality control of ayurvedic formulations, introduction of Good Manufacturing Practice (GMP) etc., are some of the milestones in the field of Ayurvedic pharmaceutical research.

Clinical research

Most of the clinical studies on Ayurveda products and/or therapies remain inconclusive due to poorly defined correlation with disease process and lack of specific parameters for clinical evaluation and outcomes. Clinical trials based on conventional medicine to establish safety and efficacy, mostly required narrowing down of Ayurvedic diagnostic approaches and therapeutic interventions. This disconnect between the Ayurvedic treatment and its expected outcome leads to confusion about its effectiveness and safety. These limitations have led to blind following of conventional diagnosis with poor recognition of Ayurvedic principles in the study that further complicates the outcome evaluation. Poor design of clinical studies on Ayurvedic products or therapies leads to poor adherence to various constituents of clinical studies like sample size, inclusion or exclusion criteria and such others.⁵

Central council for research in Ayurvedic sciences (CCRAS) have developed "Clinical Research Protocols for Traditional Health Sciences" in the year 2010 and it is generally observed that the protocols have not included Ayurvedic perspective of assessment comprehensively. Govt of India notified "Good Clinical Practice (GCP) Guidelines for clinical trials of ASU Medicine in the year 2013 and is available at http://ayush.gov.in/sites/default/files/5110899178-Final%20Book%2028-03-13_0.pdf

⁵ Retrieved from <http://www.drnareshbhatt.in/images/pdf/research-review/ClinicalResReview225Papers.pdf> on August 27, 2017.

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

<i>Year of Award</i>	<i>Names of Scientists</i>	<i>Discovery</i>
1928	Charles Jules Henri Nicolle	"For his work on typhus"
1929	Christiaan Eijkman	"For his discovery of the anti-neuritic vitamin"
	Sir Frederick Gowland Hopkins	"For his discovery of the growth-stimulating vitamins"
1930	Karl Landsteiner	"For his discovery of human blood groups"
1931	Otto Heinrich Warburg	"For his discovery of the nature and mode of action of the respiratory enzyme"
1932	Sir Charles Scott Sherrington and Edgar Douglas Adrian	"For their discoveries regarding the functions of neurons"
1933	Thomas Hunt Morgan	"For his discoveries concerning the role played by the chromosome in heredity"
1934	George Hoyt Whipple, George Richards Minot and William Parry Murphy	"For their discoveries concerning liver therapy in cases of anaemia"
1935	Hans Spemann	"For his discovery of the organizer effect in embryonic development"
1936	Sir Henry Hallett Dale and Otto Loewi	"For their discoveries relating to chemical transmission of nerve impulses"
1937	Albert von Szent-Györgyi Nagyrápolt	"For his discoveries in connection with the biological combustion processes, with special reference to vitamin C and the catalysis of fumaric acid"

(Contd.)

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<i>Year of Award</i>	<i>Names of Scientists</i>	<i>Discovery</i>
2007	Mario R. Capecchi, Sir Martin J. Evans and Oliver Smithies	"For their discoveries of principles for introducing specific gene modifications in mice by the use of embryonic stem cells"
2008	Harald zur Hausen	"For his discovery of human papilloma viruses causing cervical cancer"
	Françoise Barré-Sinoussi and Luc Montagnier	"For their discovery of human immunodeficiency virus"
2009	Elizabeth H. Blackburn, Carol W. Greider and Jack W. Szostak	"For the discovery of how chromosomes are protected by telomeres and the enzyme telomerase"
2010	Robert G. Edwards Jules A. Hoffmann	"For the development of in vitro fertilization"
2011	Bruce A. Beutler and Jules A. Hoffmann	"For their discoveries concerning the activation of innate immunity"
	Ralph M. Steinman	"For his discovery of the dendritic cell and its role in adaptive immunity"
2012	Sir John B. Gurdon and Shinya Yamanaka	"For the discovery that mature cells can be reprogrammed to become pluripotent"
2013	James E. Rothman, Randy W. Schekman and Thomas C. Südhof	"For their discoveries of machinery regulating vesicle traffic, a major transport system in our cells"
2014	John O'Keefe, May-Britt Moser and Edvard I. Moser	"For their discoveries of cells that constitute a positioning system in the brain"

(Contd.)