# References

|  |  |
| --- | --- |
| [1] | M. Masoud Y. Jaradat A. Manasrah Ahmad I. Jannoud, "Sensors of Smart Devices in the Internet of Everything (IoE) Era: Big Opportunities and Massive Doubts," *Journal of Sensors,* p. 26, 2019. |
| [2] | W. R. Bolislis F. Myriam T. C. Kühler, "Use of Real-world Data for New Drug Applications and Line Extensions," *Clinical Therapeutics,* vol. 42, no. 5, pp. 926-938, 2020. |
| [3] | AYUSH Minsitry Government of India, "AYUSH website," [Online]. Available: http://dashboard.ayush.gov.in/. |
| [4] | R. H. Singh, "Exploring issues in the development of Ayurvedic research methodology," *Journal of Ayurveda and integrative medicine,* pp. 91-95, 2010. |
| [5] | I. Krakau, "The importance of practice-based evidence," *Scandinavian Journal of Primary Health Care,* pp. 130-131, 2000. |
| [6] | B. Patwardhan, "Envisioning AYUSH: Historic Opportunity for Innovation and Revitalization," *Journal of Ayurveda and integrative medicine,* pp. 67-70, 2014. |
| [7] | G. Tillu TDU hospital staff, "Exploration of the TDU database," 2016 - 2018. [Online]. |
| [8] | Pharmaforum, "Pharmaforum, bringing healthcare together," [Online]. Available: https://pharmaphorum.com/views-and-analysis/a\_history\_of\_the\_pharmaceutical\_industry/. [Accessed 2020]. |
| [9] | "THE NUREMBERG CODE [from Trials of War Crimials before the Nuremberg Military Tribunals under Control Council Law] No. 10. Nuremberg October 1946–April 1949 Washington, D.C.: U.S. G.P.O, 1949–1953.". |
| [10] | "World Medical Association," [Online]. Available: https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/#:~:text=1.,identifiable%20human%20material%20and%20data.. |
| [11] | "THE COUNCIL FOR INTERNATIONAL ORGANIZATIONS OF MEDICAL SCIENCES (CIOMS)," [Online]. Available: https://cioms.ch/#:~:text=The%20Council%20for%20International%20Organizations,WHO%20and%20UNESCO%20in%201949.. |
| [12] | J. Greene S. H. Podolsky, "Reform, regulation, and pharmaceuticals--the Kefauver-Harris Amendments at 50," *The New England journal of medicine,* vol. 367, no. 16, p. 1481–1483, 2012. |
| [13] | "ICH Official Website," [Online]. Available: https://www.ich.org/. |
| [14] | V. Renjith, "Blinding in Randomized Controlled Trials: What researchers need to know?," *Manipal Journal of Nursing and Health Sciences,* vol. 3, no. 1, pp. 45-50, 2017. |
| [15] | D. S. Jones S. H. Podolsky, "The history and fate of the gold standard," *The Lancet: The Art of Medicine,* vol. 385, no. 9977, pp. 1502-1502, 2015. |
| [16] | National Library of Medicine USA, "ClinTrials.gov," [Online]. Available: https://clinicaltrials.gov/. |
| [17] | T. Boerma, "Public health information needs in districts," *BMC Health Serv Res,* vol. S12, 2013. |
| [18] | R. S. Evans., "Electronic Health Records: Then, Now, and in the Future," *Yearbook of medical informatics,* vol. Suppl 1, p. S48–S61, 2016. |
| [19] | V. R. Suvarna, "Real world evidence (RWE) - Are we (RWE) ready?," *Perspectives in clinical research,* vol. 9, no. 2, pp. 61-63, 2018. |
| [20] | S. Kamath G. Guyatt, "Importance of evidence-based medicine on research and practice," *Indian journal of anaesthesia,* vol. 60, no. 9, pp. 622-625, 2016. |
| [21] | G. Nahler, "good clinical research practice (GCRP)," in *Dictionary of Pharmaceutical Medicine*, Vienna, Springer, 2009. |
| [22] | J. Concato, "Randomized, Controlled Trials, Observational Studies, and the Hierarchy of Research Designs," *New England Journal of Medicine,* vol. 342, pp. 1887-1892, 2000. |
| [23] | J. Avorn, "In Defense of Pharmacoepidemiology — Embracing the Yin and Yang of Drug Research," *New England Journal of Medicine,* 2007. |
| [24] | A. Anglemyer H. T. Horvath L. Bero, "Healthcare outcomes assessed with observational study designs compared with those assessed in randomized trials," *Cochrane Database of Systematic Reviews,* 2014. |
| [25] | S. V. Ramagopalan A. Simpson C. Sammon, "Can real-world data really replace randomised clinical trials?," *BMC Med,* vol. 18, no. 13, 2020. |
| [26] | S. Rimpilainen, "A Review of Electronic Health Records Systems Around the World," 2015. |
| [27] | "World Health Organization," [Online]. Available: https://www.who.int/campaigns/world-health-day/2018/campaign-essentials/en/#:~:text=The%20theme%20of%20World%20Health,is%20%E2%80%9CHealth%20for%20All%E2%80%9D.. |
| [28] | C. Lele, "Development of statistics as a discipline for clinical research: Past, present and future. Perspectives in clinical research," *Perspectives in Clinical Research,* vol. 8, no. 1, pp. 41-44, 2017. |
| [29] | S. Kaihara, "Information explosion," World Health, 1989. |
| [30] | J. Klerkx K. Verbert E. Duval, "Enhancing Learning with Visualization Techniques," Katholieke Universiteit Leuven, Belgium. |
| [31] | H. R. Nagel, "Scientific Visualization versus Information Visualization". |
| [32] | B. Chaudhry J. Wang S. Wu et al., "Systematic review: impact of health information technology on quality, efficiency, and costs of medical care," *Ann Intern Med,* vol. 144, no. 10, pp. 742-752, 2006. |
| [33] | C. Safran M. Bloomrosen W. E. Hammond et al., "Toward a National Framework for the Secondary Use of Health Data: An American Medical Informatics Association White Paper," *Journal of the American Medical Informatics Association,* vol. 14, no. 1, pp. 1-9, 2007. |
| [34] | S. Gu J. Pei, "Innovating Chinese Herbal Medicine: From Traditional Health Practice to Scientific Drug Discovery," *Front Pharmacol.,* vol. 381, p. 8, 2017. |
| [35] | H Zeng Q Yiqi X Chen et al., "History and Development of TCM Case Report in a Real-World Setting," *Evid Based Complement Alternat Med,* 29 Dec 2021. |
| [36] | L Ai-Ping J Hong-Wei X Cheng et al., "Theory of traditional Chinese medicine and therapeutic method of diseases," *World Journal of Gastroenterol,* vol. 1854, no. 6, pp. 1-10, 2004. |
| [37] | K. Chan, "Progress in traditional Chinese medicine," *Trends Pharmacol Sciences,* vol. 16, no. 6, pp. 182-187, June 1995. |
| [38] | D. Normile, "Asian medicine: the new face of traditional Chinese medicine," *Science,* vol. 299, pp. 188-190, 2003. |
| [39] | B. Tan J. Vanitha, "Immunomodulatory and antimicrobial effects of some traditional Chinese medicinal herbs: A review," *Curr. Med. Chem,* vol. 11, p. 1423–1430, 2004. |
| [40] | W. Y. Jiang, "Therapeutic wisdom in traditional Chinese medicine: a perspective from modern science," *Trends Pharmacol. Sci,* vol. 26, p. 558–563, 2005. |
| [41] | R. Wang H. Yan X. C. Tang, "Progress in studies of huperzine A, a natural cholinesterase inhibitor from Chinese herbal medicine," *Acta Pharmacol,* vol. 27, pp. 1-26, 2006. |
| [42] | J. Wang X. J. Xiong, "Outcome measures of Chinese Herbal Medicine for Hypertension: an overview of systematic reviews," *Evid. Based Complement. Alternat. Med,* p. 7, 2012. |
| [43] | Y. Tu, "The discovery of artemisinin (qinghaosu) and gifts from Chinese medicine," *Nat. Med,* vol. 17, p. 1217–1220, 2011. |
| [44] | Y Tu, "Artemisinin-A Gift from Traditional Chinese Medicine to the World (Nobel Lecture)," *Angew. Chem. Int. Ed. Engl,* vol. 55, p. 10210–10226, 2016. |
| [45] | U. S. Neil, "From branch to bedside: Youyou Tu is awarded the 2011 Lasker similar to DeBakey Clinical Medical Research Award for discovering artemisinin as a treatment for malaria," *J. Clin. Investig,* vol. 121, p. 3768–3773, 2011. |
| [46] | X. Z. Su L. H. Miller, "The discovery of artemisinin and the Nobel Prize in Physiology or Medicine," *Sci. China Life Sci,* vol. 58, p. 1175–1179, 2015. |
| [47] | CY Chen, "TCM Database@Taiwan: the world's largest traditional Chinese medicine database for drug screening in silico," *PLoS One,* vol. 6, no. 1, Jan 2011. |
| [48] | W Yang F Zhang K Yang et al., "SymMap: an integrative database of traditional Chinese medicine enhanced by symptom mapping," *Nucleic Acids Research,* vol. 47, no. D1, p. D1110–D1117, 08 January 2019. |
| [49] | J Ru P Li J Wang et al., "TCMSP: a database of systems pharmacology for drug discovery from herbal medicines," *J Cheminform,* vol. 6, no. 13, 2014. |
| [50] | L Zhihong C Chuipu D Jiewen et al., "TCMIO: A Comprehensive Database of Traditional Chinese Medicine on Immuno-Oncology," *Frontiers in Pharmacology,* vol. 11, 2020. |
| [51] | R Xue Z Fang M Zhang et al., "TCMID: traditional Chinese medicine integrative database for herb molecular mechanism analysis," *Nucleic Acids Research,* vol. 41, no. D1, p. D1089–D1095, 01 January 2013. |
| [52] | B Li C Ma X Zhao et al., "YaTCM: Yet another Traditional Chinese Medicine Database for Drug Discovery," *Computational and Structural Biotechnology Journal,* vol. 16, pp. 600-610, 2018. |
| [53] | L Feng L Kong X Dong et al., "ASES-TCM Protocol Steering Group. China Stroke Registry for Patients With Traditional Chinese Medicine (CASES-TCM): Rationale and Design of a Prospective, Multicenter, Observational Study," *Front Pharmacol,* vol. 12:743883, 31 Aug 2021. |
| [54] | Y Song M Li K Sugimoto et al., "CARE-TCM Group. China amyotrophic lateral sclerosis registry of patients with Traditional Chinese Medicine (CARE-TCM): Rationale and design," *J Ethnopharmacol,* vol. 284:114774, 10 Feb 2022. |
| [55] | J Chen J Huang JV Li et al., "The Characteristics of TCM Clinical Trials: A Systematic Review of ClinicalTrials.gov," *Evid Based Complement Alternat Med,* 24 Aug 2017. |
| [56] | T Zhang Z Huang Y Wang et al., "Information Extraction from the Text Data on Traditional Chinese Medicine: A Review on Tasks, Challenges, and Methods from 2010 to 2021," *Evidence-Based Complementary and Alternative Medicine,* vol. 2022, p. 19, 2022. |
| [57] | X. Sun, "ISPOR West China Chapter," [Online]. Available: https://www.ispor.org/docs/default-source/conference-ap-2018/china-2nd-plenary-for-handouts.pdf?sfvrsn=5fbc7719\_0. [Accessed 2022]. |
| [58] | "National Medical Products Administration, China," [Online]. Available: http://english.nmpa.gov.cn/2020-01/07/c\_456245.htm. [Accessed 2022]. |
| [59] | D. Shankar, "Health sector reforms for 21(st) century healthcare," *Journal of Ayurveda and integrative medicine,* pp. 4-9, 2015. |
| [60] | S. Madanian D. T. Parry D. Airehrour et al., "mHealth and big-data integration: promises for healthcare system in India," *BMJ Health Care Inform,* p. 26, 2019. |
| [61] | D. Shankar B. Patwardhan, "AYUSH for New India: Vision and strategy," *Journal of Ayurveda and integrative medicine,* vol. 8, pp. 137-139, 2017. |
| [62] | AYUSH ministry Government of India, "AYUSH Namaste portal," [Online]. Available: http://www.namstp.ayush.gov.in/#/index. |
| [63] | AYUSH ministry Government of India, "AYUSH Research Portal," [Online]. Available: http://ayushportal.nic.in/. |
| [64] | AYUSH ministry Government of India, "AYUSH Hospital Management System," [Online]. Available: http://ehr.ayush.gov.in/ayush/. |
| [65] | AYUSH ministry Government of India, "Ayush Grid," 2nd Oct 2020. [Online]. Available: https://pib.gov.in/PressReleasePage.aspx?PRID=1660936#:~:text=Ayush%20Grid%2C%20the%20emerging%20IT,the%20National%20Digital%20Health%20Mission&text=The%20Ayush%20Grid%20project%20was,backbone%20for%20the%20entire%20sector.. |
| [66] | AYUSH ministry Government of India, "AYUSH Dashboard," [Online]. Available: http://dashboard.ayush.gov.in/. |
| [67] | GOVERNMENT OF INDIA MINISTRY OF HEALTH AND FAMILY WELFARE, "THE DRUGS AND COSMETICS ACT, 1940," [Online]. Available: http://naco.gov.in/sites/default/files/Drug%20%26%20Cosmetic%20Act%201940\_1.pdf. |
| [68] | "Centre for development of advanced computing," C-DAC Pune, AAI Group, [Online]. Available: https://www.cdac.in/index.aspx?id=hi\_dss\_ayusoft\_n. |
| [69] | Council of Scientific & Industrial Research (CSIR), "Traditional Knowledge Digital Library," [Online]. Available: http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng. |
| [70] | A.B. Vaidya, "Reverse pharmacological correlates of ayurvedic drug actions," *Indian J Pharmacol,* vol. 38, p. 311–315, 2006. |
| [71] | B. Patwardhan, "Bridging Ayurveda with evidence-based scientific approaches in medicine," *EPMA Journal,* vol. 5, 2014. |
| [72] | B. Patwardhan, "Envisioning AYUSH: Historic Opportunity for Innovation and Revitalization," *Journal of Ayurveda and integrative medicine,* vol. 5, no. 2, pp. 67-70, 2014. |
| [73] | S. P. Kulkarni, "HURDLES IN RESEARCH IN AYURVEDA AND THEIR POSSIBLE SOLUTIONS," *International Ayurvedic Medical Journal,* vol. 3, no. 1, 2015. |
| [74] | S. M. Baghel, "Need of new research methodology for Ayurveda," *Ayu,* vol. 32, no. 1, pp. 3-4, 2011. |
| [75] | D. Shankar, "Directions for revitalization of Ayurveda in the 21st century," *Journal of Ayurveda and integrative medicine,* vol. 9, no. 4, pp. 245-247, 2018. |
| [76] | H. Walach T. Falkenberg V. Fønnebø et al., "Circular instead of hierarchical: methodological principles for the evaluation of complex interventions," *BMC Med Res Methodol,* vol. 29, no. 6, 2006. |
| [77] | R. L. Byyny, Spring 2012. [Online]. Available: https://alphaomegaalpha.org/pharos/PDFs/2012-2-Editorial.pdf. |
| [78] | A. Patrizio, "IDC: Expect 175 zettabytes of data worldwide by 2025," 3rd Dec 2018. [Online]. Available: https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html. |
| [79] | T. Cosgrove, "Consult QD: Dealing with Healthcare’s Data Explosion by," [Online]. Available: https://www.google.co.in/amp/s/consultqd.clevelandclinic.org/dealing-healthcares-data-explosion/amp/. |
| [80] | K. Adane M. Gizachew S. Kendie, "The role of medical data in efficient patient care delivery: a review," *Risk management and healthcare policy,* vol. 12, pp. 67-73, 2019. |
| [81] | S. Kandel J. Heer C. Plaisant et al., "Research directions in data wrangling: Visualizations and transformations for usable and credible data," *Information Visualization,* 2011. |
| [82] | "The Importance of Data Preparation for Business Analytics," 16th July 2019. [Online]. Available: https://www.ironsidegroup.com/2019/07/16/data-preparation-business-analytics/. |
| [83] | "eTutorials.org," [Online]. Available: http://etutorials.org/Misc/data+quality/Part+I+Understanding+Data+Accuracy/. |
| [84] | D. Tobin, "Data Transformation: Explained," 1st June 2020. [Online]. Available: https://www.xplenty.com/blog/data-transformation-explained/. |
| [85] | Committee on Strategies for Responsible Sharing of Clinical Trial Data, "Board on Health Sciences Policy Institute of Medicine. Sharing Clinical Trial Data: Maximizing Benefits, Minimizing Risk," in *The Clinical Trial Life Cycle and When to Share Data*, Washington (DC), National Academies Press (US), 20th Apr 2015. |
| [86] | A. Kapoor, "Quality Medical Research and Publications in India: Time to Introspect," *International journal of applied & basic medical research,* vol. 9, no. 2, pp. 67-68, 2019. |
| [87] | J. Tauberer, "Analyzable Data in Open Formats (Principles 5 and 7)," in *Open Government Data: The Book*, 2014. |
| [88] | K. Tarsi T. Tuff, "Introduction to Population Demographics," *Nature Education Knowledge,* vol. 3, no. 11, p. 3, 2012. |
| [89] | E. P. Balogh B. T. Miller J. R. Ball, "Committee on Diagnostic Error in Health Care, Board on Health Care Services, Institute of Medicine, The National Academies of Sciences, Engineering, and Medicine," in *Improving Diagnosis in Health Care - The Diagnostic Process*, Washington DC, National Academies Press (US), 29th Dec 2015. |
| [90] | "PostgreSQL: The World's Most Advanced Open Source Relational Database," The PostgreSQL Global Development Group, [Online]. Available: https://www.postgresql.org/. |
| [91] | The R Core Team, "The Comprehensive R Archive Network," [Online]. Available: https://cran.r-project.org/. |
| [92] | "Python," Python Software Foundation, [Online]. Available: https://www.python.org/. |
| [93] | "Java," Oracle, [Online]. Available: https://www.java.com/en/. |
| [94] | B. Mike, "D3 Data-Driven-Documents," [Online]. Available: https://d3js.org/. |
| [95] | "Tableau," [Online]. Available: https://www.tableau.com/. |
| [96] | M. G. Larson, "Descriptive Statistics and Graphical Displays," *Circulation,* vol. 114, no. 1, pp. 76-81, 2006. |
| [97] | D. Murray, Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software, 1st ed., Wiley Publishing, 2013. |
| [98] | R. McGill J. W. Tukey W. A. Larsen, "Variations of box plots," *The American Statistician,* vol. 32, no. 1, pp. 12-16, 1978. |
| [99] | E. Tufte, The Visual Display of Quantitative Information, 2nd ed., Cheshire, Connecticut: Graphics Press, 2001. |
| [100] | D. M. Morales-Silva C. S. McPherson G. Pineda-Villavicencio et al., "Using radar plots for performance benchmarking at patient and hospital levels using an Australian orthopaedics dataset," *Health Informatics Journal,* pp. 2119-2137, September 2020. |
| [101] | B. McPherson, "The code to generate dynamic bubble plot from Github," [Online]. Available: https://gist.github.com/brucemcpherson/4684498. |
| [102] | C. DeMartini, "datablick," [Online]. Available: https://www.datablick.com/blog/2018/3/14/layering-data-for-custom-tableau-visualizations. |
| [103] | B. McPherson, "Desktop libeartion," [Online]. Available: https://ramblings.mcpher.com/. |
| [104] | H. Hofmann, "Mosaic Plots and Their Variants," in *Handbook of Data Visualization*, Berlin, Heidelberg, Springer Handbooks Comp.Statistics, 2008. |
| [105] | R. Wicklin, "SAS Blogs," 23 May 2018. [Online]. Available: https://blogs.sas.com/content/iml/2018/05/23/butterfly-plot.html. |
| [106] | "Global Oracle cloud Regions," Oracle, 2022. [Online]. Available: https://www.oracle.com/sg/database/what-is-a-data-warehouse/. |
| [107] | "Drik Panchang," [Online]. Available: https://www.drikpanchang.com/seasons/season-tropical-timings.html?geoname-id=1277333&year=2010. |
| [108] | T. Siggaard R. Reguant I. F. Jørgensen et al., "Disease trajectory browser for exploring temporal, population-wide disease progression patterns in 7.2 million Danish patients," *Nat Commun,* vol. 11, p. 4952, 2020. |
| [109] | "International Statistical Classification of Diseases and Related Health Problems (ICD)," World Health Organization, [Online]. Available: https://www.who.int/standards/classifications/classification-of-diseases. |
| [110] | C. Seung-Seok C. Sung-Hyuk C. Charles et al., "A Survey of Binary Similarity and Distance Measures," *SYSTEMICS, CYBERNETICS AND INFORMATICS,* vol. 8, no. 1, 2010. |
| [111] | S-H Cha, "Comprehensive Survey on Distance/Similarity Measures between Probability Density Functions," *INTERNATIONAL JOURNAL OF MATHEMATICAL MODELS AND METHODS IN APPLIED SCIENCES,* vol. 1, no. 4, pp. 300-307, 2007. |
| [112] | "DeepAI," [Online]. Available: https://deepai.org/machine-learning-glossary-and-terms/jaccard-index. |
| [113] | National Cancer Institute. [Online]. Available: https://evs.nci.nih.gov/ftp1/CDISC/SDTM/SDTM%20Terminology.pdf. |
| [114] | "MedDRA: Medical Dictionary for Regulatory Activities," [Online]. Available: https://www.meddra.org/. |
| [115] | "WHO Drug Global," [Online]. Available: https://www.who-umc.org/whodrug/whodrug-portfolio/whodrug-global/. |
| [116] | "International Classification of Diseases - ICD," [Online]. Available: https://icd.who.int/browse11/l-m/en. |
| [117] | "Logical Observation Identifiers Names and Codes - LOINC," [Online]. Available: https://loinc.org/. |
| [118] | "Clinical Data Interchange Standards Consortium: CDISC," [Online]. Available: https://www.cdisc.org/. |
| [119] | "International Organization for Standardization: ISO," [Online]. Available: https://www.iso.org/home.html. |
| [120] | "TransCelerate BioPharma Inc.," [Online]. Available: https://www.transceleratebiopharmainc.com/. |
| [121] | "U.S. Food & Drug administration," [Online]. Available: https://www.fda.gov/science-research/science-and-research-special-topics/real-world-evidence. |
| [122] | "U.S. Food & Drug administration: Framework Real World Evidence Program," [Online]. Available: https://www.fda.gov/media/120060/download. |
| [123] | "European Medicines Agency," [Online]. Available: https://www.ema.europa.eu/en/about-us/how-we-work/big-data/data-analysis-real-world-interrogation-network-darwin-eu. |