Review of: "Systematic review"

Sunny, Chi Lik Au[1]

1 Tung Wah Eastern Hospital

Potential competing interests: No potential competing interests to declare.

The definition “A **systematic review** is a method of integrating the best evidence about an effect or intervention from all relevant and usable primary sources” is a bit too short and non-specific to reflect the pearls of systematic review. This definition cannot distinguish “systematic review” from “meta-analysis”.[1]

A systematic review attempts to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question.[2] It uses explicit, systematic methods that are selected with a view to minimizing bias, thus providing more reliable findings from which conclusions can be drawn and decisions made.[3] The key characteristics of a systematic review are:[4]

i. a clearly stated set of objectives with pre-defined eligibility criteria for studies;
ii. an explicit, reproducible methodology;
iii. a systematic search that attempts to identify all studies that would meet the eligibility criteria;
iv. an assessment of the validity of the findings of the included studies, for example through the assessment of risk of bias; and
v. a systematic presentation, and synthesis, of the characteristics and findings of the included studies.[5]

Many systematic reviews contain meta-analyses.[6][7][8] Meta-analysis is the use of statistical methods to summarize the results of independent studies.[9] By combining information from all relevant studies, meta-analyses can provide more precise estimates of the effects of health care than those derived from the individual studies included within a review.[10] They also facilitate investigations of the consistency of evidence across studies, and the exploration of differences across studies.[11]

References

1. ^*Sunny, Chi Lik Au. (2024). Review of: "Meta-analysis". doi:10.32388/udjqaq.*
2. ^*Miranda Cumpston, Tianjing Li, Matthew J Page, Jacqueline Chandler, et al. (2019).Updated guidance for trusted systematic reviews: a new edition of the Cochrane Handbook for Systematic Reviews of Interventions. doi:10.1002/14651858.ed000142.*
3. ^*Sunny Chi Lik Au. (2024). Pearls of meta-analyses and systematic review in scientific evidence.World J Clin Cases, vol. 12 (16), 2701-2703. doi:10.12998/wjcc.v12.i16.2701.*
4. ^*Ella Flemyng, Miranda S. Cumpston, Ingrid Arevalo-Rodriguez, Jacqueline Chandler, et al. (2023).Planning a*

Cochrane Review of diagnostic test accuracy. doi:10.1002/9781119756194.ch1.

5. ^*Sunny Chi Lik Au. (2021). Comments on Stroke as a Neurological Complication of COVID-19: A Systematic Review and Meta-Analysis of Incidence, Outcomes and Predictors. Journal of Stroke and Cerebrovascular Diseases, vol. 30 (10), 105863. doi:10.1016/j.jstrokecerebrovasdis.2021.105863.*
6. ^*Cheuk-Ling Yim, Matthew Tam, Hiu-Lam Chan, Shu-Min Tang, et al. (2018). Association of antenatal steroid and risk of retinopathy of prematurity: a systematic review and meta-analysis. Br J Ophthalmol, vol. 102 (10), 1336-1341. doi:10.1136/bjophthalmol-2017-311576.*
7. ^*Priscilla Y. L. Chan, Shu-Min Tang, Sunny C. L. Au, Shi-Song Rong, et al. (2016) Association of Gestational Hypertensive Disorders with Retinopathy of prematurity: A Systematic Review and Meta-analysis. Sci Rep, vol. 6 (1). doi:10.1038/srep30732.*
8. ^*Sunny C. L. Au, Shu-Min Tang, Shi-Song Rong, Li-Jia Chen, et al. (2015). Association between hyperglycemia and retinopathy of prematurity: a systemic review and meta-analysis. Sci Rep, vol. 5 (1). doi:10.1038/srep09091.*
9. ^*Sunny Chi Lik Au. (2023). Importance of well-designed meta-analyses in assessing medical and surgical treatments. World J Meta-Anal, vol. 11 (7), 313-316. doi:10.13105/wjma.v11.i7.313.*
10. ^*Alka Rai, Arvind Kumar Sharma. (2019). Digital Divide and Libraries: A Systematic Literature Review. Lib. Her., vol. 57 (3), 402. doi:10.5958/0976-2469.2019.00026.5.*
11. ^*Wai Yan Lam, Sunny Chi Lik Au. (2023). Interpretating retinal microvascular changes in patients recovered from COVID-19 compared to healthy controls: A meta-analysis. Photodiagnosis and Photodynamic Therapy, vol. 44 , 103824. doi:10.1016/j.pdpdt.2023.103824.*