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POINT OF VIEW

Systematic review - concept and definition

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Keywords:

Systematic Review,
Clinical Study,
Evidence-Based
Medicine.

Abstract

Systematic reviews are composed of compiled data from different clinical studies summarizing the main data found in the literature on a specific topic. The objective of the present work was to define and explain the main aspects. It was concluded that systematic reviews have a great impact on the decisions of health professionals and should be considered, if they have been conducted properly and following a protocol.

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INTRODUCTION

Systematic reviews (SR) are secondary scientific investigations, with a methodology defined by a protocol that synthesizes the results of primary studies using strategies that reduce the occurrence of random and systematic errors^{1,2}. Thus, it is possible to have access, in a comprehensive and reliable way, to the results of numerous works already published on a given topic.

OBJECTIVE

The objective of the present study was to define and explain the main aspects of a systematic review.

Concept and definition

Historically, one of the first systematic reviews was prepared by Sir James Lind – a Scottish physician – and was published in book format in 1753 covering aspects related to scurvy³. Although it did not contain the information that we currently have in an SR, the objective of the study was the same as that of current systematic reviews: to critically evaluate everything that had already been published on the topic and to exclude less relevant or highly biased works.

Systematic reviews are one of the most robust techniques for evaluating and synthesizing literature in different fields of knowledge⁴. According to the *Oxford Center for Evidence-based Medicine*, systematic reviews of randomized controlled trials are considered the best level of scientific evidence (A1) when therapies are evaluated⁵. This is due to the fact that randomized and controlled studies are considered to have an excellent level of evidence and the RS is a compilation of data obtained from several of these works on the same topic.

In addition, systematic reviews are not just assessments of treatment, they can also encompass assessment of other parameters such as prognosis, diagnosis, prevention, among others^{1,5}.

Much has been discussed about the quality of systematic reviews, since these studies can present a high level of bias in the selected studies, studies with little or no homogeneity, conflict of interest, incomplete search for literature data and non-validated methodology. Thus, in order to standardize the information, the PRISMA tool (*Preferred Reporting Items for Systematic Reviews and Meta-analysis*) is used for systematic reviews of randomized and controlled clinical studies, or the STROBE tool to conduct a study of this nature. (*Strengthening the Reporting of Observational studies in Epidemiology*) or MOOSE (*Meta-analysis of observational studies in epidemiology*) for systematic reviews of observational clinical studies. These tools are composed of *checklists* and are guidelines that aim to help authors improve the quality of reporting on SR data^{2,6,7}.

Currently *The Cochrane Database of Systematic Reviews* is the leading journal and database of systematic health reviews. The first edition was published in April 1995 and its monthly publication continues to this day⁸.

Systematic reviews may or may not present meta-analysis, a statistical analysis, usually presented through graphs, which summarizes the measurements of data obtained in two or more independent studies, generating a single measure of association². The main advantages of presenting meta-analyses in systematic reviews are the visual and numerical factors, facilitating understanding and making it possible to quantify some parameters. Commonly, this type of analysis is only possible when the studies that make up the SR are homogeneous, presenting the same type of data in the results. It is quite common for systematic review work with meta-analysis to be titled simply as meta-analysis.

CONCLUSIONS

As systematic reviews, with or without meta-analysis, provide data obtained from a series of clinical studies, and not just from a single publication, summarizing the main data found in the literature on a given topic, they have a great impact on the decisions of health professionals and should be considered, provided that they have been conducted properly and following a protocol.

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