

TESTING TREATMENTS

Chapter 8, 8.2.1 ALL THE RELEVANT, RELIABLE EVIDENCE

THE IMPORTANCE OF SYSTEMATIC REVIEWS

'Systematic reviews and meta-analyses have become increasingly important in health care. Clinicians read them to keep up to date with their field, and they are often used as a starting point for developing clinical practice guidelines. Granting [funding] agencies may require a systematic review to ensure there is justification for further research, and some health care journals are moving in this direction. As with all research, the value of a systematic review depends on what was done, what was found, and the clarity of reporting. As with other publications, the reporting quality of systematic reviews varies, limiting readers' ability to assess the strengths and weaknesses of those reviews.'

Moher D, Liberati A, Tetzlaff J, Altman DG. The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement (www.equator-network.org), 2009.

Systematic reviews addressing what appears to be the same question about treatments may reach different conclusions. Sometimes this is because the questions addressed are subtly different, or because the methods used by the researchers differed; and sometimes it is because the researchers have introduced 'spin' in their conclusions. So, it is important to identify reviews that address the treatment questions that match those we are interested in; which are most likely to have been prepared in ways that reduce the effects of biases and the play of chance successfully; and which reach honest conclusions, in ways that reflect the evidence presented.

Reducing biases in systematic reviews

Just as biases can distort individual tests of treatments and lead to false conclusions, so they can also distort reviews of evidence. For example, researchers can simply 'cherry pick' those studies which they know will support the treatment claims they wish to make.

To avoid these problems, plans for systematic reviews, as for

individual research studies, should be set out in research protocols. Protocols need to make clear what measures researchers will take to reduce biases and the effects of the play of chance during the process of preparing the reviews. These will include specifying which questions about treatments the review will address; the criteria that make studies eligible for inclusion in the review; the ways in which potentially eligible studies will be identified; and the steps that will be taken to minimize biases in selecting studies for inclusion in the review, and for analysing the data.

Identifying all the relevant evidence for systematic reviews
Identifying all the relevant evidence for systematic reviews – irrespective of the language or format of the relevant reports – always presents a substantial challenge, not least because some relevant evidence has not been reported in public. Under-reporting stems principally from researchers not writing up or submitting reports of their research for publication because they were disappointed with the results. And pharmaceutical companies suppress studies that do not favour their products. Journals, too, have tended to show bias when they reject submitted reports because they deem their results insufficiently ‘exciting.’³

Biased under-reporting of research is unscientific and unethical, and there is now widespread acceptance that this is a serious problem. In particular, people trying to decide which treatments to use can be misled because studies that have yielded ‘disappointing’ or ‘negative’ results are less likely to be reported than others, whereas studies with exciting results are more likely than others to be ‘over-reported’.

The extent of under-reporting is astonishing: at least half of all clinical trials are never fully reported. This under-reporting of research is biased and applies to large as well as small clinical trials. One of the measures that has been taken to tackle this problem has been to establish arrangements for registering trials at inception, and encouraging researchers to publish the protocols for their studies.³

Biased under-reporting of research can even be lethal. To their great credit, some British researchers decided to report in 1993 the results of a clinical trial that had been done thirteen