SIGN CRITICAL APPRAISAL COURSE: EXERCISE 1

This presentation shows one individual’s assessment of the systematic review used in the first exercise. It links back to sections of the paper in the same way that we did in the video.

If you want to move through the slides more quickly, or go back to a previous slide, you can use the double-arrow buttons at the bottom of the scroll bar on the right of the screen.
Appraising a systematic review

At the end of the first video you were asked to appraise:

Arias, AJ, Steinberg, K, Banga, A, Trestman, RL.

**Systematic review of the efficacy of meditation techniques as treatments for medical illness.**

*Journal of Alternative & Complementary Medicine 2006;12(8):817-32*

This presentation will take you through our suggested answers.
1.1: THE STUDY ADDRESSES A CLEARLY DEFINED RESEARCH QUESTION.

Introduction – page 818

This paper presents a critical review of the literature for clinical efficacy of meditative practices and rates the strength of evidence for these treatments. Beyond that we provide a

This does not use the PICO format, but does indicate the objectives of the review. This is not great, but you cannot say they did not deal with the issue – so a 'Yes'
1.2: AT LEAST TWO PEOPLE SHOULD SELECT STUDIES AND EXTRACT DATA

Methods, page 822.

Studies that achieved the above criteria were rated individually by two out of three independent raters on quality, using the scale developed by Reisch et al.,\(^\text{30}\) for randomized controlled trials. Only studies with mean quality ratings greater than 0.65 were used to estimate the strength of evidence.

Clearly meets the requirement for appraisal, but no mention of data extraction. Given the care taken with other aspects of the methodology, reasonable to give them the benefit of the doubt – so ‘Yes’
1.3: A COMPREHENSIVE LITERATURE SEARCH IS CARRIED OUT

Methods, page 821

Searches were performed using MEDLINE® (PUBMED), PsycInfo, the catalogs of Western Michigan University, University of Connecticut, and Michigan State University, and the Cochrane Database. Keywords were Meditation, Meditative Prayer, Yoga, Relaxation Response, and Benson and Relaxation Response. Hits were reviewed for relevance, as were their references. Searches were performed at several timepoints between March 2001, and November 2005. Initial searches were not performed independently, and were performed by the lead author (A.J.A.). Google and Yahoo Internet searches were also done to find any relevant material.

A clear ‘Yes’
1.4: THE AUTHORS CLEARLY STATE IF OR HOW THEY LIMITED THEIR REVIEW BY PUBLICATION TYPE

Methods, page 822

Inclusion criterion: Clinical trials were randomized, and had one of the following types of control groups: wait-list (or equivalent), active, placebo, or sham. Outcomes of studies had to be quantitative, with standard statistical evaluation. All trials had to be conducted in patients with particular disease or symptom/syndrome entities and intended as a treatment. In addition, measured outcomes had to reflect relevant disease parameters. Studies with exclusively “normal” or healthy individuals were not included.

Clearly identifies criteria that had to be met for their definition of a clinical trial. Following paragraph goes into detail on reasons for excluding studies.
Exclusion of non-English language papers is common, but does introduce a risk of bias. Given the Asian origin of some of the techniques covered by this review you might decide this is a serious flaw.
On the other hand you might decide that cultural factors means that Asian papers are not applicable for a review with a mostly Western audience. The choice is yours!
1.5: THE INCLUDED AND EXCLUDED STUDIES ARE LISTED.

The included studies are listed in Table 4 on page 821.

Excluded studies are listed in Table 2 on page 819. A reference is provided for each study, along with the reason for its exclusion.

Methods, page 822.

Though not always stated explicitly, this is what most reviews do. A comprehensive literature search is always likely to bring up a huge number of hits that it is unrealistic to list completely.
Characteristics of included studies are summarised in Table 4.

Further details and comments are provided in Table 5.
1.7: THE SCIENTIFIC QUALITY OF THE INCLUDED STUDIES IS ASSESSED AND DOCUMENTED

Methods, page 822.

Studies that achieved the above criteria were rated individually by two out of three independent raters on quality, using the scale developed by Reisch et al.\textsuperscript{30} for randomized controlled trials. Only studies with mean quality ratings greater than 0.65 were used to estimate the strength of evidence.

The authors have used a documented and tested scale, and indicated the scores for individual studies (in Table 4. The standard deviations presumably relate to differences between individual assessors).
1.8: THE SCIENTIFIC QUALITY OF THE INCLUDED STUDIES WAS ASSESSED APPROPRIATELY

The ‘Suggestions for further research’ section on page 828 identifies the problems with research study design in this topic area, and the conclusions also highlight the need for better research before firm conclusions can be reached. The conclusions drawn in this study seem justifiable in relation to the evidence found.
1.9: APPROPRIATE METHODS ARE USED TO COMBINE THE STUDY FINDINGS

Meta analysis was ruled out due to variations between studies. Results are not combined, but evidence on individual meditation methods and potential beneficial or adverse effects are discussed in detail.
1.10: THE LIKELIHOOD OF PUBLICATION IS ASSESSED.

The potential for publication bias is not mentioned.
1.11: CONFLICTS OF INTEREST ARE DECLARED

There is no discussion of nor mention of potential conflicts of interest.
We have now completed work on this exercise.

☐ How would you rate this study overall?

☐ Would you use it as evidence?

Note that most of the answers came from the methods section – you don’t have to read the whole paper in order to appraise it.