What is a systematic review?

Editorial

What is a systematic review?

Terry Hanley & Laura Cutts

Content & Focus: *This Special Edition of Counselling Psychology Review is focused on systematic reviews. Whilst considering the topic for the editorial to begin this Special Edition, we considered one overarching question to be of fundamental importance to attempt to tackle: What is a systematic review? We decided to have this as the focus of the editorial in part as a result of discussions with colleagues (both trainee and qualified psychologists) whose awareness of the answers to the following questions proved limited: What is a systematic review?; Why are they conducted?; and What does one look like? Following a brief introduction focused on the history and context surrounding the systematic review, we have, therefore, aimed to address each of these questions in turn. To end this initial section of the editorial, we provide readers with a check list of possible sections contained within a systematic review. The aim of this is to hopefully elaborate on the definitions and the discussions already considered, in order to help the reader more clearly understand what a systematic review really is. Following this we provide an overview of the seven papers incorporated into this Special Edition. Five of these provide very practical examples of the factors noted below in action while two provide further methodological reflections around the use of such research designs.*
Keywords: *Systematic review; applied psychology; check list.*

Background

PROFESSOR Archie Cochrane is cited as the 'architect' of systematic reviews; in 1979 he put forward the idea that, within the medical profession, critical summaries of research trials should be produced (Bower, 2010, p.2). Since the 1970s, systematic reviews have become very influential in the health care professions. For example, they play an important role in the development of the clinical guidelines set out by the National Institute of Health and Clinical Excellence (NICE). In the process of developing their guidelines for specific problems, NICE adopt a grading scheme which details how the quality of evidence is rated. This grading scheme places systematic reviews of randomised controlled trials at the top of the pile (www.nice.org.uk). NICE guidelines in turn have a large influence on what services are commissioned. Therefore, as a research methodology, systematic reviews hold a large amount of political power and influence (Hanley et al., 2013).

What is a systematic review, and why would I want to do one?

Imagine a scenario where, for example, you wanted to know what research has to say about the effectiveness of psychological therapy. In this case you might want to conduct a review of the literature, because a review of the literature would bring together research conducted in this specific area, and help you answer your question. However, this approach (or methodology) is potentially limited. For example, you might only review studies that you already know have been conducted (such as pieces of research which colleagues have conducted, or told you about), or ones which confirm your hypothesis or argument, whilst neglecting to review those which disprove your position. Therefore, a literature review can be criticised for not being rigorous enough (Bower, 2010). Alternatively, you might think about conducting a systematic review, because a systematic review is designed to overcome this bias and is a more rigorous, and systematic, way of reviewing research in a specific area.

At its core a systematic review is a 'method of critically appraising, summarising, and attempting to reconcile the evidence' (Petticrew & Roberts, 2006, p.15). Dempster (2011, p.15) defines a systematic review as:

> 'a comprehensive review of literature which differs from a traditional literature review in that it is conducted in a methodical (or systematic) manner, according to a pre-specified protocol to minimise bias, with the aim of synthesising the retrieved information.'

So a systematic review is what it says on the tin – a *review* of the literature which is *systematic*. Historically, qualitative research was excluded from systematic reviews (Dixon-Woods, Fitzpatrick & Roberts, 2001). However, in recent years there has been a move towards including diverse types of evidence within systematic reviews (Dixon-Woods & Fitzpatrick, 2001), and the guidance on undertaking systematic reviews published by the NHS Centre for Reviews and Dissemination specifically considers the inclusion of qualitative research evidence (Centre for Reviews and Dissemination, 2009). Methodological papers have, therefore, considered both the procedures for the synthesis of qualitative research evidence (Timulak, 2009) and how to combine both quantitative and qualitative research within a single systematic review (Dixon-Woods et al., 2005; Harden & Thomas, 2005).

What does a systematic review look like?

Whether conducting a systematic review of solely quantitative research, qualitative research, or a combination of both, there is generally a protocol of steps to follow. Within the *Cochrane Handbook for Systematic Reviews of Interventions* it is stated that a systematic review has the following characteristics:

- 'a clearly stated set of objectives with predefined eligibility criteria for studies;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, for example, through the assessment of risk of bias; and
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies.'

  (Higgins & Green, 2008, p.6).

This gives a flavour of what elements might be contained within a systematic review. Within this section we take this further and reflect on what sections you might expect to see within a systematic review paper. Following this we have provided readers with a check list which brings together some of these thoughts and can hopefully act as a useful tool for those individuals who are considering producing a systematic review paper.

Within the introduction to a systematic review paper two things are required: a brief discussion of the literature in the area, and a clear statement of the study aim and research question considered. Following this, the methodology section should detail the process undertaken in the systematic review. Given the requirement for the systematic review to have an 'explicit, reproducible methodology' (Higgins & Green, 2008, p.6), the methodology section will often be very detailed. Within this, you would expect to see a number of important sections. Firstly, the author(s) should outline the search procedures used, specifying where and when they have conducted their searches, and what search terms they have used. Eligibility criteria also need to be discussed: the criteria against which the author(s) decided whether or not a citation was relevant to the research. The author(s) will also commonly discuss data extraction: what data they extracted from the citation and how. Quality criteria will outline how the author(s) have assessed the quality of the citations, and whether or not any papers were excluded on the basis of quality (this section is sometimes combined with eligibility criteria). The procedures of data synthesis need to been described, and finally, ethical considerations may be discussed.

Within the findings section of a systematic review, typically the study flow is represented (often diagrammatically). This will outline how many citations were found at different levels of the search, and how many were included/excluded. Following this, the characteristics of the included studies will be described, and the author(s) will typically report on the outcome of the quality assessment described above. Finally, the findings resulting from the synthesis of the data will be reported. In the final section of the systematic review paper, readers should expect to see authors discuss the findings of the research in relation to their initial research question and the previous literature. Limitations of the review and suggestions for further research will typically be considered, in addition to the implications or recommendations resulting from the study. The paper should end on the conclusions drawn from the research.

Table 1: Check list for systematic review papers.

Background	
Brief contextual literature review Research question or study aim	
Methodology	
Search procedures Eligibility criteria: inclusion and exclusion criteria Data extraction Quality criteria and assessment Data synthesis Ethical considerations	
Results/Findings	
Study flow Characteristics of included studies Quality of included studies Synthesis of data	
Discussion	
Revisiting the research question Discussion in relation to previous research Limitations of the review Future research Implications/recommendations Conclusion	

Overview of the present edition

This Special Edition provides a wide scope to reflect upon. However, each of these papers fits into two distinct categories, notably either as a research paper or a methodological paper. In relation to the former we list the titles and authors below:

- Where do counselling psychologists based in the UK disseminate their research? A systematic review.
  (Ruth Gordon & Terry Hanley)
- Post-traumatic growth following bereavement: A systematic review of the literature.
  (Christina Michael & Mick Cooper)

- Psychological treatments for eating disorders: What is the importance of the quality of the therapeutic alliance for outcomes?
  (Pavlina Antoniou & Mick Cooper)
- A systematic review of qualitative studies on shame, guilt and eating disorders. (Tammy Oluyori)
- The relationship between children's outcomes in counselling and psychotherapy and attachment styles.
  (Birgit Innerhofer)

The titles of these papers speak for themselves and thus need little more reflection. Additionally, and in line with the purpose of this Special Edition, each paper demonstrates how the boxes noted above (outlining what a systematic review is) might be ticked off. The second category gets a bit more methodological with the inclusion of the following papers:

- Health Technology Assessment methodology: An overview and example of its potential use in the field of Primary Care Psychological Therapies in the NH.S (Rebecca Southall)
- Experiences of conducting qualitative meta-analysis.
  (Ladislav Timulak & Mary Creaner)

In these we explicitly enter into the methodological complexities of such work. Hopefully these papers will support the development of understanding and lead to further reflections upon the process conducting a systematic review.

To end, the 'Dialogues and Debates' section once again provides much more food for thought. Thank you for reading and we hope you enjoy this Special Edition.

About the Authors

Terry Hanley is Programme Director of the Doctorate in Counselling Psychology at the University of Manchester and Editor of *Counselling Psychology Review*.

Laura Cutts is a Lecturer in Counselling Psychology at the University of Manchester.

Correspondence

Email: terry.hanley@manchester.ac.uk

References

Bower, P. (2010). *Undertaking systematic reviews in counselling and psychotherapy.* Lutterworth: British Association for Counselling & Psychotherapy (BACP).

Centre for Reviews and Dissemination (2008). *Systematic reviews. CRD's guidance for undertaking reviews in health care.* York: CRD. Retrieved 8 October 2013, from: http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf

Dempster, M. (2011). *A research guide for health and clinical psychology.* Hampshire: Palgrave Macmillan.

Dixon-Woods, M., Agarwal, S., Jones, D., Young, B. & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: A review of possible methods. *Journal of Health Services Research & Policy, 10*(1), 45–55.

Dixon-Woods, M. & Fitzpatrick, R. (2001). Qualitative research in systematic reviews. *British Medical Journal, 323*, 765–766.

Dixon-Woods, M., Fitzpatrick, R. & Roberts, K. (2001). Including qualitative research in systematic reviews: opportunities and problems. *Journal of Evaluation in Clinical Practice,* 7(2), 125–133.

Hanley, T., Cutts, L., Gordon, R. & Scott, A. (2013). A research informed approach to counselling psychology. In G. Davey (Ed.), *Applied psychology.* London: BPS Wiley-Blackwell.

Harden, A. & Thomas, J. (2005). Methodological issues in combining diverse study types in systematic reviews. *International Journal of Social Research Methodology, 8*(3), 257–271.

Higgins, Julian, P.T. & Green, S. (2008). *Cochrane Handbook for Systematic Reviews of Interventions.* Chichester, West Sussex: The Cochrane Collaboration and John Wiley & Sons Ltd.

Petticrew, M. & Roberts, H. (2006). *Systematic reviews in the social sciences. A practical guide.* Oxford: Blackwell Publishing.

Timulak, L. (2009). Meta-analysis of qualitative studies: A tool for reviewing qualitative research findings in psychotherapy. *Psychotherapy Research, 19*(4), 591–600.