Type of Review and How to Get Started

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36.1 Introduction

The advent of evidence-based medicine has greatly improved the quantity and quality of research published today. However, with this increased output of high quality research, academics and clinicians are inundated with new reports that require time and resources to appropriately read and review [1, 10, 11]. This might result in many relevant research articles going unread.

One answer to keeping abreast of this increase in literature is the synthesis of information in the form of a review. Reviews attempt to summarize and present the available literature on a given topic. In doing so, they establish whether treatment effects are consistent across studies, strengthen the power and precision of estimated treatment effects and eliminate biases that can be associated with individual studies. This provides healthcare professionals and policy makers a basis upon which they may make evidence-based decisions. Reviews also take stock of what information is available and can be useful in identifying gaps in our current knowledge as well as potential avenues for future research.

36.2 Types of Review Articles

There are two main types of review articles: systematic reviews and narrative reviews. Both types aim to abstract information from available resources to answer research questions but differ in their approach.

Systematic reviews follow a planned and reproducible process of searching and identifying relevant articles to answer a proposed question. For example, in adults undergoing a primary hip arthroscopy is the supine or lateral approach more effective at lowering post-operative pain, narcotic usage and improving hip function at 90 days following surgery [13]. They are explicit as to what types of resources they include; the exact procedures by which the primary studies were searched, screened and data abstracted; and how their findings were reached [17]. It is often recommended that researchers design their research questions with the PICO framework (Population, Intervention, Control, Outcome). For the example above, the population is adults undergoing primary hip arthroscopy, the intervention and control are the supine and lateral approach, and the outcomes include post-operative pain, narcotic usage and hip function at 90 days.

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Narrative reviews, also known as literature reviews, provide an overview of the current state of knowledge on a given topic. For example, a narrative review may look at the broad topic of humeral fractures. They do not necessarily follow a systematic methodology and typically focus on key articles or even expert opinions in a given topic area. Narrative reviews sometimes use non-peer reviewed sources such as editorials, book chapters and interviews. Narrative reviews are not required to describe the methodology by which authors assembled the literature cited in the review, where findings can be heavily dependent on the literature that authors chose to include. This might introduce a significant selection bias and creates the potential for independent authors to arrive at different conclusions, despite seeking to answer the same research question.

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36.2.1 Practical Example

In 1998, a narrative review was performed to determine what patient-related factors affect the functional outcome of total hip arthroplasty [19]. This review conducted a brief literature search of one database and included other additional articles identified as relevant by the authors. The authors concluded that the best functional outcomes were reported by patients between the ages of 45 and 75, who weighed less than 70 kg and who had a better preoperative functional status, with few to no baseline comorbidities [19]. The review also indicated that women had better functional outcomes and prosthesis survival rates than men but stated that this may be the result of confounding factors [19]. In 2004 a systematic review was published on the same topic. It specifically explored factors impacting the health-related quality of life of patients undergoing total hip and knee arthroplasty [5]. It not only examined which patient group had the best functional outcomes but also took into account confounding factors. Among its conclusions were that patient age was not an obstacle to effective surgery, men improved more than women from these total arthroplasties, and after a follow-up time of 1 year, there was no difference in health-related quality of life between weight groups [5]. This helped to dispel prior thoughts of refusing to perform hip arthroplasty on obese patients on the basis of weight [5]. The systematic review also used its data to examine the effect of comorbidities, levels of preoperative function, wait time for surgery and procedure type [5]. The difference in findings and the extent to which each factor was explored can be directly attributed to methodological and source differences between narrative and systematic reviews [8].

Overall it could be said that systematic reviews fall on the more objective end of the spectrum, while narrative reviews are often more subjective [8, 16, 17].

36.3 Why Conduct a Narrative Review over a Systematic Review?

Narrative reviews can be written relatively quickly and provide readers with current knowledge about a certain topic. They tend to be written by authors who are experts in the field and are therefore able to elaborate on their conclusions through their own personal experiences, theories or models and educated opinions. This additional insight can be invaluable in new areas of research that are lacking a sufficient body of literature. In comparison, systematic reviews are time-intensive to perform, making them most useful when there is a large body of primary research studies available to address a specific research question (Table 36.1). In the event that the reviewed studies share a common outcome, a

Table 36.1 A comparison of narrative reviews and systematic reviews

Feature	Narrative review	Systematic review
Research question	Broad overview of a topic	Specific well-defined research question examining a specific aspect of a greater topic
Searching for studies	Searches are not exhaustive and do not guarantee capture of all available literature	Attempt to capture all available published literature and work in progress in a well-documented process. Based on a predefined protocol
Study selection	Reasons for the inclusion/exclusion of studies are not required and are not commonly explained	Reasons for the inclusion/exclusion of studies are explicit and geared towards the research question
Assessment of the quality of included studies	Quality of included studies is not typically evaluated	Systematic assessment of quality of all included studies using established scales, tools, or guidelines
Interpretation and conclusions	Based in part on the resources gathered and in part on the author's intuition/opinion	Based solely on the data gathered

meta-analysis may be performed. A meta-analysis involves the careful consideration of the quality and strength of each study included in the systematic review to create a larger and more accurate pooled estimate of the effect of a treatment.

- Narrative reviews can be written quickly, they tend to by written by experts of the field they concern, and they are invaluable in new areas of research with little available research.
- Systematic reviews are more appropriate when there is a large body of evidence that could benefit from summarization or pooling of results to answer the research question.

36.4 How to Get Started

36.4.1 Background Research

The first step before choosing both a research topic/question and type of review to address it is to get a preliminary sense of the available literature. Background research can inform how best to identify more sources of information and what search terms may be relevant. The amount and quality of literature can also help determine whether one should write a narrative review or systematic review.

Most authors begin with a literature search. PubMed, Embase, MEDLINE and Google Scholar are databases for scientific articles where most medical published studies can be found. In addition, authors can reach out to subject matter experts (SME) for their thoughts on the topic. Although difficult to cite, SMEs have an understanding of current evidence and the latest ongoing research and can provide feedback regarding the planned search and direct one towards appropriate resources.

One often overlooked area for understanding emerging topics of interest in a given field is through the 'grey literature'. This includes conference proceedings, reports and other documents that are not published in scientific journals. In most cases these sources are not peer-reviewed, and thus their level of quality can be quite varied. Conference proceedings can be reviewed prior to acceptance, but it can be based on incomplete data, as the authors can choose to present preliminary findings before the study is complete [12].

36.4.2 The Outline

After deciding on an appropriate topic, the next step is to design an outline for the review. There is no set structure for designing a narrative review, but typically narrative reviews of medical literature include **introduction** and **discussion** sections [7]. In contrast, systematic reviews have a well-established structure. They require a con-

densed abstract, an introduction, a reproducible description of the methodology, a summary of the available literature in the results and a discussion section drawing overall conclusions from the findings. Guidelines, such as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) or the Consolidated Standards of Reporting Trials (CONSORT), provide reporting standards that many journals now require be implemented in a published systematic review to aid in their critical appraisal and interpretation [14, 15, 18]. More recently, journals have encouraged the registration of systematic reviews. The Cochrane Library (http://cochranelibrary.com) and PROSPERO (http://crd.york.ac.uk/prospero/) offer repositories for ongoing and completed reviews.

Regardless of how the review is structured, the outline should be as detailed as possible. It should address the planned structure of the paper and what information will be addressed in each section. Creating an outline early on allows the paper to be revised without interruption to the literary flow and to coordinate what key messages are to be conveyed throughout each section. Ideally, when using this outline to write the article, the author should be able to complete the paper without having to conduct additional research. More details about conducting a systematic review can be found in the next chapter.

36.5 Writing the Review

With the outline completed, the next step is to write the review. While this may seem like a difficult task at first, there are strategies that can make the job easier.

The first is the use of reference management software that can be found online [e.g. Mendeley (Elsevier, 2017), BibMe (Chegg, 2017)]. Systematic reviews in particular often require an extensive number of articles to be screened and referenced in the final paper. The software can act as an organized repository of information during manuscript preparation. The majority of reference management software can also automate formatting of references to save time when it comes time to submit the review to a journal.

Another strategy is the order in which the review is written. The important sections of a narrative review of medical literature include the figures and tables (when appropriate), the abstract, the title and the main text. The main text of literature reviews can be further broken down into the introduction and discussion sections, with some authors choosing to include methods and/or results sections. In comparison, systematic reviews are required to report all of these components in order to remain transparent.

Figures and tables can also be drafted early on to help organize the structure of the review and focus the main findings. It is essential to create these early in the writing process, as they will be referred to throughout the review. Systematic reviews typically include a flow diagram depicting the screening process (following PRISMA guidelines), a study characteristics table and the detailed search terms in an appendix to ensure the results can be reproduced. Narrative reviews may or may not include these figures or tables.

36.6 Reviews in the Orthopaedic Literature: A Cautionary Tale

Narrative reviews are not typically relied upon within orthopaedics to guide clinical decisions. This weight falls upon systematic reviews, which are historically cited more than their nonsystematic counterparts [2]. In the past, surgical literature, including orthopaedic literature, has been found to be lacking in quality [4]. Bhandari et al. applied the Detsky scale to assess the reporting quality of 72 randomized controlled trials (RCTs) published in the *Journal of Bone and Joint Surgery* from 1988 to 2000. Only 32 (43%) of those studies were found to be of high quality [3]. The poor quality of this literature was attributed to two reasons. The first was a reliance by systematic reviews on low-quality evidence, such as case studies and case series. These are inherently limited by their retrospective nature, potential for bias and lack of comparative groups. The second is that high quality systematic reviews regularly failed to sufficiently report the study parameters, including methodological parameters of the study, their sources of funding and of potential

conflicts, as well as the quality of their evidence [4]. In the last decade, there has been a dramatic growth in the number of randomized controlled trials and systematic reviews published in orthopaedic literature. Publications in orthopaedics on the whole are estimated to have doubled between 2000 and 2011 [9]. However, the quality of these publications and reviews were still poor, despite publishing in top journals [6]. This reduces the impact of published systematic reviews and their ability to aid in clinical decision making. By using the strategies described in this chapter to carefully plan any type of review, authors can minimize bias and ensure adequate reporting to demonstrate higher quality.

36.7 Conclusion

Narrative reviews can be written relatively quickly and often provide the most current and up-to-date information on a chosen topic. They are commonly written by authors who are experts in the discussed topic, allowing those experts to put forward their educated opinions and ideas. Systematic reviews are conducted using a planned methodological structure, they attempt to encompass all available literature for a chosen topic, and they provide reproducible and typically less biased results. This chapter has elucidated the differences between these two types of reviews and serves to provide a starting point for any author thinking of conducting a narrative review of their own.

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