



Review

Ability of physiotherapists to undertake evidence-based practice steps: a scoping review

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Abstract

Background Evidence-based practice (EBP) is promoted to ensure quality of care. However, analysis of the skill of physiotherapists in undertaking the steps of EBP, or the impact of EBP on the work of physiotherapists is limited.

Objectives To conduct a scoping review into physiotherapists performing the steps of EBP.

Data source Literature concerning the skill of physiotherapists in EBP between 1990 and June 2013 was searched using AMED, Academic Search Complete, CINAHL, PubMed, ERIC, PEDRO and EMBASE databases.

Study selection Twenty-five studies (six qualitative, one mixed methods and 18 quantitative) were selected.

Data extraction and synthesis Quantitative and qualitative data were extracted using two appraisal tools to analyse each of the five steps of EBP.

Results Limited evidence exists to show that physiotherapists undertake the full EBP process. Despite formulating clinical questions and acquiring literature-based evidence, the drivers for conducting literature or evidence searches have not been clarified. The critical appraisal step was mainly assessed in the form of recognition of statistical terms. Only examples of guideline usage support the reflective final assessment step. Physiotherapists report using their peers and other trusted sources in preference to literature, primarily due to time but also due to divergence between the literature-based evidence and other evidence that they use and value (tacit knowledge). A positive impact of EBP on patient outcomes is lacking.

Conclusions Understanding the information needs of physiotherapists may be necessary before adoption of the EBP process. The use of professional networks may offer a better means to identify knowledge gaps and translate acquired knowledge into practice, rather than focusing on individual skills in EBP.

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Introduction

Evidence-based practice (EBP) is a model of practice accepted by many professional organisations. EBP is ‘a process of care that takes the patient and his or her preferences and actions, the clinical setting including the resources available, and current and applicable scientific evidence, and knits the three together using the clinical expertise and training of

the health-care providers’ [1]. However, it is recognised that clinicians approach problem solving in complex, non-linear ways. Humans use two systems to make decisions: System 1 is automatic, quick and effortless based on experience and prior learning; and System 2 is a careful, rational analysis of information requiring time and effort, reflecting the steps of EBP [2]. System 1 does not lend itself to the steps of EBP, but is the default option in the face of busy workloads and familiar scenarios. Recent criticisms of EBP, such as the validity of evidence-based guidelines in the face of comorbidities, have called for changes in how EBP is perceived by users and conducted by clinicians [3]. Much of the literature on EBP examines one aspect, namely incorporating scientific

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evidence into clinical decisions. The steps to assimilate the scientific evidence are:

- ASK – convert information needs into answerable question(s);
- ACQUIRE – track down the best evidence to answer question(s);
- APPRAISE – appraise the evidence critically;
- APPLY – integrate the evidence (with clinical expertise and patient values); and
- ASSESS – evaluate effectiveness at executing Steps 1 to 4 and/or assess patient outcomes [4].

Undertaking EBP requires time to formulate a search strategy, and to source and interpret relevant articles [5]. Furthermore, research-based evidence and clinical guidelines can be interchangeable in clinician's minds, so physiotherapists may consider consulting guidelines as practising EBP [6].

Integrating clinical expertise with patient preferences or 'shared decision making' within the existing clinical setting are other elements of EBP. The concept of 'shared decision making' is growing, with clinicians encouraged to involve patients in making informed decisions; whether or not this results in superior patient care remains unknown [7]. A separate review in physiotherapy practice is necessary as, to date, the literature on shared decision making has been dominated by surgical or medical options [7]. While physiotherapists may share treatment options with patients, it is rarely recorded in academic literature [8].

As the concept of EBP has grown, it was considered timely to review the conduct of EBP by physiotherapists. Although a review of the attitudes, barriers and enablers to EBP within physiotherapy has been published [9], the present scoping review was undertaken to examine the skills or abilities of physiotherapists in terms of each of the steps of EBP, and to assess the impact of EBP. Given the breadth of the area and lack of randomised trials, a scoping framework was selected. This form of knowledge synthesis addresses 'an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesising existing knowledge' [10].

The objectives of this scoping review were to determine:

- the ability and skills of physiotherapists in conducting the steps of EBP; and
- the impact of conducting the steps of EBP on clinical outcomes or practice.

Methods

A recommended framework was used to structure this scoping [10]. An electronic review of databases (AMED, Academic Search Complete, CINAHL, PubMed, ERIC,

PEDRO and EMBASE) was conducted in June 2013, limited to articles in English published between 1990 and June 2013 (search terms provided in Appendix A, online supplementary material). After merging the databases and removing duplicates, the first author screened the titles and abstracts ($n=2426$). Inclusion and exclusion criteria were agreed between the reviewers (CC, NMCG) who reviewed 444 titles and abstracts independently, and came to a consensus regarding the final list of articles for full-text review ($n=44$) (Fig. A, see online supplementary data). Articles that were not agreed upon were sent to a third reviewer (ES).

Inclusion criteria were as follows.

- Investigations that examined the skill or ability of physiotherapists to carry out the steps of EBP.
- Investigations that examined the occurrence of conducting the steps of EBP in physiotherapy. Baseline data from trials were used to provide descriptive information on physiotherapists' practice.
- Investigations that examined the impact of the steps of EBP on patient outcomes. This inclusion could be process based (i.e. impact on wait times, number of treatments or patient-related outcome measures).

Exclusion criteria included clinical guidelines or similar synopsis of guidelines, systematic reviews, and editorial or opinion pieces.

Data extraction

The McMaster Qualitative Review [11] and the quantitative assessment form developed by Oude Rengerink *et al.* [12] were used to assess the quality of the included articles. Qualitative data were extracted under descriptive and thematic analysis. The Oude Rengerink *et al.* framework was used to guide the extraction of quantitative data [13]. The agreed data were extracted independently from the 25 articles by two researchers (ES, CC).

Results

Twenty-five studies were selected (six qualitative, 18 quantitative and one mixed methods). Details are summarised in Table 1, where each step of EBP is addressed.

Step 1. Ask the question

Eight studies reported on Step 1, asking a clinical question. Some studies framed this as the frequency with which a clinician identified a gap in clinical knowledge that was required to guide patient care. Other studies asked if physiotherapists were able to formulate a question to inform a literature search [5,14–20]. Specific examples of converting information needs to answerable questions were provided by a qualitative study [20]. Some studies asked how often a guideline or the Internet was used as a source of information

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