



Systematic review

Clinical performance assessment tools in physiotherapy practice education: a systematic review

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Abstract

Background Clinical performance assessment tools (CPATs) used in physiotherapy practice education need to be psychometrically sound and appropriate for use in all clinical settings in order to provide an accurate reflection of a student's readiness for clinical practice. Current evidence to support the use of existing assessment tools is inconsistent.

Objectives To conduct a systematic review synthesising evidence relating to the psychometric and edumetric properties of CPATs used in physiotherapy practice education.

Data sources An electronic search of Web of Science, SCOPUS, Academic Search Complete, AMED, Biomedical Reference Collection, British Education Index, CINAHL plus, Education Full Text, ERIC, General Science Full Text, Google Scholar, MEDLINE, UK and Ireland Reference Centre databases was conducted identifying English language papers published in this subject area from 1985 to 2015.

Study selection 20 papers were identified representing 14 assessment tools.

Data extraction and synthesis Two reviewers evaluated selected papers using a validated framework (Swing *et al.*, 2009).

Results Evidence of psychometric testing was inconsistent and varied in quality. Reporting of edumetric properties was unpredictable in spite of its importance in busy clinical environments. No Class 1 recommendation was made for any of the CPATs, and no CPAT scored higher than Level C evidence.

Conclusions Findings demonstrate poor reporting of psychometric and edumetric properties of CPATs reviewed. A more robust approach is required when designing CPATs. Collaborative endeavour within the physiotherapy profession and interprofessionally may be key to further developments in this area and may help strengthen the rigour of such assessment processes.

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Keywords: Clinical performance assessment; Physical therapy; Physiotherapy; Student; Assessment tool

Introduction

The World Confederation of Physical Therapy (WCPT) stipulates that practice education must account for approximately one third of the overall content of physiotherapy academic programmes [1,2] emphasising its importance in physiotherapy education. Physiotherapy students must “meet the competencies established by the physical therapist professional entry level education programme” [1] and must be

provided with formative and summative feedback during each practice education module [2]. This is achieved through an assessment process, where clinical performance is assessed based on observation by a supervising clinician, known as a practice educator.

Clinical performance assessment has long challenged education providers for reasons related to evidence supporting assessment methods and factors related to the subjective nature of observation-based assessment [3–9]. No literature review to date has synthesised the evidence related to psychometric testing (validity and reliability) and edumetric properties (feasibility, usefulness and educational impact) of

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CPATs used in physiotherapy practice education. Current evidence suggests that psychometric evidence for many of these is inconsistent [10–12] with little or no attention paid to their edumetric properties.

A recent systematic review in medical education also acknowledged poor reporting of edumetric properties in CPATs [13]. This is despite their importance in determining a tool's practicality and feasibility in the workplace. Lengthy or ambiguously worded assessment tools can frustrate busy clinicians which in turn can impact on rigorous completion of student assessments [14]. Psychometric properties are more commonly reported although not always comprehensively [12,13]. Such properties include content validity which captures how accurately learning outcomes described in a CPAT measure various aspects of clinical performance. This is determined by matching selected assessment criteria with published guidelines required for physiotherapy entry level practice [15,16]. Criterion validity assesses the extent to which the measure is related to the outcomes. Evidence of construct validity demonstrates that a tool is sensitive enough to detect changes in student performance over time which confirms progression of student learning [16–18]. Additional psychometric properties include inter-rater and intra-rater reliability which when present ensure consistency of grading across a variety of practice educators and practice education sites. Test–retest reliability is also necessary in CPATs to ensure consistent ranking of students on repeated assessment, particularly relevant in practice education when regular observation forms the basis for awarding final grades. Therefore, CPATs with less than acceptable psychometric and edumetric testing may cast doubt on their inherent ability to identify both the excelling student and the incompetent or unsafe student. This can result in an assessment process that is potentially unreliable and precarious with implications for educational programmes, client safety and professional bodies [3,6].

Physiotherapy undergraduate students, like nursing students, are expected to work unsupervised from the time of graduation unlike medical students who must complete further postgraduate study, known as an internship, in order to practice independently. Only one qualitative evaluation framework has been developed to evaluate and synthesise evidence pertaining to the psychometric and edumetric properties of clinical performance assessment tools used in the clinical learning environment. This was developed by the Accreditation Council for Graduate Medical Education (ACGME) in the United States of America [19]. This framework defined guidelines for grading psychometric and edumetric properties of assessment instruments as well as outlining a system for assigning an overall evidence grade for each tool. While developed for graduate medical students, it was considered appropriate for use in this study as it lends itself easily to use by other health professions [13] especially given the similarities in expectations of the physiotherapy graduate and the medical intern.

In the absence of other reviews of this kind, the need to evaluate and synthesise the evidence related to the edumetric and psychometric properties of CPATs used in physiotherapy education was deemed essential.

The specific aims of this systematic review were to:

1. Identify and synthesise available evidence pertaining to the psychometric and edumetric properties of clinical performance assessment tools used in physiotherapy practice education using the ACGME framework.
2. Discuss the findings within the broader context of health professional clinical performance assessment.

Methods

Search strategy

A systematic review of the literature was undertaken using combinations of search terms (Table S1) to identify English language peer-reviewed papers published from January 1985 to December 2015 relating to CPATs used in physiotherapy. Prior to 1985 few clinical performance assessment tools had been reported in physiotherapy literature [20,21]. Databases included Web of Science, Academic Search Complete, AMED, Biomedical Reference Collection, British Education Index, CINAHL plus, Education Full Text, ERIC, General Science Full Text, MEDLINE, UK and Ireland Reference Centre, Google Scholar and SCOPUS. Reference lists were examined by hand for further citations and checked for eligibility using the same inclusion and exclusion criteria.

Inclusion criteria

- Any peer-reviewed paper describing a CPAT used in physiotherapy practice education employing observation-based assessment methods, which included reference to psychometric or edumetric testing.
- Experimental and observational studies, randomised and non-randomised designs, and prospective or retrospective cohort studies.
- Full text papers written in the English language.
- Publication date from January 1985 to December 2015.

Exclusion criteria

- Any peer-reviewed paper describing assessment tools where standardised patients, simulated settings, Objective Structured Clinical Examinations or learning portfolios were used to assess clinical performance.
- Assessment tools exclusively from disciplines other than physiotherapy.
- Research studies where the full-text paper was not available.
- Assessment tools involving student self-assessment only.

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