



Physiotherapy clinical educators' perceptions and experiences of clinical prediction rules

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Abstract

Objectives Clinical prediction rules (CPRs) are widely used in medicine, but their application to physiotherapy practice is more recent and less widespread, and their implementation in physiotherapy clinical education has not been investigated. This study aimed to determine the experiences and perceptions of physiotherapy clinical educators regarding CPRs, and whether they are teaching CPRs to students on clinical placement.

Design Cross-sectional observational survey using a modified Dillman method.

Participants Clinical educators ($n=211$, response rate 81%) supervising physiotherapy students from 10 universities across 5 states and territories in Australia.

Results Half (48%) of respondents had never heard of CPRs, and a further 25% had never used CPRs. Only 27% reported using CPRs, and of these half (51%) were rarely if ever teaching CPRs to students in the clinical setting. However most respondents (81%) believed CPRs assisted in the development of clinical reasoning skills and few (9%) were opposed to teaching CPRs to students. Users of CPRs were more likely to be male ($p<0.001$), have post-professional qualifications ($p=0.020$), work in private practice ($p<0.001$), and work in the area of musculoskeletal physiotherapy ($p<0.001$) compared with non-users. The CPRs most commonly known, used and taught were the Ottawa Ankle Rule, the Ottawa Knee Rule, and Wells' Rule for Deep Vein Thrombosis.

Conclusions Students are unlikely to be learning about CPRs on clinical placement, as few clinical educators use them. Clinical educators will require training in CPRs and assistance in teaching them if students are to better learn about implementing CPRs in physiotherapy clinical practice.

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Introduction

Clinical prediction rules (CPRs) are research-based tools designed to assist the clinician in their decision-making. These tools quantify the relative contributions of various clinical features and patient characteristics to provide numeric

indices and therefore the probability of an outcome [1,2]. They can be used to assist in making a diagnosis, establishing a prognosis, or determining the best intervention [3]. CPRs can streamline the assessment process and improve clinical precision [4]. As such, they may reduce uncertainty in patient care [5] and give clinicians more confidence in their decisions [6].

Although long utilised in medicine, CPRs are a relatively new concept in physiotherapy. Whilst CPRs have been developed that are relevant to physiotherapy practice, there is little evidence to indicate that physiotherapists know about them or use them [7,8]. Moreover, although the impact of CPRs on clinical decision-making in medicine has been investigated

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[9–11], their impact on decision-making by physiotherapists is largely unknown [12].

The extent to which physiotherapy students are learning about CPRs is similarly unexplored. Physiotherapy clinicians and educators may be unaware of CPRs, or may not appreciate their clinical utility. Consequently, physiotherapy students may not be learning about CPRs from their clinical educators who are unfamiliar with the tool. This could be a problem for students as they enter the workforce, where under contemporary demands of evidence-based practice (EBP) they may be expected to know about CPRs and be able to utilise them in their clinical practice.

The aims of this study therefore are to (1) ascertain the awareness and knowledge of CPRs among clinical educators for pre-professional students; (2) determine the extent to which CPRs are clinically used by clinical educators and the extent to which they are taught to students in the clinical setting; and (3) establish whether or not clinical educators find them helpful in progressing their own and their students' clinical reasoning skills.

Methodology

The study design is a cross-sectional observational survey of physiotherapy clinical educators.

Survey instrument

The ten-page questionnaire comprised mainly closed-ended questions. Any open-ended questions asked for specific information that facilitated categorisation and quantitative analysis of data. The first section (8 questions) asked about clinical educators' knowledge and use of CPRs as clinicians, why they use them, why they do not use them more often, and whether they deviate from the clinical direction indicated by a CPR. The second section (8 questions) included questions about clinical educators' use of CPRs with students in the clinical setting, what they teach students about CPRs and why they teach them, why they do not teach them more often, whether they believe CPRs should be taught to students, and their views on the relationship between CPRs and the development of clinical reasoning skills. This second section included a table of 30 CPRs (14 diagnostic, 3 prognostic and 13 interventional), chosen as being more commonly known and also more relevant to physiotherapy practice [13], that were listed by their intended purpose; clinical educators were asked to indicate which of these they recognised, which they used in clinical practice, and which they taught to students. Participants were also asked to name any CPRs they knew, such as by citing their author(s) or geographical origin. The final section (12 questions) addressed respondent demographic information, including pre-professional and any post-professional qualifications, the clinical setting in which they worked, and the academic level of students they taught.

The questionnaire was initially developed based on the published literature on CPRs. It was further developed with input from five academic experts, each of whom had published in international peer-reviewed scientific journals on the use of CPRs in physiotherapy. Each expert was specifically asked to provide comment on the content and face validity of the questionnaire. Feedback was received from all five experts and the questionnaire was modified accordingly.

The survey was piloted with a sample of convenience of six former physiotherapy clinical educators in the main areas of clinical practice (musculoskeletal, cardiorespiratory and neurological). Each was invited to complete the draft questionnaire individually, and asked to provide feedback on clarity and ease of completion, as well as indicating the time taken to complete it.

Sampling and recruitment

Clinical educators supervising physiotherapy students in Australia were surveyed. Participants were sourced through the database of physiotherapy clinical educators maintained by the University of Newcastle, Australia. This included educators working in hospitals, community facilities and private practices.

An explanatory letter and reply-paid self-addressed envelope (SAE) was sent to the contact person at each clinical placement site requesting the names of all physiotherapists acting as clinical educators at their site. From these responses, and from the original database of clinical educators, a list was created of potential participants. Therefore, questionnaires were mailed directly to named clinical educators, allowing a response rate to be accurately calculated, and enabling follow-up of non-respondents.

The protocol for the administration of the questionnaire followed Dillman's Tailored Design Method [14], with minor modifications in the follow-up steps allowing more time for potential participants to respond before each reminder; previous studies have found that such minor deviations from Dillman's original Total Design Method [15] do not adversely affect response rates [16]. The Dillman protocol is used widely in published survey research, and incorporates a number of effective methods to maximise the number of respondents [17].

The procedure began with a pre-notification letter to all identified potential participants, alerting them to the imminent arrival of the questionnaire. A survey package containing a letter of invitation, information statement, questionnaire and reply-paid SAE was then posted to potential participants within one week of pre-notification. Removable codes on the front page of questionnaires were used to track non-respondents. Once completed questionnaires were received they were immediately separated from the coding number to protect confidentiality.

Two weeks following the mailing of the questionnaire, a follow-up postcard was sent to participants thanking them for completing the questionnaire and prompting them to return

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