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Physiotherapy students' perceptions and experiences of clinical prediction rules

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Abstract

Objectives Clinical reasoning can be difficult to teach to pre-professional physiotherapy students due to their lack of clinical experience. It may be that tools such as clinical prediction rules (CPRs) could aid the process, but there has been little investigation into their use in physiotherapy clinical education. This study aimed to determine the perceptions and experiences of physiotherapy students regarding CPRs, and whether they are learning about CPRs on clinical placement.

Design Cross-sectional survey using a paper-based questionnaire.

Participants Final year pre-professional physiotherapy students ($n = 371$, response rate 77%) from five universities across five states of Australia.

Results Sixty percent of respondents had not heard of CPRs, and a further 19% had not clinically used CPRs. Only 21% reported using CPRs, and of these nearly three-quarters were rarely, if ever, learning about CPRs in the clinical setting. However most of those who used CPRs (78%) believed CPRs assisted in the development of clinical reasoning skills and none (0%) was opposed to the teaching of CPRs to students. The CPRs most commonly recognised and used by students were those for determining the need for an X-ray following injuries to the ankle and foot (67%), and for identifying deep venous thrombosis (63%).

Conclusions The large majority of students in this sample knew little, if anything, about CPRs and few had learned about, experienced or practiced them on clinical placement. However, students who were aware of CPRs found them helpful for their clinical reasoning and were in favour of learning more about them.

Keywords: Clinical prediction rule; Decision making; Physiotherapy; Student; Clinical education; Clinical skills

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Introduction

Clinical reasoning refers to the thinking and decision-making processes undertaken by the practitioner in collaboration with their patients [1]. Goals and health management strategies are jointly decided based on clinical data, patient choices, practitioner judgement and knowledge [2]. It is a fundamental skill that underpins physiotherapy assessment and management, yet it is challenging to teach to pre-professional physiotherapy students who have minimal clinical experience. It can be difficult for students to learn and develop clinical reasoning skills, so teaching a more formalised and mechanical structure for clinical decision-making may make it easier for students to achieve competency in clinical reasoning [3,4]. Various tools and strategies have been developed to assist with clinical reasoning: one example of this gaining prominence in the physiotherapy literature is the clinical prediction rule (CPR) [5,6].

A CPR is a tool derived to facilitate clinical decision-making, being used to either establish a diagnosis, formulate a prognosis, or propose an optimal treatment approach [7]. CPRs do this by combining relevant clinical variables to give a numeric probability of a condition or an outcome [8,9]. Although there are many CPRs that can be applied in physiotherapy clinical practice, preliminary evidence is emerging that CPRs are underutilised by physiotherapists, who are either unaware of them [10] or reluctant to use them [5,11].

The extent to which physiotherapists are exposed to CPRs as pre-professional students is unknown. Of the five universities involved in this study, one does not formally teach anything about CPRs in its curriculum, while the other four introduce only a few basic concepts with specific examples of CPRs. A study by our research team found that most physiotherapy clinical educators in Australia were not teaching CPRs [10], so a comprehensive evaluation of physiotherapy students across Australia would be valuable in order to ascertain how much they know about CPRs. It may be beneficial to teach students a general understanding of CPRs as an aid to learning clinical reasoning, and exposing students to the application of CPRs in the clinic is consistent with an evidence-based approach to physiotherapy learning and practice. Furthermore, if students can be better educated about CPR usage it may help alleviate the fears of some clinical educators that CPRs promote a recipe-based approach to clinical practice [10].

Accordingly the aims of this study were to (1) investigate the understanding, extent and nature of the clinical use of CPRs among final year pre-professional physiotherapy students across Australia; and (2) explore the influence of CPRs on students' learning of clinical reasoning and associated implications in the context of evidence-based practice (EBP).

Methodology

The study involved a cross-sectional survey of final year pre-professional physiotherapy students in Australia using a paper-based questionnaire.

Survey instrument

Development of the questionnaire began with a review of the literature related to CPRs, including those available and relevant to physiotherapy practice. The draft questionnaire was then provided to five academic experts who had published in peer-reviewed international scientific journals on the use of CPRs in physiotherapy. Each expert was asked to comment on the content and face validity of the questionnaire. All five experts provided feedback on the appropriateness, clarity, comprehensiveness and validity of the questionnaire.

The draft questionnaire was next piloted with a sample of convenience of eight recent physiotherapy graduates within 12 months of finishing their pre-professional qualification. They were asked to complete the draft questionnaire individually, and to provide feedback on clarity of questions and ease of completion, as well as indicating the approximate time taken to complete the survey. Following incorporation of their feedback, the questionnaire was finalised.

The 8-page questionnaire was comprised predominantly of closed-ended questions; any open-ended questions requested specific information that enabled categorisation and quantitative analysis of data. There were three sections. The first section (8 questions) examined students' knowledge and use of CPRs in the clinical setting, why they use them, why they do not use them more frequently, whether they may deviate from the clinical path indicated by a CPR if used, and how they accessed information on CPRs. The second section (8 questions) asked about students' exposure to CPRs with their clinical educators in the clinical setting. Students were asked whether they learned about CPRs from clinical educators and what they learned, their views on being taught CPRs by clinical educators, and whether they considered using CPRs affected the growth of their clinical reasoning skills. The second section also included a table of 30 CPRs (3 prognostic, 14 diagnostic and 13 interventional), chosen as being relevant to physiotherapy practice [12], and listed by their intended purpose: students were asked to indicate which of these they were familiar with, and which they had actually used on clinical placement. Respondents were also asked to nominate any CPRs they knew by name, such as by citing the geographical origin or author. The third and final section (5 questions) asked for simple demographic information, including the type of clinical settings attended for placements.

Sampling and recruitment

Final-year physiotherapy students were surveyed from four undergraduate and three graduate pre-professional