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Original article

The preferences of physiotherapy clinical educators on a learning package for teaching musculoskeletal clinical prediction rules – A qualitative study

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ABSTRACT

Background: There is a growing number of clinical prediction rules (CPRs) relevant to physiotherapy, particularly in the musculoskeletal area, but many students are not learning about them due to lack of awareness or understanding by clinical educators. An educational package specifically designed for physiotherapy clinical educators would aid their understanding of CPRs and ability to utilise them clinically, and also to be able to teach them to students.

Objectives: To determine the desired content and preferred methods of delivery of an educational package for clinical educators on musculoskeletal CPRs.

Design: A qualitative descriptive approach using semi-structured group and individual interviews with clinical educators.

Method: Educators working in the clinical area of musculoskeletal physiotherapy who had an awareness of or interest in CPRs were recruited and interviewed on their views regarding the content and delivery of an educational package on musculoskeletal CPRs. Audio files were transcribed and analysed using framework analysis to explore and develop themes and subthemes.

Findings: Content of an educational package should include general information on CPRs to improve familiarity and understanding, including a brief description, purpose, stages of development, application, limitations, and Information to dispel common myths and misunderstandings, as well as some specific examples of commonly-used CPRs. The package should be available in multiple formats to allow for different learning styles, both online via video, webinars, and podcasts, and face-to-face in practical sessions.

Conclusions: Clinical educators would find an educational package useful in assisting them to learn about musculoskeletal CPRs and to teach them to students.

1. Introduction

It is incumbent on health professionals in practice today to be able to demonstrate that their clinical interactions are based upon the principles of 'best practice', a code that dictates that those interactions are founded on scientific evidence and as a consequence are the most efficient and effective available. This evidence-based best practice can be used to guide investigations, assessment procedures, clinical decision-making and interventions. Clinical prediction rules (CPRs) are evidence-based mathematical tools designed to assist clinical decision-making (Beattie and Nelson, 2006; Glynn and Weisbach, 2011; Laupacis et al., 1997; Learman et al., 2012). They aid in developing a diagnosis, formulating a prognosis, or determining an appropriate intervention (Childs and Cleland, 2006), by formalising clinical assessment in order to streamline the process and improve clinical precision (McGinn et al., 2000). While certainly not the only tool available to aid clinicians in patient consultations, CPRs have been reported to be a useful adjunct in guiding clinical decision-making (Brehaut et al., 2006; Eagles et al., 2008; Graham et al., 1998; Haskins et al., 2014). There is a growing number of CPRs relevant to physiotherapy, particularly in the musculoskeletal area (Glynn and Weisbach, 2011; Knox et al., 2015; Knox et al., 2017), but studies have found barriers to their implementation in

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clinical practice (Abboud and Cabana, 2001; Cabana et al., 1999; Haskins et al., 2014; McGinn et al., 2008; Stiell et al., 2006), including awareness of their availability and familiarity with their use. Education on their purpose is recommended to improve the acceptability of CPRs by clinicians (Kelly et al., 2017).

Because CPRs are especially useful with complex conditions or where there is "clinical uncertainty" (Beattie and Nelson, 2006, p158) they may be particularly helpful for physiotherapy students, who lack experience and thus may struggle with analysing challenging clinical presentations. There is evidence that physiotherapy clinical educators believe CPRs can aid the development of clinical reasoning skills in physiotherapy students, and that there are few educators opposed to the teaching of CPRs to students (Knox et al., 2015). Physiotherapy students report CPRs as being helpful in developing skills in clinical decision-making (Knox et al., 2017). However, these same two studies also revealed that few clinical educators know about or use CPRs, and as a result very few are teaching CPRs to students on clinical placement. Consequently, students are unlikely to be learning about or practising CPRs in a clinical setting.

In order for students to consolidate the knowledge and practice they need with this potentially valuable and useful evidence-based tool, many clinical educators will need to receive training in CPRs. Studies have found that appropriately-designed educational packages are effective in introducing educational material on a specific topic (Au et al., 2016; Gartshore et al., 2017; McKenzie and Mellis, 2017; Moule et al., 2014). An educational package for distribution to physiotherapy clinical educators, to introduce them to CPRs, explain the rationale behind the use and applicability of CPRs, as well as the advantages of using CPRs in their clinical practice would be useful in fulfilling this goal.

The necessary content and best method(s) of delivery of such a package require careful consideration to ensure it meets the needs of clinical educators. The aim of the present study was to explore what clinical educators want in such an educational package including the preferred breadth and depth of content, mode of presentation (how it appears) and method of delivery (how it is distributed).

2. Methodology

2.1. Study design

A qualitative descriptive approach was chosen for the study as the objective was to explore the perspectives of clinical educators on the use and usefulness of CPRs in their own clinical practice, what students should be taught about CPRs and how, and the way an educational package should be presented and delivered. With qualitative description, the aim is not a study of the culture (as in ethnography), development of theory (grounded theory) or interpretation of experience (phenomenology) but "a rich, straight description of an experience" (Neergaard et al., 2009, p2). Thus the data analysis is typically less interpretive than in other forms of qualitative research designs, with the end result being a description of participants' experiences expressed in a language similar to that used by the participants (Jiggins Colorafi and Evans, 2016; Kim et al., 2016; Neergaard et al., 2009; Sandelowski, 2000). The lower level of interpretation that occurs means that multiple researchers looking at the same data are more likely to agree on the analysis (Jiggins Colorafi and Evans, 2016), which improves the validity of the study outcomes. Qualitative description was therefore an appropriate approach as the aim of the study was to explore the perceptions and experiences of clinical educators with CPRs, and to record those experiences and perceptions directly with the words and phrases used by the educators.

A series of semi-structured group and individual interviews was conducted, guided by a schedule of open questions and prompts designed to explore the participants' experiences and views. Participants were asked to share their knowledge and use of CPRs, their ideas and preferences for the content of an educational package on the teaching of CPRs to physiotherapy students in the clinical education setting (including what they thought educators should know about CPRs, and what they thought students should know about them), and their thoughts and preferences on the presentation and delivery method of such an educational package.

Open questions were used as they allowed participants to frame their own answers, whereas closed questions tend to be "loaded questions" that fit answers to the researcher's ideas by "forcing responses into narrow categories" (Charmaz, 2014, p32). As with other qualitative methodologies, the aim of the interviews was not to produce generalisable findings in a statistical sense, but rather to elicit rich information, capturing and describing the range of views, issues and suggestions to obtain generalisability in an analytical sense. Studying people's responses and experiences of phenomena in certain situations gives us an idea of how others might experience similar circumstances (French et al., 2001).

2.2. Participants

Purposive sampling involves selective recruitment of participants with the knowledge and experience to have the best insight into the research question(s) (Greenwood and Parsons, 2000). This sampling technique was used to recruit physiotherapy clinical educators working in both public and private facilities, in metropolitan, regional and rural locations. Such an approach was required to represent the differing learning needs and challenges faced in a variety of clinical and geographical settings, and by educators with different levels of experience.

The clinical educators recruited were required to have some awareness of or interest in CPRs so that they would have an understanding of the subject matter, and so be able to comment on the use of CPRs in the clinical setting and in clinical teaching, although the level of knowledge and usage varied, in order to obtain a more representative discussion. Only educators working in the clinical area of musculoskeletal physiotherapy (including orthopaedics and emergency departments) were recruited, as previous studies revealed that these are the clinical areas where most CPRs relevant to physiotherapy are used (Glynn and Weisbach, 2011; Knox et al., 2015; Knox et al., 2017).

2.3. Recruitment

Potential participants were sourced from the database of physiotherapy clinical educators affiliated with the University of Newcastle. An initial contact email, with an information statement attached, was sent to potential participants inviting them to participate in the research, and following this one of the research team contacted the potential participant by telephone. This contact proceeded according to a standardised protocol and covered the following areas: voluntary nature of participation and the right to refuse participation; reiteration of study aims; confirmation of eligibility; interview method including time and dissemination of findings; anonymity and confidentiality; de-identification of data for publication; and option of more time for consideration. Those indicating a willingness to participate were invited to nominate a convenient time and contact telephone number for the interview. They were also asked to return a completed consent form and demographic questionnaire before their interview.

2.4. Procedure

Interviews were conducted between October 2016 and October 2017. One group interview (83 min in duration) and twelve individual interviews (11–31 min in duration) were conducted with a total of 14 participants. The first author (GK) conducted the individual interviews. He was trained by an experienced qualitative researcher in interviewing techniques (ES) who conducted the first (group) interview with the lead author present in order to observe interviewing technique. The group interview was conducted face-to-face, while the individual interviews

were conducted by telephone: telephone interviews were employed in order to enable the views of participants in regional and rural areas to be included.

2.5. Data analysis

Audio files from each interview were transcribed and analysed using the framework method. Framework analysis was chosen as the technique to examine and interpret the data as it is very effective in analysing data from interviews where the object is to construct themes by comparing within and between datasets (Gale et al., 2013). It is also better suited for research which has specific questions to be asked of a pre-determined sample (Green and Thorogood, 2009; Srivastava and Thomson, 2009).

Cross-checking (Charmaz, 2014; Domholdt, 2005; Petty et al., 2012) between members of the research team was done, whereby two members of the research team analysed and identified themes individually from the transcripts, before meeting to compare and contrast themes identified. Member checking (Creswell and Miller, 2000; Domholdt, 2005; Petty et al., 2012; Thomas and Magilvy, 2011) was also performed to improve validity, whereby participants were offered transcripts to read and confirm their comments and views were correctly represented, with about half the participants accepting the offer.

3. Findings

3.1. Participants

Demographic data of the 14 participants are summarised in Table 1. There was no significant gender bias (8 male, 6 female) and ages ranged from 27 to 64 years (mean 40, SD 10.6). Participants worked in both public and private facilities, ranging in size from large teaching hospitals to small community-based health centres and clinics, situated in metropolitan (three participants), regional (six participants) and rural (five participants) centres, with three participants teaching students in a university setting as well as working clinically. Years of professional experience ranged from 5 to 31 years (mean 16.5, SD 9.0), and as clinical educators from 1 to 30 years (mean 9.4, SD 8.4). Two participants had post-graduate entry-level qualifications, six more had post-professional qualifications at Masters or Doctorate level, and two were clinical specialists accredited by the Australian College of Physiotherapists. The number of students supervised per year by individual participants ranged from 1 to 30.

The experience that participants had with CPRs is provided in Table 2, indicating the degree of variation amongst participants with respect to: 1) their awareness of the existence of CPRs and the scope of conditions and problems for which CPRs are available; 2) their familiarity with the application and applicability of CPRs in various clinical settings; 3) the extent to which they used CPRs in their clinical practice; and 4) the confidence they expressed in using CPRs appropriately and effectively. This reveals that awareness did not necessarily lead to familiarity, and familiarity did not guarantee usage, nor was confidence always an indicator of usage. The wide variation in these parameters among the participants demonstrates that the themes expressed by the participants are likely reflective of clinical educators in general, in terms of their experiences with CPRs.

3.2. Framework themes

The framework analysis identified three main themes – the content of an educational package, the presentation and delivery of the package, and methods to raise awareness of the package (Fig. 1). Content refers to the breadth and depth of information clinical educators thought should be included in a CPR learning package for clinical educators. Presentation and delivery refer to how the information is packaged and circulated to clinical educators. Methods refers to ways of raising awareness of the package and promoting it to clinical educators.

3.3. Content of the package

Participants shared what they thought clinical educators should know about CPRs in general, and which specific CPRs they should know about in order to effectively teach students. The majority of participants (8/14) indicated a package should contain some background information on CPRs, specifically on the research that underpins specific CPRs. Participants all agreed (14/14) that there should be some general information about CPRs starting with basics such as an explanation of what a CPR is and a description of their practical application:

> “Maybe just a page or something on what clinical prediction rules are and why they are important” (Ellen).

Some participants wanted copies of CPR research papers, or at least links to these, as this would enable educators to research individual CPRs that might be useful and pertinent to their clinical load. They would then be able to see the current stage of development for a CPR, how it was derived and whether the derivation population related to the clinician's patient population, thus giving greater confidence in the use of a particular CPR and how to teach it:

> “We probably need to know everything about them … what they are, how to use them” (Gabby).

> “What's actually available for what part of the body … and what test is involved for each clinical prediction rule, and also how actually you do the test” (Lee).

> “When to use them and when not to use them” (Meg).

> “If you understand the research that's gone into them and how they came about then I think then you get a better understanding of how to apply them” (Noel).

Most participants (12/14) were also in favour of a learning package containing specific examples of CPRs. Comments were made that examples can help in the understanding of theory, and would therefore be valuable in comprehending the principles of CPRs, and would also aid in their teaching to students:

> “If I'm learning something I like to have examples … they could have examples as well as like a case study to help them be able to then apply the rules” (Karen).

> “I think giving examples is probably a really good way of teaching” (Ian).

Participants also noted that there were specific CPRs that educators and students should be aware of due to their being more widely known and used in practice. There was considerable variation in opinions as to which specific CPRs should be included, and whether there should even be a limit. Many participants (9/14) mentioned specific CPRs for inclusion in an educational package, the most common being the various Ottawa Rules (8/14):

> “If they are going into an orthopaedic prac then say the Ottawa ankle one” (Carolyn).

> “There's the Nexus C-Spine rules and there's the Canadian C-Spine rules and they're both different and they're both useful and I think in clinical practice you use a combination of the two” (Noel).

> “You'll be trying to make sure you don't miss DVTs (deep vein thrombosis)” (Alan).

> “I still go through the SIJ (sacroiliac joint) testing (with students); I still think that's a useful set of tests” (Joe).

Participants recommended that it was important for any educational package to clearly specify the limitations of CPRs. Haskins et al. (2014)

Table 1
Demographic and educational characteristics of participants.

Pseudonym	Gender	Age	Work setting	Location *	Working full time (F/T) or part time (P/T)	Years working as a physiotherapist	Years working as a clinical educator	Students supervised per year	Students supervised at any one time	Entry level degree	Post-professional qualifications	Clinical specialist qualification (awarded by Australian College of Physiotherapists)
Alan	Male	64	Private practice	Metropolitan	F/T	29	15	18	2	Bachelor	Post-Graduate Certificate	Sports
Belinda	Female	43	Private practice & university	Metropolitan	P/T	22	21	6–10	2	Bachelor	Nil	Nil
Carolyn	Female	32	Public hospital	Regional	F/T	9	4	6–10	1–2	Masters	Nil	Nil
Donald	Male	41	Public community	Rural	F/T	18	1	2	1	Bachelor	Masters	Nil
Ellen	Female	30	Private practice	Rural	F/T	8	1	1	1	Bachelor	Nil	Nil
Frank	Male	56	Public & private hospital inpatients & outpatients	Rural	F/T	31	30	12–14	2	Bachelor	Masters	Nil
Gabby	Female	34	Public hospital & community	Rural	F/T	10	9	10	2	Masters	Masters	Nil
Harry	Male	50	Private practice	Regional	F/T	29	10	2–4	2	Bachelor	Masters	Nil
Ian	Male	36	Public hospital	Metropolitan	F/T	15	5	16–30	2–4	Bachelor	PhD	Nil
Joe	Male	43	Public hospital	Regional	F/T	20	6	4–20	2–4	Bachelor	Nil	Nil
Karen	Female	27	Public hospital	Regional	F/T	5	4	2–3	1–2	Bachelor	Nil	Nil
Lee	Male	34	Public hospital	Rural	F/T	7	3	2	1	Bachelor	Nil	Nil
Meg	Female	31	Public hospital & university	Regional	P/T	10	6	Variable	2–4	Bachelor	Nil	Nil
Noel	Male	39	Private practice & university	Regional	F/T	18	16	Variable	1–4	Bachelor	Masters	Paediatrics

* Metropolitan (population over 100,000), regional (25,000–100,000) and rural (under 25,000) (https://www.pc.gov.au/inq, 2018; https://aifs.gov.au/cfca/, 2018).

Table 2
Experience of participants with CPRs.

Pseudonym	Work setting	Awareness of CPRs *	Familiarity with CPRs *	Usage of CPRs *	Confidence with use of CPRs *
Alan	Private practice	4	4	3	4
Belinda	Private practice & university	4	4	3	4
Carolyn	Public hospital	4	3	2	2
Donald	Public community	1	1	1	1
Ellen	Private practice	3	3	2	2
Frank	Public & private hospital inpatients & outpatients	3	2	1	1
Gabby	Public hospital & community	2	2	1	1
Harry	Private practice	2	1	0	0
Ian	Public hospital	5	5	5	5
Joe	Public hospital	5	5	4	5
Karen	Public hospital	5	5	4	5
Lee	Public hospital	4	3	2	3
Meg	Public hospital & university	4	4	3	4
Noel	Private practice & university	3	3	2	2

* 0 Not at all, 1 To a small extent, 2 To some extent, 3 To a moderate extent, 4 To a great extent, 5 To a very great extent.

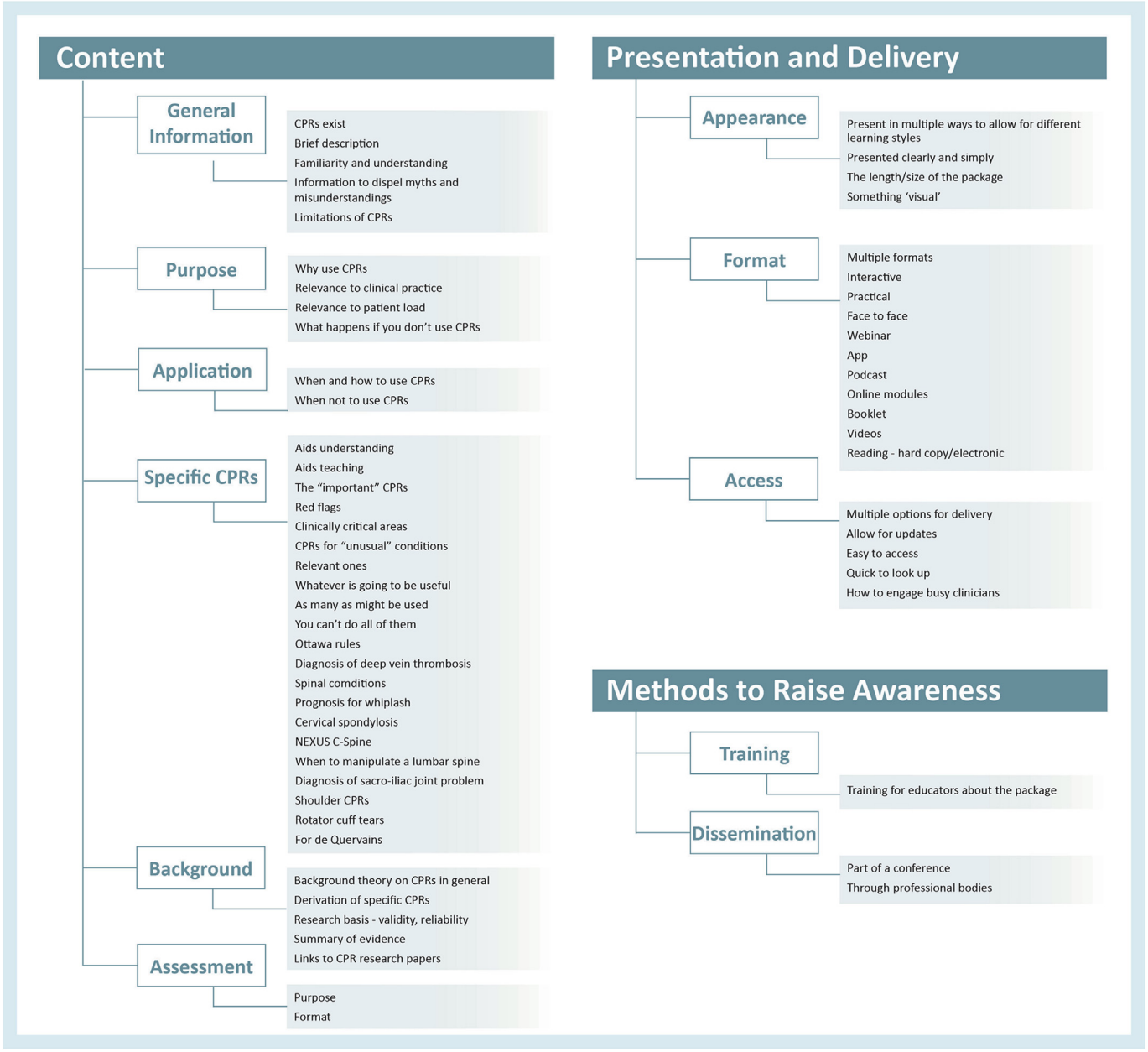

Fig. 1. Themes that emerged regarding clinical educators' preferences for an educational package.

suggest that a barrier to the clinical adoption and implementation of CPRs is the fear that they are a challenge to a clinician's autonomy, from the false belief that their proponents advocated them as replacing clinical judgement rather than augmenting it. Some participants reflected on this barrier by suggesting that the package should include information to dispel common misunderstandings about CPRs:

"That it's emphasised, these can be used as a guideline, but you still need to always have that degree of suspicion" (Belinda).

"They inform a clinical decision and not form that clinical decision. So it's not replacing, in any way, traditional clinical reasoning approaches but rather it's an additional tool that can be used to supplement clinical reasoning" (Ian).

All participants commented on the need to have some form of assessment or 'competency check' in the package so that clinical educators could evaluate their own and their students' level of understanding. Suggestions ranged from a brief 'tick box' checklist to a scenario-based assessment. Several commented that incorporating assessment both motivated student and educator to more closely engage with the learning material:

"I guess that's a good motivator for actually learning stuff isn't it really" (Harry).

"It probably does work because it does probably make you actually pay a little bit more attention; you can't just skip through the pages and you're aware that … you are going to be assessed on it; at least have to show competency at the end of the program, so I would definitely welcome that" (Ian).

3.4. Presentation and delivery of the package

Once the desired content was established, participants contributed their thoughts on how the learning package should be presented and delivered to clinical educators, expressing views on the length, the layout and visual appearance, as well as how it could be accessed. Opinions varied on the length of the package, with some participants warning you could 'lose people' (Carolyn) if it were too long, while others wanted it long enough for sufficient detail to be included:

"As short as possible" (Belinda).

"For each of the clinical prediction rules you probably need like 5 minutes" (Ellen).

"Anywhere between like an hour to a couple of hours might be about where your limit is" (Ian).

Nevertheless participants generally supported a package that was succinct and clearly presented:

"I think the simplicity needs to stay there … if you had some really clear clinical prediction rules" (Alan).

Similarly, all participants expressed an opinion on the style of delivery for a learning package, with most favouring multiple options. This was because it would cater for different learning styles and preferences, and might also be desirable for those clinical educators who learn in a combination of ways:

"I think that's part of learning, you've got to cater to all those different styles" (Belinda).

"Like a lecture and probably handouts and probably some journal articles with maybe some examples, to support it" (Ian).

There was substantial support (11/14 participants) for face-to-face instruction in CPRs combined with 'hands-on' practice of applying the CPR:

"The actual application, answering the questions to clarify exactly what things mean and why they're important, that'd have to be done face to face" (Harry).

"Talk about them and explain them in more depth than you can fit in a flyer or on a handout, and then demonstrate them, for example the SIJ one, demonstrate how to do the test and then get them to perform the test" (Ellen).

As well as this, 11/14 participants wanted something that they could read, electronically and/or in hard copy:

"Some tests I'd be quite happy to do after reading it described so long as it's well described" (Donald).

"Word documents … saved so … we could access them on our shared drive or something like that" (Gabby).

Whatever form of presentation it may take, participants indicated that a learning package should be easy to access, with 10/14 favouring the package being accessible online, including webinars and podcasts:

"An online learning package for me, that would tick all my boxes … it makes it really accessible, interactive hopefully as well … you could have perhaps different modules in the program, so you target it to where someone's development is up to" (Ian).

"Video of them performing the test … I guess that would be just as good for more remote areas" (Carolyn).

"Pre-recorded podcasts … because the participants can just suck in the information in their own time" (Noel).

It was further suggested that various organisations already have online access portals which could be utilised, such as the Australian Physiotherapy Association (APA) online learning platform or the state-based online learning portal for public New South Wales Health employees via the Health Education and Training Institute (HETI).

"Just thinking of getting it out to everyone, the webinars that the APA run" (Belinda).

"If there was an online training through HETI then that's where people could learn about in their own time" (Gabby).

It was also noted that the package would require regular updating as new CPRs were derived or existing CPRs were further validated. In this instance clinical educators would need to be alerted to the changes, such as via regular email updates:

"An email when there's any updates to that information … I was thinking in terms of longevity, you can't just have a package can you because it's going to be updated … and then can, I guess, download whatever the current update of this information is" (Joe).

3.5. Methods to raise awareness of the package

Finally, participants discussed methods of introducing the package to clinical educators, and training them to utilise the package effectively, both in their own clinical work and in a clinical teaching setting with students:

"Maybe something in conjunction with the APA … and Department of Health, a combined thing for supervisors" (Frank).

"The other way you might be able to do it is to tie it into a conference setting" (Alan).

"An education day or something … if there's enough information there for it to be a half day or a full day or something that's probably one of the better ways and target it at clinical educators" (Gabby).

4. Discussion

Previous studies have found that physiotherapists lack awareness and familiarity with CPRs (Haskins et al., 2014; Kelly et al., 2017), as do more specifically physiotherapy clinical educators (Knox et al., 2015) and students (Knox et al., 2017). This study proposes a solution to this problem could be in the form of an educational package designed for clinical educators to learn about CPRs, and to enable them to clinically teach their students about CPRs, so that as these students enter the workforce they do so with an appreciation of the potential benefits of utilising CPRs. The form and content of a learning package has been explored in this study. With a large range in interview length (11–83 min) reflecting the varying degrees of knowledge and experience with CPRs, participants expressed a variety of views and opinions on what should be in the package and how it should be delivered, though there was a measure of agreement on the basic components.

Firstly, there should be some general information on CPRs. As many educators are largely ignorant of these tools this information needs to include a basic definition and explanation; how they are developed and the stages of development; their relevance to clinical practice including how and when to apply them and why they should be used; information to dispel myths and misunderstandings; and the limitations of CPRs. In particular it should be emphasised that they are a guide to *aid* rather than replace autonomous clinical reasoning – clear explanation of this would help dispel one of the major misconceptions relating to CPRs.

Secondly, there should be some specific examples of CPRs. This would facilitate a deeper understanding of CPRs by demonstrating how they work in a clinical setting. There was some disagreement as to whether this should be an exhaustive list of 'all the CPRs you might use' (as expressed by Ellen), or just those most commonly used, or perhaps those which have been validated and shown to have a positive impact on health outcomes and healthcare resources. Nonetheless, there was considerable support for the various Ottawa rules, which have been well-validated in multiple studies (Bachman et al., 2004; Bulloch et al., 2003; Emparanza et al., 2001; Gravel et al., 2009; Libetta et al., 1999; Moore et al., 2005; Plint et al., 1999; Richman et al., 1997; Stiell et al., 1993; Stiell et al., 1996; Vijayasankar et al., 2009) and are the best known CPRs amongst physiotherapy clinical educators and students (Knox et al., 2015; Knox et al., 2017).

The inclusion of background information on CPRs was considered valuable, and there was support for copies of, or at least links to, study papers that describe the development of some specific CPRs. By understanding the evidence-base behind individual CPRs, clinical educators may have more confidence in their effectiveness and so potentially be more likely to use them clinically, as well as to teach them to students. An assessment module was proposed as being useful in a number of ways, by encouraging educators to study and comprehend the learning materials and by giving them the opportunity to check that they have understood the package content, as well as providing a form of appraisal of the students under their supervision.

This study found that there was a wide variety of opinions on the way a learning package should be presented and delivered, and it would seem sensible to offer the package in a number of ways to cater for different learning styles and preferences. There was support for specific training sessions for clinical educators, to help understand CPRs and to understand the package itself. There could be an initial introduction via webinars, with accompanying videos of the tests involved and how to implement specific CPRs. It could also be offered as face-to-face practical sessions, perhaps tied in to existing conferences, for educators who prefer this mode of learning.

The variety of delivery options suggested by participants arguably reflects the need to enable clinical educators to access the educational material irrespective of their geographical location. Face-to-face lectures and practical sessions are more likely to be available only to metropolitan and perhaps regional-centre educators, but other regional and rural educators would still be able to access potential online options including e-modules, videos, webinars, podcasts, apps and electronic copies of documents describing CPRs.

Finally, consideration should be given to the package being offered in different lengths, with varying levels of detail, to cater both for those who are more interested and for those who only want a quick summary, and who may be discouraged from engaging if there is too much information. Accordingly, there could be a 'core package' containing brief and basic information, with perhaps various modules to add to this for those clinical educators who desire greater depth and detail. To facilitate accessibility the package should be available online, perhaps via existing learning platforms/portals with hard copy print options. Updates of the package material are needed regularly as research advances, and could be distributed via email with links to relevant study papers.

5. Limitations

Data in this study were collected from a relatively small group of physiotherapy clinical educators, although they were purposefully recruited to provide a broad representation of the various key clinical and geographical settings where musculoskeletal physiotherapists work, they had markedly varied awareness and familiarity with CPRs, and they were able to offer a large number and variety of comments and suggestions relating to the proposed educational package. Most of the interviews were conducted by telephone, which may have limited some participants' expression, such as with their non-verbal means of communication. Participants were limited to one university database, which restricted participation to clinical educators in the state of New South Wales in Australia, and as such the findings may not generalise to other populations of physiotherapy clinical educators; however the study population was broadly representative in terms of age (Physiotherapy Board of Au, 2018) and experience in clinical education (Knox et al., 2015; Stiller et al., 2004).

6. Conclusions and recommendations

The results of this study suggest that physiotherapy clinical educators would welcome an educational package to assist them to learn about CPRs and to enable them to clinically teach the use of CPRs to students. The introduction of such a package may lead to students having a greater understanding and appreciation of CPRs, thereby facilitating their learning and preparedness for contemporary practice in an evidence-based healthcare setting. This study has prepared the groundwork for a package with recommendations on scope of content and methods of delivery, and future research would be needed to further develop, implement and assess the effectiveness of such a package. The key findings of the study are that an educational package should contain a basic description of CPRs and how to apply them clinically (as many clinical educators are unfamiliar with them), an acknowledgement of their limitations, and information to dispel associated misunderstandings (which is a major barrier to their use). Such a package should be available both face-to-face and online to enable clinical educators access irrespective of their geographical location.

Ethical approval

Ethical approval for the study was granted by the University of Newcastle Human Research Ethics Committee (approval number H-2016-0110).

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Declarations of interest

None.

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