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Original article

Physiotherapists' knowledge, attitudes and practices regarding clinical prediction rules for low back pain

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ABSTRACT

Clinical Prediction Rules (CPRs) have been developed to assist in the physiotherapy management of low back pain (LBP) although little is known about the factors that may influence their implementation in clinical practice. This study used qualitative research methodology to explore the knowledge, attitudes and practices/behaviours of physiotherapists in relation to these tools. Four semi-structured focus groups involving 26 musculoskeletal physiotherapists were conducted across three Australian geographic regions. A fictitious LBP case scenario was developed and used to facilitate group discussion. Participant knowledge of CPRs was found to be mixed, with some clinicians never having previously encountered the term or concept. LBP CPRs were often conceptualised as a formalisation of pattern recognition. Attitudes towards CPRs expressed by study participants were wide-ranging with several facilitating and inhibiting views identified. It was felt that more experienced clinicians had limited need of such tools. Only a small number of participants expressed that they had ever used LBP CPRs in clinical practice. To optimise the successful adoption of an LBP CPR, researchers should consider avoiding the use of the term 'rule' and ensure that the tool and its interface are uncomplicated and easy to use. Understanding potential barriers, the needs of clinicians and the context in which CPRs will be implemented will help facilitate the development of tools with the highest potential to positively influence physiotherapy practice.

1. Introduction

The identification of meaningful sub-groups of patients with low back pain is a priority area for LBP research and is believed to have the potential to lead to substantial improvements in patient care (Borkan and Cherkin, 1996; Henschke et al, 2007; Foster et al., 2009; Costa et al., 2013). Although the idea of sub-grouping patients with LBP is not new (Riddle, 1998; McCarthy et al., 2004), more recently greater emphasis has been placed upon the use of statistical procedures to identify the factors that delineate patients with LBP with differing prognoses and degrees of responsiveness to certain interventions. One such sub-grouping mechanism is the clinical prediction rule (CPR).

A CPR is a clinical tool that is used to inform decision-making by quantifying the probability of a given outcome, diagnosis or treatment response using a parsimonious set of factors from the history, physical examination and other investigations (McGinn et al., 2008). In recent years a growing number of CPRs relevant to physiotherapy have been derived for LBP presentations for a wide variety of diagnostic, prognostic and prescriptive functions (Beneciuk et al., 2009; May and Rosedale, 2009; Stanton et al., 2010; Haskins et al., 2012). At this time however, it is not clear if these tools are consistent with the perceived needs of physiotherapists or will be accepted by them.

Limited evidence suggests that LBP CPRs may be accepted and used by some US physical therapists. A recent US study found that 40% of surveyed physical therapists who routinely employ lumbar thrust manipulation report using a CPR (Learman et al., 2012). Outside of a US context, however, there is no discernible research data on physiotherapists' awareness or use of LBP CPRs. Awareness of Emergency Medicine CPRs has been demonstrated to vary internationally and to be highest in the countries in which the tools have been developed (Graham et al., 2001; Eagles et al., 2008). As most LBP CPRs relevant to physiotherapy practice have been developed in the US (Haskins et al., 2012), it is likely that awareness and use of these tools in other countries may be much lower.

In addition to limited awareness, previous research has highlighted that once CPRs have been validated and demonstrated to positively impact clinical practice, there are a number of individual and system level barriers that may impede their successful adoption (Graham et al., 1998, 2001; Brehaut et al., 2005; Brehaut et al., 2006; Stiell et al., 2006; Eagles et al., 2008; Beutel et al., 2012). Table 1 provides an overview of the literature-informed potential barriers to the adoption of LBP CPRs in physiotherapy practice

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Table 1
Literature-informed potential barriers to the adoption of LBP CPRs in physiotherapy practice.

Theme	Subtheme	Potential barrier	Description
Knowledge	Awareness	Lack of awareness	Unaware of the existence of LBP CPRs
	Familiarity	Lack of familiarity	Insufficient knowledge of the content of LBP CPRs to enable their application
	Forgetting	Forgetting	Inadvertently omitting to implement LBP CPRs
Attitudes	Agreement in general	Too 'cookbook'	Perception that LBP CPRs oversimplify the complexities of the clinical encounter
		Dislike of the term 'rule'	Aversion to using LBP CPRs due to the term 'rule' implying an authoritative influence on decision-making
		Challenge to autonomy	Perception that LBP CPRs are a threat to professional autonomy
		Biased synthesis	Perception that the development of the tool was biased
		Not practical	Perception that LBP CPRs are unclear or impractical to follow
		Unspecified overall lack of agreement with using the tool	Lack of agreement with LBP CPRs in general
	Expectancy	No perceived benefit to patient outcomes	Perception that using LBP CPRs will not lead to improved patient outcomes
		No perceived benefit to health care processes	Perception that using LBP CPRs will not lead to improved health care processes
	Self-efficacy	Lack of self-efficacy	Belief that one cannot use LBP CPRs
	Motivation	Lack of motivation/Inertia of current practice	Lack of motivation to use LBP CPRs or to change one's habits
Practices/Behaviours	Patient factors	Lack of consistency with patient preferences	Perceived inability to reconcile patient preferences with the use of LBP CPRs
	Factors associated with LBP CPRs as an innovation	Lack of triability	Perception that LBP CPRs cannot be tried or experimented with
		Lack of compatibility	Perception that LBP CPRs are not consistent with one's own approach
		High complexity	Perception that LBP CPRs are difficult to understand and use
		Lack of observability	Lack of the visibility of the results of using LBP CPRs
		Not communicable	Perception that it is not possible to communicate with colleagues about LBP CPRs to reach a mutual understanding
		Increased uncertainty	Perception that the use of LBP CPRs will increase uncertainty
		Not modifiable	Lack of flexibility to modify or adapt LBP CPRs
	Environmental factors	Lack of time	Insufficient time to use LBP CPRs
		Lack of resources	Insufficient resources to use LBP CPRs
		Organisational constraints	Insufficient support from the organisation to use LBP CPRs
		Lack of reimbursement	Insufficient reimbursement for using LBP CPRs
		Increased medicolegal liability	Perceived increased risk of legal actions arising from using LBP CPRs

based on the current body of evidence using a framework of knowledge, attitudes and practices/behaviours (Cabana et al., 1999; Legare et al., 2008). This framework has been used in previous research to help identify the barriers to the adoption of other clinical innovations, such as clinical practice guidelines (Larson, 2004; Schouten et al, 2007; Pogorzelska and Larson, 2008) and clinical protocols (Rubinson et al., 2005; Dennison et al., 2007; Barlow et al., 2008), and has been recommended as an appropriate framework to investigate the barriers to the use of CPRs (Abboud and Cabana, 2001). Recognition of the facilitators and barriers to the use of LBP CPRs will enable the development of tailored strategies that may assist the adoption of these tools into practice (Bero et al., 1998; Cabana et al., 2002; Grol and Wensing, 2004; Mehta, 2004; National Institute of Clinical Studies, 2006).

Although considerable work has been invested in the development of LBP CPRs for physiotherapy practice, very little is known about how they will be integrated within the complex thinking and decision-making processes of clinical reasoning (Edwards et al., 2004). Limited evidence suggests that clinicians using LBP CPRs may not necessarily use them in isolation but rather consider them within the context of all other available information to inform their decision-making (Learman et al., 2012). Understanding the ways in which physiotherapists apply LBP CPRs in the clinical setting will also be informative to designing strategies to optimise their use.

What physiotherapists know about LBP CPRs, as well as their attitudes and practices in relation to these tools remains largely unknown but will underpin their successful adoption into clinical practice (National Institute of Clinical Studies, 2006). Qualitative research methodology seeks to construct meaning and knowledge through the understanding of human experience (Petty et al., 2012a) and provides an appropriate avenue to gain deep understanding and greater insight into the factors that influence LBP CPR implementation in physiotherapy. The generation of such knowledge is anticipated to inform strategies that may optimise the development of LBP CPRs with the greatest potential to positively impact physiotherapy practice.

2. Methods

2.1. Design

Qualitative Descriptive design is intended to provide a clear description of a specific phenomenon or experience from the perspective of research participants (Magilvy and Thomas, 2009). It is an approach that seeks to identify and explore rich straight description on particular topics using language reflective of that used by participants and with minimal interpretative meaning inferred by the researcher (Sandelowski, 2000; Neergaard et al., 2009; Sandelowski, 2010). Qualitative Descriptive design was deemed an appropriate approach to gain firsthand insight into the knowledge, attitudes and practices/behaviours of physiotherapists in relation to LBP CPRs. The investigation of these domains is a well-recognised approach used to examine the barriers to the adoption of evidence in practice (Lang et al., 2007).

2.2. Participants

Purposive sampling (Greenwood and Parsons, 2000) is a sampling technique that involves the selective recruitment of participants who may provide the best insight into the research questions. This sampling technique was used in this study to recruit physiotherapists of varying degrees of experience who manage patients with low back pain, in both private and public sectors, across