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Physiotherapists' experiences of the management of anterior cruciate ligament injuries



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ABSTRACT

Background: While extensive research has been reported for management of anterior cruciate ligament (ACL) injuries, variation in treatment by physiotherapists is evident.

Objectives: To explore physiotherapists' experiences regarding ACL injury rehabilitation and factors that influenced physiotherapists' decision making for ACL rehabilitation, and to elicit what research physiotherapists perceived would support their management of these patients.

Design: Qualitative study.

Methods: Fifteen physiotherapists from six private clinics in New Zealand participated in semi-structured interviews. The interviews were recorded, transcribed verbatim and the general inductive approach was used to develop key themes.

Results: Participant's management strengths were evident by their intent and commitment to provide expert rehabilitation, using a biopsychosocial approach and evidence-informed practice. The lengthy management process (including prolonged rehabilitation and referral processes) and interprofessional disconnect concerned participants. Translational research was needed for clear directions for exercise prescription and milestones for return to sports and occupation following ACL injury.

Conclusions: Participants provided a biopsychosocial and evidence-based approach to ACL injury management. Potential areas of improvement include simplifying the referral process and enhancing communication between physiotherapists and other health professionals. Future research should focus on clarifying areas of ACL rehabilitation uncertainty, or collating results in an accessible and usable format for clinical practice.

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1. Introduction

Anterior cruciate ligament (ACL) injuries during sport or recreational activities are common in many countries and result in a significant burden to society due to reduced productivity and health care costs (Gianotti, Marshall, Hume, & Bunt, 2009; Mather et al., 2013; Moses, Orchard, & Orchard, 2012; Prodromos, Han, Rogowski, Joyce, & Shi, 2007). In professional sports the incidence of ACL injury is as high as 3.7% per year (Gianotti et al., 2009; Moses et al., 2012) while population based incidence has been reported as 52 per 100,000 person years (Janssen, Orchard, Driscoll, & van Mechelen, 2012). A recent meta-analysis indicated that many

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individuals do not return to their pre-injury level of participation (Ardern, Taylor, Feller, & Webster, 2014). Fear of re-injury and the costs associated with this typically outweigh the perceived benefits (Kvist, Ek, Sporrstedt, & Good, 2005; Tjong, Murnaghan, Nyhof-Young, & Ogilvie-Harris, 2014).

Various guidelines are available for rehabilitation of ACL injuries, including surgeon specific protocols and guidelines endorsed by specific health professional groups (Shea et al., 2015; Wright et al., 2015). However, evidence is still inconclusive for aspects of rehabilitation, such as accelerated versus conservative management, and exercise prescription and progression, including open versus closed kinetic chain exercises (Ajuied, Smith, Wong, Hoskinson, Back, & Davies, 2014; Shea et al., 2015; Wright et al., 2015). At present, there is a paucity of literature exploring whether ACL rehabilitation guidelines have translated into physiotherapy clinical practice. Ajuied et al. (2014) recently showed that over 80% of hospital clinics in London had written ACL rehabilitation guidelines, however significant variation in the rehabilitation

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being offered at these clinics was evident. Health care professionals' beliefs influence their adherence to treatment guidelines for select musculoskeletal conditions, and appear to be associated with patients' beliefs and clinical outcomes (Darlow, Fullen, Dean, Hurley, Baxter, & Dowell, 2012). Thus, knowledge of physiotherapists' beliefs and perspectives of ACL injury treatment strategies is important.

Previous research explored physiotherapists' perspectives of musculoskeletal injury rehabilitation and found that the nature of the injury, personality of the patient and the environment, such as support systems, were likely to affect adherence (Niven, 2007). Despite a large amount of research on the management of ACL injuries, to our knowledge, no previous studies have examined physiotherapists' experiences of ACL injury management and whether barriers are perceived to exist for achieving best possible outcomes.

This study endeavoured to explore physiotherapists' experiences and attitudes regarding ACL injury rehabilitation. We also aimed to identify the factors that influenced physiotherapists' decision making and to elicit what research (if any) physiotherapists perceived would support their management of patients with ACL injuries.

2. Methods

2.1. Recruitment of participants

Participants were recruited via purposive sampling. To be included in the study participants had to be currently practicing New Zealand registered physiotherapists, with experience in ACL injury rehabilitation. Owners of physiotherapy clinics in the lower South Island of New Zealand that dealt with ACL injuries based on information on their public websites, were contacted (n = 16). The owners were emailed an invitation and provided with an information sheet to distribute amongst their physiotherapists. Two clinics declined due to other commitments, six agreed to inform their physiotherapists of the study while the remaining eight clinics did not reply. Interested physiotherapists were asked to contact the researchers individually or as a group to organise an interview. If physiotherapists contacted the researchers as a group they were given the option of being interviewed as a small group or individually. Similarly, physiotherapists were given the option of being interviewed via OtagoConnect (akin to AdobeConnect), Skype, telephone, or face-to-face at their respective clinics. Interested physiotherapists were sent and requested to return completed consent and demographics forms prior to the interview.

Fifteen physiotherapists (Table 1) from three rural and three metropolitan clinics were included in the study. Three clinics each had three physiotherapists volunteer, one clinic had four, and one

physiotherapist volunteered from the remaining two clinics respectively. Participants from one of the rural clinics reported attracting a large number of elite athletes, particularly skiing and snow-boarding ACL injuries, while half the patients with ACL injuries attending another rural clinic were estimated to be work-related, particularly by farmers and labourers. All other clinics focussed mainly on community- and sub-elite athletes of different sports and occupation-related injuries. All participants received written and verbal information about the study and gave written informed consent. The study was approved by the University's Human Ethics Committee.

2.2. Procedure

A semi-structured schedule of questions was developed to guide each interview and ensure the key aims of our research were addressed, while allowing flexibility of the interviewees to discuss concepts and experiences important to themselves (Table 2). The schedule was developed iteratively. Core questions were placed into a logical sequence and then possible prompts and probes developed (Smith, 2003). The participants were asked about ACL rehabilitation outcomes and strategies used to achieve these outcomes as we had identified this as a gap in the literature. The schedule was reviewed and refined by the research team and then pilot tested on an experienced physiotherapist to ensure clarity and ease of understanding (Cresswell, 2007). The interview schedule continued to be refined throughout the study as unanticipated concepts or important areas became evident through initial analysis (Thomas, 2006). For example, the interviewees' perspective on their provision of psychological support to patients warranted the inclusion of this specific topic, thus was included on the interview schedule for subsequent interviews.

Two researchers attended each interview, with one of them being the primary interviewer. Once rapport was established the interviews became free-flowing. The interviews lasted between 45 and 60 min. Time spent on each question differed between participants due to individual responses so that areas of interest could be considered more deeply. Prompts were used to encourage detail on aspects of importance to the interviewees (Ritchie, 2009; Smith, 2003). No specific order of questions was followed but the interviews focussed on three key areas: current principles of ACL injury management, barriers to achieving desired outcomes, and perceived research need. Each interview was recorded with two audio recorders (Sony digital voice recorder and OtagoConnect) and transcribed verbatim. The principle investigator transcribed four interviews and an independent transcriber the remaining three. Prior to analysis, the researchers individually bracketed their thoughts and referred back to these documents so that the analysis

Table 1Participant demographics.

Number of participants	15 (10 women, 5 men)
Duration of physiotherapy practice (years, median, range)	11.5 (0.5-30)
Estimated number of patients treated for ACL injuries per year (median, range)	12 (3-54)
Highest academic qualification	
Bachelor: 5	5
Post-graduate certificate	1
Post-graduate diploma	8
Masters	5
Continued education in ACL injury management	
None	10
Post-graduate sports medicine paper	2
Diploma in manipulative physiotherapy	1
Post-graduate certificate	1
Masters topic	1

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