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Original article

# Physiotherapist-delivered Stress Inoculation Training for acute whiplash-associated disorders: A qualitative study of perceptions and experiences

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ABSTRACT

*Background:* Formally trained and accredited physiotherapists delivered Stress Inoculation Training (SIT) integrated with guideline-based physiotherapy management to individuals with acute whiplash associated disorders (WAD) as part of a randomised controlled trial. The delivery of SIT by physiotherapists is new.
*Objectives:* To investigate physiotherapists' perspectives on delivering SIT as part of the trial and in routine practice.
*Design:* Qualitative descriptive.
*Method:* Physiotherapists (n = 11) participated in semi-structured interviews. Interviews were audio-recorded, transcribed verbatim, and analysed thematically. Findings were triangulated against an audit of physiotherapists' adherence to the SIT protocol.
*Results:* Three themes were identified: perceived value; capacity to deliver; and adaptation and implementation. Physiotherapists' saw value in SIT in that they perceived the program to have improved patient outcomes, enhanced their therapeutic alliance, and provided new skills to manage psychological contributors to WAD. Physiotherapists' capacity to deliver the program was facilitated through the development of confidence in their ability to deliver sessions, viewing SIT as falling within their current professional identity, and having confidence in their ability to manage mismatches in patients' expectations of care. All physiotherapists reported having used SIT to some extent in routine practice, by selectively delivering sessions and/or integrating the content with other management. Physiotherapists were able to deliver SIT as was intended (94.6% adherence).
*Conclusions:* Physiotherapists' supported adding SIT to usual management of individuals with acute WAD. Education on SIT principles is recommended during pre-professional training to facilitate future implementation.

## 1. Introduction

Improving recovery rates following whiplash injury remains difficult. Despite comprehensive investigations into possible management strategies (Lamb et al., 2013; Jull et al., 2013), approximately 50% of injured individuals continue to experience persistent pain and disability (Carroll et al., 2009). One reason for this lack of effectiveness may be that treatments have followed traditional orthopaedic approaches, such as manual therapy and exercise, which do not address psychological distress. Acute symptoms of post-traumatic stress predict poor recovery at long term follow-up following whiplash injury (Sterling et al., 2005, 2006; Ritchie et al., 2015a) and these symptoms may be causal in the development and/or maintenance of pain (Jenewein et al., 2009). These findings raise the question of whether modulation of early stress symptoms can prevent the progression to chronicity.

A recent randomised controlled trial (StressModEx ACTRN12614001036606) investigated the effectiveness of physiotherapist-led Stress Inoculation Training (SIT) integrated with physiotherapy exercise (Motor Accidents Authority, 2014) compared to physiotherapy exercise alone for people with acute (< 4 weeks)

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**Table 1**
Description of the Stress Inoculation Training intervention.

| Objective(s) | SIT session | Content description |
|---|---|---|
| A. Identify and understand stress by identifying specific stressors and how these impact on pain, behaviour, emotions, physical performance and thoughts<br>B. Develop skills for managing stress through relaxation, problem solving and helpful coping self-statements | 1. Program overview, theories of stress and pain, abdominal breathing exercises | Rationale for SIT, introduction to gate control theory, abdominal breathing explanation, demonstration and practise including facilitation of home practise. |
| B. Develop skills for managing stress through relaxation, problem solving and helpful coping self-statements | 2. Muscle relaxation training | Review abdominal breathing exercise experience. Rationale, strategy and practise of body scan including cues to initiate and facilitation of home practise. |
| | 3. Problem solving for stressful situations | Review body scan experience. Rationale, strategy and practise of problem solving. Generation of a plan for implementation specific to patient's situation and strategies for evaluation. |
| | 4. Use of positive coping statements | Review problem solving experience. Rationale and identification of helpful and unhelpful self-talk and coping statements. Guided exercise in relation to specific stressful situation. |
| C. Apply skills in various stressful situations to develop tolerance and confidence | 5. Applying SIT to the real world | Review coping statements experience. Review SIT steps from sessions 1 to 4 and provide context for use. Develop plan for managing patient-identified stressor. |
| | 6. Coping skills maintenance | Review SIT plan experience. Introduction to relapse prevention including early warning signs and developing a coping plan. Encourage ongoing development and practise of strategies. |

SIT = Stress Inoculation Training.

whiplash associated disorders (WAD) (Ritchie et al., 2015b). Included participants were identified at risk of poor recovery based on a validated screening tool comprising items of disability, age and stress symptoms (Ritchie et al., 2015a). Participants with a mental health diagnosis, for example, severe depression were excluded. Further details of the interventions are provided elsewhere (Ritchie et al., 2015b), but briefly both interventions comprised 10 sessions over 6 weeks. The integrated SIT and exercise intervention delivered clinically relevant benefits over exercise alone on the primary outcome of pain related disability (Sterling et al., 2018).

SIT is a cognitive behavioural approach that involves facilitation of problem solving and coping strategies to manage stress-related anxiety (Foa et al., 1999). Table 1 provides a content summary of SIT sessions delivered in the RCT. When delivered by psychologists, the program has shown to decrease pain and anxiety in athletes undergoing orthopaedic surgery (Ross and Berger, 1996), and reduce the severity of post-traumatic stress symptoms, anxiety and depression in female assault victims (Foa et al., 1999). Physiotherapists are well placed to deliver SIT for patients with acute WAD, given they routinely treat this population, and have demonstrated capacity to deliver psychological interventions in chronic non-traumatic conditions such as low back pain and osteoarthritis (Main and George, 2011; Main et al., 2012; Bryant et al., 2014).

The physiotherapists participating in the RCT completed a two-day training workshop conducted by a clinical psychologist, rehabilitation physician and musculoskeletal physiotherapist. The workshop comprised skills-based training, monitoring and mentoring to develop competency in delivering SIT in combination with exercise. The psychologist and rehabilitation physician accredited the physiotherapists by assessing two audio-recordings of each individual's performance in practise sessions against standardised criteria (Appendix A). While meeting these standards is promising in that it suggests capability in delivery, this may be insufficient in actuating future use of SIT. Physiotherapists may avoid addressing psychosocial contributors to musculoskeletal pain where they feel they lack sufficient confidence or skill (Sanders et al., 2013; Alexanders et al., 2015; Foster and Delitto, 2011). The aim of this study was to investigate physiotherapists' experiences of delivering SIT in conjunction with exercise to individuals with acute WAD as part of the RCT, and their perceptions of using this approach in routine practice.

## 2. Methods

### 2.1. Design

A qualitative descriptive design was used (Sandelowski, 2000), involving semi-structured interviews with physiotherapists who delivered SIT in the RCT. This approach was selected to enable the collection of rich information about individuals' views and experiences (Noaks and Wincup, 2004). Semi-structured interviews allow participants to set the agenda and follow their own sense of what is salient (Arksey and Knight, 2012).

### 2.2. Participants

Critical case purposive sampling was conducted to gain maximal insight into the experiences of a specific group (physiotherapists who had delivered SIT), rather than generalising findings to a larger population (Miles and Huberman, 1994). Physiotherapists residing in Queensland, Australia who had been accredited to perform SIT and had implemented the program with at least one patient as part of the StressModEx pilot or RCT were eligible for inclusion and invited to participate via email. Ethics approval for the study was granted by The University of Queensland Human Research Ethics Committee, and participants provided informed consent prior to inclusion. Physiotherapists received a fee for service for treatments delivered as part of the RCT, but were not compensated for participating in an interview.

### 2.3. Procedures

Interviews were conducted with each participant between November 2016 and March 2017. Where possible, interviews were undertaken face-to-face at each physiotherapist's clinical practice. Telephone interviews were offered to participants who resided in distant geographical regions. One investigator (JMK) conducted the interviews using a standardised guide to facilitate dependable information collection (Appendix B) (Guba and Lincoln, 1989). The guide was informed by past literature (Nielsen et al., 2014), and revised by the research team to ensure questions were neutral and sensitive to the study aims (Gill et al., 2008). Participant characteristics were recorded on commencement of the interview. Subsequently, open-ended questions explored physiotherapists' reasons for participating in the RCT, experiences of SIT delivery, and thoughts on using SIT in routine