



How does an integrated physiotherapist-delivered stress management intervention exert its effects?

Identifying unique targets for acute whiplash treatment

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**Early management is important
but current approaches to treatment
have only modest effects.**

STRESS MODEX



Targets early stress as part of physiotherapy exercise

- 108 patients with whiplash at risk of poor recovery
- Physiotherapists trained in Stress Modex – stress management techniques
- Delivered over 6 weeks with 10 sessions of physiotherapy exercise
 - Stress Modex vs physiotherapy exercise

Sterling, M., Smeets, R., Keijzers, G., Warren, J., & Kenardy, K. (2019). Physiotherapist-delivered stress inoculation training integrated with exercise versus physiotherapy exercise along for acute whiplash-associated disorder (Stress Modex): a randomized controlled trial of a combined psychological/physical intervention, *Br J Sports Med*, 0:1-9. doi:10.1136/bjsports-2018-100139



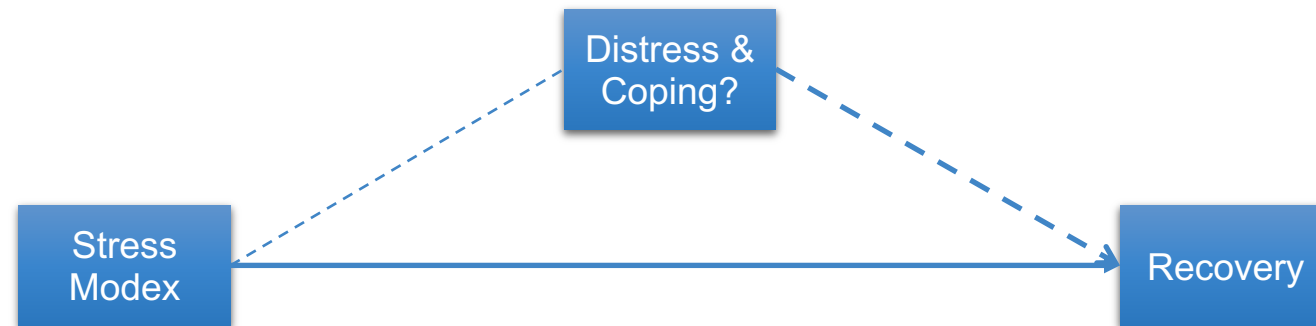
Exercise program determined by physiotherapist

Range & control of movement
Strengthening
Functional & aerobic exercise

1 EDUCATION ABDOMINAL BREATHING	2 BODY SCANNING MUSCLE RELAXATION	3 PROBLEM-SOLVING STRESSFUL SITUATIONS
4 USE OF POSITIVE COPING STATEMENTS	5 GOAL SETTING & PLANNING FOR EVERYDAY LIFE	6 MAINTAINING COPING SKILLS OVER TIME

Did it work? How did it work?

Are changes in early distress & coping the mechanisms by which the Stress Modex intervention works?



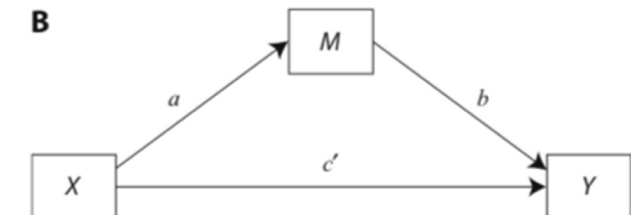
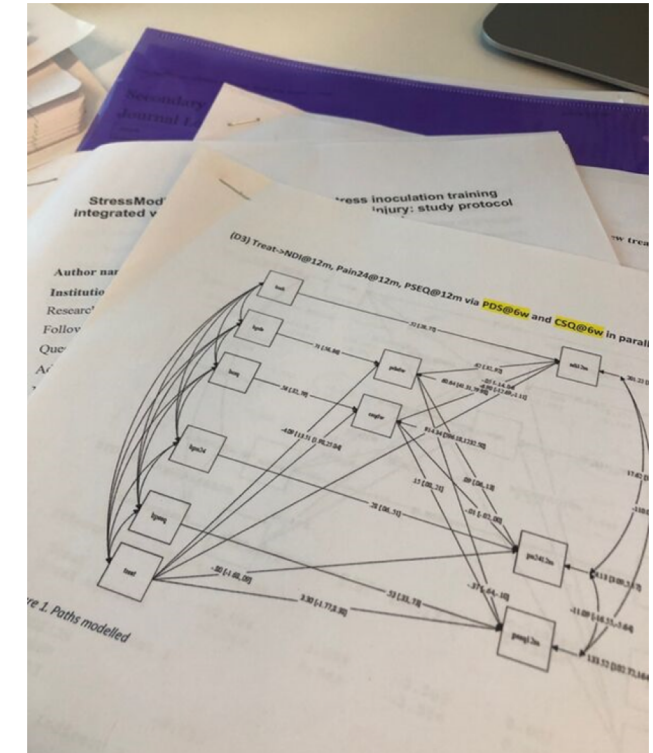
Four mediational analyses

[M] Mediators: 6-week depression, anxiety, and stress (DASS-21), post-traumatic stress symptoms (PDS), adaptive coping skills (CSQ)

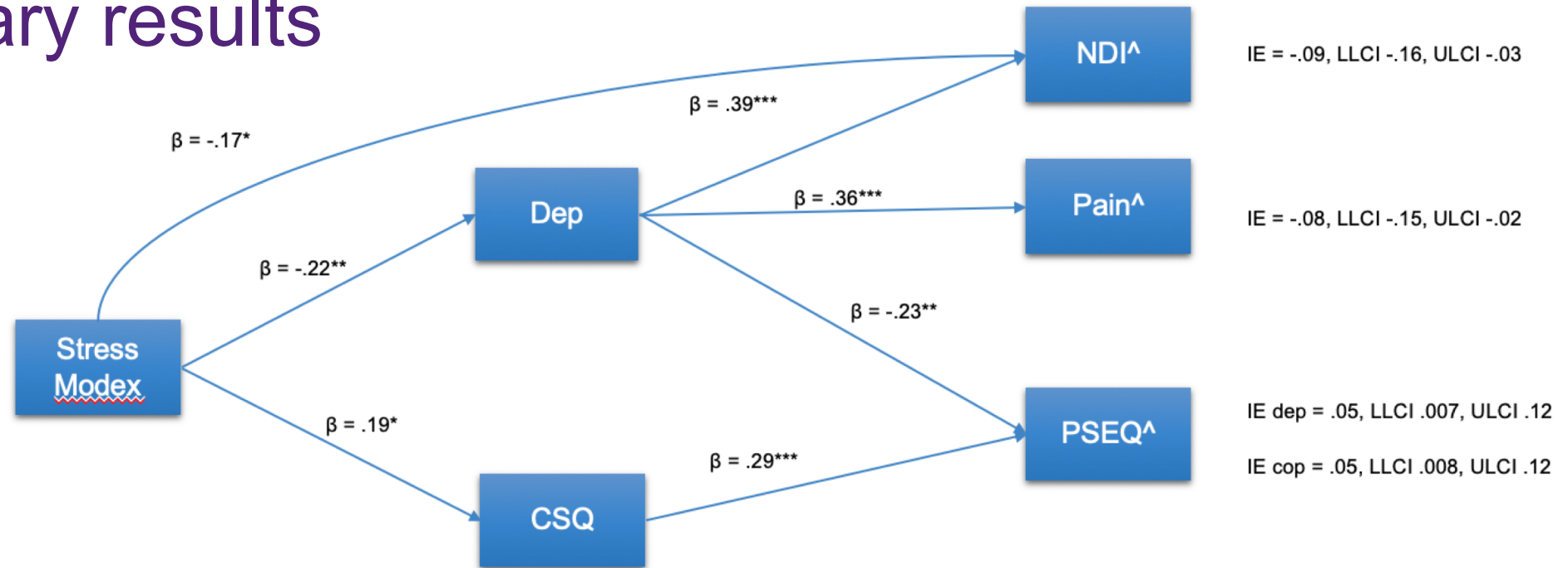
[Y] Recovery outcomes: 12-month disability, pain severity, pain self-efficacy

We used different measures of distress:

- Depression & anxiety are often considered measures of distress
- High degree of heterogeneity in measures of stress in studies examining stress as a risk factor for chronic MSK pain (Buscemi et al., 2019).



Preliminary results



^Note that baseline NDI, pain, PSEQ entered as covariates

**Mediators
at 6 weeks**

**Outcomes
at 12 months**

What do the results mean?



Even though Stress Modex had a direct effect on disability – changes in distress were also pathways to reduced disability, pain & improved self-efficacy; & changes in coping was another pathway to improved self-efficacy.

Physiotherapists can elicit changes in patients' stress symptoms and coping ability by increasing their scope of practice.



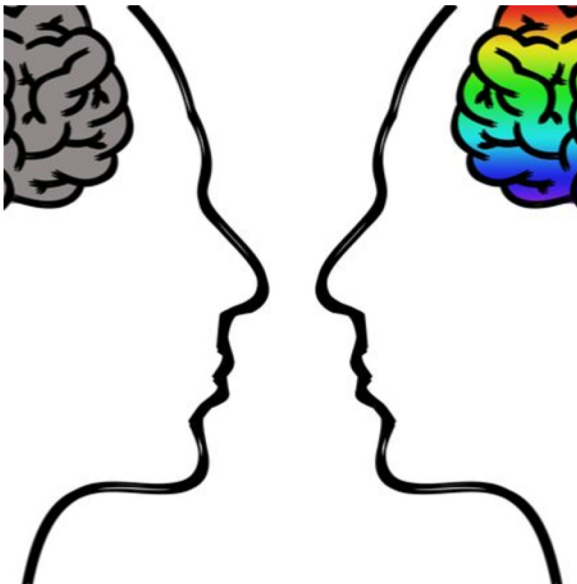
CONTROL VARIABLES

We didn't account for the number of sessions patients completed or treatment fidelity.



OTHER POSSIBLE MEDIATORS?

Fear avoidance beliefs, physical activity measures, physiotherapist-patient relationship.



CAN WE GET MORE TARGETED?

How many sessions?
What components?
Personalised to
depression/anxiety?



SCALE UP & TECH

How to use
technologies to reach
those that need it.
Integrate into
curriculum.



ALTERNATIVE OPTIONS

How best to support
further psychological
assessment &
treatment if required.



Stress & coping are new treatment targets for acute whiplash



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Thank you

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