



Thinking Differently about Pain: The Psychology of Pain and Disability

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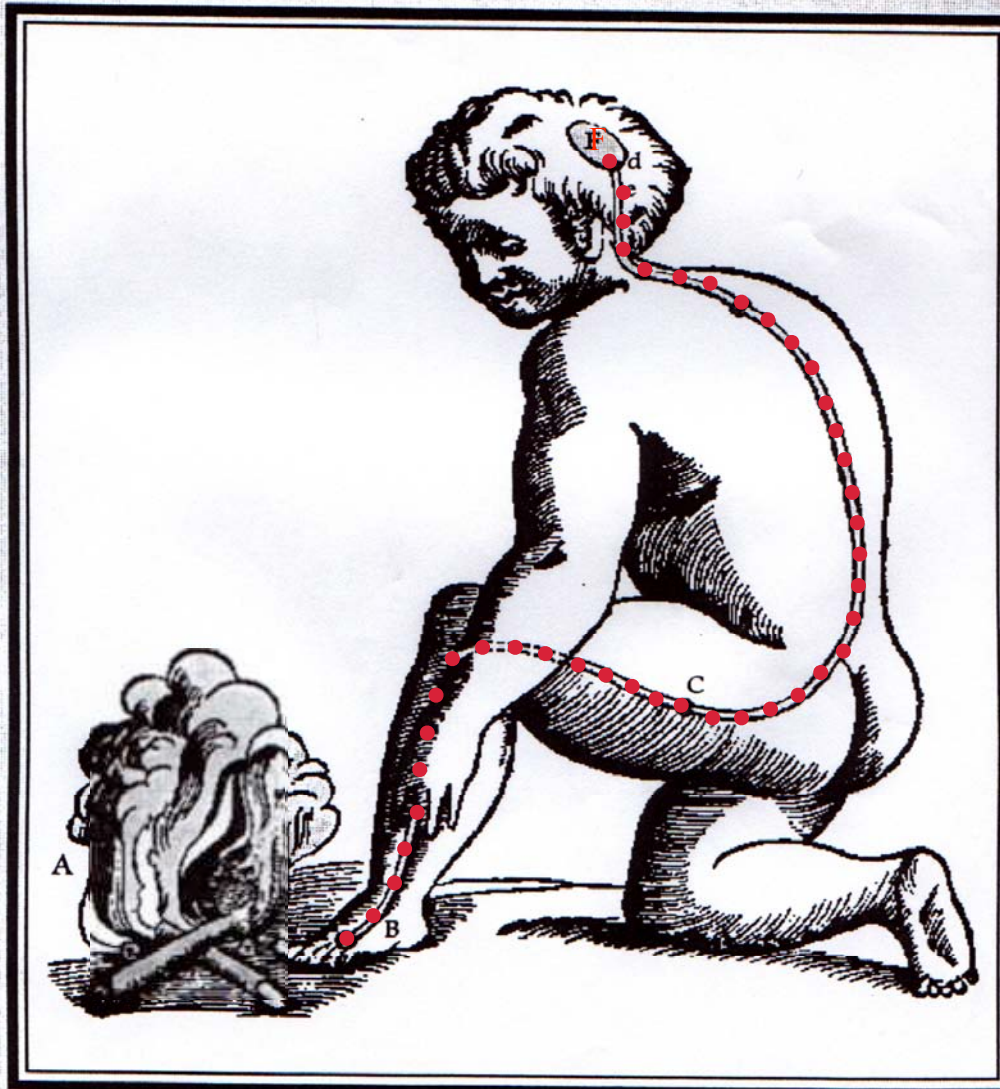


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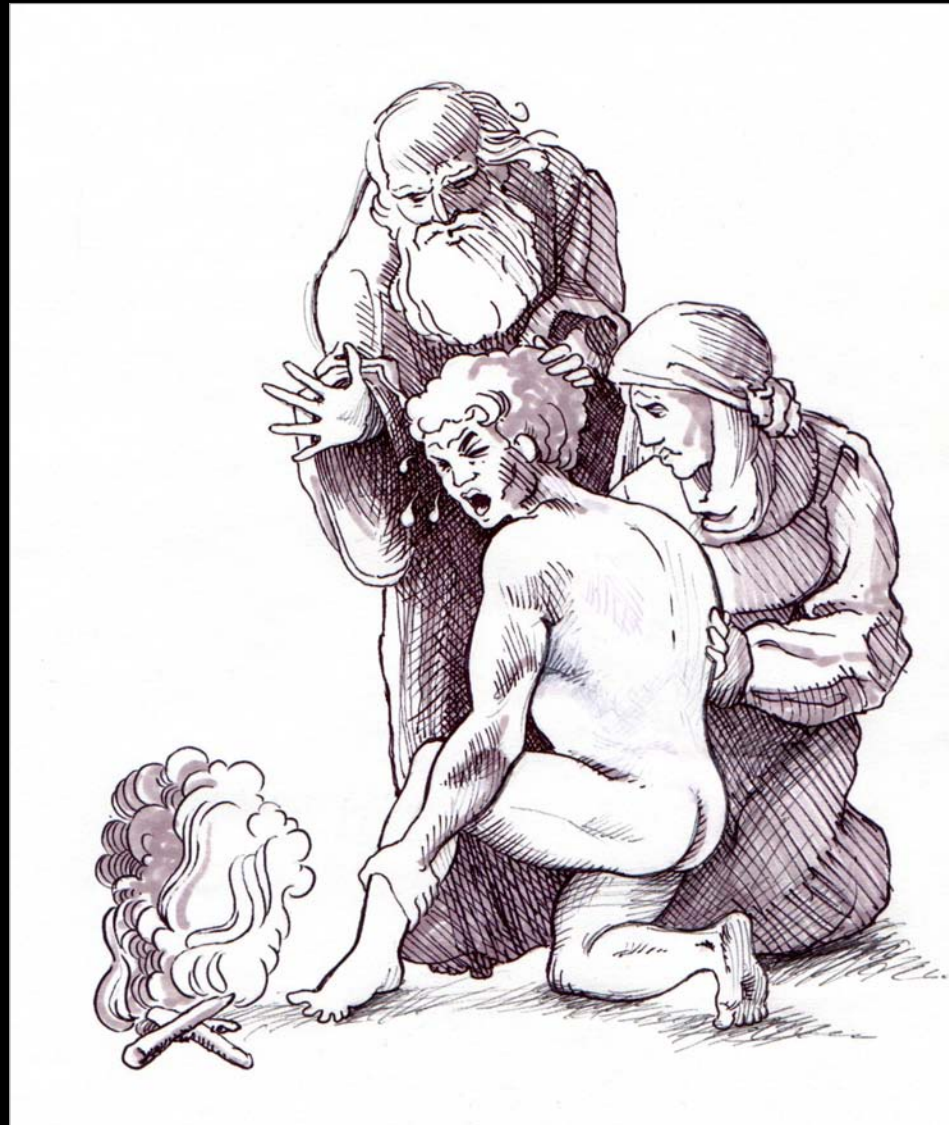


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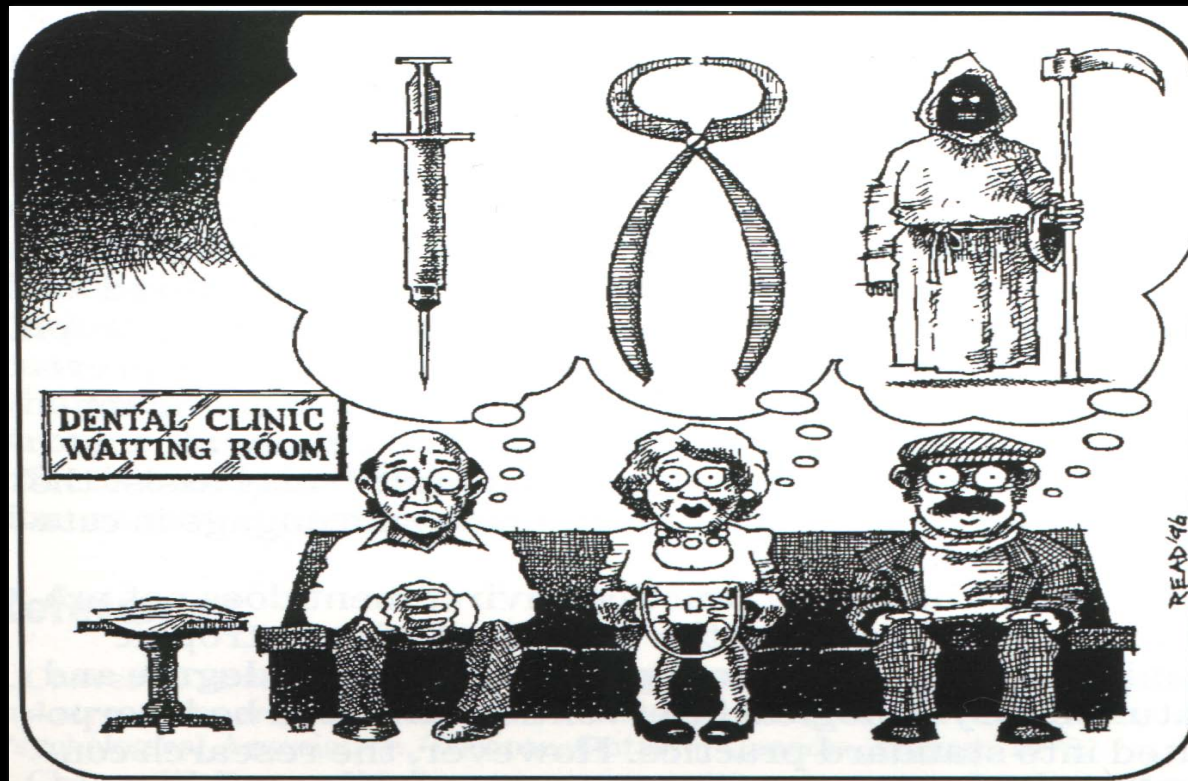
DE RENÉ DESCARTES







Pain Catastrophizing



The Pain Catastrophizing Scale: Development and Validation

Michael J. L. Sullivan and Scott R. Bishop
Dalhousie University

Jayne Pivik
The Rehabilitation Centre

In Study 1, the Pain Catastrophizing Scale (PCS) was administered to 425 undergraduates. Analyses yielded a three component solution comprising (a) rumination, (b) magnification, and (c) helplessness. In Study 2, 30 undergraduate participants were classified as catastrophizers ($n = 15$) or non-catastrophizers ($n = 15$) on the basis of their PCS scores and participated in an cold pressor procedure. Catastrophizers reported significantly more negative pain-related thoughts, greater emotional distress, and greater pain intensity than noncatastrophizers. Study 3 examined the relation between PCS scores, negative pain-related thoughts, and distress in 28 individuals undergoing an aversive electrodiagnostic medical procedure. Catastrophizers reported more negative pain-related thoughts, more emotional distress, and more pain than noncatastrophizers. Study 4 examined the relation between the PCS and measures of depression, trait anxiety, negative affectivity, and fear of pain. Analyses revealed moderate correlations among these measures, but only the PCS contributed significant unique variance to the prediction of pain intensity.



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PCS

Client No.: _____ Age: _____ Sex: M() F() Date: _____

Everyone experiences painful situations at some point in their lives. Such experiences may include headaches, tooth pain, joint or muscle pain. People are often exposed to situations that may cause pain such as illness, injury, dental procedures or surgery.

We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the following scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

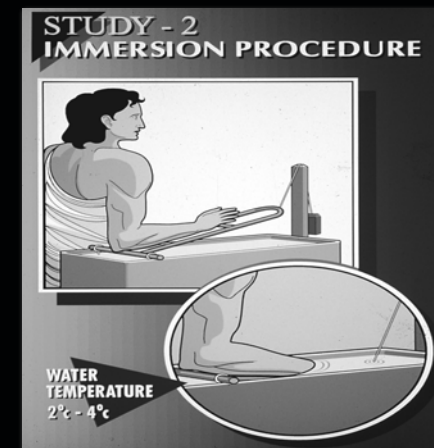
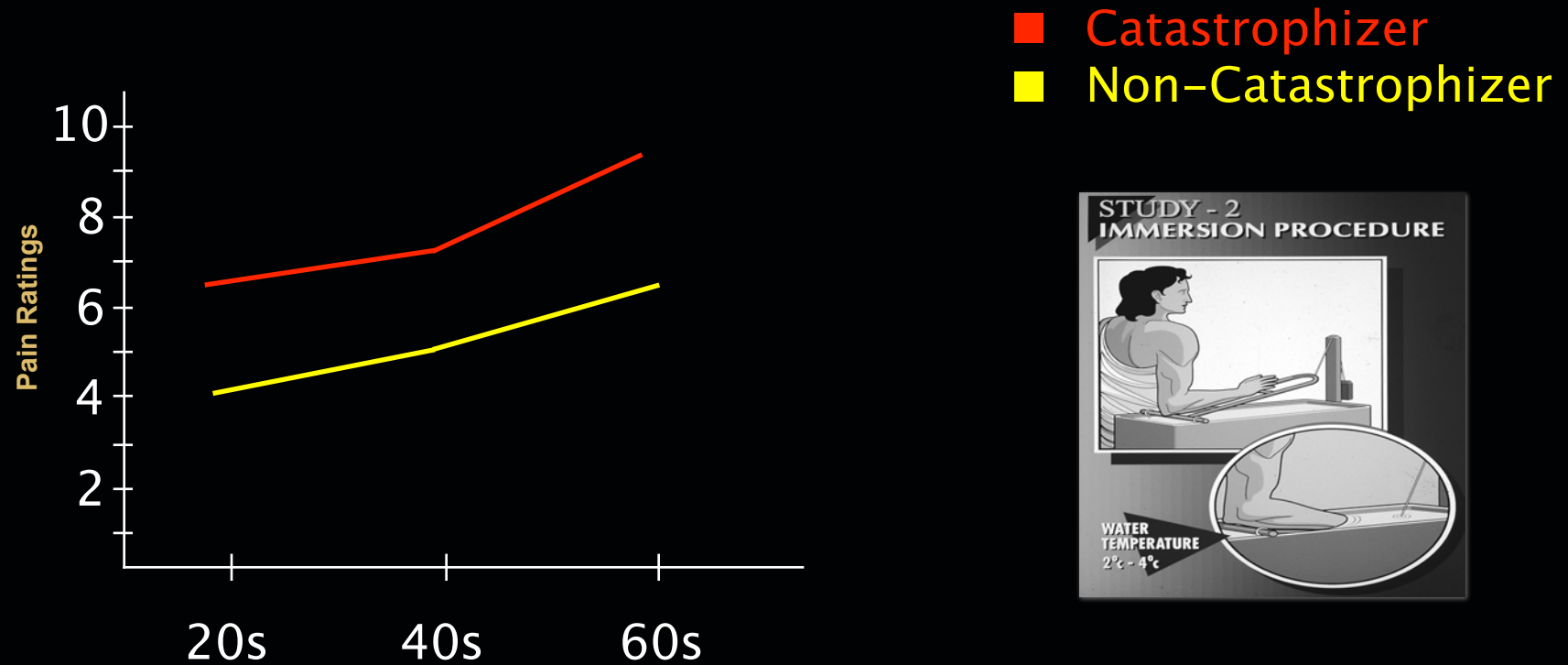
0 – not at all 1 – to a slight degree 2 – to a moderate degree 3 – to a great degree 4 – all the time

When I'm in pain ...

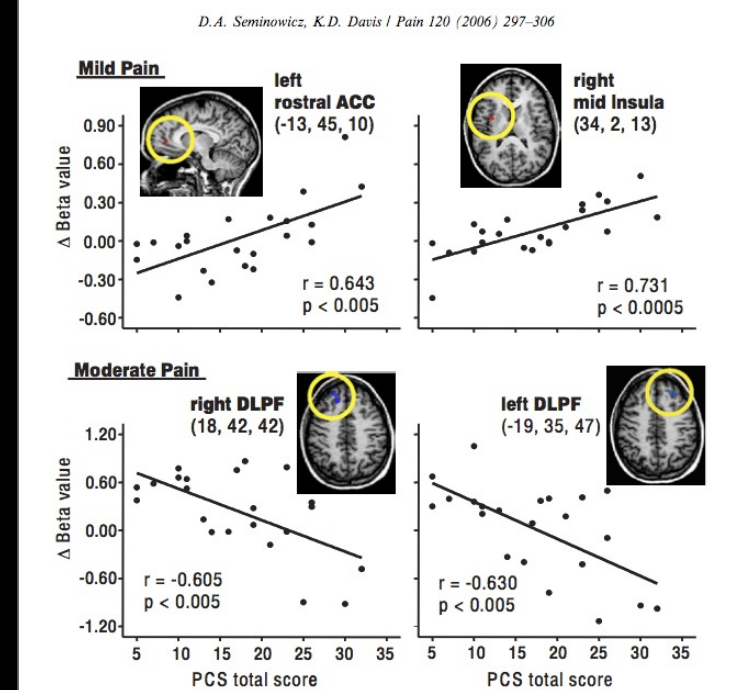
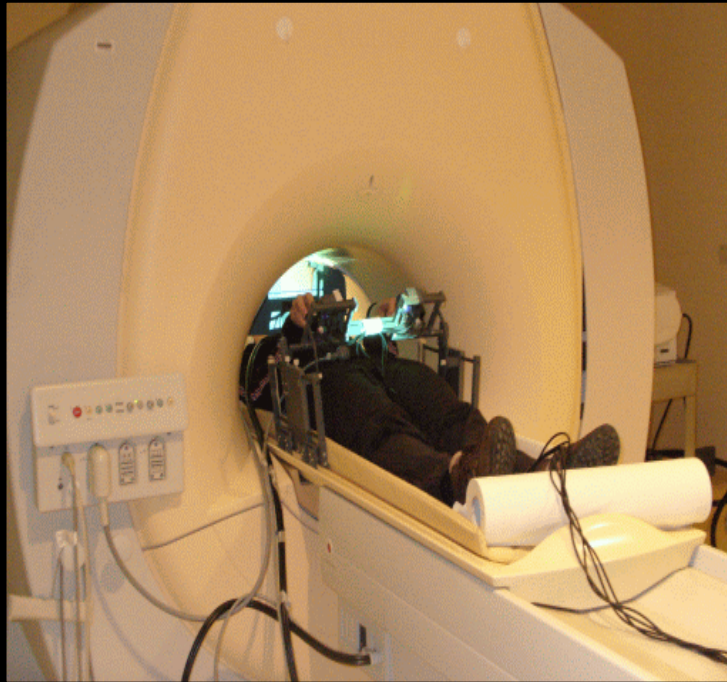
- 1 I worry all the time about whether the pain will end.
- 2 I feel I can't go on.
- 3 It's terrible and I think it's never going to get any better.
- 4 It's awful and I feel that it overwhelms me.
- 5 I feel I can't stand it anymore.
- 6 I become afraid that the pain will get worse.
- 7 I keep thinking of other painful events.
- 8 I anxiously want the pain to go away.
- 9 I can't seem to keep it out of my mind.
- 10 I keep thinking about how much it hurts.
- 11 I keep thinking about how badly I want the pain to stop.
- 12 There's nothing I can do to reduce the intensity of the pain.
- 13 I wonder whether something serious may happen.

...**Total**

Catastrophizing and Pain Experience during Cold Pressor



Sullivan et al., 1995, 1997



Catastrophizing associated with increased activation of brain centres responsible for modulation of affective, and motor aspects of pain.

Catastrophizing associated with decreased activation of brain centres involved in descending inhibition of pain.

Association of catastrophizing with interleukin-6 responses to acute pain

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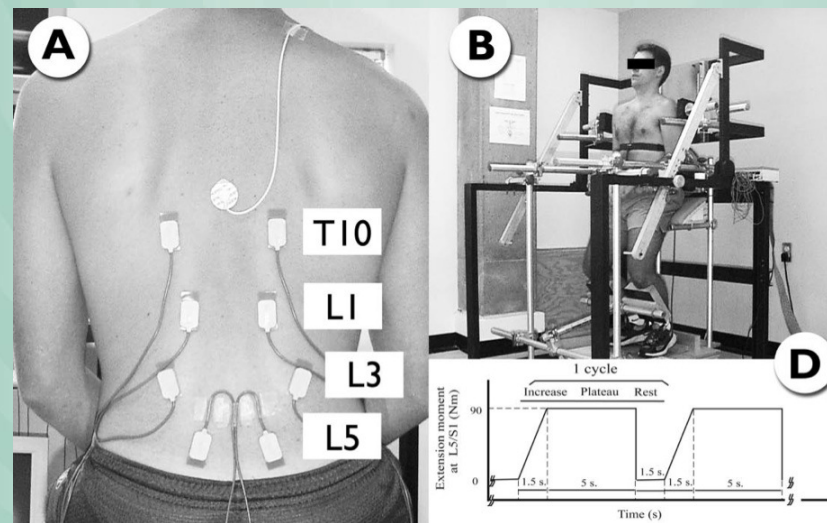
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“The amplification of inflammatory responses to acute stress may partly underlie catastrophizing’s enduring effects on pain outcomes.”

Poor Back Muscle Endurance Is Related to Pain Catastrophizing in Patients With Chronic Low Back Pain

Christian Larivière, PhD,*† Martin Bilodeau, PT, PhD,‡ Robert Forget, PT, PhD,†§
Roger Vadeboncoeur, MD,† and Hakim Mecheri, Eng, MSct



Activity-related summation of pain and functional disability in patients with whiplash injuries

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ABSTRACT

This study investigated the relation between repetition-induced summation of activity-related pain (RISP) and indicators of functional disability in a sample of 62 individuals who had sustained whiplash injuries. Participants completed measures of pain severity, pain catastrophizing, fear of movement and depression prior to lifting a series of 36 weighted canisters. An index of RISP was computed as the increase in pain reported by participants over successive lifts of the weighted canisters. Measures of functional disability included physical lifting tolerance, self-reported disability and perceived work demands. Regression analyses revealed that the index of RISP accounted for significant variance in measures of lifting tolerance and perceived work demands, even when controlling for age, sex and pain severity. The index of RISP was also significantly correlated with pain catastrophizing and pain duration. The discussion addresses the mechanisms by which physiological and psychological factors might contribute to increases in pain during repeated physical activity. Discussion also addresses whether RISP might represent a risk factor for problematic recovery outcomes following whiplash injury.

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1. Introduction

Whiplash accounts for 80% of the soft tissue injuries incurred in motor vehicle accidents [47]. Whiplash injuries arise from incidents that expose the head and neck to sudden changes in velocity [17,6,14]. For 15–25% of individuals, disabling symptoms may persist for prolonged periods [6,13,17,37,43,50]. As a result of the personal and societal costs associated with whiplash injury, considerable research has focused on identifying risk factors for problematic recovery following whiplash injury [9].

There are indications that individuals who show hyperalgesic responses to repeated evoked pain may be at greater risk for adverse pain outcomes [29,72]. Individuals who experience increasing pain in response to repeated noxious stimulation have lower pain thresholds, have more widespread pain, and score higher on self-report measures of disability [29,51,53]. There is increasing evidence that dynamic changes in responses to evoked pain might represent a dimension of pain experience that is distinct, both in terms of mechanisms and prognostic value, from measures of spontaneous pain [4,42,72].

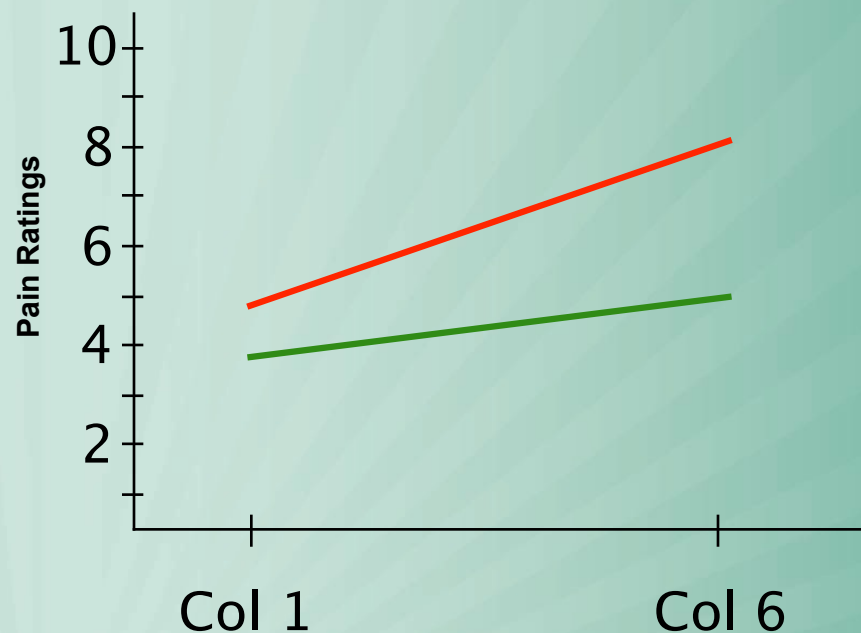
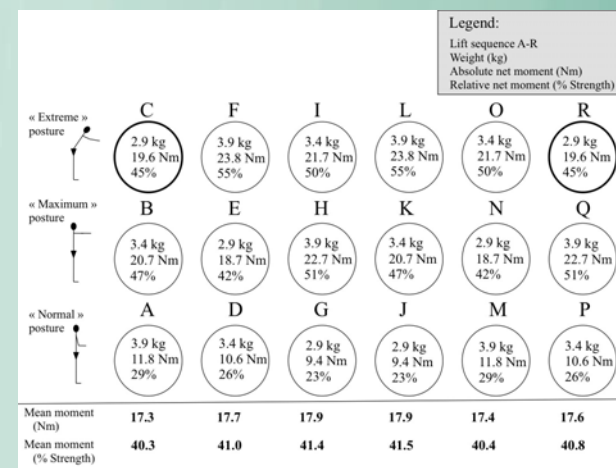
The term 'temporal summation' (TS) of pain (i.e., windup) has been used to describe progressive increases in pain severity as a

function of repeated noxious stimulation [16,27]. TS has been demonstrated primarily in response to thermal stimulation with standardized duration of stimulation and inter-stimulus intervals [3,18,68]. There are indications that TS occurs centrally in second-order neurons in the spinal cord as a consequence of sustained C-fiber afferent input [35,42].

Research from our laboratory has recently described a phenomenon that has been termed "repetition-induced summation of activity-related pain" (RISP) [59]. During the performance a simulated occupational lifting task, a subset of chronic pain patients reported increasing levels of pain over successive lifts even though the physical demands of the task remained constant. At present, it is unclear whether the mechanisms underlying RISP are similar to the mechanisms underlying TS. Although peripheral mechanisms are not considered to be important determinants of TS, it has been suggested that peripheral mechanisms related to fatigue or ischemia might play a role in RISP [59].

The relation between RISP and indicators of problematic recovery in individuals with whiplash injuries has yet to be examined. It is possible that susceptibility to RISP might explain why some whiplash patients develop chronic pain, are unable to benefit from activity-based rehabilitation, or have expended periods of disability following injury [11,16,71].

The present research examined whether RISP might be associated with whiplash-related pain and pain-related disability. Pa-



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Catastrophizing and Widespread Pain

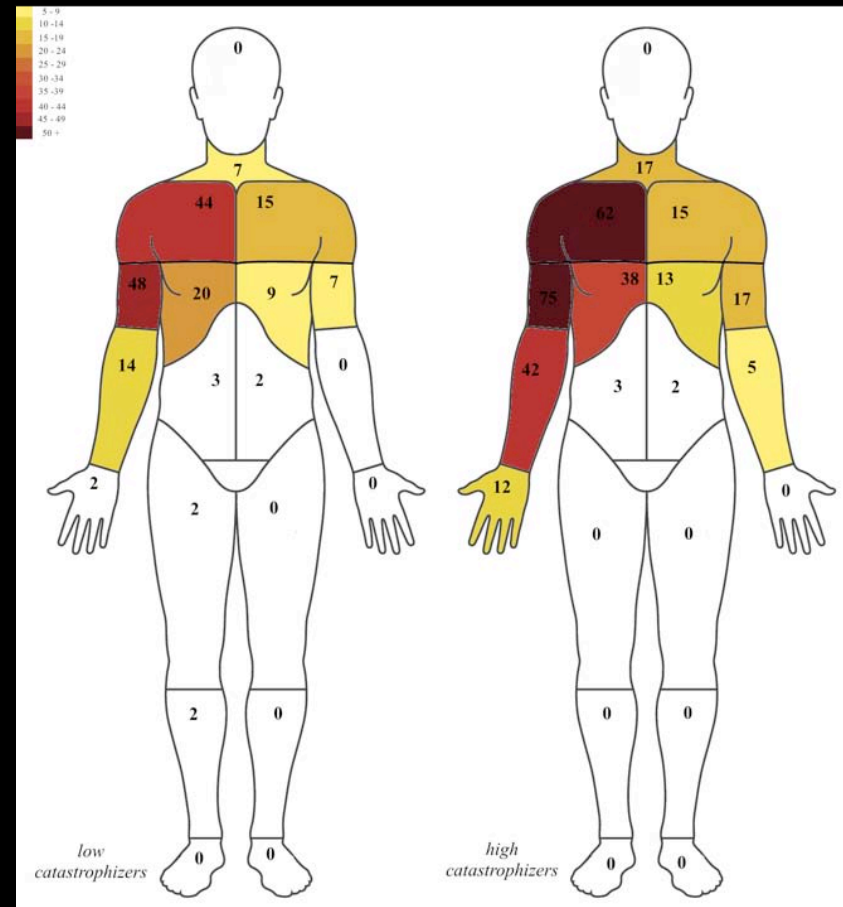
Delayed onset muscle soreness
DOMS



Day 1

Low PCS

High PCS



Day 2

Evidence for a biopsychosocial influence on shoulder pain: Pain catastrophizing and catechol-*O*-methyltransferase (COMT) diplotype predict clinical pain ratings

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Roger B. Fillingim ^d

^a Department of Physical Therapy, Brooks Center for Rehabilitation Studies, University of Florida, Gainesville, FL, USA

^b Department of Molecular Genetics and Microbiology, Center for Mammalian Genetics, University of Florida, Gainesville, FL, USA

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“Reduced COMT enzyme production might lead to chronic over-activity of the u-opioid system, decreasing its ability to modulate nociceptive input.”

Clinical Implications



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PCS

Client No.: _____ Age: _____ Sex: M() F() Date: _____

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We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the following scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

0 – not at all 1 – to a slight degree 2 – to a moderate degree 3 – to a great degree 4 – all the time

When I'm in pain ...

1. I worry all the time about whether the pain will end.
2. I feel I can't go on.
3. It's terrible and I think it's never going to get any better.
4. It's awful and I feel that it overwhelms me.
5. I feel I can't stand it anymore.
6. I become afraid that the pain will get worse.
7. I keep thinking of other painful events.
8. I anxiously want the pain to go away.
9. I can't seem to keep it out of my mind.
10. I keep thinking about how much it hurts.
11. I keep thinking about how badly I want the pain to stop.
12. There's nothing I can do to reduce the intensity of the pain.
13. I wonder whether something serious may happen.

...Total

Risk range:
> = 24

*Changes in Pain Catastrophizing Following
Physical Therapy for Musculoskeletal
Injury: The Influence of Depressive and
Post-traumatic Stress Symptoms*

**Peter Slepian, Elena Bernier, Whitney
Scott, Nils Georg Niederstrasser,
Timothy Wideman & Michael Sullivan**

**Journal of Occupational
Rehabilitation**

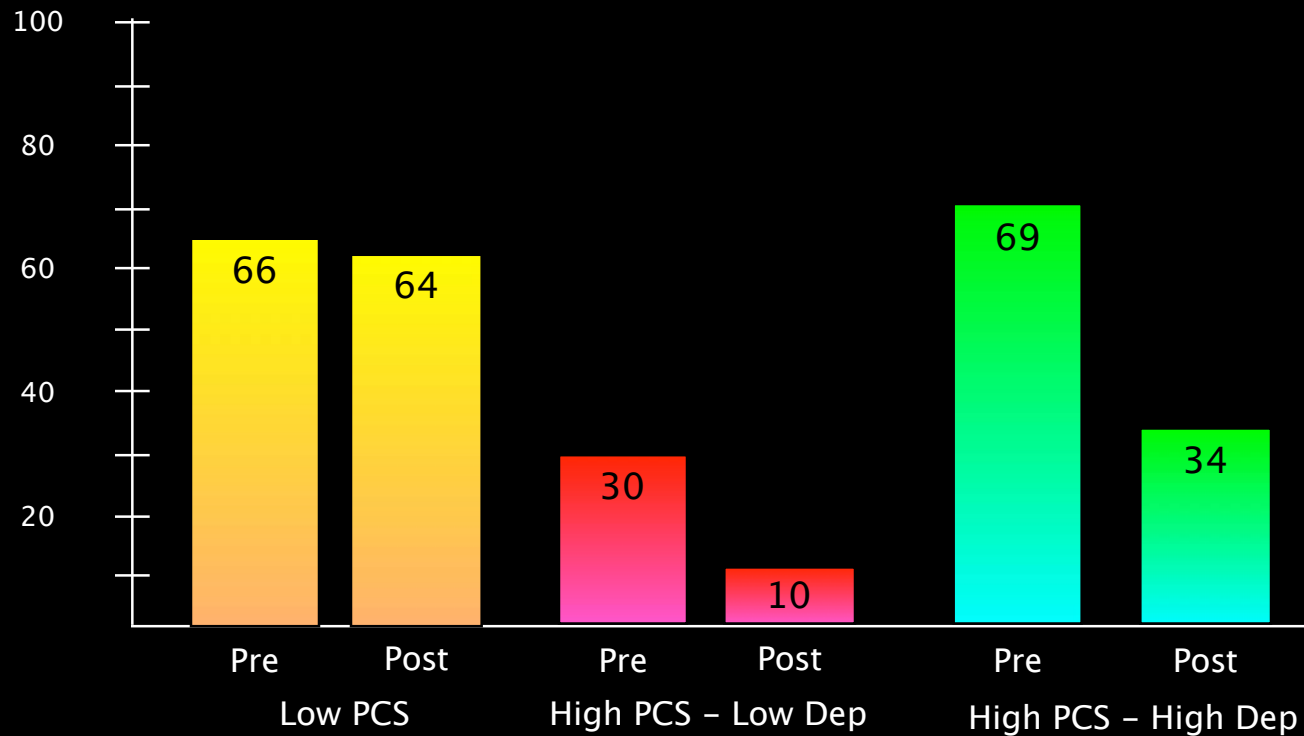
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J Occup Rehabil (2014) 24:22-31
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 Springer

Catastrophizing Response to Physiotherapy



PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME: _____ DATE: _____

Over the last 2 weeks, how often have you been bothered by any of the following problems? (use "✓" to indicate you answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	✓ 1	2	3
2. Feeling down, depressed, or hopeless	0	1	✓ 2	3
3. Trouble falling or staying asleep, or sleeping too much	0	✓ 1	2	3
4. Feeling tired or having little energy	0	1	✓ 2	3
5. Poor appetite or overeating	0	1	2	✓ 3
6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down	0	1	✓ 2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	✓ 2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	0	1	✓ 2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	✓ 0	1	2	3

10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all _____

Somewhat difficult _____

Very difficult ☒ _____

Extremely difficult _____

PHQ-9 is adapted from PRIME MD TODAY, developed by Drs Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. For research information, contact Dr Spitzer at ris8@columbia.edu. Use of the PHQ-9 may only be made in accordance with the Terms of Use available at <http://www.pfizer.com>. Copyright ©1999 Pfizer Inc. All rights reserved. PRIME MD TODAY is a trademark of Pfizer Inc.

1
2
1
2
3
2
2
2
0

15

PHQ-9



**Techniques delivered within the
context of a life-role reintegration
intervention.**

Risk Factors Targeted by PGAP

- Catastrophizing.
- Fear of movement.
- Perceived injustice.
- Disability beliefs.



Week 1, Day 3

Date: Thursday

Sleep

What time did you go to bed last night? 11

Total number of hours slept? 7

How often did you wake up during the night?
(No. of times) 3

How rested did you feel when you woke up this morning? (circle on the scale below)

0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10
not at all completely

6:00 am	
7:00	
8:00	got up
9:00	made lunches
10:00	coffee, read newspaper
11:00	watched television
12:00pm	watched television
1:00	walked to the park
2:00	watched television
3:00	rested
4:00	watched television
5:00	John came home
6:00	Supper
7:00	Cleaned up after supper
8:00	watched television
9:00	watched television



Medications

What medications did you take today? Advil x 4

Date: _____ **Week 2, Day 1**

Sleep
 What time did you go to bed last night? _____
 How often did you wake up during the night? (No. of times) _____
 How rested did you feel when you woke up this morning? (circle on the scale below)
 Total number of hours slept? _____ 0 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 not at all completely

i Plan to... i Did...

6:00 am		
7:00	get up	
8:00	breakfast	
9:00	walk 15 mins	
10:00		
11:00		
12:00 pm	lunch	
1:00	clean up	
2:00	sweep garage 15min	
3:00		
4:00		
5:00		
6:00	dinner	
7:00	clean up	
8:00		
9:00		

R Medications
 What medications did you take today? _____

PCAP - Client Workbook

Date: _____ **Week 2, Day 2**

Sleep
 What time did you go to bed last night? _____
 How often did you wake up during the night? (No. of times) _____
 How rested did you feel when you woke up this morning? (circle on the scale below)
 Total number of hours slept? _____ 0 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 not at all completely

i Plan to... i Did...

6:00 am		
7:00	get up	
8:00	breakfast	
9:00	walk 15 mins	
10:00		
11:00		
12:00 pm	lunch	
1:00	clean up	
2:00	sweep garage 15min	
3:00		
4:00		
5:00		
6:00	dinner	
7:00	clean up	
8:00		
9:00		

R Medications
 What medications did you take today? _____

PCAP - Client Workbook

Date: _____ **Week 2, Day 3**

Sleep
 What time did you go to bed last night? _____
 How often did you wake up during the night? (No. of times) _____
 How rested did you feel when you woke up this morning? (circle on the scale below)
 Total number of hours slept? _____ 0 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 not at all completely

i Plan to... i Did...

6:00 am		
7:00	get up	
8:00	breakfast	
9:00	walk 15 mins	
10:00		
11:00		
12:00 pm	lunch	
1:00	clean up	
2:00	sweep garage 15min	
3:00		
4:00		
5:00		
6:00	dinner	
7:00	clean up	
8:00		
9:00		

R Medications
 What medications did you take today? _____

PCAP - Client Workbook

Date: _____ **Week 2, Day 4**

Sleep
 What time did you go to bed last night? _____
 How often did you wake up during the night? (No. of times) _____
 How rested did you feel when you woke up this morning? (circle on the scale below)
 Total number of hours slept? _____ 0 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 not at all completely

i Plan to... i Did...

6:00 am		
7:00	get up	
8:00	breakfast	
9:00	walk 15 mins	
10:00		
11:00		
12:00 pm	lunch	
1:00	clean up	
2:00	sweep garage 15min	
3:00		
4:00		
5:00		
6:00	dinner	
7:00	clean up	
8:00		
9:00		

R Medications
 What medications did you take today? _____

PCAP - Client Workbook

Date: _____ **Week 2, Day 5**

Sleep
 What time did you go to bed last night? _____
 How often did you wake up during the night? (No. of times) _____
 How rested did you feel when you woke up this morning? (circle on the scale below)
 Total number of hours slept? _____ 0 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 not at all completely

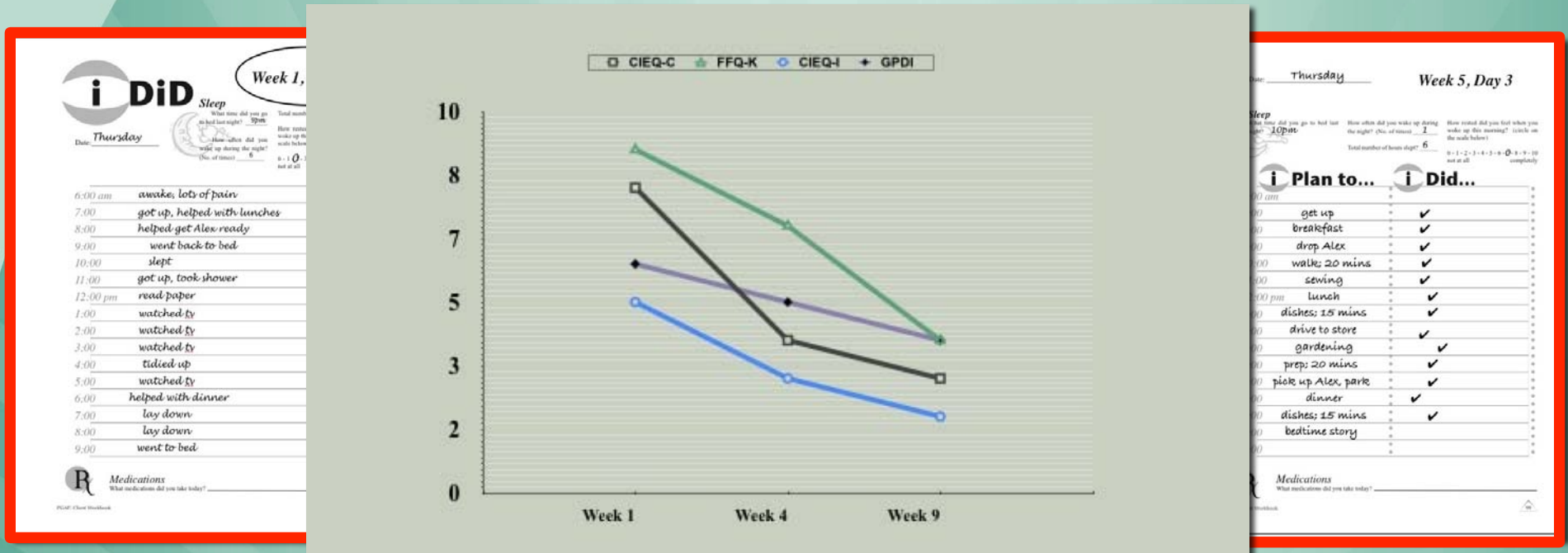
i Plan to... i Did...

6:00 am		
7:00	get up	
8:00	breakfast	
9:00	walk 15 mins	
10:00		
11:00		
12:00 pm	lunch	
1:00	clean up	
2:00	sweep garage 15min	
3:00		
4:00		
5:00		
6:00	dinner	
7:00	clean up	
8:00		
9:00		

R Medications
 What medications did you take today? _____

PCAP - Client Workbook

PGAP: Life-Role Resumption



Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10

Weekly meetings with the PGAP provider.

Techniques

- Validation of client's experience of suffering/loss.
- Disclosure of activity-related information at the beginning of every session.
- Repeated exposure to discontinued activities.
- Developing a schedule of activity participation that will challenge the client's disability beliefs.

A Psychosocial Risk Factor–Targeted Intervention for the Prevention of Chronic Pain and Disability Following Whiplash Injury

Background and Purpose. The objective of this study was to determine whether the addition of a psychosocial intervention improved return-to-work rates beyond those associated with participation in a functional restoration physical therapy intervention. Subjects who had sustained whiplash injuries participated in the Progressive Goal Attainment Program (PGAP), which is a 10-week psychosocial intervention program that aims to increase activity involvement and minimize psychological barriers to rehabilitation progress. **Subjects and Methods.** A sample of 60 subjects enrolled in a functional restoration physical therapy intervention were used as a historical cohort comparison group. Subjects who received the functional restoration physical therapy intervention were compared with a sample of 70 subjects who received PGAP in addition to physical therapy. **Results.** Participation in PGAP plus physical therapy resulted in a higher return-to-work rate (75%) than participation in physical therapy alone (50%). Differences between treatment conditions were most pronounced for the subgroup of subjects who had the largest number of psychosocial risk factors. **Discussion and Conclusion.** The findings suggest that a psychosocial risk reduction intervention can be an effective means of improving function and facilitating return to work in people who are at risk for prolonged pain-related disability. [Sullivan MJL, Adams H, Rhodenizer T, Stanish WD. A psychosocial risk factor–targeted intervention for the prevention of chronic pain and disability following whiplash injury. *Phys Ther*. 2006;86:8–18.].

Key Words: Pain-related disability, Psychosocial risk factors, Whiplash.

Michael J.L. Sullivan, Heather Adams, Trina Rhodenizer, William D Stanish

ARTICLES

Psychosocial Treatment Techniques to Augment the Impact of Physiotherapy Interventions for Low Back Pain

Michael J.L. Sullivan, Heather Adams

ABSTRACT

Purpose: The present study examined the profile of physical and psychosocial changes that occur in physiotherapy intervention when patients also participate in a psychosocial intervention. The psychosocial intervention, delivered by physiotherapists, was designed to target catastrophic thinking, fear of pain, perceived disability, and depression.

Methods: The study sample consisted of 48 individuals referred for the rehabilitation treatment of disabling back pain. Half the sample was enrolled in a physiotherapy intervention only; the other half was enrolled in a psychosocial intervention in addition to receiving a physiotherapy intervention.

Results: At post-treatment, the two treatment groups did not differ significantly on measures of pain severity, physical function, or self-reported disability. Patients who participated in the psychosocial intervention in addition to physiotherapy showed significantly greater reductions in pain catastrophizing, fear of movement, and depression than patients who received only the physiotherapy intervention. Reductions in psychosocial risk factors contributed to reduced use of the health care system, reduced use of pain medication, and improved return-to-work outcomes.

Conclusion: The findings of the present study suggest that a psychosocial intervention provided by physiotherapists can lead to meaningful reductions in psychosocial risk factors for pain and disability and may contribute to more positive rehabilitation outcomes.

Key Words: catastrophizing, fear of pain, musculoskeletal pain, psychosocial factors, rehabilitation, return to work

Sullivan MJL, Adams H. Psychosocial treatment techniques to augment the impact of physiotherapy interventions for low back pain. *Physiother Can*. 2010;62:180–189.

RÉSUMÉ

Objectif : La présente étude examine le profil des changements physiques et psychologiques qui surviennent lors d'interventions en physiothérapie chez les patients qui participent également à une intervention psychosociale. L'intervention psychosociale, assurée par des physiothérapeutes, a comme objectif de cibler la pensée catastrophique, la peur de la douleur, l'incapacité perçue et la dépression.

Méthode : L'échantillon étudié se composait de 48 personnes envoyées pour des traitements de réadaptation pour des maux de dos incapacitants. La moitié des personnes participaient aussi à une intervention psychosociale en plus de recevoir des soins en physiothérapie.

Résultats : En post-traitement, les deux groupes traités n'affichaient pas de grandes différences en ce qui a trait aux mesures d'intensité de la douleur, à la fonction physique ou à l'incapacité signalée par le sujet. La tendance à ne voir que la douleur, la peur de bouger et la dépression ont toutefois été grandement réduites chez les patients qui prenaient part à une intervention psychosociale en plus de recevoir leurs soins en physiothérapie. Ces réductions des facteurs de risque psychosociaux ont contribué à réduire l'utilisation des soins de santé et des médicaments contre la douleur et à améliorer les résultats de retour à la vie active.

Conclusion : Les constatations de la présente étude semblent indiquer que l'intervention psychosociale par des physiothérapeutes permet des réductions appréciables des facteurs de risques psychosociaux de la douleur et de l'incapacité, et pourrait contribuer à de meilleurs résultats en matière de réadaptation.

Mots clés : catastropher, douleur musculosquelettique, facteurs psychosociaux, peur de la douleur, réadaptation, retour au travail

INTRODUCTION

Research over the past two decades has revealed that psychosocial variables can present significant obstacles

to recovery following musculoskeletal injury.^{1,2} Factors such as fear-avoidance beliefs, catastrophic thinking, perceived disability, and depression have been identified as contributing to poor rehabilitation outcomes in indi-

This research was supported by grants from the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) and the Canadian Institutes of Health Research (CIHR).

The authors thank Nicole Davidson and Pascal Thibault for their assistance in coordinating data collection from collaborating treatment centres. The authors also thank all collaborating treatment centres that contributed data that were used in the preparation of this paper.

Conflict of interest statement: The first author receives royalties from the sale of the PGAP Treatment Manual.

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Heather Adams, RSW: Faculty of Medicine, McGill University Health Centre, Montreal, Quebec.

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DOI:10.3138/ptj.82.3.180

Targeting Catastrophic Thinking to Promote Return to Work in Individuals With Fibromyalgia

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Heather Adams, BSW

McGill University Health Centre, Montreal, Quebec, Canada

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In this study, a sample of 30 individuals with fibromyalgia (FM) were enrolled in a 10-week risk factor targeted intervention designed to promote return to work. Participants completed measures of pain severity, pain catastrophizing, fear of movement, depression, and self-reported disability at three points in time through the course of the intervention. Results showed that most individuals with FM were agreeable to participate in the return-to-work intervention. Treatment response of individuals with FM was compared to a matched sample of individuals with chronic low back pain (CLBP). Analysis of variance (ANOVA) revealed that both groups showed comparable reductions in pain catastrophizing, depression, and fear of movement through the course of treatment. Individuals with FM were less likely than individuals with CLBP to show clinically meaningful reductions in pain severity and self-reported disability. Patients with FM were less likely to return to work (23%) than participants with CLBP (50%). The findings suggest that although individuals with FM are more treatment resistant than individuals with CLBP, a significant proportion can still benefit from participation in a rehabilitation intervention with a stated objective of return to work. Implications of the findings for the structure and content of rehabilitation interventions for FM are discussed.

Keywords: fibromyalgia; chronic low back pain; work disability; rehabilitation

Fibromyalgia (FM) is a rheumatic condition characterized by the presence of chronic widespread pain and hypersensitivity to a variety of noxious stimuli (Julien, Goffaux, Arsenault, & Marchand, 2005). Individuals with FM often experience several symptoms other than pain, including fatigue, sleep disturbances, and a variety of neuropsychiatric problems such as memory difficulties, slowed information processing, and depressive symptoms (Mease, 2005). Epidemiological studies indicate that FM occurs in approximately 2% of the population, and women are more likely to be affected than men (McNally, Matheson, & Bakowsky, 2006; Mease, 2005). FM is most commonly diagnosed in working-age individuals between the ages of 20 and 50.

Reviews of the literature highlight the relatively disappointing long-term effects of pharmacological and nonpharmacological treatments for FM (Mease, 2005; Sim & Adams, 2002).

TBM

ORIGINAL RESEARCH

A telephonic intervention for promoting occupational re-integration in work-disabled individuals with musculoskeletal pain

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ABSTRACT

The purpose of the present research was to examine the feasibility of a telephonic occupational rehabilitation program. A sample of 23 individuals with chronic musculoskeletal pain was enrolled in the telephonic version of the Progressive Goal Attainment Program (PGAP-Tel). The PGAP-Tel is a risk-targeted intervention designed to reduce pain-related disability consequent to musculoskeletal injury. Treatment outcomes of PGAP-Tel were compared to a group of individuals with chronic musculoskeletal pain, who participated in the face-to-face format of the PGAP. Results showed that PGAP-Tel was acceptable to the majority of participants (76%) to whom it was offered. There were indications that engagement and adherence issues were more problematic in PGAP-Tel than in the face-to-face intervention. Both groups showed comparable reductions in pain, depression, fear of symptom exacerbation, and self-reported disability. Participants in the face-to-face intervention showed greater reduction in catastrophic thinking than participants in PGAP-Tel. Finally, 26% of participants in PGAP-Tel had resumed some form of employment at treatment termination compared to 56% of the participants in the face-to-face intervention. Given the low cost of the PGAP-Tel intervention and the accessibility advantages of a telephonic delivery, this type of intervention might be an important resource for targeting occupational disability in rural or remote communities when face-to-face services are not available.

KEYWORDS

Pain, Disability, Rehabilitation, Work, Psychosocial risk factors, Telephonic intervention

INTRODUCTION

In recent years, numerous investigations have pointed to the role of psychosocial risk factors as determinants of occupational disability in individuals with persistent pain conditions [8,30,41]. For example, several studies have been conducted addressing the role of psychosocial factors in the prediction of prolonged pain and disability associated with work-related musculoskeletal conditions [7,41]. Systematic reviews of prospec-

Implications

Policy: Given the low cost of the PGAP-Tel intervention and the accessibility advantages of a telephonic delivery, this type of intervention might be an important resource for targeting occupational disability in rural or remote communities when face-to-face services are not available.

Research: More clinical trials are needed to evaluate the effectiveness of occupational rehabilitation interventions delivered telephonically.

Practice: The skill set of PGAP-Tel is accessible to rehabilitation professionals from diverse disciplines such as psychologists, social workers, occupational therapists, physiotherapists and nurses.

tive cohort studies indicate that initial levels of perceived pain and perceived functional disability are predictive of prolonged work disability [25]. In research on work-related back injury, variables such as pain catastrophizing, pain-related fears (i.e., fear of movement/re-injury), self-efficacy, and outcome expectancies have been discussed as psychosocial risk factors for the prolonged pain and disability [30,31,41].

In response to the growing body of literature linking psychosocial factors to problematic recovery outcomes, rehabilitation interventions have moved away from medically based approaches (e.g., medication, surgery) to managing pain related disability and have adopted a more biopsychosocial approach [6,16]. Current biopsychosocial interventions designed to target psychosocial barriers to occupational re-integration are typically offered in the context of services available through multidisciplinary pain rehabilitation centers. Intervention disciplines involved in multidisciplinary pain rehabilitation might include medicine, physical therapy, occupational therapy, and psychology [9,13].

While research has supported the effectiveness of multidisciplinary pain rehabilitation centers for reducing psychosocial risk factors for pain and disability, there are a number of disadvantages to this approach to intervention. One major disadvan-

The Future

- How will we define our rehabilitation disciplines?
- The narrow disciplinary silos of the past.
- Broadening disciplinary boundaries to fit the problem we are attempting to treat.



Merci!



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