LUND UNIVERSITY

Long-term pain and health economic outcomes in adults receiving multidisciplinary CBT for chronic pain.

Perrin, Sean; Åkerblom, Sophia; Rivano Fischer, Marcelo; McCracken, Lance

2024

Link to publication

Citation for published version (APA):
Perrin, S., Åkerblom, S., Rivano Fischer, M., & McCracken, L. (2024). *Long-term pain and health economic outcomes in adults receiving multidisciplinary CBT for chronic pain.*. Poster session presented at European Association of Cognitive and Behavioural Psychotherapy 2024 Conference, Belgrade, Serbia. https://eabct2024.org/programme-schema/

Total number of authors:
4

General rights
Unless other specific re-use rights are stated the following general rights apply:
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.
• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: https://creativecommons.org/licenses/

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Download date: 06. Nov. 2026

Long-term pain and health economic outcomes in adults receiving multidisciplinary CBT for chronic pain

SEAN PERRIN[1*], SOPHIA ÅKERBLOM[2], MARCELO RIVANO[2] & LANCE M. McCRACKEN[3]

[1]DEPARTMENT OF PSYCHOLOGY, LUND UNIVERSITY, SWEDEN (*sean.perrin@psy.lu.se)

[2] DEPARTMENT OF REHABILITATION, LUND UNIVERSITY [3] DEPARTMENT OF PSYCHOLOGY, UPPSALA UNIVERSITY, SWEDEN

Introduction

Approximately 20% of adults in Sweden suffer from chronic pain (CP) of moderate to severe intensity. A 2012 national registry study of 840,000 Swedish adults estimated the yearly cost of CP at €32 billion, 59% of which was attributable to sick leave and early retirement. The 1st line treatment for CP in Sweden is multi-modal therapy involving pain-focused CBT delivered in specialist pain clinics. In previous studies, we have shown *Psychological Inflexibility* (PiF) mediates pain outcomes in patients treated in a specialist pain clinic in Sweden. Little is known about whether this treatment leads to reduced healthcare utilization and social costs and whether changes in PiF help explain these heath economic outcomes.

Objectives: 1) To examine pain-related and health economic outcomes at post-treatment and 1, 2 and three years after discharge from a specialist pain clinic in Sweden; and 2) to examine whether changes in PiF mediates these outcomes.

Methods

Participants: 232 adults with chronic pain arising from diverse conditions who were clinically referred to the regional specialist pain clinic at Lund University Hospital in Southern Sweden.

Treatment Program: Outpatient treatment delivered by multidisciplinary teams with training in CBT and extensive knowledge of pain rehabilitation. Treatment occurs Mon-Friday (0800-0400) for 5 weeks followed by a 2-month "homework phase" where patients work on personalized goals with support from team. Interventions are primarily group based and aimed at more adaptive ways of thinking/behaving in relation to pain with focus on medication usage (physician); improving practical skills, knowledge, and awareness regarding bodily sensation, physical exercise, and relaxation (physiotherapist); work-related and national insurance issues (social worker); ergonomics, time-use adaptations, problem-solving strategies, and everyday occupational performance (occupational therapist); and thoughts, emotions, behaviors, communication, and goal-setting methods (clinical psychologist). Interventions based on a broad CBT framework and not the psychological flexibility model/ACT.

Measures: Participants completed the Numerical Rating Scale (pain intensity), Multidimensional Pain Inventory (pain interference), Hospital Anxiety and Depression Scale (depression), Psychological Inflexibility in Pain Scale at pre- and post-treatment, and 1-, 2-, and 3-year follow-ups. Data on the # of healthcare visits, # of sick days, and cost of sick pay were obtained from national registries. Health economic data were obtained for the 12 months preceding pre- and post-treatment, and each follow-up assessment.

Analyses: Using regression, we explored whether pre-treatment values for sex, age, education-level (< or >12 years), pain duration, and total PiF score predicted treatment outcomes as indexed separately by total scores for pain intensity and interference, depression, the cost of health care visits, the # of healthcare visits and days with sick pay, and the costs of sick pay at the 3-year follow-up. Baseline value on the outcome measure were included in the regression. We used the Preacher & Hayes SEM algorithm to test whether changes in PiF between baseline and 3-year follow up mediated outcomes over this same interval.

Results

Table 1. Means and standard deviations for the clinical and mediator variables at each assessment and effect sizes for each variable.

	Pre-Treatment M (SD)	Post-Treatment M (SD)	1-Year Follow-Up M (SD)	3-Year Follow-Up M (SD)	Pre-Treatment to Post- Treatment Cohen's *d*	Pre-Treatment to 1-Year Follow-Up Cohen's *d*	Pre-Treatment to 3-Year Follow-Up Cohen's *d*
Pain intensity	7.27 (1.40)	6.58 (1.80)	6.47 (1.62)	6.50 (1.90)	.39	.46	.33
Pain interference	4.69 (.80)	4.17 (.99)	4.07 (1.21)	3.89 (1.26)	.59	.59	.60
Depression	9.88 (4.26)	7.11 (4.14)	7.88 (4.66)	7.84 (4.50)	.63	.46	.39
Psychological *in*flexibility	60.32 (11.93)	50.77 (12.51)	48.97 (14.13)	49.60 (16.43)	.87	.88	.59

Table 2. Means and standard deviations for the health economic variables at each assessment and effect sizes for each variable.

	Pre-Treatment years) M (SD)	1-Year Follow-Up M (SD)	2-Year Follow-Up M (SD)	3-Year Follow-Up M (SD)	Pre-Treatment to 1-Year Follow-up Cohen's *d*	Pre-Treatment to 2-Year Follow-Up Cohen's *d*	Pre-Treatment to 3-Year Follow-Up Cohen's *d*
Total # of health care visits	44.95 (27.97)	31.84 (22.13)	28.58 (22.77)	30.03 (24.29)	.55	.59	.51
Total cost of healthcare visits (SEK)	57,015.78 (51,723.89)	29,653.84 (41,045.12)	31,383.99 (52,309.49)	23,202.35 (43,195.29)	.65	.50	.70
Total # of sick days compensated	222.02 (148.04)	247.70 (143.10)	181.27 (158.15)	141.39 (158.14)	-.15	.20	.37
Total cost of compensated sick days (SEK)	96,219.30 (75,344.77)	105,511.48 (75,384.48)	76,662.02 (77,071.71)	58,687.30 (74,167.15)	-.12	.20	.36

Note: SEK = Swedish Kronor (10-12 SEK = 1 Euro, approximately); Values for the health economic variables are the mean for the previous year.

Table 3. Results of mediation analysis.

			Results for Indirect Effects (a*b)
Dependent Variable	N	Mediator	Point-Estimate (SE)
Pain intensity	141	Psychological *in*flexibility	.212 (.114)
Depression	144	Psychological *in*flexibility	1.051 (.302)
Pain interference	145	Psychological *in*flexibility	.301 (.073)
Total number of health care visits	142	Psychological *in*flexibility	3.963 (1.842)
Total cost of health care visits (SEK)	116	Psychological *in*flexibility	452.707 (3854.575)
Total number of sick days compensated	124	Psychological *in*flexibility	16.598 (12.010)
Total cost of compensated sick days (SEK)	124	Psychological *in*flexibility	8199.991(5855.827)

Note: LL = lower limit; UL = upper limit.
The indirect effect is statistically significant if the confidence interval (CI) does not include zero.

Moderate improvements in pain and depression at post-treatment, maintained at 1- and 3-year follow-up. Similar pattern for health economic outcomes. Largest improvements for total # number and costs of healthcare visits, with moderate effect sizes by 1-year follow-up, remaining stable at 2/3-year follow-ups. PiF predicted and/or mediated long-term outcomes.

Conclusions

The present findings add to a small body of literature indicating that improvements in pain and related difficulties in multimodal, pain-focused CBT programs have a durability of at least three years following treatment. This form of treatment also yielded meaningful improvements in health economic outcomes up to three years post-treatment. Specifically targeting psychological flexibility in pain-focused treatment programs may help improve both pain outcomes and lower the cost of chronic pain conditions over the longer term.

Funding

The research was funded by Region Skåne Health Authority.