

## ORIGINAL ARTICLE

## Cognitive exposure versus avoidance in patients with chronic pain: Adherence matters

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### Conflicts of interest

None declared.

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### Abstract

**Background:** Behavioural exposure methods can reduce pain-avoidance behaviours, but outcomes vary. One possible explanation is that patients employ cognitive (experiential) avoidance during behavioural exposure. If so, reducing cognitive avoidance during behavioural exposure should help. One option is interoceptive exposure (IE), which involves sustained exposure (via attention) to pain sensations. In order to test if IE could improve outcomes from behavioural exposure, this study with mixed chronic pain patients compared outcomes from a cognitive behavioural therapy (CBT) pain management programme incorporating either IE or distraction from pain.

**Methods:** One hundred forty chronic pain patients were randomly assigned to CBT + IE or CBT + distraction. Outcome measures included pain, disability, depression and medication. Measures reflecting degree of threat of pain were also employed (catastrophizing, fear-avoidance, pain self-efficacy and pain acceptance). An intention-to-treat approach, using mixed-effects model repeated measures, as well as conventional inferential statistical tests, effect sizes and reliable change indices were employed to evaluate the outcomes up to 1-year post-treatment.

**Results:** Significant improvements were achieved by both treatment conditions on all outcome measures and on measures reflecting the threatening nature of pain, with no differences between treatment conditions.

**Conclusions:** The addition of IE to behavioural exposure did not improve outcomes. However, higher adherence to either attentional strategy was associated with larger effect sizes on all measures, suggesting factors shared by the two treatments could have contributed to the outcomes. Taken as a whole, the results suggest that increasing adherence to treatment strategies, possibly by motivational measures, would improve the overall outcomes of these interventions.

## 1. Introduction

Cognitive behavioural therapy (CBT) interventions can reduce disability in chronic pain patients, but outcomes vary and effect sizes are often small, prompting calls for improvements (Eccleston et al., 2009). The disappointing outcomes have been attributed to inter-

ventions being too generic, too brief and of variable quality (Morley, 2011), leading to suggestions that if we are to improve outcomes from these interventions, we need to return to their theoretical roots.

One theory underpinning CBT interventions for chronic pain is the fear-avoidance model (FAM; Vlaeyen and Linton, 2000). Recent versions have