Empirical research

Further validation of the Chronic Pain Values Inventory in a Swedish chronic pain sample

Sophia Åkerblom\textsuperscript{a,b,*}, Sean Perrin\textsuperscript{b}, Marcelo Rivano Fischer\textsuperscript{h,c}, Lance M. McCracken\textsuperscript{d}

\textsuperscript{a} Department of Pain Rehabilitation, Skåne University Hospital, Lund, Sweden
\textsuperscript{b} Department of Psychology, Lund University, Lund, Sweden
\textsuperscript{c} Department of Health Sciences, Lund University, Lund, Sweden
\textsuperscript{d} Psychology Department, Health Psychology Section, King’s College London, UK

\textbf{Purpose:} Value based action is an important process in the psychological flexibility model and is associated with daily functioning in people with chronic pain, but measures of it are not well-developed. The purpose of the present study was to examine the reliability and validity of a Swedish-language version of the Chronic Pain Values Inventory (CPVI) in a large sample of adults seeking treatment for chronic pain.

\textbf{Material and methods:} A Swedish version of the CPVI was created and administered alongside other measures of psychological flexibility and pain-related functioning in a convenience sample of 232 patients admitted for treatment at the Pain Rehabilitation Unit at Skåne University Hospital between February 2014 and December 2015. Internal consistency of the CPVI was assessed as was its relationship to theoretically related facets from the psychological flexibility model. The utility of values-related processes in explaining variance in pain-related functioning was also examined by correlations and hierarchical regression analyses.

\textbf{Results:} Overall, this Swedish-language version of the CPVI was found to have satisfactory reliability and validity. The CPVI subscales yielded high levels of internal consistency. Evidence of construct validity in relation to other measures from the psychological flexibility model was observed as well as evidence of clinical utility in relation to measures of pain-related functioning.

\textbf{Discussion:} This brief self-report measure of values-based action seems to yield valid data in Swedish adults suffering from chronic pain. Values based processes appear important within evidence-based treatments for chronic pain, especially Acceptance and Commitment Therapy (ACT), and the CPVI may help assess these, particularly in predictor studies of pain-related functioning and analyses of therapeutic change processes or mechanisms.

\section{1. Introduction}

There is a growing body of evidence that Acceptance and Commitment Therapy (ACT) is an efficacious treatment for chronic pain (Hann & McCracken, 2014). Within ACT the focus is on healthy activity and wellbeing achieved through psychological flexibility and one important treatment process within the framework is values (Hayes, Strosahl, & Wilson, 1999). Values-related processes aim to improve daily functioning by helping people to initiate and persist in actions that serve their important purposes and are done with the quality in which they want to do them. Thus “valuing” is seen as an important process to promote behavioral direction, meaning, and motivation within the model of psychological flexibility (Dahl, Plumb-Vilardaga, Stewart, & Lundgren, 2009). The particular relevance of improving value-based action in adults with chronic pain arises when one considers that much of the behavior of those with chronic pain is focused on understanding, reducing, problem-solving, or avoiding pain and not on work, relationships, or other positive goals – in this way pain guides their actions instead of “values” guiding their actions. Value-based action is associated with better functioning in individuals with chronic pain (McCracken & Keogh, 2009; McCracken & Yang, 2006). There are also data showing that values-based action improves in treatment based on ACT and these improvements are associated with improvements on diverse measures of outcome (Vowles & McCracken, 2008; Vowles, Witkiewitz, Sowden, & Ashworth, 2014). Still, relatively few studies within the chronic pain field, or in any field more generally, have...
attempts to measure and examine values-related processes. Additional studies are needed of the relationship between values-related processes, functioning in individuals with chronic pain, and treatment outcome – and for this purpose brief, reliable and valid measures of values are needed (McCracken & Yang, 2006; VanBuskirk et al., 2012). So far a small number of values measures appear potentially adequate or clinically useful, including the Valued Living Questionnaire (Wilson, Sandoz, Kitchens, & Roberts, 2010), Bull’s eye (Lundgren, Luoma, Dahl, Strosahl, & Melin, 2012), and the Chronic Pain Values Inventory (CPVI) (McCracken & Yang, 2006). By no means have any of these had comprehensive psychometric analysis and validation.

The CPVI was developed for use with individuals who suffer from chronic pain (McCracken & Yang, 2006). It is a theoretically-derived measure that assesses both the importance to the individual of values in six domains (i.e., family, intimate/close interpersonal relations, friends, work, health, and personal growth/learning) and the degree of success the individual achieves in behaving in line with these values. The English-language original has been shown to possess adequate psychometric properties, to correlate in the small to moderate range with other constructs from the psychological flexibility model and with key indices of functioning, and to partially explain variation in pain-related functioning independent of pain-related acceptance in adults seeking treatment for chronic pain (McCracken & Keogh, 2009; McCracken & Vowles, 2008; McCracken and Vellemian, 2009; McCracken & Yang, 2006; Vowles & McCracken, 2008; Vowles et al., 2014). This measure has not been validated in another language.

The present study aimed to examine the reliability and validity of a Swedish-language version of the CPVI in a sample seeking treatment for chronic pain. First, improvements in psychological flexibility are assumed to include increases in values-based action but whether increases in one domain are accompanied by increases in others remains unclear (Wilson et al., 2010). In the original CPVI validation study, carried out with 140 adults seeking treatment at a specialist pain unit in Britain, the authors found similarly high Cronbach alphas for both values success and values discrepancy (both $\alpha = .82$) suggesting that the participants respond consistently across the six functioning domains assessed by the measure (McCacken & Yang, 2006). We examine the internal consistency of this Swedish translation of the measure and expect similarly high $\alpha$'s for both subscales.

Second, we expand upon previous studies by examining the construct validity of the CPVI through its relationship to separate measures of two theoretically related processes from the psychological flexibility model (committed action and pain-related acceptance) and a measure designed to assess psychological inflexibility broadly. Based on prior research (McCacken & Yang, 2006), we anticipate that patients reporting higher levels of values success will report greater levels of pain-related acceptance and committed action and lower levels of psychological inflexibility, with all correlations in the small to moderate range (McCracken & Yang, 2006). A reversed correlation pattern is expected between the same variables and values discrepancy.

Third, consistent with the psychological flexibility model, where a number of interrelated but distinct constructs contribute to psychological flexibility, we anticipate that values-based action, pain-related acceptance, and committed action will make separate and significant contributions to the total variance in this overarching construct (Hayes, Strosahl, & Wilson, 2012; McCracken & Morley, 2014).

Fourth, we examine the utility of values-related processes in explaining variation in the overall functioning in adults seeking treatment for chronic pain. Based on previous research (McCacken & Yang, 2006), we expect patients with higher levels of values success to report lower levels of depression, anxiety, and pain interference, and higher levels of physical functioning, social functioning, vitality, and overall mental health, with all correlations in the small to moderate range. A reversed pattern is expected between the same variables and values discrepancy. Also, in the original validation study (McCacken & Yang, 2006), scores on the CPVI were shown to explain variance in measures of pain-related functioning after controlling for the influence of pain-related acceptance. Its contribution to pain-related functioning in the presence of other processes from the psychological flexibility model remains untested. We undertake a preliminary evaluation of the incremental validity of the CPVI after controlling for both pain-related acceptance and committed action.

2. Material and methods

2.1. Participants

Participants in this convenience sample ($n = 232$) were adults who were consecutive referrals admitted for treatment at the Pain Rehabilitation Unit at Skåne University Hospital between February 2014 and December 2015 and who had completed the measures of psychological flexibility and pain-related functioning. The unit is a government supported, regional specialist center for adults (aged 18 years and above) who have symptoms of chronic pain that impacts significantly on everyday life. The unit offers intensive, multi-disciplinary, outpatient treatment based on a cognitive behavioral approach. All participants gave written informed consent prior to their data being used in the study and they were not reimbursed for their time. The study was approved by the Regional Ethical Review Board in Lund, Sweden (2013/381).

The sample consisted of 198 women (85.3%) and 34 men with an average age of 41.6 years (SD = 9.9). The majority was born in Sweden or another Nordic country (81.0%) and all participants were able to speak Swedish fluently. Most (59.7%) were currently in work or studying at least on a part-time basis. Slightly more than half (53.7%) had upper secondary school as their highest level of education with a further 30.7% having studied at university level. Individuals admitted for treatment at the unit present with diverse pain-related disorders, the most frequent primary pain diagnoses being fibromyalgia (40.5%), cervicocranial syndrome (9.5%), cervicobrachial syndrome (9.5%), lumbago (6.9%), and myalgia (4.3%). On average the participants reported pain of 8.2 years duration (SD = 8.1) with the number of pain locations varying between 2 and 36 ($M = 17.3$, $SD = 8.5$). At referral, usual pain intensity (rated on a 0–10 scale) averaged 7.2 ($SD = 1.4$). The sociodemographic and clinical characteristics of this sample were similar to the unit's referrals as a whole and to patients seeking treatment for chronic pain at other regional specialist pain units across Sweden (Swedish Quality Registry for Pain Rehabilitation, 2015).

2.2. Translation of the CPVI

In translating and back-translating the measure, internationally recommended guidelines were followed (Beaton, Bombardier, Guillemin, & Ferraz, 2000). The CPVI was translated from English to Swedish by the first author, a clinical psychologist specializing in clinical research on patients with chronic pain and fluent in both Swedish and English. The Swedish version was then back-translated by a Swedish clinical psychologist fluent in both Swedish and English, who was experienced in instrument translation and validation, and was independent of the research team. An ‘expert’ group comprised of clinical psychologists working in the field of pain rehabilitation, who were fluent in Swedish and English and independent of the research group, were then asked to evaluate the translated and back-translated versions and to suggest any needed adjustments. Thereafter, 10 current patients at the pain clinic were given the ‘final’ Swedish version of the measure and asked to give feedback on the clarity of instructions and vocabulary. Minor alterations were made to ascertain that the items reflected the same item content as the English original and the updated version was then given to and approved by the expert group. The Swedish version is available from the first author.
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