

Meaningful living with pain

**Meaningful living with pain: the value of Acceptance and Commitment
Therapy in chronic pain**

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Preface

This thesis has been written and formatted using American Psychological Association (APA) 6th edition formatting. This format has been used for consistency as the journals that are intended for publication use different formatting styles. Paper one journal submission guidelines can be found in paper 1: Appendix D and paper two journal submission guidelines can be found in paper 2: Appendix Q.

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Abbreviations

AAQ-II.....	Acceptance and action questionnaire - II
ACT.....	Acceptance and commitment therapy
AR.....	Applied Relaxation
BCMDI	British Columbia major depression inventory
BPCI-2	Brief pain coping inventory
BPI	Brief pain inventory
BPS.....	British pain society
BPS.....	British psychological society
CASP.....	Critical appraisal skills programme
CBT.....	Cognitive behavioural therapy
CPAQ	Chronic pain acceptance questionnaire
CPVI.....	Chronic pain values inventory
EFA.....	Exploratory Factor Analysis
IASP.....	International association for the study of pain
IMMPACT.....	Initiative on methods, measurement, and pain assessment in clinical trials
IPA.....	Interpretive phenomenological analysis
FFMQ.....	Five factor mindfulness questionnaire
HADS.....	Hospital anxiety and depression scale
MAAS.....	Mindful Attention Awareness Scale
NRS.....	Numerical rating scale
PANAS.....	The positive and negative affect schedule
PASS.....	Pain anxiety symptom scale
PASS-20.....	Pain anxiety symptom scale – 20
PCA.....	Principal Components Analysis
PCS.....	Pain catastrophising scale
PMP.....	Pain management programme
PVAQ.....	Pain vigilance and awareness questionnaire
ÖMPQ.....	Örebro musculoskeletal pain questionnaire
SCS.....	Self-compassion scale
SWLS.....	Satisfaction with life scale
SIP.....	Sickness impact profile
TSK	Tampa scale for kinesiophobia

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Thesis abstract

This thesis has been completed to fulfil the academic requirements of the doctorate in clinical psychology. The topic developed from the author's experience of working therapeutically with individuals with chronic pain in the first year of clinical training. The thesis includes a literature review of studies exploring the process of change with Acceptance and Commitment Therapy (ACT) in chronic pain, an empirical study exploring the value of ACT in chronic pain and a reflective paper of the author's reflections on this process. The literature review highlighted several factors involved in the process of change, these included the six core processes of ACT; acceptance, values, self as context, present moment, cognitive defusion, and committed action. Increased acceptance and values based activity were associated with improved functioning and quality of life. Social support from peers, normalisation and validation were also found to be helpful. The studies in the review mainly collected data via self-report questionnaires, which are open to respondent biases, confounding variables and overlook the personal value of an intervention. Qualitative approaches, although limited, have captured individual narratives of pain management, which have been helpful in understanding personal experiences. The empirical paper uses Q methodology to understand the value of group based pain management. Ten chronic pain service users completed Q-sorts in which they ranked a range of statements about change processes. Three factors emerged; (1) being believed, accepted and understood (2) the value of self-compassion and empowerment, and (3) a bipolar factor representing the importance of clarity and changing the relationship with pain. The six core processes of ACT were represented in the three factors. Self-as-context, values, and acceptance were found to be particularly relevant to therapeutic change. The reflective paper outlines the author's reflections on the process, the challenges, limitations, and growth and learning points throughout the journey.

Chapter One: Literature Review

Meaningful living with pain: the process of change with Acceptance and Commitment Therapy for chronic pain

Word count: 7,917

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Abstract

Chronic pain is a long-term health condition that impacts at individual and societal levels, and is strongly associated with psychological distress. Current treatment approaches are interdisciplinary, drawing upon biological, medical, social and psychological principles to empower individuals with chronic pain to adopt a self-management approach that allows for meaningful living with pain and improved quality of life. Acceptance and commitment therapy (ACT) is one of the established psychological approaches to chronic pain management. Extensive research has provided growing evidence for the efficacy of this approach and the processes that influence change. A review of the literature on psychological approaches to chronic pain was conducted to (a) investigate the active processes of ACT that influence change and, (b) appraise the quality of the studies forming the evidence base. Ten studies were reviewed. The review found increasing support for psychological flexibility as a mechanism of change. Increases in acceptance of pain and engagement in values based activity were associated with improved functioning and quality of life. Being part of a group was also significant in the process of change, particularly social support from peers, normalisation and validation. Concerns emerged around the validity of the methods of data collection in the sampled studies, as they tended to use outcome measures, which are open to biases. Whilst support was found for acceptance and values guided action as key active processes, questions still remained around which processes influence change and whether these were specific to ACT. The need for further research to identify which other processes make important contributions to change was evident. Q methodology was proposed to find meaningful information about the idiosyncratic and collective value of particular ACT processes from the perspective of people living with chronic pain conditions.

Key words: ACT, chronic pain, process of change

Introduction

Chronic pain is “*a common complex sensory, emotional, cognitive and behavioural long-term health condition which occurs when pain cannot be resolved by available medical or other treatments*” (The British Pain Society, BPS, 2013, p10). It is a long term health condition defined when pain cannot be ‘cured’ with medical intervention or treatment (BPS, 2013) and when pain lasts longer than the normal healing time following illness or injury (Rowbotham & Collett, 2013), which is usually beyond three months (BPS, 2013).

The International Association for the Study of Pain (IASP), an international forum for science, practice and education for professionals working within the field of pain, defines pain as “*an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage*” (IASP, 1994, p210). The IASP guidelines define chronic pain as pain that persists for longer than six months. The classification of chronic pain is usually determined by the healing process and repair of any inflammation or injury from acute pain which can take different lengths of time dependent upon the context in which the inflammation or injury occurred, this also includes cancer pains which are typically treated as chronic sooner than other types of pain (IASP, 1994).

The socially constructed concept that pain can be and should be reduced, contributes to chronic pain being a major health problem (McCracken, 2005). Chronic pain can have devastating effects on wellbeing, functioning and quality of life, and can lead to lost productivity and costs to healthcare services (Vowles, Witkiewitz, Sowden & Ashworth, 2014). The physical and psychological distress of chronic pain is commonly associated with a range of psychological problems (Holmes, Christelis & Arnold, 2012) including the belief that pain must be reduced in order to live a meaningful life (Dysvik, Vinsnes & Eikeland, 2004). The nature of chronic pain means pain reduction is often a futile avenue to pursue. Individuals with chronic pain spend a great deal of effort and time avoiding, fearing or attempting to control the pain (Yang & McCracken, 2014). Control strategies to reduce pain tend to form patterns of avoidance behaviour, and whilst they may seem effective in the short-term, the long-term

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consequences are increased pain and distress, and limited enjoyment and quality of life (McCracken, 2005).

Theories and models of pain

Theories and models of pain have attempted to explain the causes and experiences of pain in different ways and have developed, resulting in a complex integrated physiological and psychological model preferred today. Very early theories of pain date back to the 15th Century and earlier, these were influenced by ideas relating to religion, gods, magical fluids and frustration of desires. Since these early ideas, theories and models have developed to consider influences of the brain and other organs. Descartes theory offered two key ideas, firstly that a relationship exists between the amount of damage and the pain experienced, and secondly, the mind and body were separate entities which led to the concept of pain as either physical or psychological (Main, Sullivan & Watson, 2008).

The Cartesian model views pain as pivotal in drawing attention to injury, pain or damage inherent in the process of human survival (Main et al., 2008). It proposed that pain travels in one direction only and the experience of pain cannot be influenced by the brain, this has been influential in developing an understanding of a relationship between severity of damage and pain intensity (Main et al., 2008).

In 1965, Melzack & Wall's Gate Control Theory (GCT) revolutionised the way that health professionals viewed and treated pain (Roditi & Robinson, 2011). This introduced psychological theory into the understanding of pain and formed the basis for the biopsychosocial model of pain. The GCT has been revised over the years but essentially it recognises that pain signals travel bidirectional; from the body to the brain and from the brain to the body, and that pain signals are sent to the brain via metaphorical neurological gates, which determine whether the pain signals reach the brain, and with what severity (Main et al., 2008).

The neuromatrix theory further developed understandings of pain, introducing the role that emotional impact had on the experience of pain (Main

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et al., 2008). Developed in response to understanding phantom limb pain, the neuromatrix proposes that multiple parts of the central nervous system work together in signalling and experiencing pain (Melzack, 2001). Multiple neurons and nerve impulses assemble and develop patterns and pathways to communicate the experience of pain. These processes are open to influence from psychological stressors, which could cause abnormalities to occur in muscle, bone and tissue, and may contribute to patterns and pathways of chronic pain (Melzack, 2001).

Acceptance and Commitment Therapy

As the subjectivity of chronic pain was acknowledged, theory and perspectives slowly shifted from medical intervention towards psychological approaches, which have become recognised as effective interventions for the management of pain (Roditi & Robinson, 2011). Acceptance and Commitment Therapy (ACT) has become a popular method of treatment in chronic pain. Created in 1986 by Steven Hayes; ACT is a third wave contextual psychotherapy (Harris, 2006). ACT aims to enhance activity and function through an increase in psychological flexibility, to *“create a rich and meaningful life, while accepting the pain that inevitably goes with it”* (Harris, 2006, p2).

Psychological flexibility is *“the ability to contact the present moment more fully as a conscious human being and to change, or persist in, behaviour when doing so serves valued ends”* (Biglan, Hayes & Pistorello, 2008, p 142). Psychological flexibility is achieved through the six core processes of ACT: contacting the present moment, cognitive defusion, acceptance, self as context, values, and committed action (Harris, 2009).

ACT is strongly associated with Relational Frame Theory (RFT), which encompasses a theory of language and cognition grounded in language development (Prevedini et al., 2011). Research demonstrates that human language is closely linked to the ability to form connections and relate to events (Smith & Hayes, 2005). Human beings have the ability to learn, process and develop understandings of events without having any direct experience of them. This enables humans to frame or shape behaviour to conform to social, cultural,

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and familiar norms. In some ways this ability is powerful and helpful particularly in developing as a human race, but the very same processes can lead to narrow and rigid behaviours that are governed by restrictive concepts borne out of socially constructed rules (Prevedini et al., 2011). The solution people use to solve problems often becomes the problem, leading to struggle and suffering (Hayes, 2004).

Experiential avoidance, the tendency to avoid or control unpleasant thoughts and feelings, can create problems for individuals and limits their quality of life. It is thought that the suffering experienced by individuals with chronic pain does not emerge solely from pain and pain avoidance, but from a predisposition to avoidance (Hayes, Luoma, Bond, Masuda & Lillis, 2006). Psychological flexibility is thought to be able to move individuals from experiential avoidance to a more meaningful engagement with living (Harris, 2006).

Review of the ACT and chronic pain literature

There have been eight peer-reviewed assessments of the utility of ACT for a range of psychological problems including chronic pain (Association for Contextual Behavioural Science, ACBS, 2015). The first of which, Hayes et al. (2006) considers the progression and efficacy of the ACT model. This included a summary of the philosophy and theoretical roots of ACT, relational frame theory and the six core processes of ACT, a meta-analysis of 32 correlational studies, and a review of 21 outcome studies that focused on the impact of ACT components and the process of change to review the ACT model, processes and outcomes. Emerging support for the efficacy of ACT for a range of psychological problems (including anxiety, depression, psychosis and chronic pain) was documented, whilst acknowledging its underdeveloped nature at that point in time.

Two papers have recently reviewed the utility of ACT for chronic pain (Hann and McCracken, 2014; Veehof, Oskam, Schreurs & Bohlmeijer, 2011). Veehof et al. (2011) conducted a systematic review and meta-analysis of 22 studies of acceptance based interventions for chronic pain. These included

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Mindfulness Based Stress Reduction (MBSR) approaches (n=15) and ACT based approaches (n=7). The review found that acceptance based interventions produced small but equivalent effects to Cognitive Behavioural approaches (CBT). CBT has a strong evidence base for efficacy for chronic pain, and increased research into ACT based approaches for chronic pain may add to the evidence base for alternative treatments.

Hann and McCracken (2014) conducted a systematic review of 10 randomised controlled trials (RCTs) of ACT for chronic pain. They concluded that ACT was efficacious for promoting changes in physical and emotional functioning. There were several inconsistencies highlighted in the way in which data was categorised as primary, secondary or process variables, which may compromise the consistency of measuring the processes of change in the ACT model. Recommendations were that future RCTs should categorise the outcome and process data at the start of the study to reduce potential reporting bias. Guidance is offered for categorising physical, social and functioning measures as primary variables, and pain as a secondary variable along with emotional functioning, rating of change, adverse events and healthcare visits. Measures of psychological flexibility should be categorised as process variables. There did not appear to be a synthesis of their overall findings from the research conducted, rather the review concentrated on developing consistent approaches to data collection and analysis in relation to ACT for chronic pain.

The current review includes studies not included in these earlier reviews. In contrast the current review focusses on the individual contributions of the six core processes of ACT for chronic pain. The review includes a critique of the studies reviewed and a synthesis of findings, which adds to the overall evidence base for ACT.

Method

A review of the literature for the application of ACT approaches to chronic pain was conducted to investigate (a) the active processes of ACT that influence change and, (b) to evaluate the studies included.

Search strategy

NHS evidence and EBSCO were the host sites from which the search was conducted in the following databases: The Allied and Complimentary Medicines Database (AMED), British Nursing Index (BNI), Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, MEDLINE, AgeLine, and Academic Search Complete. The review question was developed within a Population Intervention Comparison Outcome (PICO) framework (Sayers, 2008). The focus was the population (chronic pain), intervention (ACT) and outcome (change). A comparison element was not applied as the aim was to explore the process of change rather than compare to any other population or intervention. Therefore the following question was asked of the literature; “What is known about the active processes in Acceptance and Commitment Therapy (I) that influence change (O) in patients with chronic pain (P).” The following search terms were used to identify key words in the abstracts and titles of research articles;

(“Acceptance and Commitment Therapy” OR “ACT”) AND “chronic pain”

Limiters were applied to yield the most relevant articles for the review. Articles were English in language, and included adult populations. Duplicates were removed. Eligibility was determined based on the title of the articles, abstracts were reviewed and full texts were read for further clarification. Articles were excluded on the basis of; (a) published prior to 2010 to exclude studies that would have been captured in the review by Veehof et al. (2011), (b) the focus was not on chronic pain, (c) the study was not focused on the processes of psychological change, (d) the study focused on CBT rather than ACT, (e) they were a review paper, (f) the evaluation was of a psychometric measure, (g) the study was a pilot study and may not be generalisable, (h) the intervention was not delivered face-to-face, and, (i) the study was a service evaluation.

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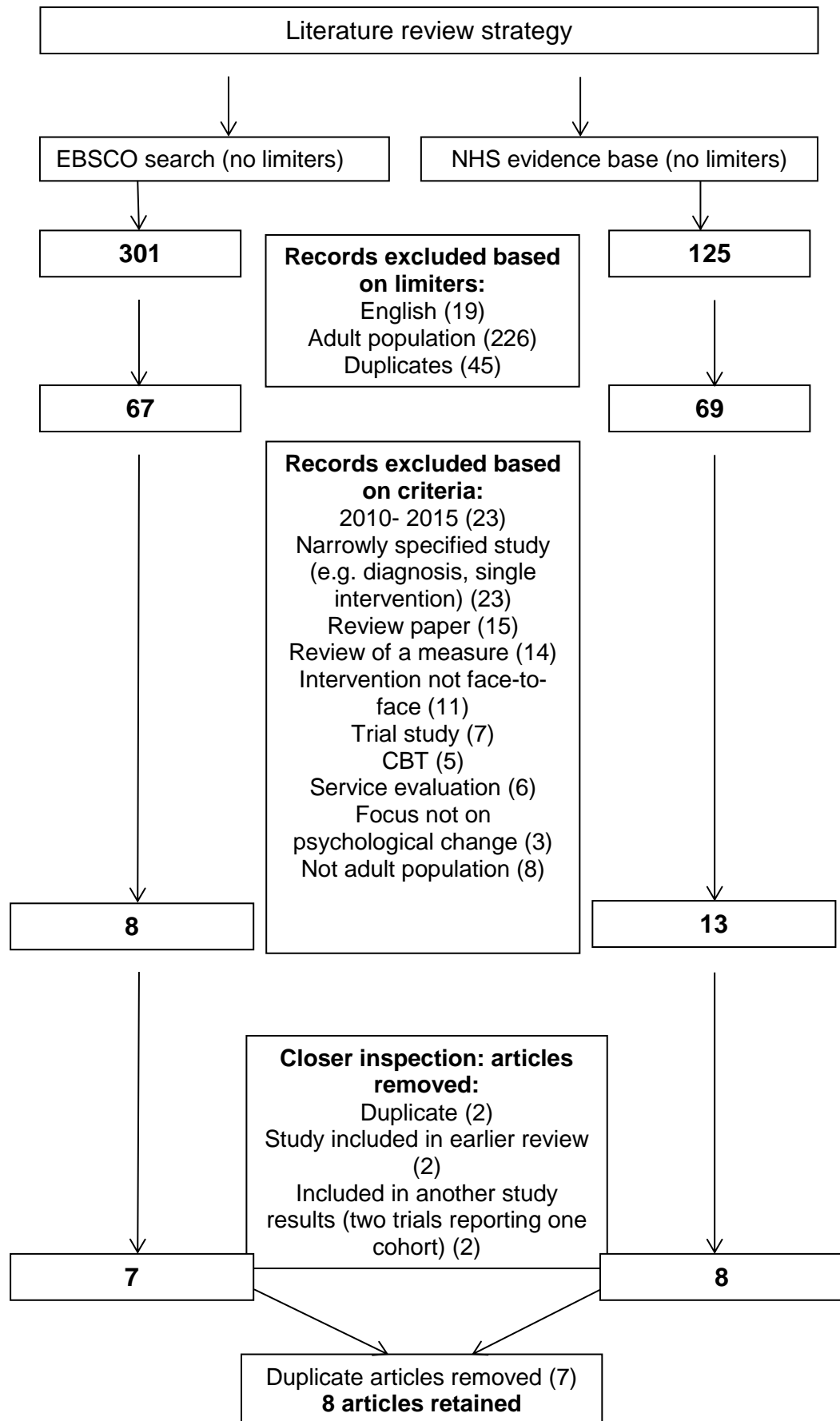


Figure 1: Literature review search strategy

Eight research articles were identified from the database search, and two additional articles were found whilst reading papers that review the ACT literature (Hayes, Pistorello & Levin, 2012; Scott & McCracken, 2015).

A hand search of the 170 referenced articles within Hayes et al., (2012) and Scott & McCracken, (2015) was conducted. Articles were discarded as follows; published prior to 2010 (n=117), focus was not on chronic pain (n=17), focus was on CBT rather than ACT (n=2), review paper (n=9), evaluation of a psychometric measure (n=9), pilot study (2), intervention was not delivered face-to-face (n=4). Further exclusion criteria were applied and references were not considered if they were a book (n=3), non-adult population study (n=2), website or guideline (n=2). Three studies were already retained in the database search.

The final set of ten research papers includes two qualitative papers (Harrison, 2012; Mathias Parry-Jones & Huws, 2014) and eight quantitative papers (de Boer et al., 2014; McCracken & Gutiérrez-Martínez, 2011; Schütze, Rees, Preece & Schütze, 2010; Thorsell Cederberg, Cernvall, Dahl, Essen & Ljungman, 2015; Vowles & McCracken, 2010; Vowles, Fink & Cohen, 2014; Vowles, Sowden & Ashworth, 2014; Vowles, Witkiewitz, Sowden & Ashworth, 2014). Appendix A includes the author and titles of the studies included.

Results

Study details

A summary of all ten studies selected for review can be found in Appendix B; this details the title and author, aims, samples, key findings, strengths and limitations of the studies.

Study characteristics

The studies varied in their design. Five were cross sectional (de Boer et al., 2014; Harrison, 2012; Mathias et al., 2014; Schütze et al., 2010; Vowles,

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Sowden & Ashworth, 2014), four were longitudinal, within participants design (McCracken & Gutiérrez-Martínez, 2011; Vowles, Fink & Cohen, 2014; Vowles & McCracken, 2010; Vowles, Witkiewitz et al., 2014) and one study was a randomised controlled trial (RCT), (Thorsell Cederberg et al., 2015).

Brief overview of studies

The ten studies collectively explored all six core processes of the ACT model. Seven of the studies explored change following an ACT based group intervention (Harrison, 2012; Mathias et al., 2014; McCracken & Gutiérrez-Martínez, 2011; Thorsell Cederberg et al., 2015; Vowles, Fink & Cohen, Vowles & McCracken, 2010; Vowles, Witkiewitz et al., 2014). These studies demonstrated change following the intervention. Two of which, offered further support for the processes of ACT as mediators of treatment outcome (Thorsell Cederberg et al., 2015; Vowles, Witkiewitz et al., 2014).

Two other studies narrowed their focus to the individual processes of present moment awareness and acceptance in the process of change. These studies explored the relationship between the processes and individuals experience of chronic pain (de Boer et al., 2015; Schütze et al., 2010). One other study conducted a comprehensive examination of the ACT model exploring the relationship between psychological flexibility and physical functioning based on questionnaire data from participants attending a medical appointment.

Synthesis

A narrative synthesis approach has been applied around the six core processes framework which attempts to characterise and identify patterns within the studies reviewed (Booth, Papaioannou & Sutton, 2012). Seven main factors were identified that contribute to the process of change.

Acceptance of chronic pain

Acceptance is the ability to let go of the struggle with painful thoughts, feelings and sensations, allowing them to be there without trying to control or change them (Harris, 2009). Six papers found support for acceptance. Acceptance empowers individuals to live their lives alongside chronic pain (Mathias et al., 2014). Individual narratives of a Pain Management Programme (PMP) indicated that meaningful changes occurred when individuals moved from experiential avoidance towards acceptance through empowerment, self-confidence and reclaiming their identity (Mathias et al., 2014).

Changes in pain acceptance and self-compassion were the strongest mediators of change in functioning following group based ACT for chronic pain (Vowles, Witkiewitz et al. 2014). Decreasing the struggle with pain control was associated with a decrease in disability functioning following an evaluation of 21 patients completing pain diaries during ACT treatment (Vowles, Fink & Cohen, 2014).

Psychological flexibility measured in 168 participants involved in an ACT based treatment programme for chronic pain identified that increases in acceptance of pain were associated with a decrease in pain intensity. Improvements in psychological flexibility following ACT were associated with an increased willingness to experience psychological phenomena (painful thoughts, emotions, sensations) and less desire to control or avoid such experiences (McCracken & Gutiérrez-Martínez, 2011).

A comparison of changes in psychological flexibility and changes in traditional pain management coping strategies in 114 individuals with chronic pain following an ACT based treatment programme found that psychological flexibility is a more reliable coping mechanism with better treatment outcomes than traditional pain management coping strategies (Vowles & McCracken, 2010). The findings supported the processes of acceptance, values and contacting the present moment being associated with improved functioning.

General psychological acceptance is a concept similar to acceptance of pain but is not limited to acceptance of pain. It is defined as acceptance of a

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broad range of unwanted psychological phenomena (McCracken and Zhao-O'Brien, 2010). In one of the studies, psychological acceptance was found to be a strong predictor of pain-related catastrophising meaning that those with higher levels of psychological acceptance catastrophise less about their pain experience (de Boer et al., 2014). Having an accepting approach to the experience of pain and other psychological experiences is thought to be a protective mechanism and may lessen the possibility of developing a fear response to pain which consequently leads to restricted and rigid behaviour patterns and impacts upon emotional well-being (de Boer et al., 2014).

Engagement in valued activity

Engagement in valued activity; identifying what is meaningful and important, and identifying activities that serve to strive towards these values / life directions (Harris, 2009). Four papers provided support for this process. Increased engagement in valued activity over a four week ACT intervention were found to be associated with a decrease in disability at three month follow up (Vowles, Fink & Cohen, 2014). Increased success in valued action led to improvements in emotional well-being, disability and functioning (McCracken & Gutiérrez-Martínez, 2011).

A comparison of ACT with applied relaxation (AR), found changes in physical functioning in the ACT group occurred whilst pain intensity remained. Thorsell Cederberg et al. (2015) relate these changes to increased acceptance and willingness to engage in activities. Thus, suggesting that individuals can be supported to engage in meaningful living even when they experience difficult thoughts, feelings and sensations.

As mentioned, Vowles and McCracken (2010) found evidence to support the process of engagement in valued activity being associated with improved functioning when measured collectively with acceptance and contact with the present moment to form a measure of psychological flexibility.

Contacting the present moment

Contacting the present moment is engaging with the immediate environment, the physical environment around us or the psychological environment internal to us (Harris, 2009). Three papers supported the role of this process. Following an ACT based intervention, increased ability to be in the present moment led to positive changes in pain-related anxiety and physical and psychosocial disability (McCracken & Gutiérrez-Martínez, 2011). Mindfulness was found to be a significant predictor of pain catastrophising and a moderator of pain catastrophising and pain intensity (Schütze et al., 2010). Contact with the present moment was found to be associated with improved functioning when measured as part of a psychological flexibility measure (Vowles & McCracken, 2010).

Self as context

Self as context is often described as the “observer self” and refers to the ability to be aware of thoughts, feelings, and sensations without being influenced by them (Harris, 2009). One paper found support for this process. Changes in the perception of self and changes in the relationship with pain were valuable and important changes for individuals with chronic pain following an ACT based PMP (Mathias et al., 2014).

Defusion and committed action

Defusion is defined as stepping back from and changing the relationship that an individual has with their painful thoughts, feelings and sensations (Harris, 2009). Committed action refers to taking action in the direction of the individual’s chosen values despite the painful thoughts, feelings, and experiences. The intention here is to move towards meaningful living (Harris, 2009). None of the studies explicitly identified defusion or committed action as having a particular significant effect on outcome. However, Mathias et al. (2014) found that the ability to distance one-self from pain (defusion) and acknowledge one’s limitations had a positive impact in the process of change, resulting in a lesser impact of pain on the perception of self.

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Vowles, Sowden and Ashworth (2014) used data from 274 individuals with chronic pain who presented at an assessment appointment to identify a model of psychological flexibility and a model of patient functioning. They found a three factor solution for both. The psychological flexibility solution found the six processes of the ACT model were highly correlated and may be best explained as three processes; defusion and acceptance; values and committed action; present moment awareness and self-as-context. Defusion and acceptance reflected a willingness to experience difficult internal and external experiences. Values and committed action capture choosing a direction towards one's values and taking action depending on what the situation brings. Present moment awareness and self-as-context focus on connecting with the present moment and holding a noticing and observing perspective. A three factor solution was found for patient functioning; disability, pain intensity, and emotional distress. All six processes were found to correlate with one another and with the three functioning variables suggesting that increased scores in psychological flexibility were associated with improved functioning, and also adding to the evidence base for a coherent model.

These findings may explain the lack of focused evidence for the individual defusion and committed action processes as each is highly correlated with another process; “defusion and acceptance” and “values and committed action” which may make it difficult to capture specific data to that process.

Social support

Two papers found evidence for the role of social support, validation and normalisation. The shared experience of accessing an ACT based pain management group appeared to promote a sense of belonging to the cohort, which was seen to have a positive impact on change throughout the group (Mathias et al., 2014). Improved functioning following a PMP was associated with normalisation and validation achieved through psychoeducation about the impact of pain on mood and the cyclical traps that individuals with chronic pain often find themselves in (Mathias et al., 2014).

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Harrison (2012) found that participants felt more understood and supported as a result of the shared experiences within the group. The positive experiences of the group were reported to have had a positive impact on participant's confidence, their abilities, and their social skills.

Summary of synthesis

Support for the active processes involved in ACT and the promotion of psychological flexibility is evident, particularly acceptance of pain and values-based action, however, none of the studies reviewed specifically identified defusion or committed action as significant in the change process. The lack of evidence for these processes could be explained through Vowles, Sowden and Ashworth (2014) three factor solution of psychological flexibility that joins the six processes into three pairs. Alternatively, it could be a lack of standardised measures for these processes being available, or that defusion or committed action processes of ACT are not significant in effecting change.

Processes of change were measured through self-report measures that were typically administered pre and post intervention. Differences in scores were examined in relation to changes in treatment intervention or over time. Several studies used differing measures to capture the process of change, which makes the synthesis of findings quite difficult. However, there appeared to be a general consensus throughout most studies that the process of change was identified as acceptance of chronic pain, engagement in valued activity, mindfulness and self-compassion.

Seven of the studies reviewed displayed evidence of the efficacy for ACT for chronic pain. Effective outcomes were measured in terms of improved functioning and quality of life rather than the reduction of pain symptomology, which is consistent with the ACT literature. The qualitative research findings offer additional support to the findings of the quantitative research, in that they capture the voice of the individual with chronic pain and their perception of the efficacy of ACT. These methods of collecting data combined together, demonstrate the efficacy of ACT, and despite the persistent intensity of pain, individuals were able to make changes to improve functioning, well-being and

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quality of life. Non-specific aspects of the intervention such as group dynamics and social support are also influential in the process of change. Themes of social support and beliefs have been captured in more depth through qualitative research, and arguably quantitative research risks being overly narrow with pre-determined focus in assessing the processes that influence change within ACT.

Critical Appraisal

A range of tools from the Critical Appraisal Skills Programme (CASP: CASP International Network, 2014) and Thomas, Ciliska, Dobbins, & Micucci, (2004) Quality Assessment Tool for Quantitative Studies were used to critically appraise the studies included in this review. The strengths and limitations of these studies have been summarised below.

Aim and Rationale

All studies reviewed clearly stated the research aims and rationale. Seven explored the processes of group based ACT for chronic pain (Harrison, 2012; Mathias et al., 2014; McCracken and Gutiérrez-Martínez, 2011; Thorsell Cederberg et al., 2015; Vowles, Fink & Cohen, 2014; Vowles and McCracken, 2010; Vowles, Witkiewitz et al., 2014). Two explored the active processes not studied in the context of an ACT based treatment approach (de Boer et al., 2014; Schütze et al., 2010) and one conducted a comprehensive examination of the ACT model (Vowles, Sowden & Ashworth, 2014).

Participant sample

Studies included a representative sample of participants with chronic pain (for longer than three months) across the adult life span. However, it was difficult to judge whether the sample was representative of all chronic pain populations due to lack of consistent quantifying of location of pain, or diagnoses of condition to categorise participants. All of the participants were treatment seeking, recruited from referrals into a range of pain rehabilitation services, pain centres and pain units within hospitals, primary care and tertiary care services. This may have biased the sample as the views of those people

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who may suffer from pain who do not seek treatment are not taken into account. Only one study included a comparative, non-clinical sample, and this was a sample of participants deemed to have 'recovered' having had some pain management and who were reporting improved outcomes (Vowles, Witkiewitz et al., 2014).

Data collection

Quantitative. The eight quantitative studies collected data through standardised self-report measures with known reliability and validity. The studies did not use the same battery of measures, which made comparison difficult (see Appendix C). Guidance sought from Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT) regarding the domains for data collection in clinical trials of chronic pain treatment efficacy and effectiveness indicate data should be collected for; pain, physical functioning, emotional functioning, participant ratings of global improvement, symptoms and adverse events, and participant disposition (adherence / withdrawal to study). Most studies collected data in these domains, but physical functioning was often overlooked (Vowles, Fink & Cohen, 2014; Vowles & McCracken, 2010). None of the studies included a measure of global improvement, which means that the personal value and importance of the treatment outcomes are not captured (Turk et al., 2003)

Qualitative. The two qualitative studies collected data through semi-structured interviews and both provided interview schedules and topic guides (Harrison 2012; Mathias et al., 2014). Harrison (2012) reviewed the interview schedule after each interview (n=12) which is consistent with using a thematic analysis. Both studies offer a justification for the data collection method and give an approximate calculation of the required number of participants. Mathias et al. (2014) report that n=6 are normative for Interpretive Phenomenological Analysis (IPA). Harrison (2012) justifies this based on the sample size being able to provide sufficient evidence.

Harrison (2012) and Mathias et al. (2014) discuss issues of power in their researcher role in relation to links with the service from which they are

collecting data and how this might influence the participant responses and biases in interpretation. Recognition of responder bias reduces threats to the validity of the findings, strengthening the trustworthiness of the study (Robson, 2002). Mathias et al. (2014) reflect on the impact of clinical experience and interests of both the researcher and the supervisor, this reflexivity is important to minimise researcher bias in interpretation. Harrison (2012) discusses the influence of pre-existing assumptions of the experience of chronic pain and psychological approaches in the process of developing questions for interviews and in the analysis of the data. This identifies potential bias and minimises researcher bias (Robson, 2002). Both studies allow the reader to develop a sense of the threats to the validity of the studies and how these have been minimised.

Data Analysis

Quantitative. Six of the studies used parametric procedures to analyse their data and three gave central limit theorem (de Boer et al., 2015) and normally distributed data (Schütze et al., 2010; Vowles, Sowden & Ashworth, 2014) as their justification. Thorsell Cederberg et al. (2015) used a non-parametric procedure known as bootstrapping due to a violation of normal distribution.

The level of detail presented varied across the studies. The increased detail of a study enhances the ability of the reader to gauge the reliability of the study. The majority of the studies report multiple test analyses and statistics, which increases their reliability and, their increased detail contributes towards the robustness of the study findings.

Change statistics. Five studies investigating change presented change statistics. Given that this review aims to understand the process of change, it is important to identify whether change occurred (Hayes et al., 2006). McCracken and Gutiérrez-Martínez (2011) reported change in all process and outcome measures from pre-treatment to post-treatment ($t(167) \geq 5.17$, all $p < .001$) and pre-treatment to three-month follow up ($t(167) \geq 3.00$, all $p < .005$). The effect sizes were given using Cohen's d , an objective and standardised measure of

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the observed effect that can be used to compare the magnitude of effect across multiple studies (Field, 2009). The overall average effect size was large, ($d = 0.85$) for pre to post-treatment and medium ($d = 0.68$) for pre-treatment to three-month follow up. Vowles and McCracken (2010) report significant improvements across two coping measures from pre to post-treatment $F(1, 117) \geq 42.5$, $p < .001$ and significant improvements in outcome measures all $F_s(1, 117) \geq 32.9$, all p 's $< .001$. Vowles, Fink and Cohen (2014) report a 47.6% reliable change in disability at three-month follow up using reliable change index (RCI) to assess whether change within each participant was significant, based on how reliable the measure is. Vowles, Witkiewitz et al. (2014) reported a significant effect of time on outcomes associated with decreases in disability, depression, pain-related anxiety, medical visits and medication, all $p < .001$, and greater sitting-to-stand repetitions $p < .001$, and 58.9% achieved reliable change in at least one measure. Thorsell Cederberg et al. (2015) include a description of the study's previous findings, which indicate that in comparison to the AR condition, the ACT condition reported increased acceptance, improved satisfaction with life and physical functioning across the treatment.

Correlation. Four studies used correlational analyses; these were presented with the p values and corresponding correlation coefficients, which indicate the strength and direction of the relationships between variables (Field, 2009). Strong correlations were found for mindfulness and acceptance ($r(85) = 0.52$, $p < 0.001$) and acceptance and pain-related catastrophising ($r(82) = -0.42$, $p < 0.001$) (de Boer et al., 2014). McCracken and Gutiérrez-Martínez (2011) found acceptance of pain correlated significantly with pain-intensity. Mindfulness correlated with all variables of the fear-avoidance model (Schütze et al., 2010). Changes at follow up on the psychological flexibility subscale were significantly correlated with seven of the eight outcome variables, with the exception of the depression variable (Vowles and McCracken (2010).

Regression analysis. Regression analysis provided more information about the relationships between variables in five of the studies (de Boer et al. 2014; McCracken & Gutiérrez-Martínez, 2011; Schütze et al., 2010; Thorsell Cederberg et al., 2015; Vowles & McCracken, 2010). The percentage of variance was presented along with the F and p values, which inform the reader

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how much variance can be accounted for in the model, and whether this is significant. The standardised coefficients were presented, these are measured in standard deviation units and are comparable across studies, they indicate the strength and direction of the relationship, and the significance of a predictor variable in their contribution to a given model (Field, 2009). Tables were used to present data, which enables easy comparison of data.

Psychological flexibility explained an additional average 18% variance (range 20% - 34%) in all final models explored by McCracken and Gutiérrez-Martínez (2011) and 9.1% of the variance in comparison to traditional pain management coping strategies as explored by Vowles and McCracken (2010).

The final model of pain–intensity, mindfulness and acceptance ($R^2 = 0.33$, $F(5, 77) = 7.59$, $p < 0.001$), accounted for 33% variance (de Boer et al., 2014). Acceptance was reported as the most significant predictor of pain-catastrophising explaining 12% of the variance, mindfulness was not a significant predictor. In comparison, Schütze et al. (2010) reported mindfulness to be strongly associated with pain catastrophising, accounting for 41% variance. Further analyses demonstrated that low mindfulness predicted pain-catastrophising, explaining 5% of variance when all other variables were controlled for.

Thorsell Cederberg et al. (2015) found acceptance accounted for 17% variance in change from pre-assessment to six-months follow up adjusting for change in pain intensity, acceptance explained an additional 26% of variance in change in physical functioning, and 35% variance in change at twelve-month follow up.

Moderator and mediator analysis. Additional analyses were conducted for four studies (de Boer et al., 2014; Schütze et al., 2010; Thorsell Cederberg et al., 2015; Vowles, Witkiewitz et al., 2014).

This ruled out any moderating effect of acceptance on the relationship between mindfulness and pain-catastrophising (de Boer et al., 2014). Whereas mindfulness was found to moderate the relationship between pain intensity and pain catastrophising in Schütze et al. (2010), the interaction between pain

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intensity and mindfulness significantly added 3% variance to pain catastrophising ($B = -1.99$, $p .05$). Thorsell Cederberg et al. (2015) found indirect mediating effects for acceptance on change in physical functioning, effects improved over time when controlling for pain intensity, suggesting change in functioning associated with acceptance rather than pain intensity.

Vowles, Witkiewitz et al. (2014) found pain acceptance, psychological flexibility, self-compassion, and values difference (difference between importance and success) were significant mediators for outcome. When all mediators were tested acceptance and self-compassion were the strongest mediators.

Factor analysis. Vowles, Sowden and Ashworth, (2014) used exploratory factor analyses (EFA). Factor loadings were presented visually in a table with the primary loadings highlighted. Internal consistency ratings (Cronbach's alpha) for all measures were reported as above 0.77, which is indicative of a reliable measure (value above .7) (Field, 2009). A three factor solution for psychological flexibility was reported (90% CI: 0.02 – 0.11; p “close” fit = 0.23), defusion and acceptance; values and committed action; and self-as-context and moment-to-moment awareness. A three factor solution for patient functioning, (90% CI: 0.001 – 0.07; p “close” fit = 0.76) identified; disability, pain intensity, and emotional distress. A test of overall model identified that higher scores on psychological flexibility were associated with better patient functioning.

Qualitative. Mathias et al. (2014) used IPA to explore individual lived experiences of changes that occur within a PMP. Five themes emerged from the analysis. Theme one captured the importance of validation and social support from the group. Theme two identified a change in relationship with chronic pain. Theme three encapsulated an increase in self-esteem and self-confidence. Theme four identified the parts of the treatment programme that were most helpful. Theme five reflected a shift from experiential avoidance to increased willingness to engage in activity.

Harrison (2012) used Thematic Analysis to provide a rich and detailed account separate from any theory or epistemological position. The justification

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for not using other types of qualitative analysis for this study such as IPA and grounded theory is provided. Three global themes emerged from the analysis. Theme one captured participant expectations for treatment, which included factors contributing to hopelessness, the experience of chronic pain, and the impact of others perceptions of chronic pain. Theme two captured the process of living with pain and the benefits and barriers to ACT based pain management, which included acceptance of pain, struggling with pain, and stigma. The third theme reflected on the experience of participating in a pain management group identifying the positive and negative aspects of this experience (Harrison, 2012).

An in-depth description of the analysis process is provided in both studies. Mathias et al. (2014) describe the analyses as a four stage process and provide a description of this process. Harrison (2012) describes a similar step-by-step process. Both studies use direct quotations from the data set to provide support for the emergent themes and illustrate categorisation. Mathias et al. (2014) explicitly mentions that at the end of the four stage process of analysis, two research supervisors viewed the themes that emerged. This method of cross checking of emergent themes, also known as observer triangulation (Robson, 2002) adds rigour to the study. An audit trail adds to the validity of the findings (Robson, 2002). Harrison (2012) explains the analysis processes with the addition of thematic networks to enhance the process of analysing emergent themes (Harrison, 2012; Attride-Stirling, 2001). Observer triangulation was also used with an independent assessor (Harrison, 2012).

Both of these qualitative studies give an in-depth description of the analysis used and map how the themes emerged and were analysed. Thus the studies give valuable and meaningful insight into ACT processes (Attride-Stirling, 2001).

Generalisability

Four studies were cautious of the generalisability of their findings to participants with different demographic characteristics to that of the study population (de Boer et al., 2014; Mathias et al., 2014; Vowles, Sowden &

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Ashworth, 2014; Vowles, Witkiewitz et al., 2014). Two studies compared their study sample to other chronic pain study samples (de Boer et al., 2014; Schütze et al., 2010) this informs the reader of how comparative the sample is, adding to the reliability of the study. However, de Boer et al. (2014) acknowledged that their sample varied in location, duration and cause of pain and this may not allow similar findings to be replicated in individuals with different pain complaints.

Attrition. High attrition negatively influences the generalisability of a study (Gustavson, Von Soest, Karevold, & Røysamb, 2012). All of the studies comment on attrition. Five studies analysed the influence of attrition on their findings (McCracken & Gutiérrez-Martínez, 2011; Schütze et al., 2010; Vowles & McCracken, 2010; Vowles, Sowden & Ashworth, 2014; Vowles, Witkiewitz et al., 2014). These checks add to the robustness and reliability of the study (Field, 2009). Thorsell Cederberg et al. (2015) acknowledge that the high attrition in their study reduces the power of the study and consequently the overall findings, which highlights the need for more research into ACT processes.

Reliability

Intervention. Treatment integrity is about how the treatment or intervention is delivered consistently and in the manner in which it was intended (Hagermoser Sanetti & Kratochwill, 2014). Seven studies analysed data from an active intervention, four explicitly discussed treatment or intervention integrity and how this was upheld, including information about the treatment approach (McCracken & Gutiérrez-Martínez, 2011; Vowles, Fink & Cohen, 2014; Vowles & McCracken, 2010; Vowles, Witkiewitz et al., 2014). The other three whilst they do not discuss integrity, outline the intervention approach.

Self-report questionnaires. Self-report questionnaires can be open to responder bias, such as over reporting or under reporting of problems (Robson, 2002) and capturing psychological flexibility through self-report questionnaires is complex (McCracken & Gutiérrez-Martínez, 2011). Four studies used additional observational and / or functional measures (e.g. sit-to-stand, distance walked, and number of healthcare visits) to improve the strengths of their study

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(McCracken & Gutiérrez-Martínez, 2011; Vowles & McCracken, 2010; Vowles, Sowden & Ashworth, 2014; Vowles, Witkiewitz et al., 2014). Vowles, Fink and Cohen (2014) collected additional data through within-treatment diaries. The diary items were based on existing validated measures (Chronic Pain Acceptance Questionnaire, CPAQ, Brief Pain Response Inventory, BPRI, Psychological Inflexibility in Pains Scale, Chronic Pain Values Inventory, CPVI) and were shown to be valid and reliable (pain intensity items; CPAQ $r=-0.25$ and BPRI $r=-0.30$ $p<0.02$ and engagement in valued activities; CPVI $r=0.37$ and CPAQ $r=0.37$ $p<0.001$). The reliability and validity of measures adds to the trustworthiness of the study, assuring the reader that the measures are measuring what they set out to and that they consistently measure this data across studies. De Boer et al. (2014) acknowledge the limitations of measuring the complexities of mindfulness using the Mindful Attention Awareness Scale (MAAS), which may only be capable of measuring the awareness element of mindfulness rather than capturing all elements.

Summary of critical appraisal

A number of limitations have been identified in the studies included in the review, which highlight concerns around the generalisability and reliability of the findings. The main concerns are the lack of consistent categorisation of variables throughout the studies, lack of global improvement measures for those assessing efficacy of intervention and the complexities of measuring process changes using questionnaire measures. Future research should include data collected through other means, which capture the personal value and importance of treatment, and where self-report measures are necessary, these should be clearly categorised.

Discussion

Past research has shown that ACT can deliver effective outcomes for chronic pain (McCracken & Vowles, 2014). The research in the studies reviewed offer support for ACT improving functioning and quality of life in individuals with chronic pain. Some studies have attempted to find evidence to support the processes of ACT, these have mainly used quantitative

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methodology and have used questionnaire data to show outcomes related to the processes of ACT. The majority of this research offers support for the processes correlating well with wellbeing and improved functioning.

Many of the studies in this review indicated that acceptance of chronic pain is an essential mechanism in the process of change for individuals with chronic pain. Acceptance has long been a concept associated with the treatment of chronic pain (la Cour, 2012) and the strength of evidence was evident in this review with six of the ten review papers offering support for this process. From this review it seems that increases in acceptance of pain are associated with improvement in emotional distress and overall disability (Mathias et al., 2014; Vowles, Fink & Cohen, 2014; Vowles, Witkiewitz et al., 2014). Acceptance had the most strength of evidence within this review, followed by values and contacting the present moment. Self-as-context, defusion and committed action had minimal support within this review with only one or two papers finding support.

Increased engagement in values-based activity reduced disability (Vowles, Fink & Cohen, 2014) and improved well-being (McCracken and Gutiérrez-Martínez, 2011). Increased mindfulness was associated with an increase in an individual's ability to focus on the present moment and was associated strongly with improved outcome scores (McCracken & Gutiérrez-Martínez, 2011). An individual's ability to remain in the present moment was influential in the level of pain catastrophising people would engage in (Schütze et al., 2010).

Self-as-context was positively associated with change in perception of self and pain through the pacing and engagement in previously avoided activity (Mathias et al., 2014). Defusion, whilst only supported by one paper, was suggested to support the process of change through helping the individual to distance themselves from pain resulting in less pain interference (Mathias et al., 2014).

There were few measures capturing committed action as an active process. This could be explained through the three factor solution shown by Vowles, Sowden and Ashworth (2014) which suggests that the six core

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processes are three pairs of interactions. The three factor solution highlights strong correlations between the processes and links values and committed action together, suggesting that committed action may be best captured in the values-based action measures.

Other processes that were not identified in the quantitative research, but which were explored in the qualitative research and viewed as significant in the process of change were social support, understanding and normalisation (Harrison, 2012; Mathias et al., 2014). Beliefs about pain, in particular, pain catastrophising were explored in quantitative research and found to be significantly influenced by present moment processes (Schütze et al., 2010), however, there were few measures capturing the influence of social support, and beliefs about pain explicitly reported within the studies.

Conclusion

A key issue remaining within the research field associated with chronic pain and ACT is to what extent are the six core processes involved in sustaining the gains made during therapy. The literature within has focused on acceptance and values guided action as key active processes, but the question still remains around what other processes have made important contributions to outcomes. The qualitative studies in this review add evidence of the processes that are missed through the quantitative studies, for example defusion and committed action; these processes are subsumed within other core processes in the quantitative studies. A proposed approach to expanding further research into the active processes of change is Q methodology; this approach could provide meaningful information about the idiosyncratic and collective value of particular ACT processes from the perspective of people living with chronic pain conditions.

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Appendices

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Appendix A: Summary table of articles included in review

Note: Summary table of articles included in the review.

Author	Date	Title
de Boer, M.J., Steinhagen, H.E., Versteegen, G.J., Struys, M.M.R.F., & Sanderman, R.	2014	Mindfulness, Acceptance and Catastrophizing in Chronic Pain
Harrison, M.	2012	A qualitative service evaluation of the usefulness of a group based Acceptance & Commitment Therapy programme for Chronic Pain
Mathias, B., Parry-Jones, B., & Huws, J.C.	2014	Individual experiences of an acceptance-based pain management programme: An interpretative phenomenological analysis
McCracken, L. M., & Gutiérrez-Martínez, O.	2011	Processes of change in psychological flexibility in an interdisciplinary group-based treatment for chronic pain based on acceptance and commitment therapy.
Schütze, R., Rees, C., Preece, M., & Schütze, M.	2010	Low Mindfulness Predicts Pain Catastrophizing in a Fear-Avoidance Model of Chronic Pain
Thorsell Cederberg, J., Cernvall, M., Dahl, J., von Essen, L., & Ljungman, G.	2015	Acceptance as a change in acceptance and commitment therapy for persons with chronic pain.
Vowles, K. E., & McCracken, L. M	2010	Comparing the role of psychological flexibility and traditional pain management coping strategies in chronic pain treatment outcomes.
Vowles, K.E., Fink, B.C., & Cohen, L.L.	2014	Acceptance and commitment therapy for chronic pain: a diary study of treatment process in relation to reliable change in disability
Vowles, K. E., Witkiewitz, K., Sowden, G., & Ashworth, J.	2014	Acceptance and commitment therapy for chronic pain: Evidence of mediation and clinically significant change following an abbreviated interdisciplinary program of rehabilitation.
Vowles, K.E., Sowden, G., & Ashworth, J.	2014	A comprehensive examination of the model underlying acceptance and commitment therapy for chronic pain.

Appendix B: Summary table including title and author, aims, samples, key findings, strengths and limitations of the studies.

Author and date	Title	Aims	Sample	Design	Main findings	Strengths	Weaknesses
de Boer, M.J., Steinhagen, H.E., Versteegen, G.J., Struys, M.M.R.F., & Sanderman, R. (2014)	Mindfulness, Acceptance and Catastrophizing in Chronic Pain	Examine the influence of mindfulness and general psychological acceptance on pain-related catastrophizing in chronic pain	89 chronic pain patients referred for treatment.	Cross sectional design.	General psychological acceptance is a strong predictor of pain-related catastrophizing.	sample representative of chronic pain population - high pain severity ratings, included comparison of scores to normative samples from previous studies, clear aims	Sample were treatment seeking, self-report measures open to biases, reliability and validity of MAAS is questionable - may not capture all aspects of mindfulness.

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Author and date	Title	Aims	Sample	Design	Main findings	Strengths	Weaknesses
Harrison, M. (2012)	A qualitative service evaluation of the usefulness of a group based Acceptance & Commitment Therapy programme for Chronic Pain	Gain an understanding of the experience of attending an ACT based programme for chronic pain from the clients perspective	Purposive sample of 12	Thematic analysis	Three global themes: Pre-programme expectations, on-going process of living with chronic pain, experiences of the group	Rich, detail separate to theory or epistemological position, rigorous - gave step by step process, reflexivity, observer triangulation	potential bias due to link with programme and researcher, participants did not attend all 8 sessions of the programme
Mathias, B., Parry-Jones, B., & Huws, J.C. (2014)	Individual experiences of an acceptance-based pain management programme: An interpretative phenomenological analysis	Add to previous quantitative research by qualitatively exploring individual experiences of attending an acceptance based PMP and identify key aspects that participants felt facilitated change	6 participants accessing and ACT based PMP	IPA	5 main themes: I'm not alone, others understand my pain - Freedom from pain taking over - A new self, one with pain - Parts of the programme that facilitated change - Exercise is possible.	reflexivity and recruitment strategy appropriate, appears rigorous	Potential bias with links to programme. Small sample size, limited age range and limited culture and diversity.

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Author and date	Title	Aims	Sample	Design	Main findings	Strengths	Weaknesses
McCracken, L. M., & Gutiérrez-Martínez, O. (2011)	Processes of change in psychological flexibility in an interdisciplinary group-based treatment for chronic pain based on acceptance and commitment therapy.	Continue to build on efficacy for ACT, focus on acceptance of pain, general psychological acceptance, mindfulness and values-based action	168 patients with chronic pain for 3 months + accessing ACT based treatment for chronic pain.	Within participants longitudinal.	Significant reduction in depression, pain related anxiety, physical and psychosocial disability, medical visits and pain intensity in comparison to start of treatment. Significant increases in each process of psychological flexibility	Broad range of measures used. Missing data occurred in fewer than 5.4% of cases. Clear aims, good sample size.	Use of self-report measures. No randomisation or control group for comparison so can't state that changes were due to intervention.

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Author and date	Title	Aims	Sample	Design / Measures	Main findings	Strengths	Weaknesses
Schütze, R., Rees, C., Preece, M., & Schütze, M. (2010)	Low Mindfulness Predicts Pain Catastrophizing in a Fear-Avoidance Model of Chronic Pain	Explore role of mindfulness in the context of the fear-avoidance model. Variables; pain intensity, negative affect, pain catastrophizing, pain-related fear, pain hypervigilance, and functional disability.	104 chronic pain patients accessing outpatient services	Cross sectional design.	Mindfulness significantly negatively predicts each of the variables. Hierarchical multiple regression analysis showed that mindfulness uniquely predicts pain catastrophizing when other variables are controlled, and moderates the relationship between pain intensity and pain catastrophizing.	clear aims, recruitment strategy, clear step by step analysis of results	cross sectional design, self-report measures open to report bias,

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Author and date	Title	Aims	Sample	Design	Main findings	Strengths	Weaknesses
Thorsell Cederberg, J., Cernvall, M., Dahl, J., von Essen, L., & Ljungman, G. (2015)	Acceptance as a change in acceptance and commitment therapy for persons with chronic pain.	Investigate acceptance as a mediator in ACT for chronic pain. Does acceptance mediate the effect of treatment on satisfaction with life and physical functioning	pre - 6 month follow up n=53, pre - 12 month follow up n=32	RCT: ACT or Applied Relaxation (AR). Two change scores: pre - 6 month and pre - 12month	Acceptance mediated effect of treatment on change in physical functioning pre-assessment to 6 months follow up. A trend was shown pre-assessment to 12 month follow-up. No indirect effect of treatment via acceptance was found for change in satisfaction with life.	Study adds to the small but growing body of research investigating the indirect effects of ACT and the results tentatively support the role of acceptance as a mediating variable in the treatment of chronic pain.	Uses data from another study. Doesn't fully explain the randomisation procedure for allocation to conditions. No power calculations & low power overall.
Vowles, K.E., Fink, B.C., & Cohen, L.L. (2014)	Acceptance and commitment therapy for chronic pain: a diary study of treatment process in relation to reliable change in disability	Examine hypothesis: pain control decreases and values activity increases over course of treatment. How patterns of change in weekly diary relate to outcome.	21 patients accessing an ACT based pain management programme	Within treatment longitudinal design.	Support for efficacy of ACT model, at follow up 47.6% evidenced reliable disability reduction.	Specifically explores engagement and struggle for pain control. First study to use this focus	Doesn't assess full treatment package. Limitations of an observational study, no comparison

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Author and date	Title	Aims	Sample	Design / Measures	Main findings	Strengths	Weaknesses
Vowles, K. E., & McCracken, L. M (2010)	Comparing the role of psychological flexibility and traditional pain management coping strategies in chronic pain treatment outcomes.	How changes in traditional coping compare to changes in psychological flexibility in improvements in functioning over the course of ACT treatment	114 chronic pain patients	Within participants longitudinal design.	Changes in psychological flexibility were consistently and significantly related to treatment improvements.	all participant data accounted for at end of study. Clear aims. Had ethical approval to complete secondary analysis on the data. Treatment received specifically targets the areas being measured.	Self-report measures. Uses data from another study. Data collected 2005 - 2006. not a full data set - only 61% of the data set could be used.
Vowles, K.E., Sowden, G., & Ashworth, J. (2014)	A comprehensive examination of the model underlying acceptance and commitment therapy for chronic pain.	A comprehensive examination of ACT model	274 individuals with chronic pain presenting at assessment appointment	Cross-sectional design.	Three factor solution for psychological flexibility and patient functioning	missing data accounted for, clear aims and recruitment strategy, step by step analytic process	data collected at a single point, no intervention or treatment, self-report measures, missing data.

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Author and date	Title	Aims	Sample	Design	Main findings	Strengths	Weaknesses
Vowles, K. E., Witkiewitz, K., Sowden, G., & Ashworth, J.	Acceptance and commitment therapy for chronic pain: Evidence of mediation and clinically significant change following an abbreviated interdisciplinary program of rehabilitation.	Evaluate the reliability and clinical significance of change following an abbreviated pain management programme	78 chronic pain patients	Within subjects longitudinal design.	Changes in measures of psychological flexibility significantly mediated changes in disability, depression, pain-related anxiety, number of medical visits, and the number of classes of prescribed analgesics.	clear aims, recruitment strategy and accounted for missing data. Reports step by step analytic process.	no comparison group, self-report measures

Note: Summary of author, aims, samples, key findings, strengths and limitations of the studies.

Appendix C: Table of measures used within the reviewed studies

Study	Core domains							Comments
	Pain	Physical functioning	Emotional functioning	Global improvement	Symptoms and adverse events	Disposition	Other measure	
de Boer et al (2014)	Numerical Rating Scale (NRS)	X	X	X	X	X	Pain Catastrophising Scale (PCS)	Cross-sectional study not assessing efficacy
McCracken & Gutierrez (2011)	NRS	X	British Columbia Major Depression Inventory (BCMDI) Pain Anxiety Symptoms Scale (PASS-20)	X	Sickness Impact Profile (SIP) Medical visits	Compared differences between follow up and DNA	Chronic Pain Acceptance Questionnaire (CPAQ), Acceptance and Action Questionnaire (AAQ-II) Mindful Attention Awareness Scale (MAAS) Chronic Pain Values Inventory (CPVI)	No global improvement scale or physical functioning measure

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Study	Core domains							Comment
	Pain	Physical functioning	Emotional functioning	Global improvement	Symptoms and adverse events	Disposition	Other measure	
Schütze et al. (2010)	X	X	The Positive and Negative Affect Schedule (PANAS), PCS, Tampa Scale for Kinesiophobia (TSK), (PVAQ)	X	Brief Pain Inventory (BPI),	X	The Five Factor Mindfulness Questionnaire (FFMQ), MAAS, Pain Vigilance and Awareness	No global improvement scale, pain scale or disposition measure
Thorsell Cederberg et al (2015)	NRS	Örebro Musculoskeletal Pain Questionnaire (ÖMPQ)	Hospital and Anxiety Depression Scale (HADS)	X	X	No comparison of differences in those that completed and withdrew – groups do remain similar sized though	CPAQ, Satisfaction with Life Scale (SWLS)	No global improvement scale or symptoms / adverse events measure
Vowles, Fink & Cohen (2014)	NRS	X	Diary items	X	SIP	No drop out – comparisons calculated for those that did not improve	X	No global improvement, or physical functioning measure

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Study	Core domains							Comments
	Pain	Physical functioning	Emotional functioning	Global improvement	Symptoms and adverse events	Disposition	Other measure	
Vowles & McCracken (2010)	NRS	Sit-to-stand and walking distance	BCMDI, PASS-20,	X	SIP	Calculated differences between completers and DNA	Brief Pain Coping Inventory (BPCI-2)	No measure of global improvement
Vowles, Sowden & Ashworth (2014)	NRS	X	X	X	Pain-related healthcare use, prescribed classes of analgesics, SIP	X	BPCI-2, CPAQ, CPVI, Self Compassion Scale (SCS)	Cross sectional study – not addressing efficacy – no measure of emotional functioning
Vowles, Witkiewitz et al (2014)	NRS	Sit-to-stand and walking distance	BCMDI, PASS,	X	Pain-related health visits, SIP	Attrition analysis	CPAQ, CPVI, BPCI-2, SCS	No measure of global improvement

Note: Table of measures used within studies

Paper 1: Journal submission guidelines

Journal of Contextual Behavioral Science



ISSN: 2212-1447

Types of article

All manuscripts must clearly and explicitly be of relevance to CBS. You may find the JCBS article "[Contextual Behavioral Science: creating a science more adequate to the challenge of the human condition](#)" helpful in assessing whether your manuscript is likely to be of interest to readers of this journal.

Articles should fall into one of seven categories:

1. Empirical research (up to 6000 words)
2. Brief empirical reports (up to 3000 words)
3. Review articles (up to 10,000 words)
4. Conceptual articles (up to 6000 words)
5. In practice (up to 3000 words)
6. Practical innovations (up to 3000 words)
7. Professional interest briefs (up to 3000 words)

Word limits exclude references, tables and figures but include the abstract

1. Empirical research. JCBS welcomes manuscripts across a breadth of domains from basic behavioral science to clinical trials. Research concerning the measurement and testing of process of change is particularly welcome. Potential methodologies include but are not limited to: randomized controlled trials, single case experimental designs, cross-sectional and prospective cohort studies, mixed-methods designs, small scale analog studies. Papers reporting null findings are also welcome if their methodology is sound and their power sufficient. Authors of such papers will need to emphasize the implications of their findings for future research and practice.

2. Brief empirical reports. Manuscripts in this section may report preliminary, provocative or replicated results. Empirically sound methodology and adequate power remain important considerations.

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4. Conceptual articles. Manuscripts in this section should address conceptual or theoretical issues relevant to CBS. This may include papers that discuss relevant philosophical assumptions

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and traditions, or conceptual papers which explore aspects of or inconsistencies in contextual behavioral theory and science.

5. In practice. Manuscripts in this section are designed to make CBS useful to practitioners from a wide variety of areas. Manuscripts must be written in an accessible style and should be easily understood by practitioners who are not experts in research or basic behavioral science. Manuscripts should provide both clear insights for new practitioners as well as stating the questions that remain to be answered by future research.

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Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

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A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

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Results should be clear and concise.

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This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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- Indicate clearly whether or not color or black-and-white in print is required.

For any further information please visit our [Support Center](#).

Chapter Two: Empirical Paper

Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain

Word count: 8,016

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Abstract

Chronic pain is a long-term health condition that can result in devastating effects to the individual and significant healthcare costs to society. Societal beliefs have contributed to a view that pain must be reduced and many pain sufferers have restricted their lives to avoid feeling / increasing pain, which can result in psychological difficulties. Group based Pain Management Programmes (PMP) using Acceptance and Commitment Therapy (ACT) approaches delivered by interdisciplinary teams have been found to be effective in improving quality of life and functioning. An understanding as to which aspects of the group are valued is central to providing effective therapeutic input. Previous research exploring the process of change has largely been based on self-report questionnaires which are open to respondent biases, confounding variables and difficulties tracking correlates of change. Qualitative approaches have captured individual narratives of group based pain management which have been helpful in giving voice to chronic pain service users. Q methodology was used to explore the active processes of change and understand the value of group based pain management from the perspective of chronic pain service users. Ten participants completed Q-sorts in which they ranked a range of statements about change processes, which had been developed by clinicians and reviewed by a service user. Data was analysed using PQmethod software. Three factors were identified; factor one represented the value of being believed, accepted and understood, factor two represented the value of self-compassion and empowerment and factor three; a bipolar factor, represented the importance of clarity and changing the relationship with pain. The six core processes of ACT were represented in the factors, specifically, self-as-context, values, and acceptance were found to be relevant to therapeutic change. The clinical implications for the research are outlined.

Key words: ACT, chronic pain, Q methodology

Introduction

Chronic pain is a long-term health condition which impacts on individual wellbeing, and social functioning (Vowles, Witkiewitz, Sowden & Ashworth, 2014). Defined when pain lasts longer than the normal healing time of an injury or illness, which is typically three months (Rowbotham & Collett, 2013), it is “a *common complex sensory, emotional, cognitive and behavioural long-term health condition which occurs when pain cannot be resolved by available medical or other treatments*” (The British Pain Society, 2013, p10).

Theories, models and approaches to chronic pain have attempted to explain and treat the causes and experiences of pain in different ways which have resulted in the recognition of cognitive, emotional and sensory influences of the pain experience that have formed the complex physiological and psychological approaches used today. Chronic pain is associated with physical and psychological distress, which is often exacerbated by societal beliefs that pain must and should be reduced in order to live a meaningful life (McCracken, 2005). The nature of chronic pain (a long-term health condition that cannot be cured) means pain reduction is often a futile avenue to pursue. Individuals with chronic pain spend a great deal of effort and time avoiding, fearing or attempting to control the pain (Yang & McCracken, 2014). The solution people use to solve the problem often becomes the problem, leading to struggles and suffering (Hayes, 2004). Control strategies to reduce pain tend to form patterns of avoidance behaviour, which inadvertently increase pain and distress, and limits enjoyment and quality of life (McCracken, 2005).

Psychological approaches such as Acceptance and Commitment Therapy (ACT) have been recognised as effective approaches to the management of pain (Roditi & Robinson, 2011). ACT is a third wave contextual cognitive behavioural therapy (McCracken & Vowles, 2014). The focus of ACT is to enhance activity and functioning through increased psychological flexibility, enhancing quality of life and functioning in a sustainable and meaningful way (Harris, 2006). Psychological flexibility is defined as the capacity to accept or be open to psychological experiences, to be aware and present focused, to choose one’s own directions according to one’s values, and take action dependent upon the situation. The ACT literature shows that the six core processes of ACT: acceptance, values, self as context, present moment, cognitive defusion and

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committed action, can support an individual to achieve psychological flexibility (Harris, 2006).

Reviews of the existing literature have found increasing support for psychological flexibility as a mechanism of change. Increased psychological flexibility was associated with better functioning and improved coping (McCracken & Gutiérrez-Martínez, 2011; Vowles & McCracken, 2010; Vowles, Sowden & Ashworth, 2014; Vowles, Witkiewitz et al., 2014). Support has also been found for acceptance of pain, engagement in values based activity, cognitive defusion, self-as-context and present moment in improving outcomes for individuals with chronic pain. Being part of a group was significant in the process of change, particularly due to social support, normalisation and validation from peers. High levels of psychological acceptance (acceptance of unpleasant thoughts, feelings, sensations) were associated with less pain-catastrophising, and was seen as a protective mechanism in recovery, reducing the likeliness of adopting fear responses to pain (de Boer et al., 2014).

Previous research into ACT based approaches, demonstrates that the majority of patients improve post-treatment (Hann & McCracken, 2014). To the author's knowledge, there is a limited amount of qualitative research capturing the individual narratives of participant experiences of group-based pain management programmes. Two studies were found to qualitatively identify individual perspectives of the key influences on therapeutic change (Harrison, 2012; Mathias Parry-Jones & Huws, 2014).

Aims of the Study

The aims of the current study are to use Q methodology to further define the active processes involved in the process of change following group based ACT for chronic pain. By giving voice to chronic pain service users and understanding from their perspective the aspects of ACT that had been helpful in their therapy experience, it was hoped that factors and mechanisms for improving quality of life with pain could be identified. Findings from this study will add to the existing knowledge base about the therapeutic elements of ACT that influence outcomes for people suffering from chronic pain, and will enable intervention to be tailored to maximise therapeutic change.

Research Question

- Are there similarities and differences in service user views about what is helpful from group based Acceptance and Commitment Therapy for chronic pain?

Reflexivity

Reflexivity is important to this research and the impact of the researcher's influence must be taken into consideration during data analysis. The researcher is a white, British female in her early 30's completing a doctoral thesis as part of the academic requirements for the qualification of doctorate in clinical psychology. The researcher has a prior interest in and experience of working with people suffering from chronic pain within a community chronic pain team which uses psychological approaches for chronic pain, delivered on an individual and group basis. The researcher's interest in the area could potentially bias the results. The researcher's experience of the positive impact of ACT based approaches for chronic pain has influenced their view that this approach can be effective. These ideas and views were discussed in supervision to minimise potential biases.

Method

Design

A cross sectional, Q methodological design was used. William Stephenson first introduced Q methodology in 1935 (Watts & Stenner, 2012). He aimed to bring a scientific structure to the study of subjectivity at a time when research was largely objectively measured (Coogan & Herrington, 2011). Q methodology allows the researcher to look at individual perspectives in relation to a specific topic or subject, in comparison with other perspectives (Coogan & Herrington, 2011). This explores the similarities and differences between participants on a particular subject matter, in this case ACT and chronic pain. Data is compared and analysed alongside other participant's data, drawing out common characteristics that participants have ranked together. These factors are interpreted in terms of their characteristics and the qualitative

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data collected from a post-sort interview with participants about what influenced their decisions. Key differences between the participant's individual and collective views are then examined which ensures a rich and detailed analysis of how viewpoints differ. This allows each participant's voice to be heard and included in the overall analyses and conclusion. Additionally, the method enables the minority voice (or voice of difference) to be identified and given value (Watts & Stenner, 2012).

Through the process of Q methodology, participants are asked what is meaningful and significant (in their opinion) from a range of statements (called a Q-sort), they are asked to rank these statements on a normal distribution curve from most agree to most disagree (Coogan & Herrington, 2011). In doing so, each participant essentially becomes a variable to be measured and inputted into factor analysis (Watts & Stenner, 2012). Q method applies a correlation statistic to the rows in the distribution curve making it possible to identify how much individuals agree or disagree on a particular range of statements. This method allows the researcher to explore the contrasts and comparisons between participants and within one individual's viewpoint (Watts & Stenner, 2012).

Factor analysis follows the ranking of statements and produces a correlation matrix, which reduces viewpoints into a small number of factors. The factor analysis looks for groups of individuals that have ranked statements in a similar way. Each factor reveals a group of people that share a similar viewpoint (Watts & Stenner, 2012).

Setting

The study took place in an adult community chronic pain management service, a tertiary care service in the West Midlands, delivered within the National Health Service. Referrals are received from GPs and secondary care services.

Ethical Approval

Ethical approval was attained from Keele University (Appendix A) and from NHS Greater Manchester East (Appendix B). Research and Development

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(R&D) approvals were attained from Staffordshire and Stoke on Trent Partnership NHS Trust (Appendix C). Subsequent amendments received approval from the appropriate bodies (Appendix D).

Pain Management Programme (PMP)

The PMP was delivered by an interdisciplinary team, including clinical psychology, anaesthesiology, physical therapy and nursing. Individuals attend on two consecutive days each week for four weeks. Each day consists of 6.5 hours of intervention, which included physical activity (in the hospital gym or activity in session), psychology sessions (covering acceptance, willingness, defusion and present moment awareness exercises), values and goals sessions (values-clarification and values consistent activity planning), and either health / medical education (nature of pain) or skills training (healthy living, effective communication).

Q-set design and content

Clinicians and service users from the PMP were invited to take part in focus groups to develop a range of statements (Q-set) for inclusion in the subsequent Q-sort.

Potential participants for the clinician focus group were identified and contacted via email (Appendix E) by the research clinical supervisor. The email invited participants to opt in to the focus group via an email to the researcher. Those that opted in were sent the full information pack for the project to help them to make an informed choice about their participation in the research (Appendix F).

Service users of the PMP were identified by clinicians within the pain community treatment team and sent invitation letters to opt in (Appendix G). Participants were given invitation letters during a six month follow up meeting from the pain management programme and invited to participate in a focus group. Following opt in; a full information pack (Appendix H) was sent to the interested parties.

Table 1

Participant demographics

Designation	Length of time working in chronic pain services / years' experience living with chronic pain
Consultant Pain Medicine	14 years
Consultant Clinical Psychologist	10 years
Clinical Psychologist	1 year
Consultant Physiotherapist	18 years
Specialist Pain Physiotherapist	3 years
Service User	20 years

Note: Demographics for participants in stage one of data collection.

Q-set. Materials including statements for the Q-sort were developed from a range of sources including the ACT and chronic pain literature, conversations with ACT clinicians and individuals accessing the chronic pain service. A group of clinicians with experience of applying ACT approaches to chronic pain took part in a focus group to develop a range of statements relating to group based ACT for chronic pain. Five clinicians (clinical psychologists, physiotherapists and a pain medicine consultant) were asked to discuss aspects of the pain management programme, which they felt facilitated change, how this was observed, and their perceptions of service user's experiences of the program (see Appendix L for focus group schedule). They gave their opinion on how service users might talk about the PMP and what they may attribute as being responsible for the process of change. The focus group was transcribed and analysed alongside the researcher's own knowledge of ACT and ACT literature. 48 statements were developed (Appendix M) that reflected nine themes;

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1. Acceptance; acceptance of pain and dropping the struggle with pain
2. Values; awareness of what is important, who I want to be, having a direction
3. Self as context; not being defined by pain, or difficult thoughts and feelings
4. Present moment; being aware and present focused
5. Cognitive defusion; aware of and changing the influence of thoughts and feelings
6. Committed action; taking action, doing things differently
7. Self- compassion; kindness towards self
8. Group process; belonging, normalisation and socialisation
9. Clarity; validation and understanding

One service user gave feedback on the statements to ensure that the statements reflected the views of service users with chronic pain and reflected the aspects of the pain management programme that service users had experienced. This allowed the statements to be accessible and include key words and terminology that service users could relate to. The statements were deliberately kept short and in simple sentences to aid accessibility.

To enhance rigour, clinicians from the focus group, research and clinical supervisors and academic peers also reviewed statements.

Distribution Grid. A distribution grid, incorporating a scale was constructed to aid participants ranking of the Q set statements (figure one). The grid was presented on A1 white card. Boxes outlined in black indicated where statement cards should be placed and these were arranged following a standard distribution pattern. Each statement was numbered and the researcher recorded the number of the statements on an A4 record sheet with a smaller scaled distribution grid. The scale ranged from most unhelpful (-5) to 0 to most helpful (+5). Participants were asked to rate the statements in accordance with the pre fixed statement “I found the following aspects of the programme.”

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A separate consent sheet (Appendix K) was signed to cover consent to make, retain and possibly publish extracts from recordings i.e. quotes or statements.

Sampling

The following inclusion / exclusion criteria were used to identify appropriate participants:

Inclusion:

- I. A clinician working within the field of chronic pain or
- II. A service user that had recently completed the pain management programme.

Exclusion:

- III. Participants were excluded if they did not speak English as their first language.

Six participants were involved in the first stage of data collection, which was aimed at developing a range of statements for the Q-sort. Participant demographics are illustrated in table one.

Ten participants participated in the second stage of data collection; two male and eight female, with an age range of 33 to 67 years old. The duration of chronic pain ranged from 18 months to 35 years. Six participants were recruited immediately post-treatment, two at three-month follow up and two at six-month follow up. One service user was involved in both the development of the statements and the Q-sort.

Q-sort data collection

Participants were introduced to the materials and the task. They were asked to place each of the 48 statements into one of three piles, labelled 'helpful,' 'neutral,' and 'unhelpful'. Those in the helpful category were sorted onto the Q-grid first followed by unhelpful and neutral categories respectively. Several strategies were used to enable participants to identify their most helpful aspect of the programme, dependent upon the number of positive statements

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they had chosen. This included lining all statements out and either pushing positive statements to the right or pushing out the top 20 positive statements before looking to identify the one statement that the participant felt most positive about (+5). Participants then ranked the next two statements (+4) and so on. The negative items were sorted onto the Q-grid ranking the most unhelpful (-5), then the next two statements at (-4) and so on (Watts & Stenner, 2012).

The sorting process was audio recorded to capture qualitative data for later factor interpretation, and participants were asked post sort interview questions (Appendix O) to gather further information regarding their viewpoints.

Ethical Considerations

Avoidance of harm. The researcher approached data collection in a sensitive manner and was alert to any signs of distress, and provided contact details for sources of support in the information sheets (Appendix N). Although this was not necessary, the researcher was able to liaise with the clinicians in the pain community treatment team if there were any concerns regarding the participants' emotional wellbeing.

Data analysis

Using PQ method, a statistical program used to perform statistical analysis (Schmolck, 2015), factors within the data are identified through correlation and data rotation, and this gives information on the similarities and differences in viewpoints amongst the p-set (van Exel, 2005). Following this, for each factor identified, specific Q-sorts are identified that strongly correlate with that one factor. The significance level is then established for each of these. This is followed by interpretation of each factor.

The 48 Q set statements and 10 Q-sorts were entered into, and analysed using PQ Method. Guidance on this process was sought from Watts and Stenner (2012).

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Correlation Matrix between Q-sorts

The nature and degree of association between the Q-sorts was determined using a correlation matrix (table two), which illustrated the scope of agreement in participants ranking of statements (Field, 2009).

Table 2

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1	100	0.28	0.14	0.20	0.9	0.29	0.12	0.2	0.13	0.22
2		100	0.13	0.11	0.19	0.15	0.35	0.29	0.23	0.25
3			100	0.2	-0.20	0.1	0.8	0.10	0.9	0.19
4				100	0.22	0.33	0.6	0.6	0.4	-0.4
5					100	0.4	0.21	-0.17	0.8	0.26
6						100	-0.22	0.2	0.2	-0.8
7							100	0.14	-0.2	0.36
8								100	-0.2	0.21
9									100	0.12
10										100

Note: A significant correlation value was calculated as ≥ 0.28 using the Brown (1980) formula at significance level $p < 0.05$: $1.96 \times (1/\sqrt{\text{No. of items in Q set}})$.

Table 2 shows that seven of the participant's views correlated significantly with another, suggesting that their views were similar. Only Q-sorts 3, 5 and 9 did not significantly correlate with any other, suggesting that their

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views were different. A significance level of 0.28 was calculated using guidance from Brown (1980).

Factor Analysis

Factor analysis allows the researcher to compare and contrast emerging themes from the data set and reveal patterns of viewpoints amongst the group. The data collected alongside the Q-sort was then used to add to the interpretation of the emerging factors within the data set. Principal Component Analysis (PCA) was used initially to explore the number of possible factors within the data set. Eight possible factors were found, and the eigenvalues for each factor were calculated (table three).

Table 3

Factors and Eigenvalues

Factor	Eigenvalue
1	2.1834
2	1.5533
3	1.3406
4	1.0694
5	0.9228
6	0.7864
7	0.7125
8	0.6146

Note: Eigenvalues related to the eight factors initially identified from Principal Components Analysis (PCA)

Eigenvalues are used in Q methodology to identify the number of factors to extract from the data set (Watts & Stenner, 2012). The Kaiser-Guttman

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criterion (Guttman, 1954; Kaiser, 1960, 1970) suggests keeping only the factors that have an eigenvalue of above one. Eigenvalues above one represent a substantial amount of variation explained by that factor (Field, 2009). The eigenvalues in this study suggest retaining four factors. A technique used to determine whether an eigenvalue is representative of a meaningful factor is Cattell's scree test (Field, 2009). Cattell's scree plot was used to identify the appropriate number of factors that should be extracted from the data.

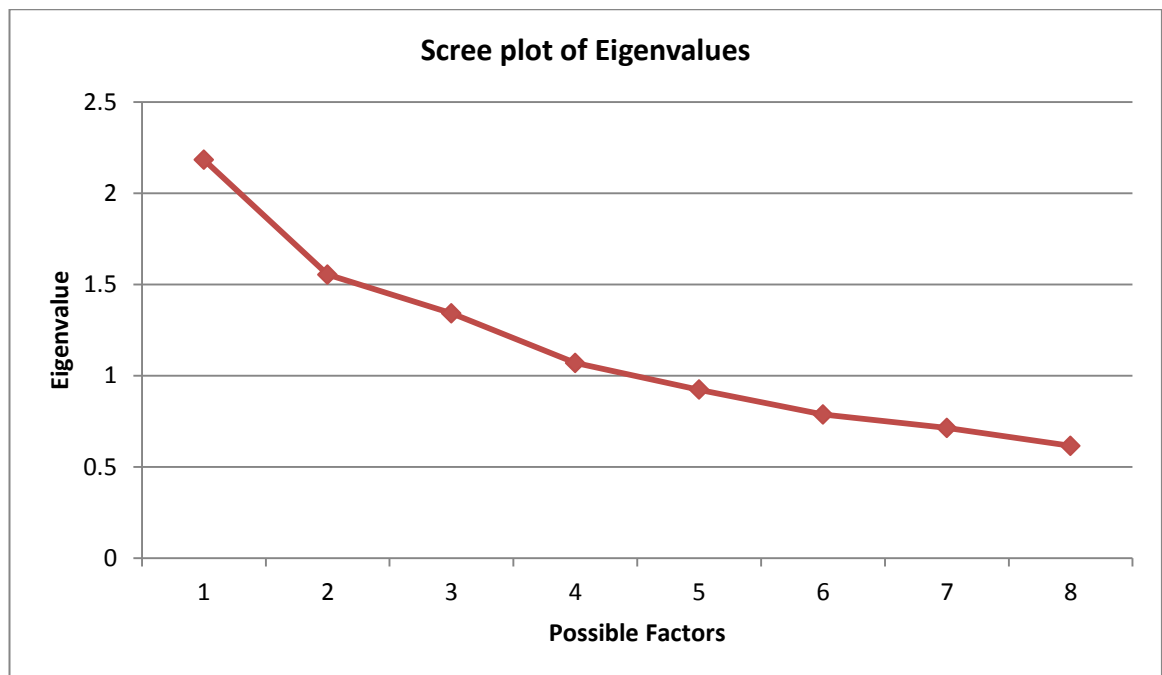


Figure 2: Cattell's (1966) Scree plot depicting the point of inflexion in the curve, used to identify how many factors to retain.

The cut off point for retaining factors is the point of inflexion in the curve (Cattell, 1966); the Scree plot shows that the shape of the curve starts to flatten at four factors. However, the decision to keep a factor or discard a factor is not solely based on eigenvalues and can be influenced by other circumstances such as the statements that define a factor and the significance and pattern of placing (Coogan & Herrington, 2011).

Principal Components Analysis and Varimax Rotation. A three-factor solution accounting for 51% of the variance was extracted using principal components analysis, which was then subjected to Varimax rotation. A suitable

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model explains at least 35-40% of variance (Watts & Stenner, 2012). All Q-sorts except Q-sort 9 loaded on to one of the three factors and there were no confounding Q-sorts loading significantly on to both factors. Guidance was sought from Watts and Stenner (2012) regarding the viability of a fourth factor, for a factor to be considered viable; more than two Q-sorts should load. As only one Q-sort loaded onto the fourth factor, the decision was made to exclude this factor. The three factors and the Q-sort loadings are displayed in table 4.

Table 4

Factors and associated Q-sort loadings

Q-sort	Factor 1	Factor 2	Factor 3
1	0.2442	0.6216 X	0.1492
2	0.5871 X	0.3842	0.2321
3	0.1246	0.0886	0.6604 X
4	0.0130	0.6692 X	-0.1716
5	0.4963	0.2344	-0.6822 X
6	-0.2787	0.7837 X	0.0391
7	0.7636 X	-0.1053	-0.0068
8	0.2443	0.0506	0.5914 X
9	0.2085	0.2364	0.0890
10	0.7298 X	0.0061	0.1407
Variance Explained	20	17	14

Note: A significant factor loading was calculated as ≥ 0.28 using the Brown (1980) formula: $1.96 \times (1/\sqrt{\text{No. of items in Q set}})$ p value < 0.05 .

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Factor arrays were produced for all factors (Appendix P) which identifies the overall ranking of statements and gives the general viewpoint of that factor based on the statements that have been ranked positively and negatively onto it (Watts & Stenner, 2012).

Qualitative information collected during the Q-sort data collection has been used to add further substance to the factor interpretations. This includes the participants feelings and own words to portray their personal feeling and experiences.

Results

Factor array content was explored to interpret the factors alongside previous psychological literature relating to chronic pain management and the qualitative interviews conducted during the process of the Q-sorts.

Factor One: 'Being believed, understood and accepted'

Factor one has an eigenvalue of 2.18 and accounts for 20% of the variance in this study. Three participant's Q-sorts loaded significantly onto this factor (two female and one male; age ranged from 33 years to 50 years; experience of chronic pain ranged from 3 years – 18 years).

This factor represents the viewpoint of individuals who valued being believed, being understood, and having a sense of belonging. The importance of being believed and understood was demonstrated in the following highly rated statements; being believed and taken seriously (+5), friendship and support with other members of the group (+4), other people understanding what I am going through (+4). A sense of belonging and social connection was demonstrated in the following positively ranked statements; shared experiences and struggles with people in a similar situation (+3), and being with people that have done the very same things (+3). Values were important; having a direction to work towards to achieve a better quality of life (+3), using my time and energy on important activities (+2), and being in the moment; not doing something just because that is what I do or always have done (+2). Realising my pain isn't going to go away (+2) was ranked as a helpful aspect of the programme, and so too was permission to change (+2).

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Qualitative information gathered during data collection has been used to further analyse the factor representation. Feeling heard, respected, and validated by the interdisciplinary team was reported to be extremely valuable and important for allowing individuals to move forward and progress. One participant (10) acknowledged that the approach of the healthcare professionals and being amongst fellow chronic pain sufferers, allowed them to feel accepted and validated, which enabled them to process, acknowledge and accept their own condition. The support from peers in the group and their shared experiences was reported to be highly validating and valuable. The support and consistent message from the interdisciplinary team in explaining the theory of chronic pain helped participants understand what was happening (prognosis and progression of condition). This seemed particularly important as it allowed participants to explain their condition to their significant others. Two of the participants (7 & 10) found the concept of acceptance of chronic pain difficult; however, they acknowledged the importance of the interdisciplinary team addressing their pain reduction efforts and this allowed them to move towards a direction for achieving a better quality of life. Metaphors used in the programme particularly connected with participant (7), who felt understood by their salience.

Distinguishing statements. Statements that were significantly different, and which discriminate this factor place value upon being believed (26), friendship and support with other members of the group (35), being understood (38), shared experiences of struggles and efforts to reduce pain (10; 44), having a direction to work towards (42), realising my quality of life can be better even though my pain might stay the same (36), and permission to change (14). Therefore suggesting the importance of validation, being accepted, having a goal / value to work towards, and deciding upon behaviour or actions dependent upon circumstance and situation.

Factor Two: 'self-compassion and empowerment'

Q-sorts from three participants loaded significantly onto this factor (all female; age ranged from 49 years – 54 years; experience of chronic pain ranged from 9 years to 26 years). This factor has an eigenvalue of 1.55 and accounts for 17% of the study variance.

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This factor represents the viewpoints of those that found improving their quality of life, empowerment, changing their relationship with pain and developing self-compassion, valuable. Improving quality of life was evident in the following highly rated statement; my quality of life can be better even though my pain might stay the same (+5). The importance of self-compassion was also rated highly; developing loving kindness towards self (+4) and acknowledging that their efforts to reduce pain are understandable and normal (+3). A sense of empowerment was important; realising that I have the power to make plans for myself (+4), I can choose to do things and the pain still be there (+3) and doing things that I wouldn't have done before because of the pain (+3). Creative hopelessness also appeared to be helpful; understanding that seeking treatment to reduce pain has taken them in circles rather than a direction they wanted to go in (+2). A sense of achievement and confidence was valued; through attending the group I have achieved something I thought was really hard to do (+2). The opportunity to sit and think about what is important to me (+2) was also valued amongst Q-sorts within this viewpoint.

Qualitative information gathered demonstrated the importance of consistent messages received from the interdisciplinary team around connecting with values, developing self-compassion, and improving quality of life (participant 6). Participants (4 & 6) spoke about the challenge of attending the group on two consecutive days per week and acknowledging their achievement in completing this, alongside their motivation and determination to attend. Consistent messages of self-compassion and its importance supported participants (4 & 6) towards making changes and improving their quality of life.

Distinguishing statements. Statements that were significantly different, and which discriminate this factor place value upon; recognising quality of life can be improved (36), developing loving kindness (8), empowerment; realising that I have the power to make plans for myself (45), I can choose to do things and yes the pain is going to be there but I can choose what I do and don't do (16), and compassion; recognising ineffective behaviour and response patterns are understandable (2), and acknowledging achievement (19). This identifies the importance of values clarification, changing behavioural patterns and developing self-compassion in bringing about change.

Factor Three

Factor three has an eigenvalue of 1.34 and accounts for 13% of the study variance. Three participants significantly identify with this factor. They are two females and one male, age ranges from 37 years to 67 years and length of time with chronic pain ranges from 14 months to 16 years. This factor has both positively and negatively loading Q-sorts, which makes it a bipolar factor. Therefore, both the positive and negative poles of this factor were interpreted.

Positive pole; 'Opening up to acceptance, gaining clarity and being in the moment'

Two of the three participants significantly identified with this factor, they regarded connection with others (+5) as highly valued within the group. They found the concepts of acceptance helpful, particularly relating to letting the pain be there and getting on with it (+4) learning that pain doesn't have to go for them to be able to do other things (+3) and coming to terms with the fact that their pain isn't going to go away (+2). The group was helpful in allowing them to develop confidence to achieve other things (+3), be flexible about what is most likely to work at a given time (+2), find clarity through an awareness of many more choices than they realised they had (+2), and awareness of choices and consequences and what is important to them (+2). The programme was helpful in bringing present moment awareness, which was evident in the following highly rated statements; weighing up if this is the best thing for them to do at this time (+3) and decide in the moment what is going to be helpful (+1). These participants also found stepping back from their thoughts (+1) and exploring the impact of thoughts and feelings (+1) to be helpful.

One of the participants that loaded on to the positive pole of this factor shared that they had already started to open up to accepting that the pain wasn't going to go away, and making plans to do things whilst the pain remained. They reported that whilst they already held these ideas about acceptance of pain, it was helpful and re-affirming to hear these messages consistently throughout the group. Both participants felt the group gave them confidence to achieve a better quality of life whilst still experiencing chronic pain. They both acknowledged the importance of connecting with other people

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in the group and this appeared to be helpful in reducing a feeling of being alone with chronic pain.

Negative pole: 'Reclaiming identity and changing my relationship with pain'

This second interpretation of the factor comes from the viewpoint of the negative pole of the factor but this does not mean that the viewpoint is negative. In carrying out this interpretation the factor arrays are reversed and a second viewpoint is offered.

This viewpoint holds that reclaiming identity (+5) was considered to be helpful, along with recognising the physical and emotional achievement of attending the group (+4), which was considered to be a difficult task, and one they committed to completing. This viewpoint suggests that whilst connecting with others was not considered important, the shared experiences and struggles with people in a similar situation (+4) were rated highly. Other aspects of the group that were rated as helpful were recognising that efforts to try and get rid of pain are understandable and normal, even though it doesn't work (+3) and had taken them around in circles rather than in a direction that they want to go in (+3). The concept of accepting the pain and dropping the struggle with pain appeared to be helpful as the following statements were rated highly; realising that pain isn't going to go away (+3) and, my quality of life can be better even though my pain might stay the same (+2). Committed action was also rated as helpful in the following statement; doing things that they wouldn't have done before because they were fighting the pain (+3). Clarity around what they can and cannot control (+2) was also rated as helpful. So too was being able to step back from thoughts and feelings: seeing my thoughts and feelings for what they are (+2), and awareness of the thoughts and feelings that may be driving my bus (+2). This last statement refers to the metaphor "passengers on the bus" this is used in the group programme to illustrate defusion from thoughts and feelings, acceptance, willingness and values, as well as illustrating the concept of self-as-context.

Distinguishing statements. Statements that were significantly different from other factors in relation to the positive pole of this factor were; awareness of many more choices than I realised I had (20), being flexible about what is

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likely to work (17), thinking about how I might want to change things (33), exploring thoughts and feelings and their impact (5). This identifies that the positive pole of this factor is represented by the importance of gaining clarity and being flexible in the present moment. Statements that were significant to the negative pole of this factor were; reclaiming identity (30), shared experiences with others (10), realising pain isn't going to go away (11) and recognition and understanding that efforts to get rid of pain haven't worked (6;2). This identifies that the negative pole of this factor is represented by changing the relationship with chronic pain through reclaiming the self and creative hopelessness (acknowledging that their pain reduction efforts have been futile).

Comparison of factors

All factors appear to represent acceptance of chronic pain. In factor one, acceptance of chronic pain was valued positively with the following statements being ranked on the helpful side of the grid; statements 3, 7, 11, 15, and 16. In factor two, acceptance of pain was also valued positively with the following statements being ranked on the helpful side of the grid: statements 3, 7 and 16. Factor three also had acceptance statements ranked highly: 3, 7, and 15. Clear and consistent messages about pain prognosis and efforts to reduce pain were said to be helpful in being able to move forward and reconnect with meaningful living, rather than continuing their efforts to find a cure and miss out on life around them.

Bridging the gap

Q-sort (9) did not load significantly onto any of the factors, suggesting that their viewpoint was different to the other participants. Closer inspection of factor loadings indicated that this Q-sort loaded very similarly on factor one (0.2085) and factor two (0.2364). Although these were not significant loadings for either factor, the Q-sort appeared to be reflective of an individual who found the acceptance of pain components of the group to be highly valuable. Validation, increased self-confidence, and self-compassion were also helpful. Statements relating to defusion from thoughts, feelings, and sensations and being present in the moment were positively rated. It seems that this participant

Meaningful living with pain

found acceptance, self-as-context, cognitive defusion and present moment awareness processes of the ACT hexaflex to be helpful in moving forward.

Statements related to the ACT hexaflex

The statements that were ranked positively in the factors map onto all six core processes on the ACT hexaflex. Factor one maps onto; self-as-context (24), values (18, 21, 39, 42), present moment (22, 34), and acceptance (3, 7, 11, 15, 36).

Factor two maps onto; values (18, 21, 39, 42), committed action (37, 40, 46) self-as-context (19, 23, 24, 45) cognitive defusion (1) and the acceptance (3, 7, 36) processes of the ACT hexaflex.

Factor three maps onto; committed action (40) acceptance (3, 7, 15) present moment (31, 34, 43) self as context (24, 33) cognitive defusion (5, 25) and values (21).

Therefore suggesting that all aspects have a positive impact on therapeutic change, but self as context, values, and acceptance are most relevant as these map onto all factors.

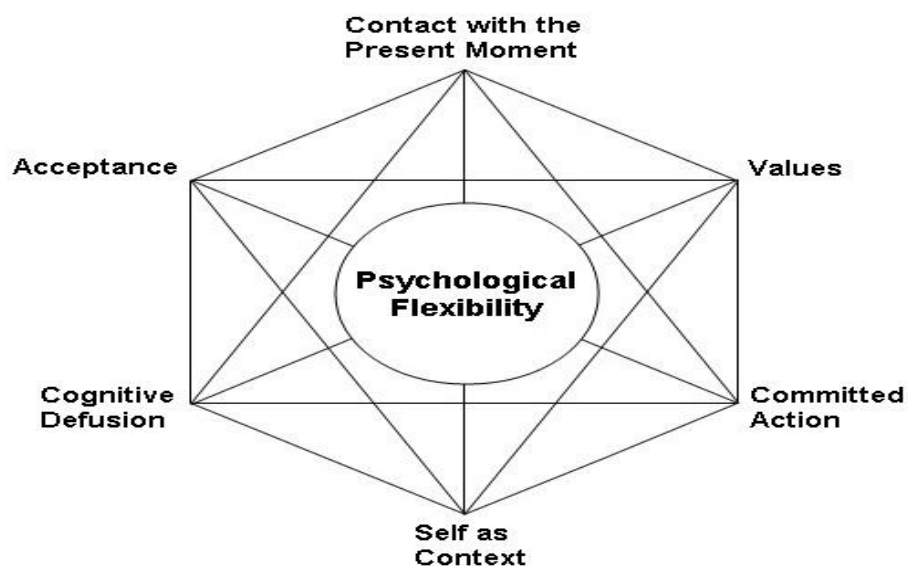


Figure 3: The psychological flexibility hexaflex with the six core processes of ACT

Discussion

Q-sorts were completed with 10 participants involved in group based ACT for chronic pain management, data analysis showed that three factors emerged. Factor one encapsulated a theme of being believed, understood and accepted, factor two captured a theme of self-compassion and empowerment and factor three was a bipolar factor which represented two views; one of opening up to acceptance and gaining clarity and the other representing the importance of reclaiming identity and moving forward with creative hopelessness. All factors positively rated the acceptance of chronic pain aspects of the group programme, and this is hypothesised to be a potential mechanism for moving an individual forwards with their lives following the pain programme.

The factors can be used to highlight a shift from suffering (psychological inflexibility) to psychological flexibility on the ACT hexaflex shown in figure 3. All factors map onto self-as-context, values and acceptance suggesting these are the most relevant elements of the PMP for bringing about therapeutic change.

Factor one represents a shift towards psychological flexibility, which may have been supported by changes in the perception of self. It is hypothesised that prior to the programme, individual's experiences of others and healthcare professionals misunderstanding their difficulties, societal stigma of chronic pain and perceptions that their condition is falsified may have led to a negative self-perception fused with hopelessness and the belief that pain must be reduced before they can engage in meaningful living. It is therefore hypothesised that the experience of being believed, understood and accepted by peers and the healthcare professionals in the interdisciplinary team is likely to have influenced a more compassionate perception of self. The reactions of other people towards us influence our self-esteem (Argyle, 1969); if others are positive, accepting and validating this influences a positive self-perception. Social connection is fundamental for survival (Maslow, 1954). Strong, positive social connections have been shown to improve emotional regulation allowing individuals to cope with difficult situations (Seppala, Rossomondo & Doty, 2013).

Factor two appears to represent a shift towards psychological flexibility, which may have been supported by self-compassion and empowerment to

Meaningful living with pain

choose one's own direction according to their values. It is hypothesised that the interdisciplinary team's consistent compassionate and understanding approach allowed participants to develop self-compassion as they were given time and space to think about what was important to them, time to make sense of and understand their experience of pain and their efforts to reduce pain which may have led to fear of or avoidance of pain.

Factor three is a bipolar factor and represents a shift towards increased present moment awareness, committed action, and defusion. The positive pole of this factor demonstrates the value of the experiential components of the group programme. Particularly, connecting with others, creative hopelessness, increased present moment awareness, moving towards acceptance and gaining clarity with regard to what changes they can make. It is hypothesised that the experiential components of the group programme, such as; psychoeducation of thoughts, feelings, and behaviour connections, and present moment exercises have supported these individuals in their process of change. It is possible that these aspects brought about clarity over the things they can change and in working towards meaningful living.

The negative pole of this factor identifies that again acceptance is an important part of the change process and helps to move towards taking committed action, and stepping back from thoughts and feelings. It also highlights the importance of creative hopelessness that is delivered in a compassionate manner. This allows individuals to acknowledge their efforts to reduce pain, acknowledge the huge impact this has had on their life and the small impact it has had on reducing their pain, and in doing so, invites them to try a different way of managing their pain. This pole of the factor also acknowledged that whilst the group can be helpful for social connection, some individuals might find the shared experience and understanding more beneficial than the connection to others.

This brings a focus to the different aspects of the programme that each individual is able to relate to, is it possible that each person takes something different from the group, that they may take what they need and add this to their repertoire of skills to manage pain and adversity? Is it possible that different aspects of the group, whilst collectively delivering one message, can be

Meaningful living with pain

carefully selected by participants dependent upon what they find helpful. Thus potentially explaining why this particular approach is successful and accessible to a range of individuals.

Another point for discussion and which may go some way to explaining the difference in the factors is an individual's readiness for change. It is often assumed that those seeking treatment are ready for change; however, all factors demonstrate the value of the interdisciplinary team and group members actively listening to and consistently validating individual experiences. It seems that information about pain prognosis, unhelpful treatment seeking behaviours, and self-compassion, and the way this was delivered by healthcare professionals helped individuals in understanding their efforts and accepting their situation. These findings relate to previous findings where changes in acceptance and self-compassion were found to be the strongest mediators of change in functioning (Vowles, Witkiewitz et al., 2014). It could be hypothesised that ACT works best for those individuals that are able to develop acceptance and self-compassion, or it could be that these are two parallel paths to a positive outcome. This could be an area for further research to explore; are both necessary (acceptance by other and acceptance of self) to be therapeutic, or is one more highly valued by individuals based on personality or another variable.

Limitations

The relatively small sample size of 10 participants, whilst appropriate for Q methodology (Watts & Stenner, 2012), makes it difficult to generalise the findings from this study to other pain groups. However, this sample, although small, gives voice to chronic pain service users. Some of the participants in this study had had prior psychological therapeutic input for their emotional well-being separate to their chronic pain difficulties, which may have influenced the findings of the study. Those already having had experience of psychological input may be more psychologically minded, and more open to the techniques suggested to them in the pain groups. Furthermore, the pain management group may have reconnected individuals with prior psychological experiences at a quicker rate than others, and this may have influenced their outcomes. This data was not routinely collected from all participants, and therefore it is not

Meaningful living with pain

possible to quantify the impact of prior psychological help on the overall findings.

Clinical Implications

The factors identified offer continued support for the evidence base for psychological acceptance of chronic pain as a mechanism of change. The psychological components of the ACT model appear to support individuals through education and understanding of the psychology of pain, developing coping strategies and identifying and modifying avoidance.

Factor one shows evidence for the efficacy of group approaches with the strong links to the value of social connection for validation alongside healthcare professionals support in normalising and validating individual experiences of chronic pain. Clinically, this highlights the role and importance of healthcare professionals and group members in validating individual's experiences and beliefs about pain. This may involve clarifying that psychological support for chronic pain does not imply the idea that chronic pain is imagined or "in the mind" as many individuals reported believing this until told otherwise by a pain clinician. Meeting others with similar experiences also helped to alleviate this idea. Healthcare professionals have an important role in understanding an individual's readiness to change and tailoring their support in accordance with this. This study identified that validation, time to process experiences to date, and creative hopelessness were important in moving an individual towards acceptance of their condition / situation before being able to make changes that would move them forward.

Factor two emphasises the importance of self-care and being kind towards oneself in the practice of changing an individual's relationship with chronic pain. Normalisation of an individual's efforts to reduce pain, and information about the possibilities of reducing pain appeared to be pivotal in bringing about self-compassion and committed action to reclaim their quality of life despite experiencing chronic pain. Education and normalisation appear to be helpful therapeutic techniques in changing an individual's relationship with chronic pain.

Meaningful living with pain

Factor three emphasises the importance of validation and the experiential components within the pain management programme. Validation can be achieved through psycho education of the development of chronic pain and stress-vulnerability. Validation is important in helping to move individuals forward before introducing psychological techniques to overcome these difficulties (Main, Sullivan & Watson, 2008). Psychological techniques, such as cognitive defusion, help individuals overcome obstacles to behaviour change through noticing their unhelpful thoughts, feelings and sensations that may be preventing them moving forward. Mindfulness exercises and breathing techniques can help individuals be in the present moment, and develop self-compassion. It is likely that the metaphors and the experiential learning achieved through in-session practices, have such importance and have been found particularly helpful due to their lack of reliance on words and language, which connects with relational frame theory. Language creates suffering and so does experiential avoidance, in-session practice undermines the strong relationships with painful thoughts, feelings, and sensations (Harris, 2013).

Whilst completing the Q-sorts many participants were reconnected with the key messages and aspects of the pain management programme and found this therapeutic. The Q-sort could be a useful tool in consolidating what the participant has taken from the group, and could be used at follow up to reconnect individuals with the programme messages.

Conclusion

Q methodology was used with 10 participants that had recently graduated from a pain management programme to identify the aspects of the group that participants valued and which were helpful in the process of change. Three factors were found, they encompass psychological acceptance of chronic pain, and map onto all aspects of the ACT hexaflex. The findings of this study highlight the importance of an individual's readiness to change, the role of the healthcare professional in validation, normalisation and education (creative hopelessness), social connection, and self-compassion and empowerment. The present study contributes to the growing evidence base for the different processes of ACT that are helpful in facilitating change for different people. The study supports the findings of the literature review, which found support for

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acceptance and values; acceptance, values, and self-as-context processes were found to be particularly helpful in this study. An extension of these findings comes from the qualitative information gathered regarding the personal importance and relevance of these processes for individuals experiencing chronic pain. The findings highlight the importance of the clinical skills within the team facilitating the intervention, which includes the ability to recognise readiness for change, demonstrate empathy and compassion, normalise, and deliver the techniques and exercises so that they are experienced experientially.

Further research would be helpful in minimising the sampling bias and confounding variables. It would be interesting to compare and contrast the value of individual ACT therapy with group therapy given that the factors identified the importance of the role of consistent messages received from an interdisciplinary team and factor one identified the importance of social connection which is very specific to group work. It would also be interesting to see if both acceptance by other and acceptance of self are necessary for therapeutic change.

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Appendix A: Ethical approval Keele University

1st April 2015
Chair
NHS Research Ethics Committee
Dear Sir/Madam

Investigator: Claire Purtil

Name of study: Meaningful living with pain: the value of acceptance and commitment therapy in chronic pain

Please find attached the peer review of the above project.

The project was initially awarded a grade 2 and the applicant was asked to address the points raised by the reviewer which included:-

- Further information about the likely methods of analysis was required
- Further background information was requested

The Independent Peer Review Committee are satisfied that the issues raised have been answered and that the project can now be awarded a grade 1 and therefore can proceed for ethical review without any revision.

We have informed the applicant that although this project has been deemed appropriate based on scientific merit, they wish to incorporate the reviewer's constructive comments to strengthen their protocol.

We have also stressed to the applicant that the Keele Independent Peer Review Committee is NOT a Sub-Committee of an NHS Research Ethics Committee and that you may identify ethical issues of your own.

If you have any queries, please do not hesitate to contact Catherine Bannerman on 01782 734495

Yours sincerely

Professor AA Fryer
Chair – Independent Peer Review Committee

Research and Enterprise Services, Keele University, Staffordshire, ST5 5BG, UK

Telephone: + 44 (0)1782 734466 Fax: + 44 (0)1782 733740

NRES Committee North West - Greater Manchester East

3rd Floor, Barlow House
4 Minshull Street
Manchester M1 3DZ

22 June 2015

Miss Claire Purtill
Staffordshire and Keele Doctorate in Clinical Psychology
Faculty of Health Sciences, Staffordshire University
Science Centre, Leek Road
ST4 2DF

Dear Miss Purtill

Study title: **Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.**
REC reference: **15/NW/0488**
IRAS project ID: **171206**

The Research Ethics Committee reviewed the above application at the meeting held on 16 June 2015. Thank you for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager Rachel Heron, nrescommittee.northwest-gmeast@nhs.net Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

1. Participant Information Sheets
 - a) Should explain the length of time taken for the focus group and the Q- SORT
 - b) Should explain that focus groups will be audio recorded.
 - c) The Committee suggested including an explanation of what ACT is
 - d) The Committee advised removing the first paragraph of the PIS, which repeats what is on the invitation letter.
 - e) The Committee advised that a list of contacts for further information or support for the management of chronic pain should be provided on the participant information.
 - f) Should be labelled with a header or footer, so that it is clear which document is the information sheet.
2. Consent forms.

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- a) Should take consent for focus groups to be audio recorded
 - b) A separate consent form should be used for each group, and it should be clear which is which
3. The invitation letter should also be labelled to make clear which document is the invitation letter and which is the PIS

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from NRES. Guidance on where to register is provided on the HRA website.

Ethical review of research sites

NHS Sites

The favourable opinion applies to all NHS sites taking part in the study taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Summary of discussion at the meeting

You were welcomed to the meeting.

Social or scientific value: scientific design and conduct of the study

The Committee observed that the application was of a high quality.

The Committee asked for clarification on the sample size. *You advised that this would be dependent on when the right amount of statements was reached for the Q-SORT test, but would be between 15 and 24.*

The focus groups would consist of 5-6 participants.

Recruitment arrangements and access to health information, and fair participant selection

The Committee asked for clarification on the recruitment and consent process.

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You explained that Focus Group 2 (the patient focus group) would be recruited from a pain management group which was already running. Your clinical supervisor would be the contact for participants, and other members of the team would also send out the invitation letter to potential participants. The invitation letter had a reply slip which could be posted in a box which would be left in the room. The participant information sheets would then be sent out to these volunteers, who you would later meet in order to take consent.

You clarified to the Committee that the box would not be left unattended, but would be taken by a member of staff, who would keep it secure. You advised the Committee that all data would be anonymised apart from the consent form. The transcripts from the focus groups would not be identifiable.

Informed consent process and the adequacy and completeness of participant information

The Committee was not clear on the length of time for the focus group and the Q-SORT. You explained that the focus group would take 1 hour and the Q-SORT 30 minutes. One consent form was used for both groups. The Committee noted that there was no mention of the audio recording and that this needed to be on the information sheets and consent form. The Committee noted that the first paragraph of the participant information repeated the invitation letter, and commented that this paragraph was unnecessary.

Suitability of the applicant and supporting staff

The Committee asked who would facilitate the focus groups. You advised that you would be doing this, and had done some reading in preparation and had a schedule which you would follow.

The Committee advised that focus groups were usually undertaken by 2 facilitators, and that they could be difficult to manage alone. You agreed to ask your supervisor to help you to facilitate the groups.

Other ethical issues were raised and resolved in preliminary discussion before your attendance at the meeting.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Covering letter on headed paper [Cover Letter]	2	01 June 2015
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance]		
Interview schedules or topic guides for participants [Clinician focus group schedule]	1	01 May 2015
Interview schedules or topic guides for participants [Graduate Focus Group Questions]	1	01 May 2015
Interview schedules or topic guides for participants [Clinician Focus Group Questions]	1	01 May 2015
Interview schedules or topic guides for participants [Graduate Focus Group schedule]	1	01 May 2015
IRAS Checklist XML [Checklist_01062015]		01 June 2015
Letter from sponsor [Letter from sponsor]		
Letters of invitation to participant [Letter of Invite - Graduates]	1	01 December 2014
Letters of invitation to participant [Letter of invite - Q-sort]	1	01 May 2014
Non-validated questionnaire [Examples of possible statements for Qsort]	1	01 May 2015
Participant consent form [Consent forms]	1	27 May 2015
Participant information sheet (PIS) [Participant Info Sheet]	2	01 December 2014
Participant information sheet (PIS) [Participant Information Sheet - FG Graduates]	2	01 December 2014
Participant information sheet (PIS) [Participant Information Sheet - Q-sort]	2	01 December 2014
REC Application Form [REC_Form_28052015]		28 May 2015

Meaningful living with pain

Referee's report or other scientific critique report [Independent Peer Review Committee]		
Research protocol or project proposal [Research Protocol]	1	27 May 2015
Summary CV for Chief Investigator (CI) [Chief Investigator CV]		24 April 2015
Summary CV for student [Student CV]		24 April 2015
Summary CV for supervisor (student research) [CV for supervisor]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Flow chart]	2	01 May 2015

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: <http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

15/NW/0488

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely



**On behalf of
Mr Francis Chan
Chair**

E-mail: nrescommittee.northwest-gmeast@nhs.net

Enclosures: List of names and professions of members who were present at the meeting and those who submitted written comments

"After ethical review – guidance for researchers" [SL-AR2 for other studies]

Copy to:

XXXXXXXXX



Health Research Authority

Research Ethics Service

NRES Committee North West - Greater Manchester East

3rd Floor, Barlow House

4 Minshull Street

Manchester M1 3DZ

20 July 2015

Dear Miss Purtil

Study title: **Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.**
REC reference: **15/NW/0488**
IRAS project ID: **171206**

Thank you for your email of 2 July 2015. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 22 June 2015

Documents received

The documents received were as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Letters of invitation to participant [Focus Group (FGPG)]	2	01 July 2015
Letters of invitation to participant [Q-sort (Q)]	2	01 July 2015
Participant consent form [Clinicians (FGC)]	2	01 July 2015
Participant consent form [Focus Group Post Graduates (FGPG)]	2	01 July 2015
Participant consent form [Q-sort (Q)]	2	01 July 2015
Participant information sheet (PIS) [Clinician's Focus Group (FGC)]	3	01 July 2015
Participant information sheet (PIS) [Programme Graduate Focus Group (FGPG)]	3	01 July 2015
Participant information sheet (PIS) [Q-sort (Q)]	3	01 July 2015

Approved documents

The final list of approved documentation for the study is therefore as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Covering letter on headed paper [Cover Letter]	2	01 June 2015
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance]		
Interview schedules or topic guides for participants [Clinician focus group schedule]	1	01 May 2015
Interview schedules or topic guides for participants [Graduate Focus Group Questions]	1	01 May 2015
Interview schedules or topic guides for participants [Clinician Focus Group Questions]	1	01 May 2015
Interview schedules or topic guides for participants [Graduate Focus Group schedule]	1	01 May 2015
IRAS Checklist XML [Checklist_01062015]		01 June 2015

Meaningful living with pain

Letter from sponsor [Letter from sponsor]		
Letters of invitation to participant [Letter of Invite - Graduates]	1	01 December 2014
Letters of invitation to participant [Letter of invite - Q-sort]	1	01 May 2014
Letters of invitation to participant [Focus Group (FGPG)]	2	01 July 2015
Letters of invitation to participant [Q-sort (Q)]	2	01 July 2015
Non-validated questionnaire [Examples of possible statements for Qsort]	1	01 May 2015
Participant consent form [Consent forms]	1	27 May 2015
Participant consent form [Clinicians (FGC)]	2	01 July 2015
Participant consent form [Focus Group Post Graduates (FGPG)]	2	01 July 2015
Participant consent form [Q-sort (Q)]	2	01 July 2015
Participant information sheet (PIS) [Participant Info Sheet]	2	01 December 2014
Participant information sheet (PIS) [Participant Information Sheet - FG Graduates]	2	01 December 2014
Participant information sheet (PIS) [Participant Information Sheet - Q-sort]	2	01 December 2014
Participant information sheet (PIS) [Clinician's Focus Group (FGC)]	3	01 July 2015
Participant information sheet (PIS) [Programme Graduate Focus Group (FGPG)]	3	01 July 2015
Participant information sheet (PIS) [Q-sort (Q)]	3	01 July 2015
REC Application Form [REC_Form_28052015]		28 May 2015
Referee's report or other scientific critique report [Independent Peer Review Committee]		
Research protocol or project proposal [Research Protocol]	1	27 May 2015
Summary CV for Chief Investigator (CI) [Chief Investigator CV]		24 April 2015
Summary CV for student [Student CV]		24 April 2015
Summary CV for supervisor (student research) [CV for supervisor]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Flow chart]	2	01 May 2015

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

15/NW/0488

Please quote this number on all correspondence

Yours sincerely



**Rachel Heron
REC Manager**

E-mail: nrescommittee.northwest-gmeast@nhs.net

Copy to: Miss Claire Purtil
XXXXXX

Meaningful living with pain

Appendix C: R&D letter of approval

Miss Claire Purhill
Staffordshire and Keele Doctorate in Clinical
Psychology,
Faculty of Health Sciences,
Staffordshire University Science Centre,
Leek Road,
Stoke On Trent
ST4 2DF

27th August 2015

Our Ref: RDU STU 012

Dear Miss Purhill,

NHS PERMISSION FOR RESEARCH

Study Title: Meaningful living with pain; The value of Acceptance and Commitment Therapy in chronic pain.

REC Reference: 15/NW/0488

IRAS project number: 171206
Chief Investigator: Claire Purhill
Sponsor: Staffordshire University
Research Site:

We can confirm that the above project has been given NHS Permission for Research by the Research & Development Office for the NHS Trust and the details entered on to the R&D database.

We note that this research project has been approved by RES Committee North West on 20th July 2015.

NHS Permission for the above research has been granted on the basis described in the application form, Protocol and supporting documentation.

Permission is granted on the understanding that the study is conducted in accordance with the Research Governance Framework, ICH GCP, any other relevant legislation such as the Data Protection Act and NHS Trust policies and procedures.

Permission is only granted for the activities for which a favourable opinion has been given by the REC.

Meaningful living with pain

Conditions of NHS Permission

It is now a national initiative that the Trust is expected to recruit the first patient into a new study within 30 days. Please inform this office if you anticipate problems in achieving this for your study. The research Sponsor, Chief Investigator or the local Principal Investigator at the research site, may take appropriate urgent safety measures in order to protect research participants against any immediate hazard to their health or safety.

The R&D Office should be notified that such measures have been taken. The notification should also include the reasons why the measures were taken and the plan for further action.

The R&D Office should be notified within the same time frame of notifying the REC and any other regulatory bodies.

After NHS permission

All amendments including changes to the local research team need to be submitted in accordance with guidance in IRAS.

For further information regarding how to notify us of any amendments to the study please refer to the Amendments Guidance for Researchers found on the following web link:
<http://www.crnc.nihr.ac.uk/researchers/amendments/>

Please note that the NHS organisation is required to monitor research to ensure compliance with the Research Governance Framework and other legal and regulatory requirements. This will be achieved by random audit by our department.

We would like to take this opportunity to wish you well with your research. If you need any further advice or guidance please do not hesitate to contact us.

Yours sincerely



.....
Dr James Shipman
Medical Director

7.10.15

.....
Date of NHS Permission

Appendix D: NHS approval of amendments



03 December 2015
Miss Claire Purtil
Staffordshire and Keele Doctorate in Clinical Psychology
Faculty of Health Sciences, Staffordshire University
Science Centre, Leek Road
ST4 2DF

Dear Miss Purtil

Study title: Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.
REC reference: 15/NW/0488
Amendment number: 1
Amendment date: 19 November 2015
IRAS project ID: 171206

- Due to problems with recruitment, it is proposed to contact patients from previous groups to see if they would like to take part in the study.

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Letters of invitation to participant [Q-Sort XXXX]	1	18 November 2015
Letters of invitation to participant [Letter from XXXX]	1	18 November 2015
Notice of Substantial Amendment (non-CTIMP)		19 November 2015
Research protocol or project proposal	2	18 November 2015

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet

R&D approval

Meaningful living with pain

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

15/NW/0488: Please quote this number on all correspondence

Yours sincerely



Signed on behalf of
**Professor Janet
Marsden Chair**

E-mail: nrescommittee.northwest-gmeast@nhs.net

Appendix E: Email sent to clinicians



INVITATION TO RESEARCH PROJECT

Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this. My name is Claire Purtill and I am a Trainee Clinical Psychologist studying at Staffordshire & Keele Universities. I am undertaking a research project at XXX XXXX exploring the value of Acceptance and Commitment Therapy (ACT) for chronic pain.

I would like to invite you to participate in a focus group with other clinicians to develop a range of statements related to the pain management programme. These statements will be combined with statements developed by individuals that have completed the pain management programme and will form a Q-sort where programme graduates will be asked to rate the statements in accordance with how much they agree or disagree with them.

It is estimated that the focus group will last no longer than 60 minutes, and it will take place in a meeting room at XXXXXXX. It will involve the researcher talking to you about what you feel is valuable and most important in the process of change throughout the programme. This information will be collected using an audio-recorder, and the researchers own notes.

Any participation in this research project is entirely on a voluntary basis. If you do decide to take part, you have the right to withdraw from the study at any point up until the focus group takes place.

The research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXXXXXXXXXXXXXXXX NHS Trusts policies and procedures. If this needs to happen, the researcher, where possible will inform you of this in advance.

If you decide that you would like to take part in this research project, please forward this email to [XXXXX](#) with your name and job title. You will then be given a full information sheet and further opportunity to decide whether you would like to participate. Following this, the researcher will invite you to participate in a focus group held at XXXXXXX.

Many thanks for your time,
Claire Purtill
Trainee Clinical Psychologist
Staffordshire & Keele Universities
XXXXXX

Appendix F: Information sheet for clinicians



PARTICIPANT INFORMATION SHEET

Meaningful living with pain: A Q methodology of the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this information sheet. I would like to invite your participation in this project. Before you decide, I would like you to understand why the research project is being done and what it would involve for you. These details are included in this information sheet. It is estimated that it will take you around 5 minutes to read.

What is the purpose of the research?

The purpose of the research is to explore the value of ACT for chronic pain. There are a number of psychological approaches to coping with pain and this project would like to further explore the efficacy of ACT.

Why have I been invited?

You have been invited because you are a clinician working within the field of chronic pain and have been identified as a clinician familiar with ACT approaches to chronic pain. You may be able to contribute to a focus group regarding the key features of ACT.

Do I have to take part?

No you do not have to take part. Any participation in this research project is entirely on a voluntary basis. If you do decide to take part, you have the right to withdraw from the study at any point up until data is collected from the focus group. If you change your mind during the focus group just let the researcher know, you do not need to give a reason for this.

What will I have to do?

If you decide to take part in the research project, you will be invited to take part in a focus group with the researcher, and fellow colleagues who also have experience of working with chronic pain using ACT approaches. You will be asked to talk about the key features of ACT with the view that this will develop statements about ACT that can be used in a Q-sort with individuals with chronic pain. You can choose how much or how little you say. It is estimated that the focus group will last no longer than 60 minutes, and it will take place in a meeting room at XXXX.

The focus group will be voice recorded, and you will be asked not to mention anyone's name. After the focus group the researcher will type the voice recordings into written format. The researcher will then analyse this information and draw out key statements about ACT. These statements will then be used alongside statements in the ACT and chronic pain literature to develop a range of statements for a Q-sort to be used with individuals with chronic pain that have recently accessed an ACT based group therapy intervention. After the researcher has developed the statements, you will be invited to clarify the statements developed. You do not have to participate in the clarification of statements, and you do not need to give a reason.

What are the possible risks and / or disadvantages of taking part?

During the focus group you will be asked to talk about the key features of ACT. It is not envisaged that there will be any risks or disadvantages. However, you are encouraged to only share what you are comfortable with.

What are the possible benefits of taking part?

This study cannot guarantee any specific benefits to you and you will not be reimbursed for your participation. Your participation will allow the researcher to develop a Q-sort of statements that will

Meaningful living with pain

then be used to collect data from individuals with chronic pain. It is hoped that this will identify predictors of change during therapy and add to the reliability and clinical significance of ACT therapy.

What if there is a problem?

Taking part in this research project is not expected to cause you any problems. However, if you or the researcher come across any problems during or after the focus group, there are relevant services that you may access (e.g. your line manager or clinical supervisor).

If you have any problems regarding the conduct of the research, please do not hesitate to contact the Research Governance Officer at Keele University or my academic supervisor at Staffordshire University on the contact details below;

Nicola Leighton

Research Governance Officer
Research & Enterprise Services
Dorothy Hodgkin Building
Keele University
ST5 5BG
01782 733306

Dr Helen Combes

Principal Clinical Lecturer
Staffordshire University
Faculty of Health Science
Science Centre
Leek Road ST4 2DF
01782 295803

Will my taking part in the research project be kept confidential?

Yes, this research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXXX NHS Trusts policies and procedures. If this needs to happen, the researcher, where possible will inform you of this in advance.

The content of the focus group will be anonymised and all identifiable information will be removed when typed into written format. Direct quotes or statements may be used in the development of Q-sort statements. All quotes or statements will be anonymised. The voice recordings of the focus group will be destroyed after they have been typed up into written format and anonymised. Written versions of consent sheets and any other correspondence used for the research project that may contain personal data will be stored securely. The written transcript will be stored electronically under a password protected computer file. This information will be destroyed securely 5 years after the project is finished.

As this research is being completed as part of an academic course, the other people that will see the anonymised transcript will be the university research supervisor, Dr Helen Combes, and the clinical research supervisor, Dr Jayne Levell.

What will happen to the results of the research project?

The results of the research project will be fed back to the XXXXXX service at XXXXXXX, and this may be in the form of a presentation or written report. It is hoped that the findings of this research project will be published so that it will be made available for other professionals and services to view.

Who has reviewed the study?

All research within the NHS has to be reviewed by the Research Ethics Committee to ensure participants' interests are protected. This study has been reviewed by Greater Manchester East NHS Ethics Committee and approved by Keele University Independent Peer Review Committee.

If I decide I want to take part what do I have to do?

If you decide that you would like to take part in this research project, please send an email to XXXXX. The researcher will then arrange a time that suits all participants to conduct a focus group at the XXXXXX. At this time, the researcher will go through the information sheet again to allow you to give informed consent to take part. You will be able to ask the researcher any questions regarding the

Meaningful living with pain

research project. If you consent to taking part in the research you will be asked to sign a form to confirm that you have given your informed consent to take part and that you fully understand why the research is being completed, and what is expected of you. At the end of the focus group there will be a debriefing session, this is to allow you to discuss anything that may have caused you concern during the interview.

Further information and support

Various resources are also available from:

Breathworks – a Mindfulness-Based Pain Management service based in Manchester: www.breathworks-mindfulness.co.uk

The British Pain Society website provides links and information for professionals working who care for people with pain - www.britishpainsociety.org

Claire Purtil
Trainee Clinical Psychologist
Staffordshire & Keele Universities
XXXXX

Appendix G: Invitation to service users



INVITATION TO RESEARCH PROJECT

Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this. My name is Claire Purtill and I am a Trainee Clinical Psychologist studying at Staffordshire & Keele Universities. I am undertaking a research project here at XXXXXX and I am interested in exploring the value of Acceptance and Commitment Therapy (ACT) for chronic pain.

I would like to invite you to participate in a focus group with other programme graduates aimed at developing a range of statements related to the pain management programme. These statements will be combined with statements developed by clinicians and other programme graduates will be asked to rate them in accordance with how much they agree or disagree with them. It is estimated that the focus group will last no longer than 60 minutes, and it will take place in a meeting room at XXXXX. It will involve the researcher talking to you about what you felt was valuable and most important from the programme. This information will be collected using an audio-recorder, flip chart, sticky notes and the researchers own notes.

Any participation in this research project is entirely on a voluntary basis. If you choose not to participate the care and service that you receive will not be affected. If you do decide to take part, you have the right to withdraw from the study at any point up until the focus group takes place.

The research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXX NHS Trusts policies and procedures. If this needs to happen, the researcher, where possible will inform you of this in advance.

If you decide that you would like to take part in this research project, please complete the attached form in the envelope and leave in the box in the group room. You will then be given a full information sheet and further opportunity to decide whether you would like to participate.

Many thanks for your time,
Claire Purtill
Trainee Clinical Psychologist
Staffordshire & Keele Universities
[XXXXXXX](#)

Meaningful living with pain

Interest in Research Project

Meaningful living with pain: A Q methodology of the value of Acceptance and Commitment Therapy in chronic pain.

I am returning this form as I am interested in participating in this study. I confirm that I am currently participating in a pain management programme at XXXXX.

Name _____

Contact details _____

Preferred time of contact _____

Please place the form in the box in the group room if you are interested in participating in the project.

Meaningful living with pain

Appendix H: Information sheet for focus group for service users



PARTICIPANT INFORMATION SHEET

Meaningful living with pain: A Q methodology of the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this information sheet. I would like to invite your participation in this project. Before you decide, I would like you to understand why the research project is being done and what it would involve for you. These details are included in this information sheet. It is estimated that it will take you around 5 minutes to read.

What is the purpose of the research?

The purpose of the research is to explore the value of ACT for chronic pain. There are a number of approaches to coping with pain and this project would like to further explore the efficacy of ACT amongst those with chronic pain.

Why have I been invited?

You have been invited because you are a programme graduate of the IMPACT pain management programme which is based on the principles of ACT and you may be able to contribute to a focus group regarding the key features of the pain programme.

Do I have to take part?

No you do not have to take part. Any participation in this research project is entirely on a voluntary basis. If you do decide to take part, you have the right to withdraw from the study at any point up until data is collected from the focus group. If you change your mind during the focus group just let the researcher know, you do not need to give a reason for this.

What will I have to do?

If you decide to take part in the research project, you will be invited to take part in a focus group with the researcher, and fellow programme graduates. You will be asked to talk about the key features of the programme which you valued and found helpful with the view that this will develop a range of statements about that can be used in a Q-sort with individuals with chronic pain. A Q-sort involves an individual ranking the statements in accordance with how much they agree / disagree with the statement. You can choose how much or how little you say. It is estimated that the focus group will last no longer than 60 minutes, and it will take place in a meeting room at XXXXX.

The focus group will be audio-recorded and will involve the researcher making notes on flip chart paper, sticky notes and other written notes. The researcher will also bring along statements developed from a focus group with clinicians and from their analysis of the ACT literature. You will be asked not to mention anyone's name during the focus group, however if you do inadvertently use names these will be removed when later transcribed. After the focus group the researcher will type the audio recording into written format and will then analyse all the information and draw out key statements about ACT. These statements will then be used to develop a range of statements for a Q-sort. After the researcher has developed the statements, you may be invited to clarify the statements developed. You do not have to participate in the clarification of statements, and you do not need to give a reason.

What are the possible risks and / or disadvantages of taking part?

During the focus group you will be asked to talk about the key features of the programme. It is not envisaged that there will be any risks or disadvantages. However, you are encouraged to only share what you are comfortable with.

What are the possible benefits of taking part?

Meaningful living with pain

This study cannot guarantee any specific benefits to you and you will not be reimbursed for your participation. Your participation will allow the researcher to develop a Q-sort of statements that will then be used to collect data from individuals with chronic pain. It is hoped that this will identify predictors of change during therapy and add to the reliability and clinical significance of ACT therapy.

What if there is a problem?

Taking part in this research project is not expected to cause you any problems. However, if you or the researcher come across any problems during or after the focus group, there are relevant services that you may access (e.g. XXXXX service and your GP, please see further information and support section).

If you have any problems regarding the conduct of the research, please do not hesitate to contact the Research Governance Officer at Keele University or my academic supervisor at Staffordshire University, on the contact details below;

Nicola Leighton

Research Governance Officer
Research & Enterprise Services
Dorothy Hodgkin Building
Keele University
ST5 5BG
01782 733306

Dr Helen Combes

Principal Clinical Lecturer
Staffordshire University
Faculty of Health Science
Science Centre
Leek Road ST4 2DF
01782 295803

Will my taking part in the research project be kept confidential?

Yes, this research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXXX NHS Trusts policies and procedures. If this needs to happen, the researcher, where possible will inform you of this in advance.

The content of the focus group will be anonymised. Direct quotes or statements may be used in the development of Q-sort statements. Written versions of consent sheets and any other correspondence used for the research project that may contain personal data will be stored securely. The written statements will be stored electronically under a password protected computer file. This information will be destroyed securely 5 years after the project is finished.

As this research is being completed as part of an academic course, the other people that will see the anonymised transcript will be the university research supervisor, Dr Helen Combes, and the clinical research supervisor, Dr Jayne Levell.

What will happen to the results of the research project?

The results of the research project will be fed back to the XXXXX service at XXXXXX, and this may be in the form of a presentation or written report. It is hoped that the findings of this research project will be published so that it will be made available for other professionals and services to view.

Who has reviewed the study?

All research within the NHS has to be reviewed by the Research Ethics Committee to ensure participants' interests are protected. This study has been reviewed by Greater Manchester East NHS Ethics Committee and approved by Keele University Independent Peer Review Committee.

If I decide I want to take part what do I have to do?

If you decide that you would like to take part in this research project, the researcher will go through the information sheet again to allow you to give informed consent to take part. If you consent to taking part in the research you will be asked to sign a form to confirm that you have given your informed consent to

Meaningful living with pain

take part and that you fully understand why the research is being completed, and what is expected of you. At the end of the focus group there will be a debriefing session, this is to allow you to discuss anything that may have caused you concern during the interview.

Further information and support

Further information or support for the management of chronic pain is available from your GP.

You may also contact:

XXXXXXX

North Staffordshire Wellbeing Service

XXXXXXXXXXXX

01782 711651

Various resources are also available from:

Breathworks – a Mindfulness-Based Pain Management service based in Manchester:

www.breathworks-mindfulness.co.uk

The British Pain Society website provides links and information for people living with pain:

www.britishpainsociety.org/people-with-pain/

Claire Purtil
Trainee Clinical Psychologist
Staffordshire & Keele Universities
XXXXXX

Meaningful living with pain

Appendix I: Invite to Q-sort



INVITATION TO RESEARCH PROJECT

Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this. My name is Claire Purtill and I am a Trainee Clinical Psychologist studying at Staffordshire & Keele Universities. I am undertaking a research project here at XXXXX and I am interested in exploring the value of Acceptance and Commitment Therapy (ACT) for chronic pain.

The project will involve asking you to sort a range of statements related to ACT therapy in accordance with how much you agree or disagree with the statements. Following this sorting process you will be offered the opportunity to discuss your perspectives on how you have rated the statements. It is estimated that the data collection will last no longer than 60 minutes, it will be audio-recorded and will take place in a meeting room at XXXXXXXX.

Any participation in this research project is entirely on a voluntary basis. If you choose not to participate the care and service that you receive will not be affected. If you do decide to take part, you have the right to withdraw from the study at any point up until two weeks following data collection.

The research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXX NHS Trusts policies and procedures. If this needs to happen, the researcher, where possible will inform you of this in advance.

If you decide that you would like to take part in this research project, please complete the attached form in the envelope and leave in the box in the group room. You will then be given a full information sheet and further opportunity to decide whether you would like to participate.

Many thanks for your time,

Claire Purtill
Trainee Clinical Psychologist
Staffordshire & Keele Universities
XXXXXX

Meaningful living with pain

Interest in Research Project

Meaningful living with pain: A Q methodology of the value of Acceptance and Commitment Therapy in chronic pain.

I am returning this form as I am interested in participating in this study. I confirm that I am currently participating in a pain management programme at the XXXXXXX.

Name _____

Contact details _____

Preferred time of contact _____

Please place the form in the box in the group room if you are interested in participating in the project.

Appendix J: Information sheet for Q-sort



Keele
University



STAFFORDSHIRE
UNIVERSITY

PARTICIPANT INFORMATION SHEET

Meaningful living with pain: A Q methodology of the value of Acceptance and Commitment Therapy in chronic pain.

Thank you for taking the time to read this information sheet. I would like to invite your participation in this project. Before you decide, I would like you to understand why the research project is being done and what it would involve for you. These details are included in this information sheet. It is estimated that it will take you around 5 minutes to read.

What is the purpose of the research?

The purpose of the research is to explore the value of ACT for chronic pain. There are a number of psychological approaches to coping with pain and this project would like to explore the efficacy of ACT further.

Why have I been invited?

You have been invited because you have recently participated in a pain management programme at XXXXXXX which is based on the principles of ACT and you may be able to be involved in the project.

Do I have to take part?

No you do not have to take part. Any participation in this research project is entirely on a voluntary basis. If you do decide to take part, you have the right to withdraw from the study at any point up until two weeks following data collection. If you change your mind during the data collection just let the researcher know, you do not need to give a reason for this.

What will I have to do?

If you decide to take part in the research project, you will be invited to take part in a Q-sort with the researcher. You will be asked to sort statements related to ACT therapy in accordance with how much you agree or disagree with the statements. Following this sorting process you will be offered the opportunity to discuss your perspectives on how you have rated the statements. It is estimated that the data collection will last no longer than 60 minutes, and it will take place in a meeting room at XXXXXXXX.

The q-sort and discussion will be voice recorded, afterwards the researcher will type the voice recordings into written format. This data will be collectively compared with others data. The researcher will then analyse this information to understand the factors that are associated with quality of life and improved functioning.

What are the possible risks and / or disadvantages of taking part?

During the q-sort you will be asked to talk about the key features of ACT in relation to managing chronic pain. It is not envisaged that there will be any risks or disadvantages. However, you are encouraged to only share what you are comfortable with.

What are the possible benefits of taking part?

This study cannot guarantee any specific benefits to you and you will not be reimbursed for your participation. Your participation will allow the researcher to develop an understanding regarding the processes involved in therapy. It is hoped that this will identify predictors of change during therapy and add to the reliability and clinical significance of ACT therapy.

What if there is a problem?

Meaningful living with pain

Taking part in this research project is not expected to cause you any problems. However, if you or the researcher come across any problems during or after data collection, there are relevant services that you may access (e.g. XXXXXX and your GP, please see further information and support section).

If you have any problems regarding the conduct of the research, please do not hesitate to contact the Research Governance Officer at Keele University or my academic supervisor at Staffordshire University, on the contact details below;

Nicola Leighton

Research Governance Officer
Research & Enterprise Services
Dorothy Hodgkin Building
Keele University
ST5 5BG
01782 733306

Dr Helen Combes

Principal Clinical Lecturer
Staffordshire University
Faculty of Health Science
Science Centre
Leek Road ST4 2DF
01782 295803

Will my taking part in the research project be kept confidential?

Yes, this research project will follow all legal and ethical practice guidelines. All information obtained will remain confidential and anonymous within the limits of confidentiality. Please be informed that if during the research project you reveal any risk to yourself or the safety of others, or if you discuss information that raises concerns about clinical or professional practice, then the researcher will have to inform an appropriate person, this is in accordance with XXXXXXXX NHS Trusts policies and procedures. If this needs to happen, the research, where possible will inform you of this in advance.

The content of the discussion will be anonymised and all identifiable information will be removed when typed into written format. Direct quotes or statements may be used in the analyses of the factors involved in therapy. All quotes or statements will be anonymised. The voice recordings of the discussion will be destroyed after they have been typed up into written format and anonymised. Written versions of consent sheets and any other correspondence used for the research project that may contain personal data will be stored securely. The written transcript will be stored electronically under a password protected computer file. This information will be destroyed securely 5 years after the project is finished.

As this research is being completed as part of an academic course, the other people that will see the anonymised transcript will be the university research supervisor, Dr Helen Combes, and the clinical research supervisor, Dr Jayne Levell.

What will happen to the results of the research project?

The results of the research project will be fed back to the XXXXXX at XXXXXX, and this may be in the form of a presentation or written report. It is hoped that the findings of this research project will be published so that it will be made available for other professionals and services to view.

Who has reviewed the study?

All research within the NHS has to be reviewed by the Research Ethics Committee to ensure participants' interests are protected. This study has been reviewed by Greater Manchester East NHS Ethics Committee and approved by Keele University Independent Peer Review Committee.

If I decide I want to take part what do I have to do?

If you decide that you would like to take part in this research project, the researcher will offer you the opportunity to ask any questions regarding the project which will allow you to give informed consent to participate. If you consent to taking part in the research you will be asked to sign a form to confirm that you have given your informed consent to take part and that you fully understand why the research is being completed, and what is expected of you. At the end of the q-sort there will be a debriefing session, this is to allow you to discuss anything that may have caused you concern during the interview.

Further information and support

Further information or support for the management of chronic pain is available from your GP.

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You may also contact:

XXXXXX

North Staffordshire Wellbeing Service

XXXXXXXXXXXX

01782 711651

Various resources are also available from:

Breathworks – a Mindfulness-Based Pain Management service based in Manchester:

www.breathworks-mindfulness.co.uk

The British Pain Society website provides links and information for people living with pain:

www.britishpainsociety.org/people-with-pain/

Claire Purtill
Trainee Clinical Psychologist
Staffordshire & Keele Universities
XXXXX

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Appendix K: Consent sheet



Centre Number:

Study Number:

Participant Identification Number:

CONSENT FORM

Title of Project: Meaningful living with pain: the value of Acceptance and Commitment Therapy in chronic pain.

Name of Researcher: Claire Purtil

Please initial box

1. I confirm that I have read the information sheet dated [insert date] (version _) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without my medical care / legal rights with XXXXXX NHS Trust being affected.

3. I understand that the information collected about me will be used to support other research in the future, and may be shared anonymously with other researchers.

4. I understand that data collected during the study will be stored at Staffordshire University and may be looked at by individuals from Staffordshire University, Keele University, regulatory authorities or from XXXXXXXXX NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to this data.

5. I agree to take part in the above study.

6. I consent to the data collection being audio-recorded

Name of Participant

Date

Signature

Name of Person taking consent

Date

Signature

Appendix L: Focus group schedule

Focus group schedule

1. I would like us to think about the role of acceptance and commitment therapy in promoting meaningful living. So, to get us thinking about this, what do you think are the main changes that occur pre and post group?
2. Which aspects of ACT do you think are the most influential in this process of change?
3. Psychological flexibility is said to underpin ACT – How do you understand this and how do you feel it influences change within the pain management group?
4. How do you think psychological flexibility promotes quality of life, meaningful living and functioning?
5. Which aspects of the pain programme do you think are least helpful for patients with chronic pain
6. Which aspects of the pain program do you think are most difficult for patients with chronic pain?
7. How do you think graduates from the group would evaluate their change process?
8. What do you think patients might say has brought about change?
9. I will be asking patients to attend a focus group in which I will hope to facilitate a discussion around the process of change. I would like to share some of the ideas you have generated here in this focus group with the overall view to developing a range of approximately 50 statements that patients from the pain management program will use in a Q-sort. The patients will be asked to rate statements in terms of how much they agree – disagree with them. If possible, I would like your help to generate some statements that can be shared with the patient focus group
10. Would there be a better way to word some of these statements?

Appendix M: 48 statements

Statements for Q-sort

- 1 Awareness of the thoughts and feelings about pain that may be driving my bus
- 2 Recognising that what I had been doing (trying to get rid of pain) was understandable and normal, even though it doesn't work
- 3 Letting the pain be there and getting on with it
- 4 Connecting with others
- 5 Exploring thoughts and feelings and their impact
- 6 Understanding that seeking treatments to reduce pain has taken me round in circles rather than in a direction that I want to go in
- 7 Learning that pain doesn't have to go for me to do other things
- 8 Developing loving kindness towards myself
- 9 Changing the influence of thoughts and feelings
- 10 Shared experience and struggles with people in a similar situation to myself
- 11 Realising my pain isn't going to go away
- 12 Questioning how is it working for me now
- 13 Seeing my thoughts and feelings for what they are – words, sounds, pictures
- 14 Permission to change
- 15 Coming to terms with the fact that my pain isn't going to go
- 16 I can choose to do things and yes the pain is going to be there but I can choose what I do and don't do
- 17 Being flexible about what is most likely to work at a given time
- 18 Using my time and energy on important activities
- 19 Through attending the group I have achieved something I thought was really hard to do
- 20 Awareness of many more choices than I realised I had
- 21 Deciding who I want to be and what I want life to be about
- 22 Not doing something just because that is what I do or always have done
- 23 Confidence to achieve other things
- 24 I am not my pain and I can do many things
- 25 Standing back from my thoughts and feelings
- 26 Being believed and taken seriously
- 27 Questioning the helpfulness of something in relation to achieving a better quality of life
- 28 Experimenting with new or different ways of doing things
- 29 Clarity around what I can and cannot control
- 30 Reclaiming my identity
- 31 Deciding in the moment what is going to be helpful

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- 32 Generating curiosity about what choices I have and the outcomes of my choices
- 33 Thinking about how I might want to change things
- 34 Weighing up is this the best thing for me to do at this time?
- 35 Friendship and support with other members of the group
- 36 My quality of life can be better even though my pain might stay the same
- 37 Doing things that I wouldn't have been doing before because I was fighting the pain
- 38 Other people understanding what I am going through
- 39 The opportunity to sit and think about what is important to me
- 40 Doing things differently
- 41 Thinking about what is in my long term best interests and not a short term fix
- 42 Having a direction to work towards to achieve a better quality of life
- 43 Being aware of choices and consequences and what is important to me
- 44 Being with people that have done the very same things
- 45 Realising that I have the power to make plans for myself
- 46 Explored functions and movements that I can do that are helpful to me
- 47 Communicating how I really am and what my needs are
- 48 Acknowledging that I am not my thoughts, feelings, sensations

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Appendix N: Sources of support

Further information or support for the management of chronic pain is available from your GP.

You may also contact:

XXXXXXX

North Staffordshire Wellbeing Service

XXXXXXX

01782 711651

Various resources are also available from:

Breathworks – a Mindfulness-Based Pain Management service based in Manchester:

www.breathworks-mindfulness.co.uk

The British Pain Society website provides links and information for people living with pain: www.britishpainsociety.org/people-with-pain/

Appendix O: Post sort interview questions

Post-sort interview questions

1. Now that all the statements are on the grid, would you like to move any around?
2. Were you surprised that you have placed the statements in the way that you have?
3. How did you decide to put statement ___ at the most helpful (+5) distribution
4. Why do you feel so strongly about this
5. Can you tell me about more about why you have placed statements ___ (+4) ...(+3)....(+2).....
6. How did you decide to put statement ___ at the most unhelpful (-5) distribution
7. Why do you feel so strongly about this
8. Can you tell me about more about why you have placed statements ___ (-4) ...(-3)....(-2).....
9. Is there anything from the PMP that is missing from the statements?

Consider

Any anomalies or sorting that doesn't make sense
Summarise what the grid reflects and seek clarification

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Appendix P: Factor arrays

Statement		Factor Arrays		
No.	Content	Factor One	Factor Two	Factor Three
1	Awareness of the thoughts and feelings about pain that may be driving my bus ¹	0	1	-2
2	Recognising that what I had been doing (trying to get rid of pain) was understandable and normal, even though it doesn't work	0	3	-3
3	Letting the pain be there and getting on with it	2	3	4
4	Connecting with others	3	-2	5
5	Exploring thoughts and feelings and their impact	-3	-1	1
6	Understanding that seeking treatments to reduce pain has taken me round in circles rather than in a direction that I want to go in	0	2	-3
7	Learning that pain doesn't have to go for me to do other things	2	1	3
8	Developing loving kindness towards myself	-1	4	1
9	Changing the influence of thoughts and feelings	-3	-1	0
10	Shared experience and struggles with people in a similar situation to myself	3	-2	-4
11	Realising my pain isn't going to go away	2	0	-3
12	Questioning how is it working for me now	-2	1	-1
13	Seeing my thoughts and feelings for what they are – words, sounds, pictures	-1	0	-2
14	Permission to change	1	-4	-3
15	Coming to terms with the fact that my pain isn't going to go	1	0	2
16	I can choose to do things and yes the pain is going to be there but I can choose what I do and don't do	0	3	0
17	Being flexible about what is most likely to work at a given time	-4	-3	2
18	Using my time and energy on important activities	2	1	-1

¹ Passengers on the bus is a metaphor used in the pain management programme.

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19	Through attending the group I have achieved something I thought was really hard to do	-2	2	-4
20	Awareness of many more choices than I realised I had	-2	-3	2
21	Deciding who I want to be and what I want life to be about	1	1	1
22	Not doing something just because that is what I do or always have done	2	-4	-1
23	Confidence to achieve other things	0	2	3
24	I am not my pain and I can do many things	2	2	1
25	Standing back from my thoughts and feelings	-5	-1	1
26	Being believed and taken seriously	5	-1	0
27	Questioning the helpfulness of something in relation to achieving a better quality of life	0	-2	0
28	Experimenting with new or different ways of doing things	-1	-1	0
29	Clarity around what I can and cannot control	1	-1	-2
30	Reclaiming my identity	-1	0	-5
31	Deciding in the moment what is going to be helpful	-1	-5	1
32	Generating curiosity about what choices I have and the outcomes of my choices	-3	0	-2
33	Thinking about how I might want to change things	-3	-1	2
34	Weighing up is this the best thing for me to do at this time?	1	-3	3
35	Friendship and support with other members of the group	4	0	3
36	My quality of life can be better even though my pain might stay the same	1	5	-2
37	Doing things that I wouldn't have been doing before because I was fighting the pain	0	2	-2
38	Other people understanding what I am going through	4	-2	-1
39	The opportunity to sit and think about what is important to me	1	2	-1
40	Doing things differently	-2	3	4
41	Thinking about what is in my long term best interests and not a short term fix	0	0	2
42	Having a direction to work towards to achieve a better quality of life	3	-3	0
43	Being aware of choices and consequences	-1	1	2

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	and what is important to me			
44	Being with people that have done the very same things	3	0	0
45	Realising that I have the power to make plans for myself	-2	4	1
46	Explored functions and movements that I can do that are helpful to me	-1	1	-1
47	Communicating how I really am and what my needs are	-2	-2	0
48	Acknowledging that I am not my thoughts, feelings, sensations	-2	-2	0

Appendix Q: Journal submission guidelines

Paper 2: Journal submission guidelines

The Clinical Journal of Pain Online Submission and Review System



INSTRUCTIONS FOR AUTHORS

The Clinical Journal of Pain publishes original articles in the following forms: *Clinical investigations*: Present results of original clinical research. *Case reports*: **Case reports will no longer be accepted for publication in *Clinical Journal of Pain* and thus no submission for case reports will be accepted as of June 13, 2013.** *Reviews*: Comprehensive surveys covering a broad area. They consolidate old ideas and may suggest new ones. They must provide a critique of the literature. *Special articles*: On subjects not easily classified above (e.g., articles on history, education, demography, ethics, socioeconomics, etc.). *Letters to the editor*: These may offer criticism of published material, but must be objective, constructive, and educational. A few references, a small table, or relevant illustrations may be used.

MANUSCRIPT SUBMISSION

Preparation of Manuscript

Cover Letter. With your manuscript, please submit a brief cover letter describing your manuscript and provide the names and e-mail addresses of 3-4 suggested reviewers. These should be people who are knowledgeable of the topic of the manuscript and who will not have a conflict of interest serving as reviewers. The Editors may or may not enlist these suggested reviewers.

Manuscripts that do not adhere to the following instructions will be returned to the corresponding author for technical revision before undergoing peer review.

General format: Submit manuscripts in English as a Word file. Double space all copy, including legends, footnotes, tables, and references.

Title page: Include on the title page (a) complete manuscript title; (b) authors' full names, highest academic degrees, and affiliations; (c) name and address for correspondence, including fax number, telephone number, and e-mail address; (d) address for reprints if different from that of corresponding author; and (e) sources of support that require acknowledgment.

The title page must also include disclosure of funding received for this work from any of the following organizations: National Institutes of Health (NIH); Wellcome Trust; Howard Hughes Medical Institute (HHMI); and other(s).

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Structured abstract and key words: Limit the abstract to 250 words. Do not cite references in the abstract. Limit the use of abbreviations and acronyms. Use the following subheads: Objectives, Methods, Results, and Discussion. List three to five key words.

Text: Organize the manuscript into four main headings: Introduction, Materials and Methods, Results, and Discussion. Define abbreviations at first mention in text and in each table and figure. If a brand name is cited, supply the manufacturer's name and address (city and state/country). Acknowledge all forms of support, including pharmaceutical and industry support, in an Acknowledgments paragraph.

The Clinical Journal of Pain does not have a required number of words for the text. Please treat your subject thoroughly but not excessively. Perusing several back issues to familiarize yourself with typical accepted article length is recommended.

Abbreviations: For a list of standard abbreviations, consult the *Council of Biology Editors Style Guide* (available from the Council of Science Editors, 9650 Rockville Pike, Bethesda, MD 20814) or other standard sources. Write out the full term for each abbreviation at its first use unless it is a standard unit of measure.

References: The authors are responsible for the accuracy of the references. References should be cited by number in order of citation in the text. Key the references (double-spaced) at the end of the manuscript, in numbered order. Cite unpublished data, such as papers submitted but not yet accepted for publication or personal communications, in parentheses in the text (H. E. Marman, M.D., unpublished data, February, 1997). If there are more than three authors, name only the first three authors and then use et al. Refer to the *List of Journals Indexed in Index Medicus* for abbreviations of journal names, or access the list at <http://www.nlm.nih.gov/tsd/serials/lji.html>. Sample references are given below:

Journal article

1. Prager J, Jacobs M, Johnson KJ. Evaluation of patients for implantable pain modalities: medical and behavioral assessment. *Clin J Pain* 2001;17:206-214.

Book chapter

2. Todd VR. Visual information analysis: frame of reference for visual perception. In: Kramer P, Hinojosa J, eds. *Frames of reference for pediatric occupational therapy*. Philadelphia: Lippincott Williams & Wilkins, 1999:205-256.

Entire book

3. Kellman RM, Marentette LJ. *Atlas of craniomaxillofacial fixation*. Philadelphia: Lippincott Williams & Wilkins, 1999.

Software

4. *Epi Info* [computer program]. Version 6. Atlanta: Centers for Disease Control and Prevention; 1994.

Online journals

5. Friedman SA. Preeclampsia: a review of the role of prostaglandins. *Obstet Gynecol* [serial online]. January 1988;71:22-37. Available from: BRS Information Technologies, McLean, VA. Accessed December 15, 1990.

Database

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6. CANCERNET-PDQ [database online]. Bethesda, MD: National Cancer Institute; 1996. Updated March 29, 1996.

World Wide Web

7. Gostin LO. Drug use and HIV/AIDS [JAMA HIV/AIDS Web site]. June 1, 1996. Available at: <http://www.ama-assn.org/special/hiv/ethics>. Accessed June 26, 1997.

Figures:

A) Creating Digital Artwork

1. Learn about the publication requirements for Digital Artwork: <http://links.lww.com/ES/A42>
2. Create, Scan and Save your artwork and compare your final figure to the Digital Artwork Guideline Checklist (below).
3. Upload each figure to Editorial Manager in conjunction with your manuscript text and tables.

B) Digital Artwork Guideline Checklist

Here are the basics to have in place before submitting your digital artwork:

- Artwork should be saved as TIFF, EPS, or MS Office (DOC, PPT, XLS) files. High resolution PDF files are also acceptable.
- Crop out any white or black space surrounding the image.
- Diagrams, drawings, graphs, and other line art must be vector or saved at a resolution of at least 1200 dpi. If created in an MS Office program, send the native (DOC, PPT, XLS) file.
- Photographs, radiographs and other halftone images must be saved at a resolution of at least 300 dpi.
- Photographs and radiographs with text must be saved as postscript or at a resolution of at least 600 dpi.
- Each figure must be saved and submitted as a separate file. Figures should not be embedded in the manuscript text file.

Remember:

- Cite figures consecutively in your manuscript.
- Number figures in the figure legend in the order in which they are discussed.
- Upload figures consecutively to the Editorial Manager web site and enter figure numbers consecutively in the Description field when uploading the files.

Figure legends: Legends must be submitted for all figures. They should be brief and specific, and they should appear on a separate manuscript page after the references. Use scale markers in the image for electron micrographs, and indicate the type of stain used.

Color figures: The journal accepts for publication color figures that will enhance an article. Authors who submit color figures will receive an estimate of the cost for color reproduction.

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If they decide not to pay for color reproduction, they can request that the figures be converted to black and white at no charge.

Tables: Cite tables consecutively in the text, and number them in that order. Key each on a separate sheet, and include the table title, appropriate column heads, and explanatory legends (including definitions of any abbreviations used). Do not embed tables within the body of the manuscript. They should be self-explanatory and should supplement, rather than duplicate, the material in the text.

Supplemental Digital Content

Supplemental Digital Content (SDC): Authors may submit SDC via Editorial Manager to LWW journals that enhance their article's text to be considered for online posting. SDC may include standard media such as text documents, graphs, audio, video, etc. On the Attach Files page of the submission process, please select Supplemental Audio, Video, or Data for your uploaded file as the Submission Item. If an article with SDC is accepted, our production staff will create a URL with the SDC file. The URL will be placed in the call-out within the article. SDC files are not copy-edited by LWW staff, they will be presented digitally as submitted. For a list of all available file types and detailed instructions, please visit <http://links.lww.com/A142>.

SDC Call-outs

Supplemental Digital Content must be cited consecutively in the text of the submitted manuscript. Citations should include the type of material submitted (Audio, Figure, Table, etc.), be clearly labeled as "Supplemental Digital Content," include the sequential list number, and provide a description of the supplemental content. All descriptive text should be included in the call-out as it will not appear elsewhere in the article.

Example:

We performed many tests on the degrees of flexibility in the elbow (see Video, Supplemental Digital Content 1, which demonstrates elbow flexibility) and found our results inconclusive.

List of Supplemental Digital Content

A listing of Supplemental Digital Content must be submitted at the end of the manuscript file. Include the SDC number and file type of the Supplemental Digital Content. This text will be removed by our production staff and not be published.

Example:

Supplemental Digital Content 1.wmv

SDC File Requirements

All acceptable file types are permissible up to 10 MBs. For audio or video files greater than 10 MBs, authors should first query the journal office for approval. For a list of all available file types and detailed instructions, please visit <http://links.lww.com/A142>.

Style: Pattern manuscript style after the *American Medical Association Manual of Style* (9th edition). *Stedman's Medical Dictionary* (27th edition) and *Merriam Webster's Collegiate Dictionary* (10th edition) should be used as standard references. Refer to drugs and therapeutic agents by their accepted generic or chemical names, and do not abbreviate them. Use code numbers only when a generic name is not yet available. In that case, supply the chemical name and a figure giving the chemical structure of the drug. Capitalize the trade names of drugs and place them in parentheses after the generic names. To comply with trademark law, include the name and location (city and state in USA; city and country

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outside USA) of the manufacturer of any drug, supply, or equipment mentioned in the manuscript. Use the metric system to express units of measure and degrees Celsius to express temperatures, and use SI units rather than conventional units.

The editorial office will acknowledge receipt of your manuscript and will give you a manuscript number for reference. Address all inquiries regarding manuscripts not yet accepted or published to the Journal's editorial office: JuliePorter529@gmail.com.

Manuscript Checklist (before submission)

- Cover letter with 3-4 suggested reviewers
- Title page
- Abstract
- References double-spaced in Journal style
- Corresponding author designated (in cover letter and on title page)
- E-mail address of corresponding author included in cover letter and on title page
- Permission to reproduce copyrighted materials or signed patient consent forms
- Acknowledgments listed for grants and technical support
- Authorship Responsibility, Financial Disclosure, and Copyright Transfer form signed by each author
- High-quality files of electronic art

Chapter Three: Reflective Paper

Reflections on my personal journey of exploration and increased self-compassion

Word count: 3,198

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Abstract

This reflective paper explores the personal and professional reflections of a trainee clinical psychologist's journey in completing a doctoral research project. Covering a brief introduction to reflective practice models the author then considers the challenges and limitations, and growth and learning points from the thesis journey. The author uses Kolb's (1984) experiential learning cycle to structure the paper and covers each stage in the cycle. The author discusses the experience of carrying out the thesis as a whole in the "having an experience" section, discusses the challenges and associated thoughts and feelings in the "reflecting on the experience" section, discusses potential learning and growth in the "learning from the experience" and considers future directions in the "planning" section. As the paper is a reflective account, the paper is written in the first person.

Models of reflective practice

Whilst there are multiple models of reflective practice that can be used to support professionals in their practice (Finlay, 2008), I have chosen to use Kolb's (1984) reflective cycle to structure the paper as I was able to relate to all aspects of the cycle during the thesis process. Before discussing my experiences in detail, I felt it was important to acknowledge what reflective models involve and how these are useful for professional practice. As a trainee clinical psychologist, I have learnt the importance of maintaining ethical practice, and I have been guided by the British Psychological Society (BPS) code of ethics and conduct (BPS, 2009) and the Health and Care Professions Council (HCPC) standards of proficiency (HCPC, 2012). These guidelines and standards state that we as professionals should be self-aware, reflecting on personal attitudes and assumptions that we bring to our clinical practice, and critically appraising these to gain an understanding of our responses and reactions to improve future practice. Reflective models allow us to do this in a structured and contained way (Finlay, 2008).

As a trainee clinical psychologist, I have been exposed to experiential and didactic learning around reflective practice. A lot of my learning, skills development and knowledge have developed through experiential processes. For this reason, I have chosen Kolb's (1984) experiential learning cycle to structure my paper, and I have used the stages of this process as headings throughout my paper; having an experience, reflecting on the experience, learning from the experience and planning for future research.

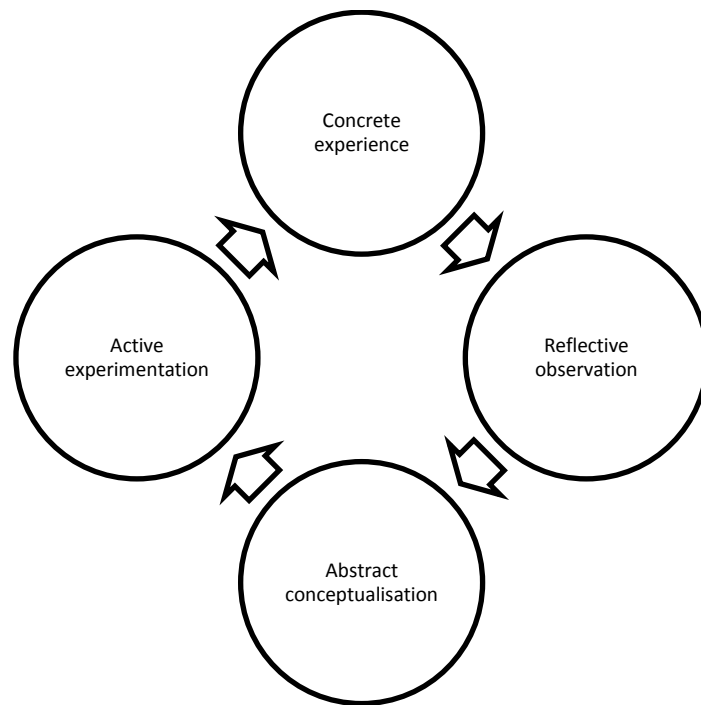


Figure 1: Kolb's (1984) experiential learning cycle

Epistemological position

Another adjunct to exploring my reflections is to pay consideration to my epistemological position. I strongly believe that my philosophical stance has been influenced by social constructionist views. I feel it is important to include this in my reflective account as I acknowledge that my views about the world and what there is to know about it are influenced by a collective idealism position. This position, assumes that the world exists as a result of the representations constructed and shared by individuals in certain contexts (Ormston, Spencer, Barnard & Snape, 2013). I believe that knowledge and learning about the world is developed through observations, through exploring and understanding the meanings and interpretations that people construct. I recognise that I too construct meanings and interpretations based on my own experiences and observations and these are likely to have shaped my interpretations of findings, and will be threaded throughout my reflections of the doctoral thesis process.

Having an experience

In adhering to Kolb's (1984) learning cycle, I will briefly outline my experience of completing the doctoral thesis. Having completed my first year of clinical training on placement with a chronic pain management service, I became curious about clinical health psychology and how and why psychological approaches can help individuals with long-term health conditions. The idea for my thesis came from this early experience during training and led me to explore the value of acceptance and commitment therapy (ACT) for chronic pain using Q methodology. In brief, I used Q methodology to determine the value of ACT based approaches to chronic pain management from the perspective of the chronic pain service user. Throughout this process, there were a number of challenges to overcome, particularly as I had no prior experience of using Q methodology.

Reflecting on my experience

My experiences in my first year of clinical training using ACT approaches for chronic pain management with individuals and groups of individuals have heavily shaped my thesis experience and future career aspirations. As I reflect on my experiences, I am drawn to several influential events that occurred whilst on placement. Of particular potency is my experience of participating in peer supervision with my clinical supervisor and a professor of clinical psychology. Discussions during our peer supervision often orientated towards research, and more specifically, the discussion of outcomes. This led us to thinking about what may influence engagement and / or disengagement from services, and which individuals benefit the most from ACT, and why. Our tendency to veer towards these discussions in peer supervision generated a curiosity for me to explore this further. Having this as a potential research question felt quite exciting, and I was curious as to what the findings of this research would be.

Review of the literature

A preliminary review of the literature to identify the process of acceptance and commitment therapy valued by chronic pain service users

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revealed a heavily populated, quantitative based, evidence base. There were very few qualitative approaches. At almost the same time as I was conducting the literature review, I was introduced to Q methodology as a research approach through the doctoral teaching programme. Whilst I considered a qualitative methodology to further explore individual experiences of pain management programmes, I was drawn to Q methodology in being able to qualitatively capture the voice of service users and add to the quantitative evidence base. Q methodology was developed so that a scientific framework could be brought to a subjective method of collecting data. It can be used to explore the similarities and differences between participants on a subject matter (Coogan & Herrington, 2011). This was appealing; with a potential gap in the research and evidence base for ACT, I could add something new to the literature and fulfil my desire to learn a new methodology.

I therefore decided to embark on a journey of exploration. I used Q methodology to identify the aspects of a pain management programme that individuals had found most helpful in moving them forward. Q methodology allowed me to capture the voice of the service user; something that I felt was missing from previous research due to the abundance of self-report questionnaire data. Self-report questionnaires are often open to responder bias, confounding variables, and overlook the personal importance and value of an intervention. I was determined to ensure that service user's viewpoints were heard, and their perspectives shared. As a clinician working within the NHS, I believe that service users have important contributions to make to the evaluations of intervention approaches, how they view, and value the service is important. Service user input is also acknowledged by NHS England (2013) as they state; the NHS must be responsive to the service user experiences and ensure that those whose use NHS services are heard.

Ethical approval

I had previous experience of conducting research in an NHS setting for the academic requirements of a master's degree in research psychology and so, I was aware of the process involved in acquiring ethical approval. I wrote a thorough research protocol, which in some ways was written to alleviate my

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worry around gaining ethical approval, to manage my feelings of uncertainty and unfamiliarity with Q methodology and also to keep my mind focused on the task. On reflection, whilst the protocol was helpful in achieving containment, it inadvertently created problems in the recruitment stages of the thesis.

The research project required thorough university and NHS ethical approvals as I was recruiting participants from the NHS. Gaining ethical approval was a complex, lengthy process with several obstacles, mainly due to the research being conducted in a trust and a site that was not my employing trust. Additional measures were required for Research and Development (R&D) approval for the specific site where the research would take place, and this created more complications. A lack of clarity regarding the process and ambiguity about additional information along with delays in the process brought about feelings of uncertainty, worry, and frustration. The delegation of responsibilities and relying on others to action tasks were particularly difficult. The delay in processing the application led me to wonder whether I would actually be able to complete the project within the agreed timescales, and this was quite concerning. However, a combination of my own persistence, the proactive responses of my tutors at the university and the helpful natures of individuals involved in approving the applications helped to get my application through the process and avoid any major delays.

Recruiting participants

Q methodology relies on individuals sorting a range of statements related to a particular situation, view, or experience. ACT clinicians and service users from a chronic pain management service were initially invited to participate in two focus groups to develop these statements. Recruiting service users to a focus group to develop and validate statements was challenging due to limited numbers, availability, and interest from potential participants. I was keen to include the service user viewpoint in the development of the statements, for a unique perspective and to acknowledge the contribution of service users to the development of services in the NHS. Involving a service user in the review of the statements meant for me that the Q-sort would accurately reflect the pain management programme, avoid professional jargon, and be understandable to

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chronic pain service users. This was felt to be important in being able to capture what service users found useful and most valuable from the pain management program.

One service user attended the service user focus group, which allowed the statements to be reviewed prior to Q-sort data collection. Additional measures of rigour were employed as I approached the clinicians to validate the statements alongside my academic peers at the university. I wanted to make sure that the statements were meaningful, that they did not just replicate statements found in self-report measures. I also wanted to make sure that the experience of the Q-sort was richer and more personal than ticking statements on a questionnaire.

As the recruitment difficulties continued into the Q-sort stage of data collection, I could sense my perfectionist tendencies (wanting to get things done on time, correctly and to a high standard) increase. It was the praise and encouragement from my research supervisor and clinical supervisor at these times that kept me grounded. The positive response from the clinical team in promoting my research to potential participants was also really helpful. A total of ten participants were recruited for the Q-sorts and one individual reviewed the statements prior to the Q-sort stage of data collection.

Procedure

Focus groups were chosen for the initial stage of data collection (to develop statements) rather than semi-structured interviews due to the interactions that are encouraged during group discussions and the perceived richness of such data as participants offer their opinions and listen and build upon the opinions of others (Finch, Lewis & Turley, 2013). The focus group with clinicians was really helpful in developing the statements as participants spontaneously built upon ideas and opinions related to the group based pain management programme. Clinicians were asked which parts of the programme they felt facilitated change, that clients may find helpful or difficult, and which they are likely to have connected with the most. The focus group ran smoothly and occurred alongside an extensive review of the ACT literature, which helped to contain my worries

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about developing 48 relevant statements. The language used by clinicians was easily translated to statements that service users would be able to relate to.

The second stage of data collection was the completion of the Q-sorts. This stage of data collection had a number of challenges as I relied on members of the pain management team to recruit and organise participant attendance for data collection. Again, my perfectionist tendencies came into play, I had to balance wanting to check that other people had fulfilled their roles and responsibilities with maintaining a positive working relationship. Clear and responsive communication during this time was really helpful in alleviating my worries and ensuring that tasks were completed.

Several time constraints created difficulties throughout the data collection stage, the first being the cancellation of a group which significantly reduced access to potential participants. A substantial amendment was submitted to NHS ethics to widen the inclusion criteria and access service users attending for their three-month and six-month follow up. Quick responses from those authorising my application to those approving the changes were really helpful at this stage, so too was the co-operative nature of the clinicians in the chronic pain service in responding to my last minute requests to send out invites. A further time constraint were the actual Q-sorts themselves, which took longer to conduct than first, anticipated. The first few Q-sorts left me feeling quite overwhelmed with the amount of information I had gathered. However, this information became extremely valuable when interpreting the outcomes.

One other challenge in collecting data was managing the distinction in my role as a researcher, and resisting the temptation to act as a therapist. This was particularly noticeable when participants became overwhelmed during the Q-sorts. Throughout the research, I used my clinical skills to display empathy and active listening, which helped the participants to feel heard, valued and respected. My approach also seemed to validate their feelings and experiences, and I was able to direct participants to the useful contacts contained in the information sheet for further information and support where needed.

Analysis

Finding a way through the analysis to a succinct interpretation of factors proved to be difficult. The PQmethod software that I used offers a choice of analyses, and it was difficult to know which the best analysis to choose was. The guidelines of Watts and Stenner (2012) and Brown (1980) were helpful in helping me to choose an analysis and be confident with this choice. I adjusted the significance level using guidance from Brown (1980) to best capture the similarities and differences between the participants, and then used principle component analysis (PCA) with varimax rotation, which found an appropriate and accurate solution. The PCA and varimax method does have limitations, as it tends to find a numerical solution rather than a theoretical solution. However, looking through the factor solutions it appeared that these factors did in fact reflect the participant's viewpoints. My presence during the data collection and discussions with participants gave me confidence that this solution was the most appropriate.

Insider perspective

Having had direct experience of the group delivery, I felt I was able to relate with the parts of the programme that participants spoke about and I was able to convey genuine understanding of the value of particular parts. It felt like this was really important for the participants, feeling heard and feeling valued, and I believe this has really helped with the interpretation of the factors.

Learning from the experience

I have likened my learning throughout this process to a steep learning curve. There have been many challenges, which despite my previous experience of researching for academic purposes I had not considered. The first was the rigid manner in which I wrote my research protocol. This presented many challenges during the recruitment process, as I had been rigid with my inclusion criteria to recruit participants going through the pain management programmes that occurred concurrently with the thesis data collection. I had not considered including service users from past groups being eligible, which meant

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a substantial amendment to the NHS ethics, was required. Furthermore, individual interviews may have been more appealing to service users rather than a focus group. My learning here is to consider all viable options of recruitment and data collection before writing these into a research protocol.

Factor interpretation

Having had direct experience of delivering an ACT based group intervention for chronic pain I had to remain mindful through the interpretation of the factors that I did not impart my own ideas of what people found most helpful. Supervision with both my research supervisor and clinical supervisor were helpful through this process along with personally checking in with my own ideas, and robustly linking the interpretation back to the statistics of the PQmethod.

One of the factors that emerged from the results of this study identified the value and importance of self-compassion. I felt privileged to hear about the experiences of the participants completing the Q-sorts and I admired their courage and honest discussion of the challenges that they had overcome. This experience of conducting the research has allowed me to develop a deeper level of understanding and empathy for individuals with long-term health conditions that impact upon quality of life and functioning. In completing the research, I connected with a real sense of admiration for the participants. They taught me about the importance of self-compassion for my own personal and professional development, which was something that I always believed I was aware of, but I noticed that whilst working hard to complete my training and ensure that this doctoral thesis was conducted ethically, and to the highest standard, I had at times allowed my self-care to slip. This is a valuable learning point that I will endeavour to take forward in my training and career as a clinical psychologist.

Planning for future research

There were several limitations to this research project, which in future research could be rectified. The first limitation is the relatively small sample

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size, which in some ways was stilted by the delay in gaining ethical approval and then again with unavoidable service constraints. My learning points, going forward are to consider a range of contingency plans for recruitment and widen out my inclusion criteria in any future research that I undertake. The lengthy and complex process of ethical approval cannot be changed, but an appreciation of this can be included in the timescale for the study. As the focus groups were time consuming and difficult to recruit to, an alternative approach to data collection for the development of statements could have been used (individual interviews), although these may not create as rich detail, they may have allowed more service users to participate in the research.

However, my journey through completing this thesis has been extremely valuable. I am aware that I am now near to the end of my journey, and I can look back and reflect upon the challenges and obstacles in a more positive light. I have overcome several challenges and through doing so I have developed skills and knowledge in a new approach to research, and I have fulfilled my goal of capturing the views of service users and representing them in the evidence base for ACT and chronic pain. The experience as a whole has allowed me to feel more confident about future research, and I have consolidated my understanding of the importance of evaluating treatment approaches, particularly within the NHS, which will be helpful for my future career as a clinical psychologist.

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