Acceptance and Commitment Therapy with Chronic Pain Patients: Using a Delphi Study to Gather an Expert Consensus on Client Language in Relation to Psychological Flexibility

Gemma Louise Dunning

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Academic Unit of Psychiatry and Behavioural Sciences

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ABSTRACT

Introduction: There is increasing research evidence to support the effectiveness of Acceptance and Commitment Therapy (ACT) in treating chronic pain, but relatively little on the hypothesised change processes thought to underlie it. ACT is rooted in a theory of human language and cognition and if an ACT intervention was successful, this should be reflected in a change in the language used by the patient when talking about their experience of pain. However, there is currently no clear understanding regarding the form these changes might take.

Aim: The current study aimed to gather a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological flexibility, the key theoretical construct in ACT. The focus was to create a pool of statements thought to typify client language during therapy that reflects psychological in/flexibility and that could inform future outcome and process research.

Method: Participants were recruited using a mixture of purposeful and snowball sampling to take part in a Delphi study. The study involved three iterative rounds of data collection and analysis. Quantitative and qualitative data analysis included simple descriptive statistics and thematic analysis respectively.

Results: Participants generated 478 statements representing client language reflective of psychological in/flexibility in round one. Participants found it hardest to produce statements in relation to the ‘now as known’ processes. The item pool was reduced/amended on the basis of participant feedback in round two leaving 160 items for round three. A final item pool was obtained in round three using two different consensus cut-offs, and data was gathered on the process. Participants were often split in their decision making regarding statements *inconsistent* with the target processes, but offered several insights into hypothesised key characteristics of client language before and after successful ACT.

Discussion: The results are contextualised within the wider literature. The strengths and limitations of the current study are explored. Finally, areas for future research and the clinical implications of the current study are considered.

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ABBREVIATIONS

AAQ = Acceptance and Action Questionnaire
ACT = Acceptance and Commitment Therapy
ADPM = Acceptance and Defusion Process Measure
BOS = Bristol Online Survey
CBT = Cognitive behavioural therapy
CPAQ = Chronic Pain Acceptance Questionnaire
EMDR = Eye movement desensitization and reprocessing
IQR = Inter-quartile range
LOC = Locus of control
MBSR = Mindfulness-based stress reduction
MDT = Multidisciplinary team
MI = Motivational interviewing
MISC = Motivational Interviewing Skill Code
MI-SCOPE = Motivational Interviewing Sequential Code for Observing Process Exchanges
MTAU = Medical treatment as usual
NGT = Nominal group technique
PhD = Doctor of Philosophy
PMP/s = Pain management programme/s
RFT = Relational frame theory
SCD = Sentence Completion Test for Depression
UK = United Kingdom

CHAPTER ONE: INTRODUCTION

An Overview of the Current Research

Chronic pain is a major health problem. Traditional treatments for acute pain in western societies have been dominated by the medical model and the search for a cure. However, these treatments may be inappropriate in chronic or persistent pain (e.g. see Siddall & Cousins, 2004; Turk, 1999). More recently there has been an increased emphasis on biopsychosocial approaches to chronic pain management. In particular there is increasing research evidence to support the efficacy and effectiveness of Acceptance and Commitment Therapy (ACT) approaches in the treatment of chronic pain (see Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

As ACT becomes an increasingly popular choice for the treatment of chronic pain, there has been a call for research to focus more on treatment processes in ACT in order to ultimately help maximize the benefits of therapy for patients (e.g. McCracken & Vowles, 2014; Wetherell et al., 2011). Importantly, ACT as a model is rooted in a theory of human language and cognition (see Hayes et al., 2006). Based on this it would be reasonable to think that if ACT has ‘worked’ we could observe changes in the way people talk about and relate to their pain experience. That is changes in the processes targeted in ACT could be reflected, assessed and measured through changes in the language used by patients. However, there is currently no consensus in the literature on what these changes would look like. Therefore, the current research focuses on drawing a consensus from experts in the fields of ACT and chronic pain regarding how we might expect patients to talk about their pain if ACT has been effective or ineffective. This consensus could then inform future outcome and process research in ACT.

Background on Pain

What is Pain?

There are different types of pain. There exists variation in the physical or sensory dimension of pain (e.g. its nature, severity, pattern; Morrison & Bennett, 2006). In addition, people’s affective experiences of pain are subjective; one reason being that they learn the meaning of ‘pain’ through their unique early life experiences related to injury (International Association for the Study of Pain, 2011). Pain has been defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (International Association for the Study of Pain, 2011). This introduces the idea that pain is not simply a physical experience.

Adaptive Advantages of Pain

Pain serves an adaptive function. Pain can alert the individual experiencing it to potential damage to their body (Morrison & Bennett, 2006); they may then stop or restrict painful activity in order to promote healing and recovery. Pain can also signal the onset of disease and prompt people to seek medical treatment (Morrison & Bennett, 2006), meaning it is vital to human survival. In support of this idea, people with congenital insensitivity to pain (who are unable to feel pain) often die by early adulthood (Nagasako, Oaklander, & Dworkin, 2003). This is probably because they fail to notice and respond to illnesses and injuries (Nagasako et al., 2003).

In addition pain is signalled to others via verbal and non-verbal behaviours such as facial expressions, vocalisations, postures, and movements (e.g. limping; Williams, 2002a). However, these behaviours are not necessarily proportionate to the amount of pain experienced by the individual displaying them (Vervoort, Goubert, & Crombez, 2009). The above behaviours can elicit care and assistance from others (Williams, 2002b) and it is thought that such survival benefits drove the evolution of ‘pain behaviours’.

Moreover, an individual’s pain experience can be influenced by their interactions with others. For example, in one study patients with chronic back pain completed a treadmill test twice, with their partner present during one of these tests only. In this study solicitous spouses were thought of as those who were relatively more vigilant to their spouse’s pain and more likely to behave in ways that lessened their behavioural activities (e.g. by taking over their chores). It was found that patients with more solicitous spouses (based on the spouse’s report) experienced greater pain, and walked for less time, than individuals with relatively non-solicitous spouses when their partners were present (Lousberg, Schmidt, & Groenman, 1992). This highlights that a patient’s pain behaviour and activity levels can be shaped by their social environment.

Defining ‘Chronic Pain’

Despite the obvious adaptive advantage of acute pain as a warning signal when it lasts for a long time it can become problematic and maladaptive. Chronic pain has been defined as “pain that persists beyond the normal time of healing” (Thorn & Walker, 2011, p.376). However it is unclear what is meant by ‘normal time of healing’ (Verhaak, Kerssens, Dekker, Sorbi, & Bensing, 1998). This may be affected by, for example, the type and extent of physical damage associated with an individual’s condition. The above definition also does not account for conditions where healing may not occur (e.g. rheumatoid arthritis). As a result different definitions of chronic pain exist in the literature, which makes it difficult for researchers and clinicians to have a shared language regarding this phenomenon. Generally, pain is said to be chronic when it lasts for more than three months (Debono, Hoeksema, & Hobbs, 2013; Thorn & Walker, 2011). Thus we are presented with two issues: the continuation of pain for no apparent reason and the effect of that continuous experience on the sufferer.

Prevalence of Chronic Pain

Partly due to the above definitional issues it has previously been difficult to estimate the prevalence of chronic pain. A review of the literature reported the median prevalence of chronic pain to be 15% in the adult population at a primary care level (Verhaak et al., 1998). Across the 15 studies reviewed the estimated prevalence ranged from 2% to 40%. Methodological differences between these studies, such as different data collection methods, may account for discrepancies in the reported estimates. A more recent large scale telephone interview study estimated the prevalence of chronic pain to be 13% in the general UK population (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006).

Interestingly, Verhaak and colleagues (1998) found that the prevalence of chronic pain usually increased with age. However, the researchers largely included studies with participants between 18 and 75 years in their review. Therefore the prevalence of chronic pain in the oldest people is unclear. On the other hand Breivik and colleagues (2006) reported that chronic pain was as common in younger people as in older people. However, the use of telephone interviews in this study may have meant that a proportion of older people (e.g. those in nursing homes) were not reached. Importantly, research has highlighted a higher prevalence of pain in older persons, that is those generally aged over 65 (e.g. Blyth, March, Brnabic, Jorm, Williamson, & Cousins, 2001; Bouhassira, Lantéri-Minet, Attal, Laurent, & Touboul, 2008; Crook, Rideout, & Browne, 1984; Eriksen, Jensen, Sjøgren, Ekholm, & Rasmussen, 2003). One reason for this could be the increasing likelihood of physical health problems with advancing age. Given that there is a growing number of older people, especially the ‘very old’ (Tinker, 2002), it seems crucial that we look more closely at chronic pain in this population in future. Moreover, based on the above one could argue that chronic pain is a major health problem *across* the lifespan that needs addressing.

The Impact of Chronic Pain

Living with chronic pain can have wide reaching implications. For example, it can negatively impact on people's ability to self-care, sleep, engage in daily activities, and work (in turn affecting their financial situation; e.g. Blyth et al., 2001; Breivik et al., 2006; Eriksen et al., 2003; Morrison & Bennett, 2006). Along with untreated pain older people, for example, may have to contend with changes in their mobility (e.g. impaired walking, falls), social context (e.g. reduced socialization), and overall health (e.g. malnutrition, sleep disturbance, cognitive dysfunction; e.g. Dworkin, Von Korff, & LeResche, 1990; Ferrell, Ferrell, & Osterweil, 1990). This presents the challenge of disentangling the impact of pain per se from other contributors to the experience of chronic pain.

The impact of pain on an individual's mood is also evident in the literature, with studies highlighting higher rates of depression in chronic pain patients (30-54%) as compared to the general population (5-17%; Banks & Kerns, 1996; Romano & Turner, 1985). A bi-directional relationship likely exists between people's perception of their pain and their mood. Experimental studies have indicated that individuals with depressed mood show a reduced tolerance for pain compared to non-depressed individuals (e.g. Piñerua-Shuhaibar, Prieto-Rincon, Ferrer, Bonilla, Maixner, & Suarez-Roca, 1999; Zelman, Howland, Nichols, & Cleeland, 1991). Whereas other studies have shown that mood changes (e.g. increased anxiety, anger, depression) can precipitate increased pain and vice versa (e.g. Magni, Moreschi, Rigatti-Luchini, & Merskey, 1994; Moldofsky & Chester, 1970).

In addition, one study found the prevalence of anxiety disorders to be significantly higher in a large sample of chronic pain patients with arthritis (35.1%) compared to the general population (18.1%; McWilliams, Cox, & Enns, 2003). However, there are no consistent associations between specific anxiety disorders and chronic pain in the literature (Dersh, Polatin, & Gatchel, 2002). The presence of an anxiety disorder has been found to be associated with poorer treatment outcomes (e.g. a reduced likelihood of returning to work) in chronic pain patients (Burton, Polatin, & Gatchel, 1997). However, anxiety in the context of chronic pain is less well studied relative to depression and further research is needed (Perry, 2013).

Chronic pain is also associated with interpersonal problems. For example, it has been found to exacerbate marital conflict and create interactions between spouses (e.g. punitive ones) that in turn can intensify the patient's pain (Schwartz, Slater, & Birchler, 1996). Other social consequences of chronic pain can include social withdrawal as well as social isolation for sufferers and their spouses (Sofaer-Bennett, Walker, Moore, Lamberty, Thorp, & O'Dwyer, 2007).

Pain also has associated economic costs (although the precise cost is unknown). For example, it was estimated that in 1998 the direct costs of back pain in adults alone totalled £1632 million and the cost of informal care and 'production losses' (e.g. absenteeism from employment) equalled £10668 million (Maniadakis & Gray, 2000). Also, the cost of chronic pain in adolescents to UK society has been estimated to be £3840 million a year (Sleed, Eccleston, Beecham, Knapp, & Jordan, 2005). Thus, given the apparent potential for chronic pain to seriously affect the individual, those around them, and wider society, it is crucial that effective treatments are developed.

Psychological Factors in Pain

Introducing Psychological Factors

Although somewhat outdated, The Gate Control Theory of pain (Melzack & Wall, 1965) offered a theoretical model to account for subjective differences in the perception and experience of pain. This introduced the crucial element of a top-down influence in pain. For example, negative cognitions (e.g. catastrophizing) and emotions (e.g. anxiety, fear) are thought to lead to a greater degree of pain. Conversely more positive cognitions (e.g. optimistic ones) and emotions (e.g. calmness) are thought to attenuate pain (Morrison & Bennett, 2006). That is, not only does tissue damage affect pain perception, but this experience can be altered by other (e.g. psychological) variables.

Since then it has been increasingly acknowledged that pain is a complex perceptual experience altered by a variety of psychosocial variables (Turk & Okifuji, 2002). Therefore, it is reasonable to think that we might enhance our understanding of how people perceive, experience, and respond to chronic pain and its treatments by considering the psychological factors of pain. Examples of key psychological constructs and their relationship to pain are explored below (these examples are not exhaustive).

Attention and Pain

Pain is a powerful stimulus that demands attention (Eccleston & Crombez, 1999). When an individual is engaged in activity, whether it is observable (e.g. chores) or not (e.g. thinking), pain can 'interrupt' their attention (e.g. Morley, 2008). Goal-directed behaviour requires attention (Morley, 2008). It may be important that such behaviour is interrupted. For example, if a person is running a race and through pain is alerted to a torn ligament they could then stop and seek medical attention. However, if behaviour is continually interrupted (e.g. in the case of chronic pain) this can ‘interfere’ with a patient’s ability to perform tasks to their desired standards or the perceived standards of others (Morley, 2008). Ultimately, this can prevent people from achieving their goals (e.g. going to work, socializing, bathing).

Cognitions and Pain

People’s thoughts and beliefs may also influence their pain experience. For example, Walsh and Radcliffe (2002) studied chronic low back pain and found that patients who believed that their pain was mainly organic in nature (i.e. caused by physical damage) reported greater physical disability (e.g. more difficulty with activities such as personal care, walking, and sleeping). This may have occurred because patients feared that activities would further damage their backs thereby causing more pain (Morrison & Bennett, 2006). In contrast, patients’ beliefs that their pain resulted from psychological factors (e.g. anxiety) were not associated with physical disability.

Other types of beliefs and expectations are also thought to alter the pain experience. For example, people who hold high expectations of being able to cope with/tolerate pain seem to be able to do so (e.g. Bachiocco, Scesi, Morselli, & Carli, 1993). Also, those who believe/think that they are able to control their pain appear to experience less pain compared to people without this belief (e.g. Jensen, Turner, & Romano, 2001).

Similar to the above, Murphy, Lindsay, and Williams (1997) noted that patients’ activities were limited more by their expectations of pain rather than their actual experience of pain. More specifically, patients with chronic low back pain were largely found to under predict the intensity of their pain on an initial exercise task, which meant that they increased their prediction on subsequent tasks; this was associated with greater anxiety and more avoidance behaviour. In line with this McCracken, Gross, Sorg, and Edmands (1993) found that patients with chronic pain who predicted greater pain (regardless of actual pain) showed less range of motion during physical examination. The above suggests that people’s causal attributions and expectations related to pain can affect their willingness to engage in activities that we can presume are important for their independence and quality of life. Importantly, research has shown patients’ beliefs about the causes of their pain to change during (multidisciplinary) treatment; reductions in patients’ reported ‘organic’ causal attributions have been found to be associated with improved physical disability (e.g. Walsh & Radcliffe, 2002).

Fear Avoidance

The above seems to resonate with the idea that in chronic pain, pain related fears and anxieties can intensify the pain experience. Chronic pain patients have been found to fear: the pain itself; activities (e.g. work) that are expected to bring on the pain; movements that they think will cause re-injury (Vlaeyen, Kole-Snijders, Boeren, & van Eek, 1995; Wideman et al., 2013). Fearful patients also seem to attend more to threat signals (i.e. physical sensations; Crombez, Vervaet, Lysens, Baeyens, & Eelen, 1998).

The consequences of such fears and attention to threat signals are illustrated by the fear avoidance model (introduced by Lethem, Slade, Troup, & Bentley, 1983). This postulates that if feared bodily movements and/or activities are avoided it can lead to long-term problems such as physical de-conditioning and guarded movements, as well as increased pain and disability (Leeuw, Goossens, Linton, Crombez, Boersma, & Vlaeyen, 2007; Lohnberg, 2007; Vlaeyen & Linton, 2000). Avoidance can lead to frustration, irritation, and depression, with the latter likely perpetuating the pain experience (thus increasing fear and avoidance; Vlaeyen & Linton, 2000).

Importantly, ‘pain related fear’ (i.e. fear of re-injury due to movement) has been found to be a strong predictor of disability, even when controlling for other variables (e.g. onset of pain and pain intensity), at least in chronic back pain (e.g. Crombez, Vlaeyen, Heuts, & Lysens, 1999). This suggests that pain related fears may be more disabling than the pain itself for chronic pain patients. Of note, interventions that incorporate reducing pain related fear (e.g. graded exposure in vivo) have been shown to have benefits (e.g. significantly improved performance of daily activities) for people with chronic pain (e.g. de Jong, Vlaeyen, Onghena, Goossens, Geilen, & Mulder, 2005; Vlaeyen, de Jong, Geilen, Heuts, & van Breukelen, 2001). However, it is important to remember that there exists individual variability in how people respond to pain and its related fears, which likely reflects their prior learning histories (Turk & Okifuji, 2002).

Self-Efficacy and Pain

Self-efficacy is another concept that has been considered within the chronic pain literature. Using Bandura’s (1977) definition as a base, in the context of chronic pain self-efficacy can be thought of as: one’s level of confidence in successfully performing activities, in service of a desired outcome, despite the pain. According to the literature self-efficacy seems to be influential in the perception of pain, control of pain, and adjustment to pain, as well as the degree of pain related disability/impairment (Harrison, 2012; Lorig, Chastain, Ung, Shoor, & Holman, 1989; O’Leary, Shoor, Lorig, & Holman, 1988; Turk & Okifuji, 2002). A patient’s self-efficacy may even be a better predictor of disability (when thought of as the degree to which pain interferes with activities) than pain related fear variables (e.g. fear of movement, catastrophizing; Denison, Åsenlöf, & Lindberg, 2004).

Evidence also suggests that self-efficacy plays a key role in treatment outcomes. For example, O’Leary and colleagues (1988) tested a CBT treatment for rheumatoid arthritis. The treatment focused on, for example, the development of pain management skills and coping strategies (including relaxation) as well as goal setting. The researchers found that the experimental group, in comparison to controls, showed substantial reductions in their pain post-test. The experimental group also displayed reductions in stress and depression; they were also found to cope more effectively with pain/illness. Further, the researchers found that perceived self-efficacy (to manage pain) was enhanced in the experimental group. Correlation analyses revealed that perceived self-efficacy was associated with the magnitude of the improvements noted. Although, given that correlation analyses were used we cannot infer that self-efficacy *caused* the above improvements.

Perceived Control and Pain

‘Locus of control’ (LOC) is another psychological construct that has been considered within the chronic pain literature. Generally LOC refers to the degree to which one believes they have control over events/situations/circumstances (such as chronic pain) affecting them. People are often thought of as having either an internal LOC or an external LOC. With an internal LOC a person believes that events are contingent upon their behaviour (Rotter, 1966), giving them a sense of personal agency over their actions. With an external LOC a person believes that events are contingent upon luck, chance, fate, or environmental factors (Rotter, 1966), leaving them with little perceived control over their decisions. Although it is probable that most people’s LOC does not exist at these extremes but instead lies between them on a continuum.

Research suggests that individuals with persistent pain who have an internal LOC are, in comparison to individuals with an external LOC, more likely to: adopt adaptive coping strategies (e.g. cognitive self-management strategies; Buckelew, Shutty, Hewett, Landon, Morrow, & Frank, 1990); show greater compliance with medical interventions (e.g. back exercises; Härkäpää, Järvikoski, Mellin, Hurri, & Luoma, 1991); report pain of lower intensity and frequency (e.g. Toomey, Mann, Abashian, & Thompson-Pope, 1991); experience less pain-related disability (e.g.

Härkäpää et al., 1991). Conversely, research suggests that chronic pain patients with an external LOC are more likely to adopt maladaptive coping strategies (e.g. over-reliance on diverting attention) and display greater psychological distress (including anxiety, depression, obsessive-compulsive symptoms; Crisson & Keefe, 1988). The above suggests that the response of patients to treatments that require self-motivation and active participation (as psychological interventions do) could be different depending on their LOC/attributional style. Moreover, it seems apparent that an individual's LOC can play an important role in how they adjust to living with chronic pain.

Treatments for Chronic Pain

Medical Treatments

Despite the varied influences on pain explored so far the biomedical model of pain remains dominant, especially in western societies where we seek curative treatments. That is pain is often seen as a physical phenomenon that is directly related to an underlying physical pathology. As such treatments are often designed to repair tissue damage and reduce the sensation of pain, which is appropriate in acute pain. However, this could be inappropriate in chronic pain where treatments may not work because, for example, there may be an absence of physical pathology (Turk, 1999). Also, in chronic pain interventions meant to treat primary and secondary pathologies (e.g. surgery, spinal cord stimulation, drugs) may be inadequate as they fail to recognize environmental influences that can maintain pain (Siddall & Cousins, 2004). This highlights a need for the continued development of alternative interventions for when it may not be possible to remove the problem/pain.

Chronic Pain: A Biopsychosocial Approach

There is increasing evidence and support for a biopsychosocial model/approach to formulating and treating pain as an alternative to the medical model (Harrison, 2012). Here pain is seen to be caused and maintained by a variety of mechanical, physiological, psychological, and social-contextual processes/variables (Turk & Okifuji, 2002). The interaction between these variables is thought to shape an individual's response to pain (Turk & Flor, 1999). This model has been fundamental to the developmental of psychological interventions (e.g. cognitive-behavioural therapy/CBT) and the integrated/multidisciplinary pain management programmes for chronic pain (e.g. Turk & Okifuji, 2002).

Pain Management Programmes

Rehabilitative and physical interventions aimed at restoring functioning can be useful in pain management (British Pain Society, 2013). However, when persistent pain adversely impacts on an individual's functioning (i.e. physical, social, psychological) and quality of life it is recommended that pain management programmes (PMPs), employing cognitive-behavioural principles, are used to address the psychological components and complexities of pain (British Pain Society, 2013; Koes, van Tulder, & Thomas, 2006; National Institute for Health and Clinical Excellence, 2009). PMPs are generally delivered by a multidisciplinary team (MDT) and in groups to normalize the pain experience (British Pain Society, 2013). A range of integrative methods are used to promote behaviour change and personal wellbeing, which include: pain self-management; activity pacing; guided exercise; goal-setting; relaxation; challenging unhelpful thinking styles and beliefs (British Pain Society, 2013). Importantly, PMPs do not primarily aim to reduce or eliminate pain (as compared to other interventions such as surgery) but instead to improve daily functioning (British Pain Society, 2013). There is good evidence to support the efficacy of such cognitive-behavioural packages as those described above in improving e.g. pain experience, coping, and mood compared to no treatment or usual treatment, (e.g. Morley, Eccleston, & Williams, 1999; Williams, Eccleston, Morley, 2012). However, further consideration of psychological interventions in chronic pain may help us to better understand what contributes to successful outcomes and how so that we are able to maximize the benefits of treatments for patients.

Psychological Interventions for Chronic Pain

Cognitive Behavioural Therapy

CBT packages have become the standard psychological treatment in chronic pain management. Generally, CBT emphasises the importance of changing the content of an individual's maladaptive cognitions (e.g. thoughts, beliefs) during treatment (e.g. Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). This is also the case in the context of chronic pain where the roles of e.g. beliefs regarding pain and its consequences, catastrophic thinking, and cognitive coping styles are often emphasized (e.g. Turk & Rudy, 1992; Vlaeyen & Linton, 2000).

There is a significant evidence base to support the effectiveness of CBT programmes in chronic pain (Vowles & McCracken, 2008). For example, reviews in this area have found CBT to result in reduced pain intensity, disability, distress, and healthcare use, as well as improvements in daily functioning (e.g. Hoffman, Papas, Chatkoff, & Kerns, 2007; McCracken & Turk, 2002; Morley et al., 1999). Moreover, these interventions seem to be the most cost effective treatments for chronic pain (e.g. Gatchel & Okifuji, 2006; Turk, 2002).

Although CBT has made important contributions to chronic pain management we know little about the process/agents of change in CBT and more research is needed in regards to this (Morley, 2004). Moreover, Vowles and McCracken (2008) noted a pattern across the results from treatment trials for a range of disorders (e.g. major depression, posttraumatic stress disorder): specifically targeting maladaptive cognitions (a proposed mechanism of change in CBT) does not appear necessary to achieve improvements/treatment outcomes in either the short-term or long-term.

'Third Wave' Approaches

In contrast to 'second wave' CBT theory it has been questioned whether interventions have to focus on/change the semantic meaning of cognitions to be effective (Vowles & McCracken, 2008). Instead, it has been argued that treatments should focus on the relationship that individuals have with distressing private events/experiences (e.g. cognitions, physical sensations) and how this might be altered by understanding the contexts (e.g. historical, situational) in which they occur (e.g. Hayes et al., 2006; Hayes, Strosahl, & Wilson, 1999). These treatments are known as 'third wave' approaches; Acceptance and Commitment Therapy or ACT is one of the more actively researched interventions from this group. A key strength of ACT is that unlike CBT it arguably has a stronger link to basic cognitive science (see Hayes et al., 2006, for a review). Thus, it seems important to further consider ACT in the context of chronic pain.

The Philosophical and Theoretical Foundations of ACT

Functional Contexualism

ACT as an approach is rooted in functional contextualism (Biglan & Hayes, 1996; Hayes, & Brownstein, 1986). Essentially, this means that it views psychological events (e.g. thoughts, feelings) as "ongoing actions of the whole organism interacting in and with historically and situationally defined contexts" (Hayes et al., 2006, p.4). ACT shares common philosophical roots with other contextual approaches such as constructionism, narrative psychology, and feminist psychology. However ACT and functional contextualism have different goals to these other approaches in that they seek to predict and influence interactions between people and their environments (Hayes, Barnes-Holmes, & Roche, 2001). This restricts ACT's causal analyses to events that can be directly manipulated (i.e. events in the context of an action; Hayes et al., 2006).

Based on the above philosophy, in ACT psychological events are not in themselves seen as problematic/pathological, but rather are seen as dependant on *context*. To disconnect a patient's problematic behaviours (meaning public and private psychological activity here) from their contexts, or to try and explain psychological events in terms of other psychological events (as in CBT for example), could mean that we misunderstand the nature of an individual's difficulties and miss potential solutions. Therefore ACT does not focus on changing the form of psychological events to influence overt behaviour. Instead it focuses on altering the context that causally joins psychological events (Hayes et al., 2006). Put simply ACT focuses on changing one's *relationships* with their thoughts and feelings (Harrison, 2012). Psychological events will function differently in contexts in which they are taken as the objective truth and seen as something to avoid in contrast to contexts where they are not taken as the truth and are 'accepted' (Cocksey, 2011). In the latter context psychological events may still be painful, however they will not prevent and individual from living a valued life (Harris, 2009). In addition, ACT emphasizes workability (i.e. the extent to which a coping strategy/action moves an individual towards living a valued, meaningful, and full life) in its interventions (Harris, 2009) and individuals are encouraged to identify their values in order to assess workability.

Relational Frame Theory

Relational Frame Theory (RFT; Hayes et al., 2001) is a behaviour analytic theory of human language and cognition that underpins ACT, although it has scope for application far beyond ACT. RFT proposes that human behaviour is predominately driven by networks of mutual relations known as 'relational frames'; these make up the core of human cognition and language. Importantly, these relations also enable learning to take place without direct experience (Hayes & Smith, 2005). For instance, a child does not have to hold a wasp to be verbally taught that it could sting them. Hayes (2004) illustrates how relational frames work in this example:

"Suppose a child has never before seen or played with a cat. After learning "C-A-T" → animal, and C-A-T → "cat" the child can derive four additional relations: animal → C-A-T, "cat" → C-A-T, "cat" → animal, and animal → "cat". Now suppose that the child is scratched while playing with a cat, cries and runs away. Later the child hears mother saying, “Oh look! A cat.”. Now the child again cries and runs away, even though the child was never scratched in the presence of the words “Oh, look! A cat.” (Hayes, 2004, p.648-649*).

*Presumably here “C-A-T” and “cat” = spoken word; C-A-T = written word; animal = actual cat; → = equivalence relation.

This way of thinking relationally allows humans to essentially arbitrarily relate anything (e.g. thoughts, feelings, actions, and objects in their environment) to anything else (e.g. other thoughts, feelings, etc.) in practically any way possible (e.g. viewing them as the same as one another, as opposites of each other; Hayes & Smith, 2005). Examples of relational frames include the following: frames of coordination (e.g. “same as”, “like”); spatial frames (e.g. “near/far”), causal or temporal frames (e.g. “if/then”, “before and after”), evaluative/comparative frames (e.g. “better than”, “faster than”); deictic frames (i.e. those with reference to the speaker’s perspective e.g. “I/you” and “here/there”). Relational frames have been a key tool in human evolution (Hayes & Smith, 2005). They allow us to analyse our environment, think about the future, problem solve, make plans, and evaluate outcomes. However, the verbal rules resulting from relational frames can also restrict our lives and create distress. For example, using an “if/then” (temporal) relation one can predict negative events (which may not happen) or worry that pain will reoccur (Hayes & Smith, 2005). Also, using evaluative/comparative relations one can compare themselves to an ideal, which can leave them feeling inadequate despite them doing quite well in the present (Hayes & Smith, 2005). RFT is highly complex and as a result has its own language. This can limit how accessible it is to wider audiences. However, RFT ideas have been translated into a more readily understandable (and translatable to clinical practice) theory of human psychopathology, which will now be explored.

Psychological Inflexibility: An ACT/RFT Account of Psychopathology

An Overview

From an ACT/RFT perspective a key source of psychopathology (and one that can exacerbate the impact of other sources) is ‘psychological inflexibility’. Psychological inflexibility can be defined as “the way that language and cognition interact with direct contingencies to produce an inability to persist or change behaviour in the service of long-term valued ends” (Hayes et al., 2006, p. 6). This is said to result from poor contextual control over language processes (Hayes et al., 2006). There are thought to be two processes that are core to psychological inflexibility; these are outlined below.

Cognitive Fusion

Cognitive fusion becomes problematic when behaviour is improperly or overly regulated by verbal processes (e.g. derived relational networks, rules; see Hayes et al., 1999). Essentially, individuals can buy into or become attached to the literal meaning of private experiences (e.g. thoughts, feelings/emotions; Herzberg, Sheppard, Forsyth, Credé, Earleywine, & Eifert, 2012). For example, thoughts may be seen as absolute truths, rules to follow, or threats to eliminate (Harris, 2009), rather than only a process of thinking occurring in the present moment. Thoughts can then dominate behaviour (i.e. actions, choices). A patient with chronic lower back pain may have the thought “If I feel pain then my back will suffer more damage” - fusion in this case may heavily influence their behaviour (e.g. they may avoid any activities that trigger any pain sensations). Ultimately, cognitive fusion can prevent people from acting in line with their values/goals (Hayes et al., 2006).

Here the functional contexts that seem to produce adverse effects are mainly perpetuated by the social or verbal community (Hayes et al., 2006). These include contexts of: literality (e.g. treating symbols, such as thoughts, as referents or truths); reason-giving (e.g. basing action/inaction largely on the perceived causes of one’s behaviour, especially non-manipulable ones); experiential control (e.g. where one’s main goal is the manipulation of cognitive/emotional states; Hayes et al., 2006). The above interrelate and support experiential avoidance.

Experiential Avoidance

One may be unwilling to stay connected to or in contact with certain private events/experiences. Experiential avoidance refers to attempts to change the frequency, form, and/or situational sensitivity of private experiences (e.g. thoughts, emotions, memories, bodily sensations) even if this causes behavioural harm (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). So an individual may try, for example, to avoid, escape, or get rid of a distressing or unwanted private experience (Harris, 2009) using cognitive, behavioural, and emotional strategies (e.g. rationalising or suppressing a thought). Experiential avoidance becomes problematic when it is applied rigidly/inflexibly and large amounts of time/energy/effort are dedicated to managing unwanted thoughts, emotions, etc. (Kashdan, Barrios, Forsyth, & Steger, 2006). Importantly, attempts to avoid unwanted private experiences likely increases their functional importance as these private experiences are made more salient and efforts to control them are verbally linked to feared outcomes (Hayes et al., 2006). For example, the verbal rule “Do not think about the physical pain” contains the word pain- this will evoke memories, images, thoughts, and emotions associated with this physical sensation. The struggles inherent in experiential avoidance can also reduce one’s contact with the present moment and prevent them from behaving in accordance with their values (Kashdan et al., 2006).

The Core Processes of ACT

An Overview

A key goal of ACT is to increase an individual’s *psychological flexibility* in order that they are able to more fully contact the present moment and change or continue with behaviours that are in service of their values (Hayes et al., 2006). In chronic pain this means that patients are better able to live according to their values despite the pain being present i.e. the pain is not removed but their relationship to the pain changes. The six (interlinked) core processes of/targeted in ACT are displayed in Figure 1. Each of these processes can be thought of psychological skills through which psychological flexibility is established (Hayes, 2006); a range of techniques are used during therapy to equip patients with these skills (see Harris, 2009, for an overview). Each process/skill is briefly outlined below.

Acceptance

Acceptance refers to one being open to and making room for aversive thoughts, emotions, physical sensations etc. (Harris, 2009). Acceptance is not about wanting or tolerating unwanted private events. Instead it refers to a willingness to experience these events as they actually are (and not as one’s mind says they are) without attempting to change them (Flaxman, Blackledge, & Bond, 2011). In ACT for chronic pain, patients can learn to reduce unhelpful attempts to control/avoid their pain in order to focus on engaging in (personally) valued activities (McCracken, Vowles, & Eccleston, 2004). Thus acceptance is encouraged as an alternative to experiential avoidance which can help foster values-based action.

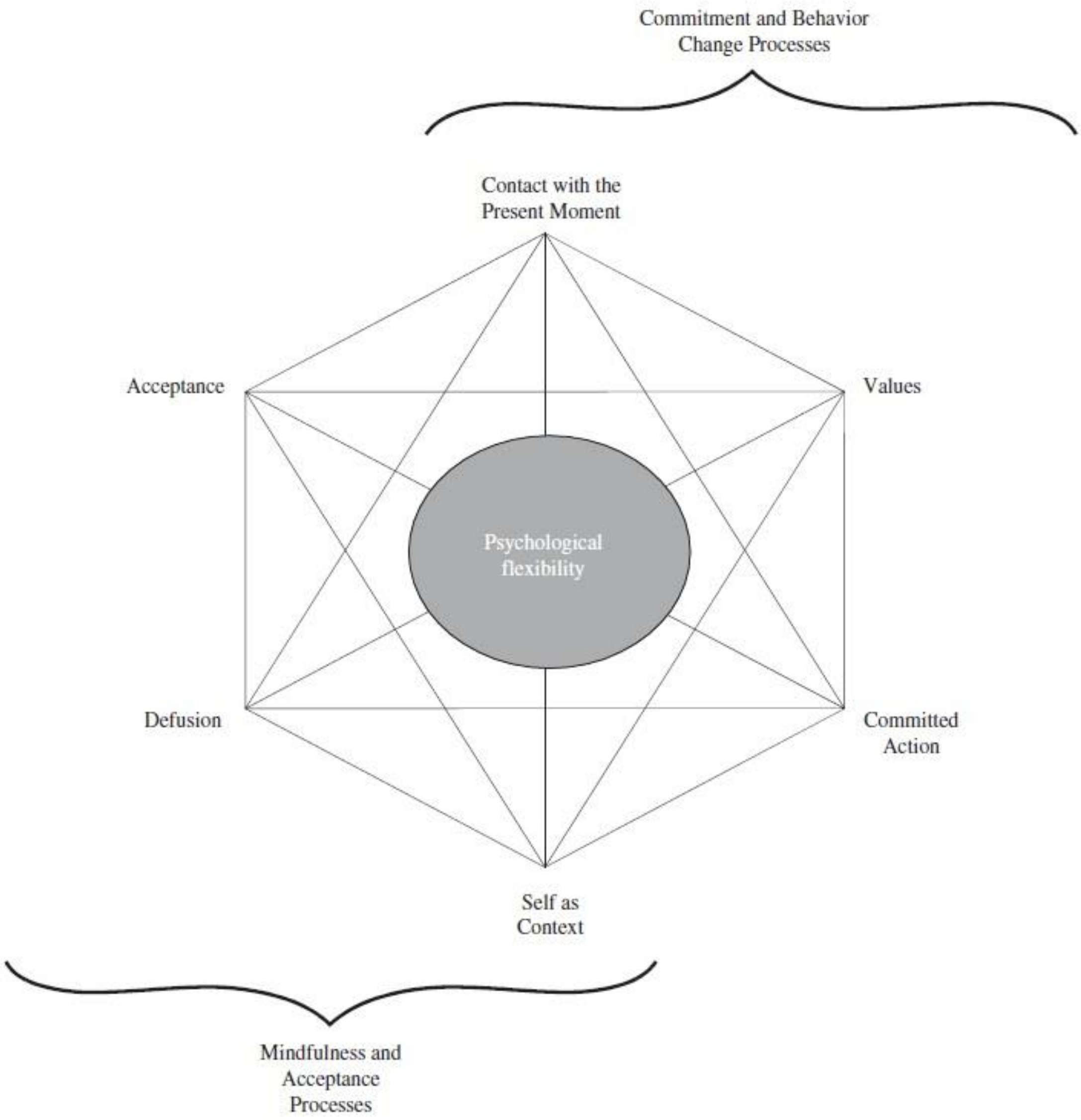


Figure 1. A model of psychological flexibility (the ‘hexaflex’) displaying the psychological processes acceptance and commitment therapy aims to strengthen (reproduced from Hayes et al., 2006, p.8)

Defusion

Defusion refers to the ability to separate or detach from painful thoughts, emotions, etc. (Harris, 2009). For example, individuals can learn to *notice* or *observe* their thoughts as they occur, without judgement, rather than becoming entangled in them. They can also learn to see their thoughts as words or pictures rather than as truths. Cognitive defusion aims to alter how individuals relate to/interact with unwanted private experiences by developing environments/contexts wherein their unhelpful functions are reduced (Hayes et al., 2006). In chronic pain defusion does not get rid of pain (and its associated thoughts etc.) but can provide patients with enough distance from their pain to make choices (e.g. in line with their goals).

Contact with the Present Moment

Being present means that one can flexibly pay attention, non-judgementally, to their here-and-now experiences (i.e. within the physical and/or psychological world; Harris, 2009). This is opposed to the individual getting caught up in their thoughts or being in ‘autopilot’ mode (Harris, 2009). Here language becomes a tool to *describe*, rather than predict or judge, events, thereby allowing greater flexibility in one’s behaviour (Hayes et al., 2006).

Self-as-Context

There are thought to be two distinct parts to the self, these are the ‘thinking self’ and the ‘observing self’ (Harris, 2009). The former generates thoughts, fantasies, plans, etc. Whereas the observing self (or the self-as-context) allows us to be *aware* of what we are thinking, feeling etc. in any moment. Within self-as-context an individual is no longer defined by the content of their private experiences and so difficult situations, as well as the verbal evaluations they give rise to, can become less disabling/threatening (Flaxman et al., 2011). During ACT the observing self is encouraged through experiential and mindfulness activities, as well as metaphors (Hayes et al., 2006).

Values

Values can be defined as “chosen qualities of purposive action that can never be obtained as an object but can be instantiated moment by moment” (Hayes et al., 2006, p.9). That is values describe how we wish to act on a continual basis and provide direction for life (Harris, 2008, 2009). The mindfulness and acceptance processes in ACT (see Figure 1) are used to enable individuals to live a more fulfilling and values consistent life (Hayes et al., 2006).

Committed Action

ACT encourages individuals to put their values into action (Flaxman et al., 2011). That is ACT cultivates increasingly larger patterns of effective action connected to one’s chosen values (Hayes et al., 2006). In this way ACT appears similar to traditional behavioural therapy. Values can never be obtained as an object. However, concrete (behaviour change) goals linked to one's values can be worked towards (Hayes et al., 2006) using a range of behavioural interventions (see Harris, 2009).

Empirical Support for ACT

The Efficacy and Effectiveness of ACT

Two relatively recent reviews of the research considered a variety of ACT-based studies (e.g. correlation, component, outcome, and experimental studies; Pull, 2008, Ruiz, 2010). The reviews concluded that overall the empirical evidence is very coherent and supports the idea that ACT-based approaches can be helpful for a range of disorders. More specifically, ACT has been found to be an efficacious psychological intervention for: psychosis (e.g. Gaudiano & Herbert, 2006); diabetes (e.g. Gregg, Callaghan, Hayes, & Glenn-Lawson, 2007); depression (e.g. Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Zettle & Rains, 1989); worksite stress (e.g. Bond & Bunce, 2000). Other studies suggest that ACT is an efficacious treatment for a range of other conditions (e.g. trichotillomania/hair pulling, social phobia, polysubstance abuse, obsessive-compulsive disorder; see Hayes et al., 2006, for a review). Further, a meta-analysis considered 18 randomized controlled trials and found that ACT was more effective than control conditions (i.e. waiting lists, treatment as usual, psychological placebos) across multiple problem domains (Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009). In essence, there is a growing body of evidence to support the efficacy of ACT in treating a wide range of difficulties where there is a pattern/context of cognitive fusion and experiential avoidance.

ACT and Chronic Pain

Importantly, ACT also appears to be an effective treatment for pain. For example, a small Swedish controlled trial compared a brief (four hour) ACT intervention with medical treatment at usual (MTAU) for public health sector workers with chronic pain/stress at risk of high sick leave use (Dahl, Wilson, & Nilsson, 2004). Here ACT focused on defusion, exposure, values, and commitment processes. Post-therapy and at a six month follow-up it was found that those in the ACT group had used significantly fewer sick days and medical treatment resources than participants in the MTAU group, despite there being no difference between the groups in pain/stress symptoms (Dahl et al., 2004). However, no significant differences in other important variables (e.g. quality of life) were found between the groups. Taken together these results suggest that the above outcomes cannot be attributed to a remission in symptoms. Instead it may be that the ACT group were able to act more effectively/flexibly in the presence of their symptoms following the intervention. However, the above results come from a study with a small and highly specific sample which in turn limits the reliability of the findings.

Another outcome study found that chronic pain patients significantly benefited from an ACT-based treatment programme in terms of their physical, emotional, and social functioning, as well as their medication use, compared to a no-treatment waiting period (McCracken, Vowles, & Eccleston, 2005). Other studies have shown complex chronic pain sufferers to achieve significant reductions in e.g. pain-related anxiety, depression, disability, healthcare use, and work status use following an ACT treatment model (e.g. McCracken & Gutiérrez-Martínez, 2011; Vowles & McCracken, 2008). Overall, there now seems to be numerous studies to support the efficacy and effectiveness of ACT-based interventions in chronic pain (McCracken & Gutiérrez-Martínez, 2011).

Preliminary trials have also shown patients with chronic pain to benefit from ACT when delivered in a group format. For example in two studies Vowles, Wetherell, and Sorrell (2009) tested the effectiveness of a brief ACT group programme for chronic pain outpatients. The programme focused on mindfulness, acceptance, and values-based action. Preliminary results supported the programme's efficacy and feasibility (with mostly medium and large effect sizes). This seems an important finding given the current PMP (or group format) approach to treating chronic pain in the UK.

ACT has also been considered in the context of paediatric pain. One case example in the literature focused on a female adolescent with chronic idiopathic generalized pain (Wicksell, Dahl, Magnusson, & Olsson, 2005). ACT was chosen as the treatment model. The intervention focused on the achievement of value-based goals rather than the reduction of pain/distress (although in the pursuit of values exposure to avoided stimuli occurred naturally). The researchers noted improvements in the patient's functioning (e.g. increased school attendance) and valued life activities following treatment. Further, a case series of adolescents (*n* = 14) with chronic debilitating pain showed an ACT-based approach to be associated with improvements in functional disability, school absence, catastrophizing/internalizing, pain intensity, and pain interference post-treatment, as well as at three and six month follow-ups (Wicksell, Melin, & Olsson, 2007). The above results suggest that ACT can be useful in the treatment/rehabilitation of children/young people with chronic pain.

There is also some evidence to support the efficacy of guided self-help ACT interventions for chronic pain. For example, Johnston, Foster, Shennan, Starkey, and Johnson (2010) evaluated the effectiveness of an ACT self-help book for chronic pain patients (*n* = 24). Half of the participants were assigned to a treatment group, where they received a self-help book and a workbook; they worked through sections of these books over a six week period. The other half of the participants were assigned to a control group (they were given the option of the intervention after the initial six weeks). Both groups also completed a battery of measures pre- and post- test and received weekly telephone calls from the researchers. It was found that the treatment group showed reduced anxiety and improved quality of life compared to control participants. Also, in terms of those who received the treatment researchers found statistically significant improvements in: satisfaction with/quality of life, acceptance, and values illness (i.e. large effect sizes), as well as pain ratings (i.e. median effect sizes).

Another study (a Swedish clinical trial) compared two self-help based interventions, those being an applied relaxation approach and an ACT-based approach (Thorsell, Finnes, Dahl, Lundgren, Gybrant, Gordh, & Buhrman, 2011). Both interventions included: an initial meeting with a therapist, a seven week self-help intervention (this was manual based) with weekly telephone support and a final session with a therapist. The researchers found that the ACT group showed significantly increased levels of acceptance compared to the applied relaxation group. The ACT group also displayed greater functioning (e.g. walking, sleeping) and decreased pain intensity in comparison to the other group. Both groups improved significantly in terms of anxiety and depression. The above studies suggest that even ACT-based self-help materials, with minimal clinician contact, can help improve the lives of people with chronic pain above and beyond waiting lists, treatment as usual, and other treatments (at least applied relaxation).

There is also emerging evidence to support the efficacy of online ACT-based interventions in the treatment of chronic pain. For example Buhrman and colleagues (2013) found significant increases in pain willingness and activity engagement, as well as reductions in anxiety and depression, in people who engaged in a moderated online discussion forum compared to controls. Improvements were maintained at a six month follow-up. Such initial findings are encouraging and suggest that internet delivered treatment (which maximizes available therapist resources) can be effective for individuals with chronic pain.

Qualitative Research

There is a general dearth of qualitative research on ACT for chronic pain. However, two recent studies have explored the experiences of patients attending ACT-based PMPs for chronic pain; the researchers investigated processes that helped to facilitate change using thematic analysis and interpretative phenomenological analysis (Harrison, 2012; Mathias, Parry-Jones, & Huws, 2014). Mathias and colleagues (2014) identified a number of themes indicating key components that may have been helpful in bringing about change. These components included: participants feeling validated/supported/less alone through meeting other people with chronic pain; use of cognitive defusion techniques; increased acceptance of pain; developing a new sense of self (said to reflect a self-as-context perspective); physical exercise (compared to previously avoiding pain-provoking activities). Similar results in terms of validation, support, and acceptance were reported by Harrison (2012). The above seems to fit with the model of change in ACT outlined earlier. However, given their chosen methodology Mathias and colleagues (2014) could not establish the efficacy of ACT. Their study was also limited by only including white British females of a narrow age range, which reduces the generalizability of the findings. One idea is for future research to combine both quantitative and qualitative methods to explore the efficacy of ACT and the change processes underlying this.

ACT in Comparison to Other Therapies

So, if we know that ACT ‘works’ how does it compare to other therapies for chronic pain? Vowles and colleages (2009) tested the effectiveness of a brief ACT group programme for chronic pain outpatients. They found that ACT’s effectiveness rates compared favourably with those from traditional CBT (i.e. the standard treatment in chronic pain). Surprisingly, pain acceptance improved in both treatments even though this is not an explicit aim in CBT (Vowles et al., 2009). In addition, a large randomized controlled trial compared ACT with CBT for chronic non-malignant pain in patients seeking treatment (Wetherell et al., 2011). The trial showed equivalent outcomes for both therapies when added to usual care i.e. participants in both conditions reported improvements in pain interference, pain-related anxiety, and depression (Wetherell et al., 2011). Interestingly, individuals found the rationale behind CBT more credible; yet found ACT more satisfactory, which can be important for treatment engagement (Wetherell et al. 2011).

Similar to the above, an explorative meta-analysis of 22 controlled and non-controlled studies of acceptance-based therapies for chronic pain found medium effect sizes for physical wellbeing, pain intensity, quality of life, anxiety, and depression (Veehof, Oskam, Schreurs, & Bohlmeijer, 2011). Veehof and colleagues (2011) concluded that CBT and acceptance-based interventions produce equivalent effects, with the latter maybe being more useful in cases involving high experiential avoidance and reduced meaning in life. Furthermore, a number of systematic and meta-analytic reviews have concluded that ACT is no more or less effective than established treatments (e.g. Powers et al., 2009; Ruiz, 2010).

Of note, one of the difficulties with comparing ACT to CBT is that ACT *is* CBT (McCracken & Vowles, 2014). That is the two therapies include many similar methods. This means that from a research perspective very large sample sizes (in turn meaning expensive studies) would be required to determine which treatment was more effective (McCracken & Vowles, 2014). An alternative research strategy would be to “focus on examining treatment processes in order to identify methods and moderators that optimize change in these key processes” (McCracken & Vowles, 2014, p.182). This fits with Wetherell and colleagues’ (2011) argument that future research should focus on increasing our understanding of the mechanisms of change in ACT.

Change Processes in ACT

So, there is evidence that ACT works as a treatment for chronic pain but *how* is it said to work from an empirical perspective? Studies have explored ACT’s treatment mechanisms or change processes in a number of ways e.g. through correlation studies, component studies, and mediation analyses. Many correlation studies on ACT have not focused on single ACT processes. Hayes and colleagues (2006) conducted a meta-analysis of 32 correlation studies of ACT (involving 6628 participants) across multiple problem domains (including chronic pain). They found that in general higher levels of psychological flexibility (meaning processes related to acceptance and values-based action here) were associated with better outcomes (e.g. lower rates of psychiatric disorder, higher quality of life). Ultimately “the correlational evidence is fairly supportive of the ACT model as assessed by self-report instruments designed by ACT therapists to measure some of the processes targeted by ACT” (Hayes et al., 2006, p.13).

Further, in the context of chronic pain greater acceptance of pain and greater values-based action has been found to be associated with and predictive of less depression, pain-related anxiety, disability and avoidance, as well as lower pain intensity (e.g. McCracken, 1998; McCracken et al., 2005; McCracken & Eccleston, 2003; Vowles & McCracken, 2008). Many of these changes have also been found to be maintained at three month follow-ups (e.g. McCracken et al., 2005; McCracken & Gutiérrez-Martínez, 2011; Vowles & McCracken, 2008). In addition, in a non-clinical population the addition of a values component to an ACT-based acceptance intervention was found to lead to significantly greater pain tolerance compared to acceptance alone (Branstetter-Rost, Cushing, & Douleh, 2009).

Also, Wicksell, Olsson, and Hayes (2011) analyzed data from a previously reported randomised controlled trial examining ACT for paediatric chronic pain. They evaluated the mediating function of six distinct variables. Pain reactivity and pain impairment beliefs were the variables used to represent psychological flexibility (as no relevant validated instrument of this construct was available). The other variables tested were: pain intensity, catastrophizing, self-efficacy, and kinesiophobia/fear of movement. The researchers tested the mediating effects of the above variables on the outcomes (i.e. depression, pain interference) for two treatments (i.e. ACT and MDT approaches). No mediating effect was found for the four non-psychological flexibility variables. This suggests that improvements in outcome variables were not mainly achieved through pain/distress reduction. However, the two psychological flexibility variables significantly mediated the differential effects on outcomes for the two treatment approaches. Further analysis revealed that for the ACT approach only the psychological flexibility variables post-treatment independently predicated a large proportion of changes in outcome variables at follow-up (i.e. after controlling for earlier outcomes post-treatment). The above results suggest that psychological flexibility variables mediate the effects of ACT to improve the functioning of chronic pain patients.

Cognitive defusion as a change process has been studied to a lesser extent and requires further research attention within the chronic pain literature. However, cognitive defusion has been shown to reduce the discomfort, as well as believability, of negative self-relevant thoughts (at least in the non-clinical population; e.g. Masuda, Hayes, Sackett, & Twohig, 2004). We can also turn to the wider mindfulness literature to consider change processes that overlap with those found in ACT (namely acceptance, defusion, contact with the present moment and self-as-context). Carmody and Baer (2008) studied 174 people with a range of problems (e.g. chronic pain, anxiety) who participated in an eight session (group) mindfulness-based stress reduction (MBSR) programme. The researchers found that from pre-treatment to post-treatment participants' levels of mindfulness increased significantly. Also, the time spent in at home mindfulness practice (e.g. yoga) was shown to be significantly correlated with improvements in: multiple features of mindfulness; psychological symptoms; stress; wellbeing. Similar results were reported in another study focused on MBSR for chronic pain conditions (Rosenzweig, Greeson, Reibel, Green, Jasser, & Beasley, 2010). Moreover, Carmody and Baer (2008) found that increases in mindfulness mediated the relationships between at home mindfulness meditation/practice and improvements in stress and psychological symptoms. The above results provide support for a key belief of mindfulness-based interventions: regular mindfulness/meditation practice should grow or enhance one's mindfulness skills (a facet of psychological flexibility) and in turn lead to improvements in symptoms/psychological functioning (e.g. improved well-being, reduced stress and anxiety).

In summary, it appears that the existing evidence is supportive of ACT processes such as acceptance, defusion, and values-based action (Hayes et al., 2006; Ruiz, 2010). However, other processes such as self-as-context are less well studied, especially as distinct processes and in the context of ACT as opposed to other mindfulness-based interventions. This is likely due in part to the limited range of measures available to assess and track ACT processes (Hayes et al., 2006). Thus, mechanisms of change in ACT for chronic pain, and the measures used to assess these, are important areas for future research.

Limitations of the Research

The research on ACT is not without its limitations (some of which are noted above). A review of studies on ACT highlighted limitations in the quantitative research, which included: a lack of psychiatric diagnostic evaluations/categories; a lack of controls for confounding therapist and treatment conditions; little information on adherence to treatment manuals; a female bias among participant samples; a lack of research with older people (Öst, 2008). Also, in efficacy studies ACT has often been compared to wait-list control groups (a relatively weak control) or treatment as usual, where it is difficult to know what this entails and it often includes fewer hours of treatment than ACT interventions (Öst, 2008). Also much of the pain research has been cross-sectional or included relatively short-term follow-ups (Turk & Okifuji, 2002) and so little is known about the continued impact of ACT-based interventions in the longer term. Further, the representativeness of patients has been limited in some studies (including some described above), in turn limiting how far findings from the empirical literature can be generalized (Veehof et al., 2011).

Importantly, quantitative studies of ACT and chronic pain also seem to have relied heavily on participants' self-reports on outcome and process measures. These measures are subject to biases (e.g. social desirability response bias) during completion which can weaken the validity of results obtained. Further, the ability of usual self-report measures to actually capture changes in relation to acceptance has been questioned in the literature (Harrison, 2012).

There is also a general dearth of qualitative outcome and process research on ACT and chronic pain. The qualitative research that is available (e.g. Harrison, 2012; Mathias et al., 2014) comes with its own limitations e.g. given the methodologies used such research has been unable to establish the efficacy of ACT interventions studied. Future research could benefit from combining both quantitative and qualitative methods to explore the efficacy of ACT and its change mechanisms. Further McCracken and Vowles (2014) have called for future research on ACT to focus more on change processes and to explicitly link ACT's theoretical assumptions to its processes and clinical techniques.

Assessing Change in ACT: The Role of Client Language

ACT and Chronic Pain: The Story so Far

In summary, from the literature reviewed it seems that chronic pain is a major health problem. Although the medical model of pain, and the search of a cure, is dominant medical treatments may be inappropriate for persistent pain. Recently, there has been an increased emphasis on biopsychosocial approaches to chronic pain management. Within individual and interdisciplinary treatment packages cognitive-behavioural principles are often used. However, we know little about how CBT 'works'. Moreover, there is increasing research evidence to support the use of ACT approaches in chronic pain treatment. These approaches have good evidence to support their efficacy and effectiveness. There is also some evidence to support the proposed mechanisms underlying change in ACT. Furthermore, ACT seems especially appropriate to chronic pain, where pain may not be curable, as it emphasises being able to live a valued and meaningful life in the presence of distress/difficulty.

However, the research on ACT has its limitations. In particular it is heavily reliant on self-report measures which are subject to biases. Further, investigators have called for future research to focus more on treatment processes in ACT in order to ultimately help maximize the benefits of therapy for patients (e.g. McCracken & Vowles, 2014; Wetherell et al., 2011). Moreover, it is reasonable to think that future research could combine *both* quantitative and qualitative methods to explore the efficacy of ACT and the change processes underlying this.

Client Language and ACT

Given the above how might future research more effectively explore and measure outcomes and change processes in ACT? In terms of the basic scientific theory underlying ACT the model is rooted in a theory of human language and cognition. Ultimately "[ACT] treatment methods…involve undermining the ways that language and cognitive process interact with other nonverbal contingencies in ways that limit healthy functioning" (Vowles & McCracken, 2008, p.398). Given this it would be reasonable to think that if ACT has 'worked' we could observe changes in the way people talk about and relate to their pain experience. That is we would expect to see 'traces' of ACT in a how patients talk about their pain, much like how archaeologists can find data left behind by past human activity. Thus it makes sense that changes in ACT processes could be reflected, assessed and measured through changes in the language used by patients/clients to talk about their pain experiences.

Given the above proposal it seems important to consider the question: what attempts have already been made to explore client language as a measure of psychological flexibility? The literature reveals that so far client language in the context of ACT has usually been tapped into via endorsement methods (e.g. checklists, questionnaires). One example of this is the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004). In order to construct the AAQ ACT therapists were asked to generate an item pool of clinical processes targeted/central in ACT that were linked to the theory on experiential avoidance (Hayes, et al., 2004; Hayes et al., 2006). Two validated versions of the general AAQ exist (i.e. a 16-item version and a nine-item version). Both versions have shown good psychometric properties (e.g. Bond & Bunce, 2003; Hayes et al., 2006). The AAQ is often referred to as an experiential avoidance measure (based on RFT), although it measures several key processes of psychological flexibility targeted in ACT (e.g. acceptance and mindfulness, values-based action; Hayes et al., 2006). The AAQ has also been adapted for use with chronic pain patients, resulting in the Chronic Pain Acceptance Questionnaire (CPAQ; McCracken, 1998; McCracken et al., 2004). A similar measure, for assessing cognitive fusion, is also available (i.e. the Cognitive Fusion Questionnaire; Gillanders et al., 2014). Essentially in the above measures people rate the truth of each item/statement as it applies to them. That is individuals are invited to endorse statements that make reference to psychological in/flexibility. However, the above measures have serious limitations. For example, the sub-processes of psychological flexibility that the measures tap into are limited by the content of the questionnaire items. Further, the questionnaires do not provide respondents with the opportunity to make spontaneous productions or utterances that might challenge or extend the underlying model of psychological flexibility. Also, if questionnaires contain many negative statements they may bring about depressed mood in respondents and in turn increase negative response bias (Barton & Morley, 1999).

Otherwise, few studies have examined the processes of psychological flexibility using behavioural or observational measures. One study that has was conducted by Hesser, Westin, Hayes, and Andersson (2009). The researchers designed a measure to assess clients' verbal behaviour (from videotapes) during ACT sessions for severe tinnitus and associated distress. The resulting measure was called the Acceptance and Defusion Process Measure or ADPM. It was based on a scale used to assess ACT therapists' adherence to the model (Forman, Herbert, Moitra, Yeomans, & Geller, 2007). In Hesser and colleagues' (2009) study raters used the ADPM to code the frequency and the 'extensiveness' (*1 = A highly diminished statement*; *5 = An absolute in-depth statement*) of client acceptance and cognitive defusion behaviours/processes. In total four raters coded 57 ACT sessions. The measure showed good inter-rater agreement (Hesser et al., 2009). Using the ADPM as a process measure researchers found (during a controlled trial) that client verbal behaviour (reflecting acceptance and defusion) early on in ACT was predictive of sustained positive treatment effects (Hesser et al., 2009). However, little is available on the ADPM outside of the above study. The ADPM was also limited in which processes of psychological flexibility is assessed. Further, the ADPM has not been used with chronic pain patients and it is unclear whether Hesser and colleagues' (2009) findings would generalize to this population.

Client Language in Other Areas

Beyond the above and to our knowledge no research has considered developing a tool that looks at client language as a measure of the six key processes of psychological flexibility within a chronic pain context. However, researchers outside of these arenas have examined client language/talk more closely. Probably the most notable example of this has been the development of the Motivational Interviewing

Sequential Code for Observing Process Exchanges (MI-SCOPE; Martin, Moyers, Houck, Christopher, & Miller, 2005). This was based on the Motivational Interviewing Skill Code (MISC; Miller, 2000), among other ideas. The MI-SCOPE is used to encode recordings and transcripts of client-therapist interactions during motivational interviewing (MI); it particularly focuses on sequential information in client-therapist exchanges. During use one first performs parsing of the transcripts into utterances and then codes those utterances (see Martin et al., 2005). The MI-SCOPE has shown adequate inter-rater reliability (e.g. Moyers, Martin, Houck, Christopher, & Tonigan, 2009). The MI-SCOPE has been used to investigate the relationship between key theoretical constructs in MI, general therapy processes, and client outcomes (Martin et al., 2005). For example, using the MI-SCOPE it has been found that client talk focused on change, mobilized during MI by therapists, leads to reduced drinking (in people whose drinking is problematic; Moyers et al., 2009). Essentially, the MI-SCOPE has been refined over a number of years and is a highly sophisticated system for tracking client language/MI processes. Similarly, in ACT for chronic pain it would be reasonable to think that changes in the six processes of psychological flexibility would be reflected in client language. However, there is currently no consensus in the literature on what these changes would look like. Therefore it would be very difficult to implement a coding process equivalent to the MI-SCOPE in ACT at present.

Sentence completion tasks have also been used to investigate client language. For example, Barton and Morley (1999) studied the negative cognitive triad (Beck, 1970) as a model of depressive cognition/thinking in a mixed sample of patients with anxiety and depression (*n* = 126). They did this using the Sentence Completion Test for Depression (SCD; Barton, 1996) along with other questionnaire measures of anxiety and depression. The SCD contains 48 items or short stems that participants complete. The stems vary along three dimensions. First they either make reference to self or other agent roles (e.g. using “I” or “He”). These are combined with verbs that are either positive, negative or neutral (e.g. “trust”, “fears”, “think”), which prime respondents with different cognitive/affective concepts. Finally, theoretically relevant concepts (e.g. world) as well as non-relevant concepts (e.g. people) are included in the stems. Sentence completions are classified according to three criteria: valency of thoughts expressed (which can be positive, negative, or neutral); agency roles or the source of thoughts/feelings etc. referred to (i.e. self or others); object roles or location referred to (e.g. self, world, past; see Barton & Morley, 1999). Interestingly, using correlation analyses Barton and Morley (1999) found negativity (assessed using the SCD) to be highly sensitive and specific to depression (but not comorbid anxiety). The SCD has shown good psychometric properties including good construct validity, sensitivity, and specificity (Barton, Morley, Bloxham, Kitson, & Platts, 2005). No measure equivalent to the SCD exists for use in ACT for chronic pain.

A Gap in the Literature: The Current Study

Thus although attempts have been made to explore client language as measure of psychological flexibility the measures used to do this have serious limitations. Also, no one measure has tapped into all of the six processes central to psychological flexibility. Importantly, it does seem reasonable to think that we can expect to see changes in client language that reflect changes in psychological in/flexibility during ACT. However, there is currently no consensus in the literature on what these changes would look like. Therefore, the current study aims to draw a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological flexibility. This research idea was discussed in personal communication with one of the current leaders in the field of ACT and chronic pain (Lance McCracken) who confirmed that it would be a valid avenue to explore in order to add to our understanding of ACT for chronic pain.

CHAPTER 2: METHOD

Study Aims

Primary Aim

The current study had two main aims. The primary aim was to gather a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological in/flexibility. More specifically: I wanted to know how one might expect patients to talk about their pain experience (e.g. cognitions, physical sensations) when displaying language that is consistent and inconsistent with the core processes targeted in ACT. I ultimately wanted to create an item pool or pool of statements thought to typify client language during therapy that reflects psychological in/flexibility (from an expert perspective).

Secondary Aim

The initial aim was to develop an item pool that would then be used to develop either a) an outcome measure to evaluate the effectiveness of an ACT intervention based on the processes thought to be targeted by it or b) a process measure perhaps adapted to the analysis of client language recorded before, during, and after ACT interventions. However, as the study progressed (and due to the rich data set produced by participants) it became apparent that the above primary aim needed to be the focus of the current study. Therefore, I will only focus on the primary aim from here onwards, although I will discuss ideas for future research in the discussion section below.

Methodology

Chosen Methodology

A Delphi method was used to achieve the above aims. Words such as ‘study’, ‘method’, ‘group’, ‘survey’ and ‘technique’ are used interchangeably throughout the literature to refer to a Delphi method and the same will also apply here. The Delphi method was developed by the RAND Corporation in the 1950s during military research (Norcross, Pfund, & Prochaska, 2013). The central aim was to develop a technique that could be used to obtain the most reliable consensus from a panel of experts (Dalkey & Helmer, 1963). The Delphi method structures communication, which enables a group to collectively deal with a complex problem and offer reasonably accurate opinions regarding future events (Linstone & Turoff, 2002; Norcross et al., 2013). Therefore, it seemed appropriate to use a Delphi method in this study where there currently is no consensus in the literature on how one might expect patients to talk about their chronic pain over the course of ACT.

The Delphi method has four key features, which are outlined in Table 1. In a classic Delphi study the first round is unstructured, which enables participants to identify pertinent issues to be explored further (Rowe & Wright, 1999). The group’s responses are then collated by the facilitators and are used to create a structured questionnaire. This may be used in the following rounds to elicit participants’ views, judgements, and opinions in a quantitative manner (e.g. people rank their level of agreement with items in the questionnaire; Jones & Hunter, 2000). After each round, participants’ responses are analysed and summarized (which can include a statistical summary). Participants then consider this summary (i.e. they are able to change their opinions on the basis of feedback). This continues until a predefined stop-criterion, such as a set number of rounds or when a set level of stability in participants’ responses is obtained (Rowe & Wright, 1999).

Variations of the Delphi method exist. For example, the first round may be structured, which makes the application of the method easier (Rowe & Wright, 1999). Debates exist in the literature over the methodological rigour of the Delphi method (e.g.

Table 1.

Four Key Features of Delphi Studies, How These are Achieved, and Their Advantages

Key Feature	How it is Achieved	Advantage/s
Anonymity	- Use of questionnaires	- Social pressures (e.g. dominance) can be avoided whilst participants consider ideas - Facilitates open critique of ideas
Iteration	- Process takes place over a series of rounds	- Participants can change their opinions (without fear of social repercussions)
Controlled feedback	- Given to participants between rounds - Displays the group's responses - Can include a statistical summary - Indicates to participants their own previous responses	- All opinions/judgements are heard, not only those from the most vocal members of the group
Statistical aggregation of the group response	- Summary measures used to capture the whole group's response	- Provides richer information when compared to a simple consensual statement

Note. The above is based on work by Jones and Hunter (2000), Pill (1971), and Rowe, Wright, and Bolger (1991).

Rowe, Wright, & Bolger, 1991) and attempts have been made to increase this (e.g. Schmidt, 1997). Therefore, it is important for researchers to be transparent about how a Delphi study has been conducted.

The Delphi method has wide reaching applications, from predicting trends in technology to use in policy formation (Rowe & Wright, 1999). For example, research shows that the Delphi method has been applied in education (e.g. Olshfski & Joseph, 1991), marketing (e.g. Lunsford & Fussell, 1993) and information systems (e.g.

Niederman, Brancheau, & Wetherbe, 1991). It has also been employed in the health sciences (de Meyrick, 2003) and it is increasingly being used in the field of psychology (e.g. James & Roberts, 2009; Neimeyer, Taylor, & Rozensky, 2012; Norcross et al., 2013). The structure of the Delphi method enables researchers to access the helpful aspects of interacting groups (e.g. obtaining ideas and knowledge from a range of sources) whilst pre-empting their unhelpful attributes (e.g. due to personal conflicts; Rowe & Wright, 1999).

Alternative Approaches

Alternative consensus methods exist to the Delphi method. The most notable of these is the nominal group technique (NGT; Delbecq & Van de Ven, 1971). Both approaches can be applied to aid the development of consensus/standards where the evidence base is inconclusive or even absent (see Cantrill, Sibbald, & Buetow, 1996, for a detailed comparison of the two approaches). However, on a practical level unlike the NGT the Delphi method imposes no geographical constraints on the selection of participants (Fink, Kosecoff, Chassin, & Brook, 1984). This meant that I could recruit participants from different countries (i.e. to reflect the international movement that is ACT). Also, the NGT is often used to focus on a single problem or goal rather than to generate a range of views or ideas on a particular topic (Jones & Hunter, 1995) as I aimed to do in this study.

I also favoured a Delphi methodology over a more pure statistical approach to allow qualitative data (e.g. written material/ideas generated by participants) to play a greater role in shaping the final item pool. It also seemed inappropriate to use a more pure qualitative approach (e.g. interpretative phenomenological analysis, grounded theory) as I wanted participants to also use rating scales to make judgements about data (i.e. statements) based on how well they represented an existing theory/model (rather than think about how they personally made sense of them). Thus, the Dephi methodology allowed me to flexibly combine both qualitative and quantitative approaches to data collection and analysis to meet my main research aim.

Participants

Recruitment

A mixture of purposeful and snowball sampling was used to recruit ‘expert participants’ (i.e. expert in the areas of chronic pain and ACT) for the Delphi panel. To begin with a list of six possible participants was compiled by Professor Stephen Morley (one of the supervisors of this thesis) through his knowledge of the field. These individuals were then given the opportunity to nominate further experts to take part in the Delphi study (and so on) during the first round (see Figure 2). I aimed to recruit around 15-20 participants in each round, which is thought to be the ideal size for a Delphi survey (Henry, Moody, Pendergast, O'Donnell, Hutchinson, & Scully, 1987). Participants were invited to take part in the study via email (see Appendix A). I sought the relevant contact details for potential participants via personal knowledge/communication in the first instance and then via nominations from those who had taken part in the study. New participants were given the chance to join each round of the Delphi survey.

Inclusion Criteria

In regards to the initial list of possible participants, I thought it would be important that they: 1) Hold a professional qualification in a relevant discipline such as, but not limited to, clinical psychology 2) Have sufficient (i.e. two years) experience of working with ACT and chronic pain via clinical practice with patients and/or conducting research in relevant areas. I then trusted participants to nominate further potential expert participants based on their knowledge of the field and their peers. Essentially, I aimed to have participants meet the following criteria put forth by Fink and colleagues (1984, p. 981): “Consensus participants should qualify for selection because they are representative of their profession, have power to implement the findings, or because they are not likely to be challenged as experts in the field. It is also advisable to include potential consumers whenever appropriate”.

In addition, I aimed to ensure that female voices were included in the participant sample (e.g. by ensuring that women were represented among the initial participant pool contacted). I also aimed to recruit people from a number of countries. That is, ACT is an international movement and I wanted to ensure that the participant sample represented this range of views as far as possible.

Ethical Considerations

This study was approved by the University of Leeds Faculty Research Ethics Committee within the School of Medicine (see Appendix B) and was conducted in accordance with the British Psychological Society’s (2009) Code of Ethics and Conduct. All participants gave their informed consent to take part in the study after

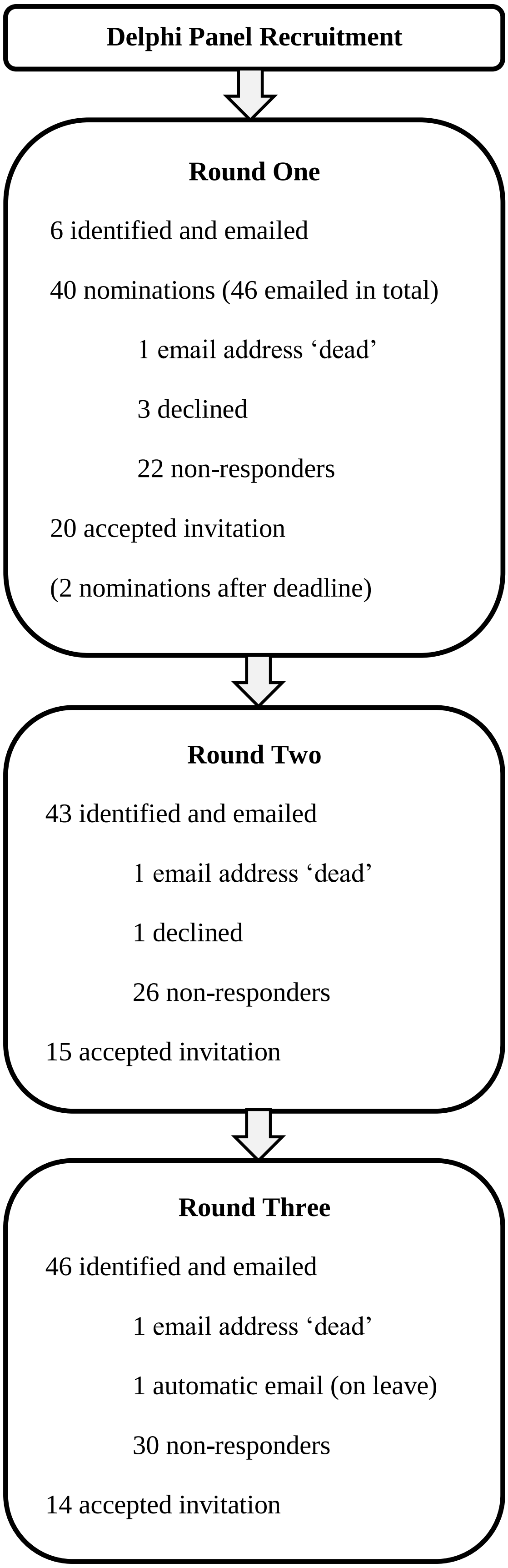


Figure 2. Diagrammatic representation of the stages of participant recruitment across the three rounds of the Delphi study.

reading information about it and having the opportunity to ask questions. The study information included details regarding: the study aims; why participants had been approached and what they would need to do; the potential benefits and risks of taking part; confidentiality, ethics, and the right to withdraw. Consent was sought from participants (via an online questionnaire) at the beginning of each of the three rounds of the Delphi study as new participants were able to join each round. Participants did not receive any monetary payment for taking part in the study.

Measures

Demographic Questionnaire

I developed a brief online demographic questionnaire for use in this study. The questionnaire gathered information regarding participants' gender, country of residence, and length of experience (i.e. time spent researching and/or working clinically) with both ACT and chronic pain. This questionnaire was completed during each round of the Delphi study to ensure that any new participants who joined each round were given the opportunity to complete it.

Nomination Form

I developed a brief online nomination form for use in this study (i.e. in the first Delphi survey). It contained a single question: "Do you know any other experts who might like to take part in this study?". Responses to this question were optional. Participants who chose to respond were given free text space to provide information regarding individuals they had nominated (i.e. their names and contact email addresses). Participants were also given free text space to provide any additional comments they had regarding their nominations and/or the form in general.

Delphi Survey: Round One Questionnaire

I developed this online questionnaire for use in this study. It was used to generate the initial data that was to be refined over the following rounds of the Delphi study. The first part of the questionnaire was split into six sections based on the core processes of psychological flexibility that are targeted in ACT (i.e. *acceptance, defusion, contact with the present moment, self-as-context, committed action*, *values*). In each section participants were provided with a brief description/reminder of the target process. They were then asked to generate two examples of statements that patients with chronic pain might make that are consistent/congruent, and two that are inconsistent/incongruent, with that process. Participants gave their responses via free text space (see Appendix C). They were also given free text space to provide any additional qualitative comments they had regarding each section.

The second part of the questionnaire assessed the difficulty of the above task from a participant perspective. That is individuals were asked to rate how difficult it was to produce statements for each of the above processes on separate seven-point Likert scales (*1 = Very Easy*; *7 = Very Difficult*; see Appendix C). I also assessed the representativeness of the statements produced from a participant perspective. That is individuals were asked to rate how representative they thought the statements they had produced were of each of the aforementioned processes. Ratings were made on seven-point Likert scales (*1 = Very Unrepresentative*; *7 = Very Representative*). Participants were also given free text space to provide any additional qualitative comments they had concerning the first questionnaire/round in general.

Delphi Survey: Round Two Questionnaire

I developed this online questionnaire for use in this study. In the first part of the questionnaire individuals were asked “Did you take part in the first round i.e. have you previously completed a questionnaire/survey as part of this study?” which they answered with either a *yes* or a *no*. This allowed me to track participants through the rounds and assess the consistency of participation.

The aims of the second round of the Delphi study were to: 1) Condense or reduce the number of items/statements gathered in the first round 2) Ensure that items/statements could be applied across patients rather than to a specific group (e.g. those with rheumatoid arthritis) only. Therefore in the second part of the questionnaire participants were presented with all of the items/statements that had been generated in the first round (and subsequently analysed). For each item they were asked to state what they would do with it. Responses were given using a multiple choice response format (*keep, change, delete*; see Table 2 for criteria given to participants to aid their decision-making). Participants could also provide qualitative comments on each item (including suggested rewording or rephrasing) using free text space (see Appendix D). Note that items were presented separately for each of the core processes of psychological flexibility. They had been further separated into those that were said to be consistent/congruent, and inconsistent/incongruent, with the target processes. Finally, participants were given free text space to share any additional comments they had concerning the second questionnaire/round in general.

Table 2.

Criteria Given to Participants for Use in Deciding What to Do with Each Statement in Round Two

Decision	**Criteria**
Keep	• The statement *is* an example of something a chronic pain patient might say that is consistent or inconsistent* with the target ACT process [at this point I was not concerned with how good of an example the statement was]. • The statement *is not* a duplicate/covered by another statement in relation to the same target process. • The statement *is not* too specific (i.e. could be observed across clients). • You would *not* change the statement in any way (e.g. by rewording or rephrasing).
Change	• The same as above, except you *would* change the statement in some way (e.g. by rewording or rephrasing).
Delete	• The statement *is not* an example of something a chronic pain patient might say that is consistent or inconsistent* with the target ACT process. • The statement *is* a duplicate/covered by another statement in relation to the same target process (in cases of duplication choose to keep the 'best' statement). • The statement *is* too specific (i.e. could not be observed across clients).

Note. *Statements that were consistent and inconsistent with each of the processes targeted in ACT were displayed separately.

Delphi Survey: Round Three Questionnaire

I developed this online questionnaire for use in this study. In the first part of the questionnaire individuals were asked “Did you take part in the first round of this study?” and “Did you take part in the second round of this study?”. Both questions were answered with either *yes*, *no*, or *do not know*. Again this allowed me to track participants through the rounds and assess the consistency of participation across the rounds.

Essentially, the aims of the third round were two-fold. Firstly, I wanted participants to review the item pool from round two and rate how ‘good’ of an example they thought each statement was of language that is consistent or inconsistent with the core processes of psychological flexibility. Secondly, I wanted to offer participants an opportunity to think about what made statements ‘good’ statements. Thus, in the second part of the questionnaire participants were presented with all of the items/statements that had been generated in the first round and refined over the second round. For each item they were asked to rate how good of an example it was of ACT-consistent or ACT-inconsistent language using a seven-point Likert scale (*1 = Very Poor*; *7 = Very Good*). Note that items were presented separately for each of the core processes targeted in ACT and had been further separated into those that were said to be consistent/congruent, and inconsistent/incongruent, with those processes. Participants were also able to provide any qualitative comments (including suggested rewording) regarding individual items via free text space (see Appendix E).

Participants were then asked to think about their top-rated statements and state what made these ‘good’ statements. This was done separately for each of the above ACT processes (and separately for statements that were said to be consistent/congruent and inconsistent/incongruent with those processes). Participants responded using free text space. Note that responses here were made optional to reduce participant fatigue. Participants could also share any qualitative comments they had regarding the third questionnaire/round in general via free text space.

Pen Portrait Form

I developed a ‘pen portrait form’ for use in this study (i.e. at the end of the third round of the Delphi survey). Participants were asked the question “Are you happy to provide information for a pen portrait?”. This was answered using a forced-choice (*yes*/*no*) response format, which allowed participants to opt-out of further questions on the form and maintain their anonymity if they preferred. If participants answered *yes* then they were given the option of providing further details, using free text space, regarding their identity or status as an ‘expert’ (e.g. name and title, relevant academic and/or clinical posts held, a brief overview of their interests in and work with chronic pain and ACT). This data was used to characterize the participant sample. Ultimately the data were used to confirm that participants had met the inclusion criteria/expert status outlined above and in turn to boost the credibility of the study’s findings.

Procedure

A Delphi survey was conducted via Bristol Online Surveys (BOS) over three iterative rounds. Each round took participants approximately 30-60 minutes to complete. To start I emailed the initial list of six possible participants and invited them to take part in the first round of surveys. Those who wished to take part were asked to email me back so that I could send them a follow-up internet link to the relevant BOS survey. This allowed me to create a rolling database of participants for use in future rounds. Participants then completed the first Delphi survey, as summarized in Figure 3. As part of the survey participants were given the opportunity to nominate other people who may have been interested in taking part in the study. These individuals were contacted in the same way as above (and added to the participant database). Participants were prompted, via email, to complete the BOS before the closing date. At the end of the survey participants were reminded that they would be contacted to take part in a second round of surveys in due course.

Subsequently the data from the first round were analysed. Then, all individuals from the participant database (excluding those who had declined to take part in future rounds) were emailed and invited to take part in the second round of surveys. Those who chose to take part completed the second Delphi survey, as summarized in Figure 3. Again participants were prompted, via email, to complete the BOS before the closing date and at the end were reminded that they would be contacted to take part in a third round of surveys in future.

Following this data from the second round were analysed. Then, again, all individuals from the participant database (excluding those who had declined to take part in future rounds) were emailed and invited to take part in the third and final round of surveys. Those who chose to take part completed the third Delphi survey, as summarized in Figure 3. Again participants were prompted, via email, to complete the BOS before the closing date. As part of the final survey participants were given the option of providing details for a pen portrait. At the end of all three rounds of surveys individuals were thanked for their time and participation in the study.

Data Analysis

An Iterative Process

Inherent within the Delphi method is an iterative process of data collection and analysis. As such I could not predict what data participants would produce in each round (as the data sets depended on idiosyncratic responses from participants). Using

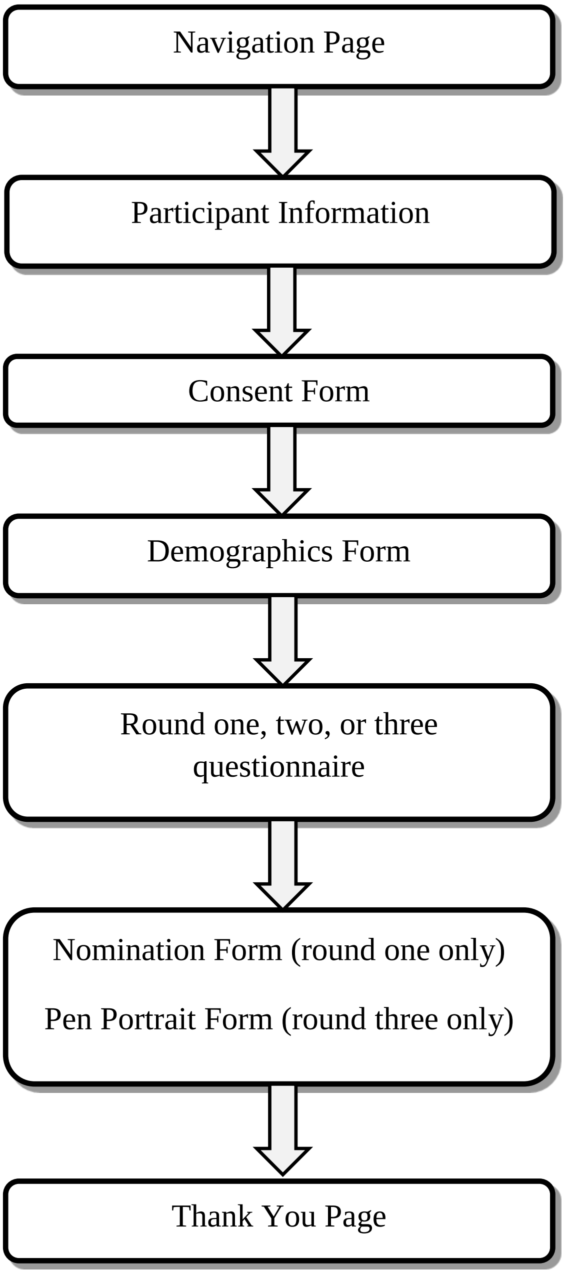


Figure 3. Flow diagram mapping out key pages and measures in the three Bristol Online Surveys participants completed.

the available data I then decided which analyses would be most suitable and useful. A summary of my data analysis is given below.

Participant Data

I calculated the response rates for each round of the Delphi study as well as the percentage of participant attrition between rounds. I looked at the consistency of participation between rounds. I also characterized the participant sample for each round in terms of their gender, country of residence, as well as their length of experience with chronic pain and ACT. I also summarized qualitative data provided regarding participants’ identities.

Descriptive Statistics

I computed simple descriptive statistics relating to items/statements across the three rounds. In round one I calculated the number of items generated and the number of duplicated items removed from the initial item pool. I also considered participants’ ratings of the difficulty of the task in round one and their ratings of the representativeness of statements produced. I calculated the median and inter-quartile range for each rating as appropriate. This allowed me to compare participants’ ratings in regards to the difficulty of producing statements, and the representativeness of statements, in relation to each of the six core processes of psychological flexibility.

At the end of round two I calculated the number of items kept (without alteration), the number of items amended, and the number of items deleted based on participant feedback. In round three participants rated items on how well they thought they reflected language in/consistent with processes of psychological flexibility (on seven-point Likert Scales). I calculated the median and inter-quartile range for each item, which allowed me to rank order items (primarily according to their medians) to determine which items met two different consensus cut-offs. From this I worked out how many items would make up a final item pool (based on the two cut-offs). Finally, I calculated the number of item-specific comments made in rounds two and three, as well as the number of general qualitative comments made in all three rounds.

Item-Specific Feedback

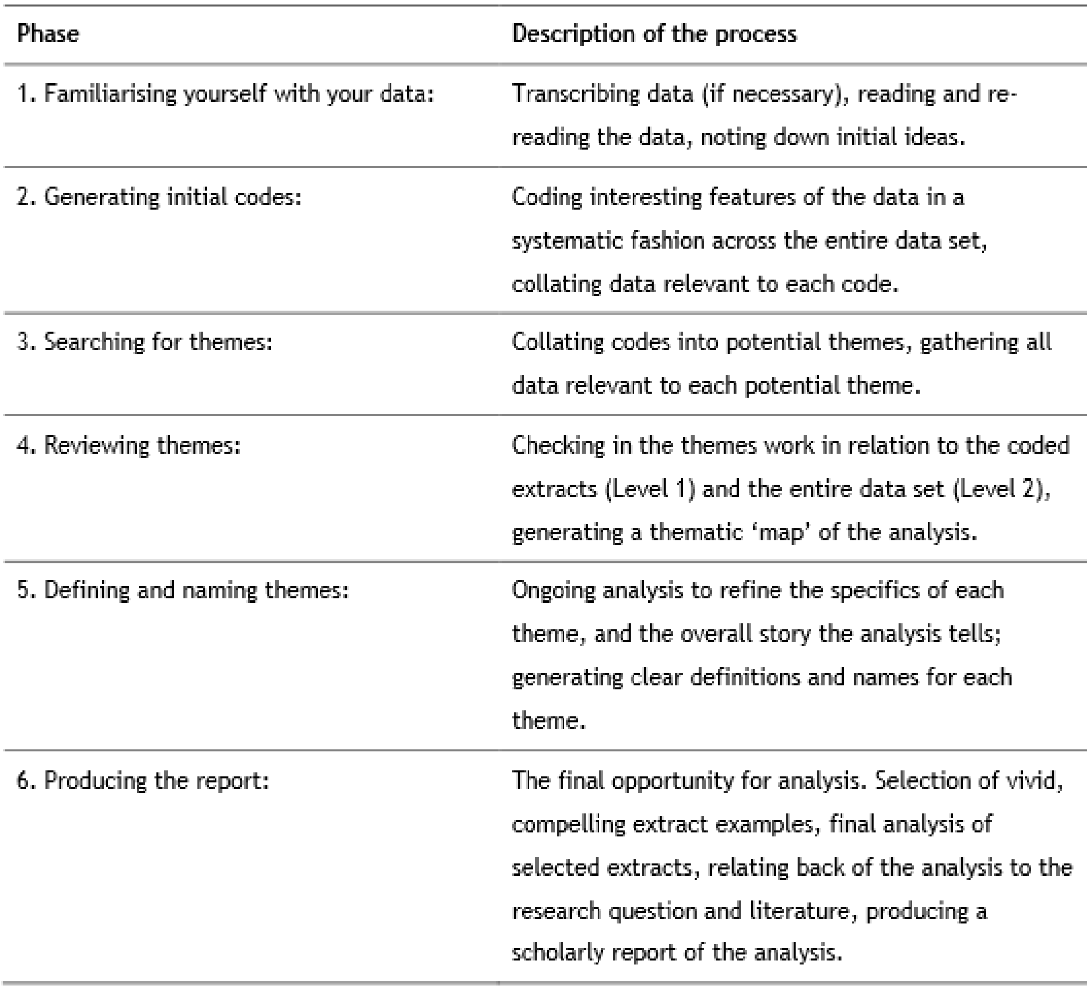
As previously noted participants were given the opportunity to comment on individual items in rounds two and three. At the end of round two I used this feedback to decide whether to keep, amend, or discard individual statements for use in round three. At the end of round three I used the item-specific feedback to decide whether to alter any items (e.g. in terms of wording). No further analysis was conducted on item-specific feedback.

General Qualitative Feedback

Participants were given the opportunity to provide general/additional comments in all three rounds. These data were not analysed between rounds. However, upon completion of the study general comments were reviewed separately for each round and analysed using thematic analysis. Thematic analysis is a “method for identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p.79) and can aid researchers in the interpretation of qualitative data (Attride-Stirling, 2001). Thematic analysis involves a number of stages (see Table 3).

Table 3.

Phases Involved in Thematic Analysis



Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic ‘map’ of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Note. The above table is reproduced from Braun and Clarke (2006) p.87.

A number of credibility checks were also installed to enhance the quality of the data and reduce any possible bias. For example, I discussed/checked the development of themes with my research supervisors on multiple occasions. The aim of this was to strengthen the reliability of the findings. Also, raw data extracts have been included in the results section below to support identified themes/make the analysis process transparent.

In addition, in round three participants were asked to consider their top-rated statements and to tell me what made these ‘good’ examples of language consistent and inconsistent with the core process of psychological flexibility. This yielded a rich qualitative data set. These data were analyzed in the same way as outlined above.

CHAPTER 3: RESULTS

Participation

Response Rates

Potential participants were invited to take part in each round of the Delphi study via email. I found that the response rates varied between rounds and were as follows: 20/45 (44.44%) for round one, 15/42 (35.71%) for round two and 14/44 (31.81%) for round three. Thus the number of participants that took part in rounds one and two was in line with the suggested ideal sample size of 15-20 participants per round put forth by Henry and colleagues (1987). The number of participants that took part in round three was slightly below this recommended sample size.

Consistency of Participation

In addition to the above 13/15 (86.67%) participants in round two had also taken part in round one. Also, 9/14 (64.29%) participants in round three had taken part in round two (one participant was unsure whether they had been in round two). Finally, 12/14 (85.71%) participants in round three had also taken part in round one. Thus the sample of participants across rounds was fairly consistent.

Attrition

Given the above there was an overall participant attrition rate of 25.00% between rounds one and two and 6.67% between rounds two and three. The Delphi method in general is sensitive to participant drop-out between rounds. This is likely due to a variety of reasons, such as the relatively long-term commitment required from participants and distractions they face between rounds (Donohoe & Needham, 2009). Given this context, the attrition shown between rounds in the current study is not unusual.

Sample Characterisation

At the beginning of each round participants were asked to complete a short demographic questionnaire. The data gathered from these questionnaires is summarized and displayed in Table 4, which shows that participants varied across the demographic areas assessed both within and between the three rounds. Of note, the majority of the sample in each round was female, meaning that the voices of women were included in the study as hoped. Also, across the rounds at least 71% of participants were from the UK. However, there were participants from at least two other countries in each round, suggesting that the sample reflected the international movement that is ACT.

Table 4.

Demographics Across the Three Rounds

Demographics		**Round One**	**Round Two**	**Round Three**
Male: Female		9 : 11	6 : 9	6 : 8
Country of Residence	UK	15 (75%)	12 (80%)	10 (71%)
	Australia	2 (10%)	1 (7%)	1 (7%)
	Ireland	1 (5%)	-	-
	Sweden	1 (5%)	2 (13%)	2 (14%)
	USA	1 (5%)	-	1 (7%)
Years of Experience with ACT	1-5	12 (60%)	7 (47%)	4 (29%)
	6-10	5 (25%)	6 (40%)	6 (43%)
	11-15	1 (5%)	1 (7%)	2 (14%)
	16-20	2 (10%)	-	1 (7%)
	>20	-	1 (7%)	1 (7%)
Years of Experience with Chronic Pain	1-5	8 (40%)	4 (27%)	2 (14%)
	6-10	2 (10%)	4 (27%)	6 (43%)
	11-15	5 (25%)	5 (33%)	3 (21%)
	16-20	4 (20%)	1 (7%)	2 (14%)
	21-25	1 (5%)	1 (7%)	1 (7%)

Note. n = 20 for round one; n = 15 for round two; n = 14 for round three. ACT = Acceptance and Commitment Therapy. Years of experience represents the number of years spent working clinically with and/or researching ACT or chronic pain; these years were rounded down to the nearest whole number.

In addition, the majority of participants in round one had one-five years of experience with ACT and the majority of participants in rounds two and three had over five years relevant experience. Finally, across all rounds the majority of the sample had over five years of experience working clinically with and/or researching chronic pain. The above results suggest that the participant sample was, as expected, highly experienced with both ACT and chronic pain (i.e. expert in these areas).

Additional Participant Information

At the end of the round three participants were also given the opportunity to provide further information regarding their identities as ‘expert’ Delphi panel members. 11/14 (78.6%) participants provided this information. Given this somewhat limited number of responses, and that I cannot be sure that exactly the same participants took part in each round, I have chosen to comment broadly here on what the above data showed rather than to refer to individuals.

Upon inspection of the available data I found that participants came from a variety of backgrounds. That is the sample included: Clinical Psychologists, Physiotherapists, a PhD student, a Postdoctoral Fellow, an Associate Professor, a University Professor, an Academic Director of a UK Doctoral Programme in Clinical Psychology, and a Clinical Director of a pain treatment service. I also found that the participant sample had experience with both paediatric and adult pain across a number of areas (e.g. musculoskeletal, oncology, medically unexplained symptoms). Also, in terms of chronic pain, participants were generally interested and involved in: treatment delivery (e.g. individual, group, multidisciplinary); treatment development; research (e.g. into biomarkers for chronic pain, psychosocial interventions for chronic pain, the predictors and moderators of treatment outcomes, the development and evaluation of outcome and change process measures in ACT); training others (with one person being a peer reviewed ACT trainer). Participants also noted that they used other therapies in addition to ACT in their work with chronic pain patients (e.g. CBT, mindfulness, compassion focused therapy, EMDR). Overall, participants appeared to meet the criteria for ‘expert’ status set out in the method section above.

Delphi Survey: Round One

Item Pool Generation

Participants first generated the initial item pool. Essentially, they were asked to generate two types of statements that chronic pain patients might make. More specifically, they were asked to produce two statements that were consistent, and two that were inconsistent, with each of the six key processes of psychological flexibility.

Thus, statements were generated in 12 sections (see Table 5). I found that participants generated a total of 40 statements in 11 of these sections, and 38 statements in the remaining section (see Table 5). In total participants generated 478 statements in the first round. The above results suggest that participants were largely able to complete their assigned task.

Of note, in comparison to all other sections participants generated fewer statements that were said to be *inconsistent* with the process of *self-as-context*. This resulted from two participants who only generated one statement when asked for two in relation to the aforementioned section. This may have been an oversight or error on the part of participants. Alternatively, it may be that the above statements were especially hard for participants to generate; especially given the participants' ratings of the difficulty of the task in round one (discussed below).

Data Cleaning

The initial data were cleaned. I found obvious spelling, grammar, and typing errors across multiple statements (too many to detail here). These may have resulted in part from not all participants having English as a first language (based on the range of countries of residence above). I corrected the noted errors. I ensured that any changes made to the statements did not alter their meaning or integrity.

Item Repetition

I found that some statements appeared to be repeated (i.e. closely resemble each other) within the initial item pool. For example the item “I realise now that the pain isn't going to go away” was given by one participant as an example of language that is *consistent* with the process of *acceptance* and the statement “I know my pain is never going to go away” was given by another participant. I found that the proportion of overlap between statements in each of the 12 sections ranged from 0% to 13% (see Table 5), suggesting a relatively low level of commonality in statements produced by participants.

To avoid unnecessary repetition within the data set for the second round I removed the repeated/duplicated statements (see Table 5). Note that to identify these statements were compared within their sections and not between sections. As an example, the decision was made to retain the item “I only have one goal in life, to get rid of my pain” as an example of language that is *inconsistent* with the process of *values*

Table 5.

The Original Number of Items, the Number of Duplicated Statements Removed and Final Number of Statements Generated by Participants in Round One Relation to the Key Processes of Psychological Flexibility (Examples of Final Items Included)

Process	**Type of Statements**	**Original Number of Items**	**Number of Duplications Removed**	**Final Number of Items**	**Example Item**
Acceptance	Consistent	40	3 (8%)	37	"I no longer feel like I have to fight my pain."
	Inconsistent	40	5 (13%)	35	"I need to get rid of the pain."
Defusion	Consistent	40	2 (5%)	38	"I am having a thought that ...."
	Inconsistent	40	1 (3%)	39	"I am a burden on my family."
Contact with the present moment	Consistent	40	0 (0%)	40	"I am noticing a pain in my right hip."
	Inconsistent	40	1 (3%)	39	"I keep wondering why this happened to me."
Self-as-context	Consistent	40	1 (3%)	39	"I am more than the sum of my pain stories."
	Inconsistent	38	2 (5%)	36	"I am a person with chronic pain."
Values	Consistent	40	2 (5%)	38	"I now know what matters to me."
	Inconsistent	40	4 (10%)	36	"I only have one goal in life, to get rid of my pain."
Committed action	Consistent	40	0 (0%)	40	"I work towards my goals even when it's challenging."
	Inconsistent	40	1 (3%)	39	"I cancel planned activities when I am in pain."

Note. Statements have been separated into those that were consistent and inconsistent with each target process. Percentages have been rounded up to the nearest whole number. Percentages represent the amount of overlap or commonality between items in each section.

and delete the duplicate “My main aim is to get rid of my pain”. In total I found 22 duplications (4.60% of the whole item pool) that were removed leaving 456 items at the end of round one.

Data Preparation

Given the large number of statements left at the end of round one I wanted to make them as easy as possible for participants to process in the second round (e.g. to reduce participant fatigue). Therefore using thematic analysis I grouped statements within their sections (see Appendix F). Ultimately, I sorted and ordered the items so that roughly similar statements appeared together in the second round questionnaire for ease of reading.

Difficulty of the Task

Participants rated the difficulty of the task in round one. More specifically, they rated how difficult it was to produce statements in relation to the key processes of psychological flexibility on separate seven-point Likert scales (*1 = Very Easy*; *7 = Very Difficult*). A summary of participants’ ratings is shown in Table 6.

I found that participants were indeed able to produce statements that reflected each of the core processes of psychological flexibility. However, the results in Table 6 suggest that the difficulty of this task varied depending on what process the statements were meant to reflect. It appears that participants found it easiest to produce statements in relation to the commitment and behaviour change processes targeted in ACT (i.e. *values* and *committed action*), followed by statements related to acceptance and mindfulness processes (i.e. *acceptance* and *defusion*). Interestingly, participants seemed to find it most difficult to generate statements in line with the processes that overlap with both of the above groups. That is participants found it hardest to produce client language reflective of *contact with the present moment* and more so *self-as-context*. Put another way participants found it most difficult to find language for the ‘now as known’ processes central to all human psychological activity.

Representativeness of Statements

Participants also rated the representativeness of statements produced in round one. That is they rated how representative they believed items they had individually produced were of each of the core processes of psychological flexibility. Ratings were

Table 6.

Participant Ratings of the Difficulty of Producing Statements, and the Representativeness of Statements Produced, in Relation to the Key Processes of Psychological Flexibility in Round One (n = 20)

Process	**Difficulty Rating**		**Representativeness Rating**	
	Median	**Inter-quartile Range**	**Median**	**Inter-quartile Range**
Acceptance	2.50	1.50	6.00	1.00
Defusion	3.00	2.00	5.50	1.75
Contact with the present moment	4.00	2.75	5.00	2.00
Self-as-context	5.00	2.75	4.00	1.75
Values	2.00	2.00	6.00	1.00
Committed action	2.00	2.00	6.00	1.00

Note. Difficulty ratings were made on seven-point Likert scales (*1 = Very Easy*; *7 = Very Difficult*). Representativeness ratings were made on a seven-point Likert scales (*1 = Very Unrepresentative*; *7 = Very Representative*).

made on seven point Likert scales (*1 = Very Unrepresentative*; *7 = Very Representative*). A summary of participants' ratings is shown in Table 6.

The results in Table 6 suggest that participants largely believed that the statements produced were representative of the key acceptance and mindfulness processes, as well as the core behaviour change processes, of psychological flexibility. The results also suggest that compared to other processes participants believed that the statements they produced were least representative of the 'now as known' processes, especially *self-as-context*. This may be unsurprising given that these statements were also the most difficult for participants to produce (see above and Table 6).

General Qualitative Feedback

I inspected the qualitative comments made by participants throughout round one. I found that a total of 35 general comments were made across *all* sections of the questionnaire participants completed. Using thematic analysis I identified eight themes in this data (see Appendix G). These related to participants' thoughts generally about: the task in round one, the statements they had produced, psychological flexibility and ACT (see Table 7).

Delphi Survey: Round Two

Aim of Round Two: A Reminder

There were 456 items at the start of round two. Examples of these statements are displayed in Table 5. In round two I wanted to reduce the size of the item pool to make it more manageable/workable. Therefore in this round participants were asked whether they would 'keep', 'change', or 'delete' each item/statement according to a set of criteria outlined in the method section above. I then analyzed the data to make the final decisions over which items to delete and which items to keep or amend for use in the third/final round.

Decision Making Process

The decision of what to do with each statement was made on a case-by-case basis. For each item I visually scanned the frequency distribution produced by BOS that showed how many participants voted to keep, change, and delete the statement. This showed what the majority of participants would do with each item or whether the sample was split in their collective decision. Together with the above I reviewed participants' qualitative comments in relation to each item. This allowed me to

Table 7.

Themes Identified Within Participants' General Comments in Round One

Theme	**Comments and Meaning**
Defining key processes	Participants highlighted that various definitions of the core processes of psychological flexibility exist (including different ones to those stated in the round one questionnaire) and one definition may be favoured over others by individual practitioners. Three participants in particular highlighted different conceptualizations of 'values' from "values" (as a noun) to "values clarity/clarification" and "values orientation".
Overlap between processes	It appeared difficult for participants to separate/distinguish between the content of key processes of psychological flexibility as "the processes in ACT aren't really distinct, they overlap and interconnect."
Subtleties of language	Some participants described being really aware of the subtitles of language used by patients and highlighting these for discussion as part of therapy. For example, one participant highlighted that patients are likely to say "but it was worth it [in relation to acceptance]" as opposed to "and it was worth it". The 'but' here implying "doing something in spite of, or in conflict with" and the 'and' implying "doing something "with" symptoms and more willingness". One participant also highlighted that there as some "very direct words to express" key processes that participants are unlikely to use.
Meta-cognitive understanding of ACT	One participant highlighted how "a statement that reflects contact with the present is different from a statement that reflects an understanding of the importance of contact with the present". Presumably this applies to other ACT processes.
Context of language	Participants highlighted the importance of context (e.g. the spirit in which a statement is delivered) in client

	language because “without context you can interpret them [statements made by patients] in different ways e.g. ‘just get on with it’ could have an avoidant quality.”
Behavioural quality of processes	One participant believed acceptance is “Not a cognitive process but a behavioural stance.” Other participants highlighted that “reflections in behaviour” express the processes of psychological flexibility very well. For example, there should be “a behavioural quality of openness whatever internal content may come with doing the activity [said in relation to committed action]”.
The task	Participants commented on the process of completing the task set in round one. One person felt the “non-ACT statements came quicker” and another felt it was hard to put processes (e.g. fusion) “into words without it sounding a bit theoretical”. A number of participants felt the study was “interesting” and “important”.
Miscellaneous	One participant clarified details regarding a nomination of another potential participant.

Note. ACT = Acceptance and Commitment Therapy.

determine whether amending any statements (e.g. in terms wording, phrasing) would make them more useful. Participants' comments also highlighted problems with some items (e.g. in terms of their validity and/or applicability to a wide range of patients). In addition, I compared the ratings and comments for one item against those for similar statements in each section. This helped me to decide, for example, which of two or more similar statements was 'best' to keep (although if participants rated two similar statements very highly both were kept; see Appendix H).

Following the above there was more uncertainty over what to do with some items than others. These items were taken to a panel where they were discussed in detail with the supervisors of this thesis (i.e. Professor Stephen Morley and Dr Gary Latchford). Together my research supervisors and I decided whether to retain, amend, or discard the items. In total 90 items were taken to the panel. Even after the panel there remained uncertainty with some items and in these cases I erred on the side of caution and retained them for use in round three, where participants could rate how 'good' they were. Table 8 gives an overview of the decisions made regarding items in round two following discussions at the panel. Given the large number of statements analysed it is not possible to detail the decision made in relation to each item here and how this was arrived at. However, examples of decisions made are given below.

Examples of Retained Items

A total of 122 items were retained, without any alterations, for use in round three. I found that these items were generally ones where a large majority of participants had voted to keep them and few participants had commented on them. For example, 86.7% of participants voted to keep "I am having a thought that ..." as an example of a *defusion-consistent* statement. Therefore this statement was retained, without alteration, for use in round three (despite one person wishing to discard it and another voting to change it).

I also found that at times participants voted to keep two similar statements. For example, 80% of participants voted to keep both "I now know what matters to me" and "I am aware of what I consider important in life" as examples of *values-consistent* statements. Therefore, both items were retained for participants to rate in the third round.

Table 8.

The Number of Statements Removed, Changed, and Retained Without Alterations (and Final Number of Items) in Relation to the Key Processes of Psychological Flexibility in Round Two

Process	**Type of Statements**	**Removed**	**Changed**	**Retained**	**Final Number**
Acceptance	Consistent	24	8	5	13
	Inconsistent	21	3	11	14
Defusion	Consistent	19	7*	12	18
	Inconsistent	22	2	15	17
Contact with the present moment	Consistent	28	4	8	12
	Inconsistent	25	2	12	14
Self-as-context	Consistent	28	2	9	11
	Inconsistent	25	0	11	11
Values	Consistent	21	5**	12	15
	Inconsistent	26	4	6	10
Committed action	Consistent	30	3	7	10
	Inconsistent	24	1	14	15

Note. *Includes two items collapsed together (counted as one item in final number). ** Includes four items collapsed into two (counted as two items in the final number).

Examples of Deleted Items

A total of 293 items were discarded over round two. I found that some of these items were ones that the majority of participants voted to delete. For example, 66.7% of participants voted to delete “I could see the pain running through me like water” as an example of language *consistent* with *self-as-context*. Otherwise, 26.7% of the sample voted to keep it and 6.7% voted to change it (but did not suggest how). Therefore the above item was discarded.

I also found that some of the deleted items were ones where only a slight majority of participants had voted to keep them. For example, 60.0% of the sample voted to keep “What’s the point in doing anything when it’s just going to hurt?” as an example of a statement *inconsistent* with *committed action*. However, 33.3% of the sample voted to delete the item and 6.7% of the sample voted to amend it but provided no qualitative comments to indicate what changes could be made. On balance, the above statement did not appear strong enough to be taken forward into round three, especially given the large number of other statements available for use/that a larger majority of participants voted to keep.

In addition, I found that some items were also discarded when a slight majority had voted to keep them but participants had also commented on the items’ validity as process-specific statements. For example, 60% of the sample voted to keep “I carried my pain whilst I was doing (insert valued activity)” as an example of *defusion-consistent* language. However, two participants pointed out that the above statement is more an example of *acceptance* or *willingness* rather than defusion. Therefore the above statement was discarded.

Examples of Amended Items

A total of 41 items were amended in round two and taken forward into round three. These amendments were largely based on item-specific feedback from participants. I found that participants made 247 item-specific comments throughout round two (given this large number they will not be detailed in full here). I have highlighted how item-specific feedback was used below.

As an example, I found that in regards to the *values-inconsistent* statement “There's no point pursuing a goal if there's still pain facing you at every turn” 73.3% of participants voted to keep it. However, 6.7% of the sample voted to amend the statement, meaning one person suggested I simplify it. I thought that this was a fair comment and that by simplifying the statement its overall meaning would not be lost.

Therefore the above statement was changed to “There’s no point pursing a goal if there’s still pain” for use in round three.

Sometimes feedback was used to alter statements that only a slight majority of participants had voted to keep (i.e. to make them more useful). For example, 60.0% of the sample voted to keep the *acceptance-consistent* statement “Pain no longer dictates to me with regard to what I can and cannot do” and 26.7% of the sample voted to amend it. One person suggested the statement needed to be condensed/simplified. Another participant suggested I change it to “Pain no longer dictates what I can and cannot do”. This suggestion seemed to be in line with the first one and so it was upheld in the hope it would strengthen the utility of the above statement.

Some statements were also amended following a discussion with the research panel (discussed above). For example, in the case of both “My mind is telling me that I can’t cope” and “My mind gives me thoughts that I’m useless”: 66.7% of the sample voted to keep them, 6.7% voted to change them (with no suggestions given as to how), and 26.7% voted to delete them. Following a panel discussion I decided that given the similar structure of both statements I would collapse them into one statement: “My mind is telling me that I can’t cope/I’m useless”.

General Qualitative Feedback

At the end of round two participants were invited to share any additional comments they had regarding the round. I found that eight participants chose to leave comments. These comments ranged from being two to 18 lines long and will not be reproduced in full here. I inspected the comments using thematic analysis (see Appendix I). I identified six themes from the data in relation to the items in round two and the process of completing the survey (see Table 9).

Delphi Survey: Round Three

Aim of Round Three: A Reminder

There were 160 items left at the end of round two. These statements were taken forward into round three. The aim of this round was to ultimately build a consensus amongst the expert participants regarding what statements typified client language in relation to psychological in/flexibility.

Table 9.

Themes Identified Within Participants' General Comments in Round Two

Theme	Comments and Meaning
Overlap between processes	Similar to round one I found that (five) participants commented on the overlap between ACT processes i.e. that "many items might be redundant/fit into several categories". It appears that this overlap made it difficult for participants to separate statements according to whether they reflected a target process. At least some participants seemed to view these processes as "far more fluid and interdependent". The above feedback suggests that some statements at the end of round two may have been 'compound items' or reflected multiple processes.
Context	Some participants felt many of the items needed more context for them to be able to determine whether the items loaded on a target process. For example, one person said "Family can look like a value, but without vitality and focus it can be a lack of willingness to look at other life areas or a fusion with family being the only priority." Feedback also suggested that 'context' could include both verbal context (e.g. the way in which a statement is said, what is said following the statement) and nonverbal context (e.g. actions following what is said). One participant also noted how these forms of context can be consistent or inconsistent with one another. In essence, the above results suggest, as one participant noted, that "coding small statements in isolation of a broader discourse may limit understanding of the context, which is important in ACT".
Difficult decision making	Participants highlighted a number of challenges in regards to making decisions about statements in round two. For example, one participant found it harder to make decisions regarding the ACT consistent statements as opposed to the inconsistent statements. Another participant believed that many of the statements were quite specific to a particular client or condition/context and required adjustments to

	make them more broadly applicable. Another participant highlighted that with short items “it can be difficult to separate/define those that are expressions of rule governed behaviour/rigidity (i.e. ‘I always go to the gym’) or about experiential avoidance (i.e. …in order to get rid of pain...)”. The same participant also highlighted that if items become too long “they are no longer generic and become difficult to manage”. Also, one person expressed they had wondered how the items were to be used and demonstrated participants’ thoughts about this may have affected how they rated items.
Survey response format	One participant thought that the available survey response options in relation to questions set were constraining, meaning they were somewhat uncertain about and dissatisfied with their answers.
Self-as-context	One participant said that they found the statements related to self-as-context the most difficult to assess. They also suggested that I consider dropping self-as-context as a construct from the study. They cited several reasons, including a “lack of empirical support” and it being “questionable if it should be assessed with self-report [questionnaires]”.
Normalizing psychological inflexibility	One participant thought it is important to bear in mind that “moments of psychologically inflexible speech are normal even in people who otherwise act with high flexibility”.

Note. ACT = Acceptance and Commitment Therapy.

Item-Specific Feedback

I found that participants made a total of 149 item-specific comments throughout round three. Given the large number of comments they will not be detailed in full here. I noted that feedback focused on, for example: suggested changes to items; the overlap between processes; participant's positive views on specific items; problems with items; how clinicians might follow-up on items in a conversation with a patient.

I reviewed the feedback in relation to each item on a case-by-case basis. I then decided whether as a result of the feedback any changes would be made to the item pool. In total 19 items were amended. Examples of how item-specific feedback was used can be found in Appendix J. Where there was uncertainty over what do with an item, I discussed this with my research supervisors and a joint decision was made. It was impossible to implement all of the feedback as some of it was contradictory. For example, in relation to the *acceptance-consistent* statement "There is room for pain in my life" one participant said it was confusing whereas another felt it was "good, metaphorical, and not rigid".

Item Ratings

In round three participants rated how good an example they thought each statement was of language that was consistent or inconsistent with the core processes of psychological flexibility. The entire item pool is displayed in Table 10. This table also includes the median score (reflecting the group level of agreement) and the inter-quartile range (representing the degree of consensus) for each item. The median scores ranged from 4.50 to 7.00 across the item pool, which suggests that participants viewed the item pool favourably (and that the analysis in round two had been fair).

Interestingly, I found that the distribution of scores in round three varied depending on the item. However, the majority of items had a negatively skewed rating distribution. That is participants' ratings tended to cluster towards the upper end of the rating scale. I also noted an interesting pattern of bimodal, and sometimes trimodal, rating distributions, which suggested that participants were divided or split in their decision-making. These distributions occurred more often when participants rated statements that were *inconsistent* with core process of psychological flexibility as opposed to those that were *consistent* with target processes.

Table 10.

Median and Inter-quartile Range (IQR) for Participants' Ratings of Statements in Round Three

Statement	**Median**	**IQR**
Acceptance Consistent Statements (*n* = 13)		
I am willing to have my pain as it is.	7.00	1.00
Even though I have the pain, I can do things that are important to me.*	7.00	1.00
I am willing to have the emotions/sadness/anger/etc. that come with pain.*	7.00	1.50
I don't need to fight the pain anymore. I can get on with living.*	7.00	1.50
I am living a life that is meaningful with my pain.	7.00	2.00
I can have pain and it is ok.	7.00	2.00
Pain does not dictate what I can and cannot do.*	6.00	2.00
There is room for pain in my life.	6.00	2.00
My pain doesn't stop me from engaging in social/family events and hobbies.*	6.00	2.00
I can notice my thoughts or feelings about the pain and not react to them.	6.00	2.00
Pain is a part of what I am doing and it does not stop me.	6.00	2.50
I'm going to have pain and anxiety/depression whether I do things or not so I may as well do things.	5.00	1.50
I realise now that the pain isn't going to go away and I can live with it.	5.00	2.00
Acceptance Inconsistent Statements (*n* = 13)		
Pain stops me from doing everything.	7.00	2.50
I must fight to get rid of my pain.	7.00	2.50
I need to get rid of the pain.	7.00	3.50
I need to fix my pain before I can start living again.	6.00	1.50
I must control my pain.	6.00	2.00

I know there is definitely something wrong with me. Until they find a cause for my pain I can’t get on with my life.	6.00	2.00
I would gladly sacrifice important areas in my life to get rid of this pain.	6.00	3.00
I can't do what matters to me because of the pain.*	6.00	3.00
I need to stop these bad thoughts and feelings about my pain.	5.00	3.00
I cannot live my life with this pain.	5.00	3.00
I have to figure out what the pain means before beginning to work on my goals.	5.00	3.00
I can't just accept that there is no cure for this pain.	5.00	3.00
I can cope okay with my pain as long as I'm just careful about what I do and just keep away from activities that might increase it too much.	5.00	3.00
When my pain is low it’s not too bad but when it flares up I just can't do anything and I have to go and lie down.	5.00	3.50
Defusion Consistent Statements (*n* = 13)		
I'm more able now to step back and not get so caught up in how I'm feeling or thinking.	7.00	1.00
Even though my mind gives me all these thoughts, I know I don't have to listen to them.	7.00	2.00
I realized that my thought about the situation and the actual situation were not the same.	6.00	1.00
When I was in pain, I noticed my breathing and realised how busy my mind was.	6.00	1.00
I was having a bad day and I noticed my mind saying "what’s the point of getting out of bed today?".	6.00	1.00
I am having a thought that ...	6.00	1.50
I was having a thought that ... and I chose not to follow it.*	6.00	1.50
I still have some painful thoughts but they don’t take over everything anymore.	6.00	1.50
I can notice thoughts without having to get rid of them.	6.00	1.50
I could hear my mind saying 'don't do it' and I still did it anyway.	6.00	1.50
I have a wider perspective now- before it was just pain and distress, now I can see other things that are happening.	6.00	2.00
I notice that my mind is saying that my pain is unbearable.	6.00	2.00

I still have my difficult thoughts but they don't bother me so much.	6.00	2.00
My mind is telling me that I can’t cope/I’m useless.	6.00	2.00
They're just thoughts, they can't harm me.	6.00	2.00
I am noticing that I am	6.00	2.00
I think I just noticed another passenger on my bus.	6.00	2.00
I recognize that my pain doesn't have to make my decisions for me.	5.00	1.50
Defusion Inconsistent Statements (*n* = 14)		
I need to think positively to get some control of my pain.	6.00	0.50
I just can’t stop thinking something bad will happen if I do "X".	6.00	1.00
It's not just a thought, it is true.	6.00	1.25
I have to get rid of x (pain, certain thoughts/memories) before I can take part in life.	6.00	1.50
I need to understand my pain before taking steps toward my goals.	5.50	1.25
I am no longer worthwhile because of my pain.	5.50	1.50
I'm a fraud - there's probably nothing really wrong with me.	5.50	2.00
The thought that I am having a flare up comes into my head and ruins my day.	5.50	2.25
Being afraid of moving just takes over.	5.50	3.50
I cannot move on until I know what's wrong.	5.00	1.25
When it started to hurt I couldn't think of anything else.*	5.00	2.00
I am so overwhelmed by stress at the moment that I can't do anything else.	5.00	2.25
I should be able to manage this pain.	5.00	2.25
I am a burden on my family.	5.00	2.25
I'm useless.	5.00	2.25
If I can't do it how I used to it’s not worth doing.	5.00	2.50
I can't stand this pain. I just need to find an answer.	5.00	3.00

Contact with the Present Moment Consistent Statements (*n* = 14)		
I can notice when I get distracted by thoughts and bring my focus back to the moment.	7.00	1.00
There I go again, I can see I was stuck in the past/worrying about the future.*	6.50	1.25
I was washing up and I noticed the feel of the water, the sound of the bubbles popping, the smell of the washing up liquid.	6.50	2.00
I noticed more of my surroundings on my walk.	6.00	1.00
I can notice that my ... is hurting right now, and I can also notice other sensations in my body such as ... *	6.00	2.00
I can choose to focus on the sensations in my body moment by moment.	6.00	2.00
Be here now with my pain.	6.00	2.00
I was getting all-caught up in my head when I noticed that I had a chance to do something different.	6.00	2.00
I stopped and noticed that I had options.	6.00	2.00
I try to just let the thoughts float in and out of my mind, I don't try to control them.	6.00	2.25
I am noticing that I feel sad.	6.00	2.25
I notice more now what my pain is doing, or how I'm feeling or thinking.	5.00	2.25
Contact with the Present Moment Inconsistent Statements (*n* = 14)		
I spend a lot of time thinking about the past.	6.00	2.00
I often get lost in thinking about my fears for the future.*	6.00	2.75
I often get lost in wondering what will happen in the future and how I will cope.*	6.00	2.75
I despair that life will never be the same again.	6.00	2.75
I kept thinking 'Why can't you do this as well as before?’	6.00	3.50
When I'm in pain, I can't think of anything else.	5.50	1.25
I don't think I can stand living like this for the rest of my life.	5.50	2.75
I often get lost in wondering about whether my pain will get better.*	5.50	2.75
I often get lost in thoughts comparing how I am now with how I was before.*	5.50	4.25

I'm always going to have this pain, and life therefore isn't worth living.	5.00	2.50
I can't do mindfulness; I just keep noticing my pain.	5.00	3.00
I want to get back to normal.	5.00	4.00
I often get caught up in wondering why this has happened to me.*	5.00	5.00
I noticed my pain and started thinking that the doctors have missed something, there's something really wrong with me this time.	4.50	3.00
Self-as-Context Consistent Statements (*n* = 14)		
I can see that I am more than just my thoughts, feelings, and pain.	6.50	1.00
The pain does not mean that I am less of a person.	6.00	1.00
I am not my pain.	6.00	2.00
I can experience observing myself without making a judgement about it.*	6.00	2.25
I could see the Me that would normally run away from pain.	6.00	2.25
There's lots of different parts to me/my identity.*	6.00	3.00
I am not my thoughts.	5.50	3.00
I notice that I put pressure on myself to do things perfectly.	5.00	2.25
There's times when everything is stressful and I can float above it.	5.00	2.25
I realized that I am in charge and not my "passengers."	5.00	2.50
I am noticing that the sensations in my body are changing over time.	5.00	3.00
Self-as-Context Inconsistent Statements (*n* = 14)		
I am defined by my pain.	6.50	1.00
I'm no good at change.	6.00	1.50
The pain has taken over - I don't know who I am anymore.	6.00	2.00
I can't talk about my feelings, I'm not that kind of person.	6.00	2.00
I am a weak person for letting this pain control my life.	6.00	2.25

That’s just the way I am it’s my personality.	6.00	2.25
I used to be .... and I need to be that way again.	6.00	2.25
I am a person with chronic pain.	6.00	3.00
That's who I am, who I've always been.	6.00	3.25
I'm lazy.	5.00	1.50
I'm useless, people would be better off if I wasn't around.	5.00	2.00
Values Consistent Statements (*n* = 14)		
I am living the life I want.	7.00	1.00
I realize that my pain is not worth sacrificing what is important to me.	7.00	1.25
I have chosen to do this because it is meaningful to me.	6.50	1.00
I feel like I am the person I really want to be, even though I have pain.	6.50	2.00
I am aware of what I consider important in life.	6.50	2.00
I can still be a good X (e.g. friend, parent, colleague) even with my pain.	6.00	0.00
It was uncomfortable and I did it because that is the kind of person I want to be.	6.00	1.00
Doing something for X (e.g. work, family, other) is more important than my pain.	6.00	1.00
I have been making more of an effort to see those who are important to me because I know that I value this connection with others.*	6.00	1.00
I now know what matters to me.	6.00	1.25
Even though I still have chronic pain, it is so nice to be doing something I really care about.	6.00	1.25
It was worth it to spend the quality time with my children.	6.00	1.25
Step by step I started feeling that vitality that comes from (insert valued activity).	6.00	1.25
I am building a better life in the long term with my persistent pain.*	6.00	2.00
I can feel connected with (insert value) when I do (insert activity).	6.00	2.00
Values Inconsistent Statements (*n* = 14)		

I only have one goal in life, to get rid of my pain.	6.50	1.50
Since the pain started, nothing matters anymore.	6.00	1.25
I don't know what I want to accomplish in life, or what makes me engaged.	6.00	2.00
Doing things that are important to me is impossible because of my pain.	6.00	2.00
There's no point pursuing a goal if there's still pain.	6.00	2.00
My pain needs to be fixed by the doctors before I can do anything.	6.00	2.25
There is no point in doing X, Y, or Z as it just increases the pain.	6.00	2.25
I've always just done what everyone else wants me to do.	6.00	2.75
My pain takes over my life.	6.00	2.75
I have to/should do X.	6.00	3.50
Committed Action Consistent Statements (*n* = 14)		
I work towards my goals even when it's challenging.	7.00	1.00
I am committed to a certain course in my life, even with continued pain.	7.00	1.00
That goal is important to me so I started to make it happen and I am going to keep doing that.	6.50	1.25
Even though it’s tough I’ve been making steps towards where I want to go.	6.50	1.25
Even though I’m going slowly, I know where I’m headed.	6.50	2.00
I can still do the things that matter to me even if I get off track for a bit.	6.50	2.00
I might not succeed the first time, but I’m going to keep working on it.	6.00	2.00
I am committed to putting this change into practice.	6.00	2.00
It may seem something small to someone else, but doing it is really important to me.	6.00	2.00
I notice that I can choose to do something important with pain - or if it isn't worth it, I can choose not to do it too.	6.00	2.25
Committed Action Inconsistent Statements (*n* = 14)		
I cancel planned activities when I am in pain.	7.00	2.00
I have to stop working toward my goals when my pain increases.	6.50	1.25

Someday I might work on that, but I am not ready.	6.50	2.00
I don't plan anything anymore as I just don't know how I'm going to be feeling, and I don't want to let people down.	6.00	1.25
I have no other options but to stop when pain appears.	6.00	1.50
I'll try to do it, if my pain is not too bad.	6.00	2.00
I'll do it if I'm having a good day.	6.00	2.00
I avoid scheduling activities because of my pain.	6.00	2.00
I'd really like to do X, Y, and/or Z, but my pain just gets in the way.	6.00	2.00
I just can't seem to get started, or I start something and then it’s too hard so I give up.	6.00	2.25
When I feel a bit more confident, I'll have a go.	6.00	2.25
Last time I did that it was horrible so I definitely don't want to do that again.	6.00	2.50
I haven't got the energy to do it.	5.50	2.25
Pain stopped me (from doing a valued activity).	5.50	2.25
I don't do anything.	5.50	2.50

Note. Statements marked with an asterisk (*) have been amended on the basis of item-specific feedback from participants in round three. The median score reflects the group level of agreement and the inter-quartile range represents the degree of consensus for each item. Statements highlighted in orange met a stricter/more robust consensus agreement of a median of six or above and an inter-quartile range of one or below. Statements highlighted in blue (as well as those highlighted in orange) met a more lenient/less robust consensus agreement of a median of six or above and an inter-quartile range of two or below. Statements highlighted in grey did not meet either of the aforementioned cut-offs.

Consensus

In deciding which items met consensus in round three I tried two different cut-offs/patterns (see Table 10). The first was a more lenient (and less robust) consensus agreement of a median score/rating of six (or higher) and an inter-quartile range of two (or lower). Under these criteria 89 statements met consensus. The number of statements that reached the above cut-off for the 12 types of statements looked at ranged from one to 17.

The other cut-off was a more robust (and stricter) consensus agreement of a median score/rating of six (or higher) and an inter-quartile range of one (or lower). Under these guidelines 21 statements met consensus. The number of statements that reached the above cut-off for the 12 types of statements looked at ranged from zero to six. That is under the above consensus agreement four types of statement (i.e. *acceptance-inconsistent*, *contact with the present moment-inconsistent*, *values-inconsistent*, *committed action-inconsistent*) would not be represented in a final item pool. This finding suggests that experts struggled to reach an agreement/consensus on the aforementioned constructs.

It is unsurprising that participants struggled to reach consensus on *contact with the present moment-inconsistent* language given that these statements were some of the most difficult for people to generate (and some of the least representative of their target process) in round one. The same cannot be said for the other three types of statements above. However, as previously noted participants were often split in their ratings of/decision-making about what to do with *inconsistent* statements in general in round three. Therefore, it makes sense that it was difficult for them to reach agreement on the above statements. In essence, I found that experts struggled to reach agreement/consensus on language *consistent* and *inconsistent* with the all of the core processes of psychological flexibility when strict cut-offs were applied.

Client Language: Key Elements

In round three I also asked participants to think about their top rated statements and to tell me what made these ‘good’ examples of client language that is *consistent* or *inconsistent* with processes targeted in ACT. I found that 13/14 participants chose to share their thoughts. I inspected the qualitative data obtained and using thematic analysis (see Appendix K) summarized themes in participants’ ideas regarding the key characteristics of client language (see Table 11). Note that I removed themes/ideas that

Table 11.

A Summary of Participants' Ideas Regarding the Characteristics of Client Language Depending on Whether it is Consistent or Inconsistent with the Key Processes of Psychological Flexibility

Process	**Consistent Statements**	**Inconsistent Statements**
Acceptance	• Highlight the noticing of the different aspects of pain (e.g. mental and physical effects) • A realization that pain is not going to go away • A willingness to have the pain/thought/emotion as it is • A sense of not trying to fight/change/avoid/get rid pain • Use of words such as 'making room for' and 'a *part* of life' in relation to pain • An absence of judgement over whether the pain/thought/emotion is e.g. 'good' or bad' • A focus on behavioural activation or the pursuit of meaningful activities in the presence of pain • A present focus rather than comparing behaviour over time (by using words such as 'no longer' and 'anymore') • A quality of empowerment rather than resignation	• An unwillingness to have the pain • A focus on experiential avoidance (e.g. fighting/struggling with/needing to get rid of pain or other unwanted experiences; avoiding activities that increase pain) • A sense of bargaining or sacrificing parts of life in order to control pain • A sense of 'stuckness' or that life is on hold • A sense that life or the pursuit of meaningful activities cannot begin until the pain is gone/cured

Defusion	• Describe a focus on noticing, observing, and increasing one's awareness (e.g. of language, thoughts, emotions, surroundings) • A focus on being in the present moment • Describe a distance between the thought/emotion/sensation and the person having the thought/emotion/sensation • Make use of seeing thoughts as thoughts rather than reality • Describe *sitting with* emotions • Describe a loosening of the influence of language/thoughts/emotions/sensations on behaviour or action • Identity is not seen as equal to one's pain/thoughts/emotions	• Describe a lack of noticing or awareness (e.g. of thoughts) • Describe a buying into/getting hooked by/getting caught up in/being stuck to thoughts/emotions/judgements about self etc. • Express an unwillingness to experience pain/sensations/emotions • Use of language e.g. about battle and fight/getting rid of the pain/finding an answer for the pain/fearing the pain feeling stronger • Identity is seen as fused with thoughts/emotions/sensations
Contact with the present moment	• Describe a noticing, awareness, and/or broadening awareness (e.g. of thoughts, memories, emotions, bodily sensations) • Focus is on the present or the here and now (rather than	• Focus is *not* on the present moment • Refer to the behavioural quality of being out of present moment (e.g. "I get lost in the thought that ..." or "I get caught up with thinking ...")

	implying a change over time) • Describe being in contact with current experiences or actions (describe the rich or minute detail of these) • Describe an awareness of being dragged into the future/past/one’s mind and ability to reconnect to the present moment • Demonstrate a realisation that there is a bigger picture, choices, different options • Use of present tense	• Showcase an inability to notice the time reflected in thoughts and/or the inability to reconnect with the present • Attention is focused on the past (e.g. preoccupation with, rumination on) or future (e.g. fears for, worry about) • Show a narrow/limited awareness and options/choices • Use of present tense • Statement is without too much contamination by evaluative thought content
Self-as-context	• Show meta-cognitive awareness • Describe a separation between the self that observes experiences (e.g. pain) and the experiences one is observing • Represent the self as bigger/more than pain/thoughts/feelings etc. • Show awareness (e.g. of what is going on, reactions, choices about how to act)	• Describe how self-content dominates identity (i.e. thoughts, beliefs, and stories about the self as seen as truths or reality) • A sense of pain overriding/overwhelming/dominating the self • Refer to the way in which stories about the self shape action in the present (e.g. “I used to be....and I need to be that way again”)

		• Describe how self-content dominates behaviour (i.e. as a result of such content one is seen as having no control/choice/chance/options and as unable/unwilling to change) • Statements reflect very set, not fluid, ways of thinking (e.g. refer to self being only one thing, only right now) • Include language that demonstrates a judgemental self • Lack reflection
Values	• Show an awareness of what is important to/matters to/is valued by the individual • Some statements may refer more generally to how life is being lived (e.g. whether it is meaningful) rather than refer to specific values • May refer to what is important both in terms of abstract directions and concrete behaviours/goals • Clear that values are actively and freely chosen • Demonstrate reflection upon how life is currently in	• Show a lack of awareness or clarity about what is important to the individual • Reflect a dominance of pain (i.e. pain or pain relief is the only goal, nothing else matters) • A sense that it is impossible to have a values-based life with pain • Focus is on pain minimisation/avoidance/control rather than adhering to personal values • Reflect a lack of pursuit of goals and values

	respect to values • A focus on action and pain alongside each other • A sense of using values (rather than pain) to guide action/behaviour; a sense of moving in the direction of what matters • Language reflects the motivation to engage in valued activities	
Committed action	• Refer to actions and behaviour • Imply “doing” as opposed to “thinking about doing” • Behaviours are related to values • A focus on working towards goals even in the face of difficult/challenges/obstacles/setbacks • Describe a flexible pursuit of goals (e.g. if a goal is truly impossible one can choose to stop/set a different goal)	• Suggest a failure to initiate important activities or ‘putting things off’ • Suggest goals fail to provide guidance • Shows how pain/feelings/experiences etc. dictates behaviour instead of the person and their values • Describe being able to take committed action only under certain circumstances (e.g. pain being more manageable, feeling well, feeling more confident, having more energy) • Describe not persevering/following through with important activities when challenges are present

appeared to be a response to what I had asked them to do/the task set rather than a reflection of participants' own ideas.

General Qualitative Feedback

At the end of round three participants were invited to share any additional comments they had regarding the round. I found that eight participants chose to leave comments. These comments ranged from being two to seven lines long and will not be repeated here. I inspected the comments using thematic analysis (see Appendix L). I identified seven themes from this data in relation to participants' thoughts generally about the items in round three and the process of completing the third round survey/taking part in the study overall (see Table 12).

CHAPTER FOUR: DISCUSSION

Overview

Review of Background & Aims

Chronic pain is a major health problem. In the past there has been a focus on medical models of treatment. More recently biopsychosocial approaches to pain management have been emphasised. Although CBT has formed the foundation of PMPs (British Pain Society, 2013), and there is evidence to support its use (Vowles & McCracken, 2008), we know little about how it works (Morley, 2004).

In addition, there is increasing research evidence to support the efficacy and effectiveness of ACT for chronic pain (Hayes et al., 2006; McCracken & Gutiérrez-Martínez, 2011; Vowles & McCracken, 2008). ACT as a model is based on RFT and is closely linked to scientific/behavioural principles (Hayes et al., 2006). Importantly, ACT focuses on altering the context that causally joins psychological events (Hayes et al., 2006). Put simply it focuses on changing one's *relationship* with their thoughts/feelings/bodily sensations etc. rather than changing the form, frequency, and/or situational sensitivity of such experiences (Harrison, 2012). ACT seems especially appropriate for use with chronic conditions as it emphasises the idea that individuals can live valued lives *alongside* pain/difficulty/distress.

In terms of how ACT is said to 'work': ACT aims to increase a person's psychological flexibility in order that they are able to more fully contact the present moment and change or continue with behaviours that are in service of their values (Hayes et al., 2006). ACT does this by targeting six (interlinked) core processes (i.e. *acceptance, defusion, contact with the present moment, self-as-context, values,*

Table 12.

Themes Identified Within Participants' General Comments in Round Three

Theme	Comments and Meaning
Survey response format	One participant thought that the survey included a "narrow format with few response options", which made it difficult to express ideas. Another felt that given the functional contextual perspective inherent in ACT it seemed like a "contradiction...to focus so much on structure, content, and literal meaning" when considering items.
Overlap between processes	Similar to the other rounds, one participant noted that it was difficult to separate out the processes of psychological flexibility and their corresponding items.
Difficulties with items	Participants noted a number of difficulties with the items/statements in general. Two participants noted the important of context with statements i.e. that they "could mean one thing or another depending on how and when they are said and how they interact with other responses". This point would need to be carefully considered if and when developing a measure from the current study. One participant also pointed out that some items "relied on [presumably the client] having been introduced to certain ACT strategies such as passengers on the bus". The same person also noted that some items were "fine from a point of view as an ACT practitioner" but their own research experience "suggested that some phrasings don't lead to good responses, e.g. 'I am more than my thoughts' was an example."
Tool construction	One participant suggested I "consider dropping some of the processes" (presumably if and when developing a tool from the study data) given difficulties with coming up with relevant items. The same person also suggested that since "the empirical support for each process is not yet firmly established, this may call for a

	conservative approach in measurement development”. Finally, they suggested I maybe make “sensitivity to change” a primary criteria when selecting the final items as items that change in seemingly successful interventions may be most useful.
Experience of taking part	A number of participants described the study as “great” or “very interesting” and told me that they had “really enjoyed taking part”. One participant even highlighted that taking part had “made [them] reflect on [their] own patients”. However, one participant said that it felt difficult to not be consulted further and “to have no role in how the material [from the study] is synthesized”.
Clinical implications	Three participants said that they were looking forward to reading about the results of the study and using them clinically. Interestingly, one participant thought that some of the information obtained “could also be used in an on line training package”.
Miscellaneous	One participant clarified how they had responded to some items.

Note. ACT = Acceptance and Commitment Therapy.

committed action). These processes can be thought of psychological skills (i.e. developed during the course of ACT) through which psychological flexibility is established (Hayes et al., 2006).

The existing evidence is supportive of some of the processes targeted in ACT, such as acceptance, defusion, and values-based action (Hayes et al., 2006; Ruiz, 2010). However, other processes (e.g. self-as-context) are less well studied. This is likely due in part to the limited range of measures available to assess and track ACT processes (Hayes et al., 2006). Importantly, investigators have called for more research to focus on the change processes of ACT and to explicitly link ACT's theoretical assumptions to its processes and clinical techniques in order to help maximize the benefits of therapy for patients (e.g. McCracken & Vowles, 2014; Wetherell et al., 2011).

ACT is rooted in a theory of human language and cognition (see Hayes et al., 2006). Based on the basic scientific theory underlying ACT it seems reasonable to think that if ACT has 'worked' with an individual, we should be able to observe changes in the way they talk about and relate to their pain experience. However, client language in the context of ACT has mainly been investigated using self-report measures, which are subject to biases. Few studies have examined the processes of psychological flexibility in chronic pain using behavioural or observational measures. Also, although we may expect to see changes in client language during the course of a successful ACT intervention there is currently no consensus in the literature on what these changes would look like.

Thus, the current study aimed to draw a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological in/flexibility. More specifically: I wanted to know how we might expect patients to talk about their pain experience (e.g. cognitions, physical sensations) when displaying language that is *consistent* and *inconsistent* with the core processes targeted in ACT. I ultimately wanted to create an item pool or pool of statements thought to typify client language during therapy that reflects psychological in/flexibility (from an expert perspective) that would form the basis for further outcome/process research.

The Task

To achieve the above aim I recruited experts in the fields of ACT and chronic pain through a mixture of purposeful and snowball sampling. The experts took part in a Delphi study, which involved three iterative rounds of data collection and analysis. In the first round participants generated the initial data or pool of statements that were said to typify client language that was *consistent* and *inconsistent* with the core processes of psychological flexibility. These data were refined over the following rounds. Participants also rated the difficulty of the task in round one and how representative they thought the statements they had produced were of the target processes. In round two participants reviewed the statements from round one and voted to keep, change/amend, or delete each item in line with set criteria (ultimately the size of the item pool was reduced over round two to make it more manageable/workable). In round three participants reviewed the item pool from round two and rated how good an example they thought each statement was of language that is consistent or inconsistent with the core processes of psychological flexibility. The aim of this round was to build a consensus amongst the expert participants regarding the final versions of statements that typified client language in relation to psychological in/flexibility. In addition, participants were given the opportunity to share their ideas about what made statements ‘good’. Participants were also able to provide general qualitative feedback across all three rounds (e.g. in relation to how they found the tasks).

Summary of Findings

In terms of the sample I had good response rates from participants in each round. I also found that participants met our inclusion criteria for expert status (i.e. were relatively highly experienced with both ACT and chronic pain). The sample of participants was also fairly consistent across the three rounds and the attrition rate between rounds was reasonable.

In round one the participants were asked to generate two statements that were *consistent*, and two that were *inconsistent*, with each of the six key processes of psychological flexibility (i.e. they generated statements in 12 different sections). I found that participants generated a total of 478 statements in round one. Thus, participants were largely able to complete their assigned task. Participants struggled with only one section (i.e. language *inconsistent* with *self-as-context*), for which fewer statements than required were produced. I found a total of 22 duplicated items (i.e. ones that closely resembled each other) across round one; these were deleted. The proportion of overlap between statements in each of the 12 sections ranged from 0% to 13%.

Interestingly, although participants were able to produce statements that reflected each of the core processes of psychological flexibility the difficulty of this task varied depending on what process the statements were meant to reflect. It appears that participants found it easiest to produce statements in relation to the commitment and behaviour change processes targeted in ACT (i.e. *values* and *committed action*), followed by statements related to acceptance and mindfulness processes (i.e. *acceptance* and *defusion*), and found it most difficult to generate statements in line with the processes that overlap with both of the above groups (i.e. *contact with the present moment* and *self-as-context*). I also found that participants believed that the statements produced were representative of the key acceptance, mindfulness, and core behaviour change processes of psychological flexibility. However, participants believed the statements produced were least representative of the 'now as known' processes, especially *self-as-context*; this seems unsurprising given these were also the most difficult to produce.

In round two participants voted to keep, change/amend, or delete each item from round one. A total of 122 items were retained, without any alterations, for use in round three. A further 293 items were discarded. Finally, a total of 41 items were amended in round two based on item-specific feedback (i.e. 247 item-specific comments) from participants. Of note, in this round I discussed 90 statements with my research supervisors and a joint decision was made as to what to do with them.

There were 160 items left at the end of round two that were taken forward into round three. In round three a total of 19 items were amended based on participant feedback (i.e. 149 item-specific comments). In round three participants rated how good an example they thought each statement was of language that was consistent or inconsistent with the core processes of psychological flexibility (*1 = Very Poor*; *7 = Very Good*). I calculated the median score (reflecting the group level of agreement) and the inter-quartile range (representing the degree of consensus) for each item. The median scores ranged from 4.50 to 7.00 across the item pool, although the distribution of scores in round three varied depending on the item. I found that the majority of items had a negatively skewed rating distribution. I also noted that participants were more often split in their decision making regarding statements said to be *inconsistent* with core process of psychological flexibility as opposed to those that were *consistent* with target processes. In deciding which items met consensus in round three I tried two different cut-offs. Under a more lenient (and less robust) consensus agreement of a median score/rating of six (or higher) and an inter-quartile range of two (or lower) 89 statements met consensus. The number of statements that reached the above cut-off for the 12 categories of statements ranged from one to 17. Under a more robust (and stricter) consensus agreement of a median score/rating of six (or higher) and an inter-quartile range of one (or lower) 21 statements met consensus. The number of statements that reached the aforementioned cut-off for the 12 categories of statements ranged from zero to six. That is *acceptance-inconsistent, contact with the present moment-inconsistent, values-inconsistent,* and *committed action-inconsistent* language would not be represented in a final item pool. In round three I also found a range of themes in participants' ideas regarding the key characteristics of client language (which are discussed in more detail below).

Participants were also able to leave general qualitative feedback in each of the three rounds. I identified a total of eight, six, and seven themes in this data across the three rounds respectively (with overlap in themes observed across the rounds). The themes related to participants' thoughts generally about: the tasks completed; the statements they had produced/rated; psychological flexibility and ACT; the process of taking part in the study. The wider meaning of the themes is explored below.

Further Discussion

So far in this chapter I have reviewed the background to the current study and the study's main aim. I have also summarized the study's method and findings. Below I will consider how these findings fit within the wider ACT and chronic pain literature and what they may mean. Also, as with any study this one has its strengths and limitations and so these are outlined below. I will also consider the implications the current research has for clinical practice and outline my ideas for future research.

What Do the Findings Mean and How Does the Current Research Fit with the Wider Literature?

From Inflexibility to Flexibility

Overview

In the current study participants were asked to generate statements that patients with chronic pain might make during ACT that are consistent and inconsistent with the core processes of psychological flexibility. The *inconsistent* statements gathered can be thought of as language reflective of psychological *inflexibility* or broadly as client talk before ACT/change has taken place. Similarly the *consistent* statements gathered can be thought of as language reflective of psychological *flexibility* or broadly as client talk after successful ACT/change has taken place. Thus we can think of the *inconsistent* and *consistent* statements as representing 'before' and 'after' (successful) ACT respectively. This data set represents the first known attempt to map out changes over the course of ACT via client language (with the changes being tied to the underlying model of ACT).

Participants were also asked to think about what made statements ‘good’ statements. I found a range of themes in these ideas regarding the key characteristics of client language before and after therapy. These provide some hypotheses on what is likely to change/shift in terms of client language over the course of successful ACT.

Acceptance

There were a number of key elements experts indicated would change/shift in terms of client language in relation to *acceptance* over the course of successful ACT. Pre-therapy client talk was said to be characterized by adversarial language (e.g. use of the words *fight* and *struggle* in relation to pain). This seems fitting given that a recent meta-ethnography revealed that the concept of an adversarial struggle was central to explaining the experiences of patients with chronic non-malignant musculoskeletal pain (i.e. including the struggle to find an answer/explanation for the pain and the struggle to construct one’s self/identity over time; Toye, Seers, Allcock, Briggs, Carr, Andrews, & Barker, 2013). Also, Hayes, Strosahl, and Wilson (2012) have pointed out that fused speech also regularly has an adversarial quality; this fits with participant observations in the current study of an overlap in how patients talk in relation to the different processes of psychological in/flexibility.

In contrast to the above, experts thought that post-ACT client talk would be characterized by the use of phrases such as “making room for” and “a *part* of life” in relation to pain. That is a patient’s painful private experiences may become accommodated or assimilated into their schemata during ACT (see Stiles, Elliott, Llewelyn, Firth-Cozens, Margison, Shapiro, & Hardy, 1990). The noted behavioural shift from avoiding/fighting pain to opening up/making room for pain over the course of therapy makes sense given that ACT focuses on creating an alternative to patients’ control-and-eliminate agenda (i.e. where the control and elimination of pain is the patient’s primary goal; Hayes et al., 2012). The alternative to the control agenda in ACT is *willingness* or the choice to expose oneself to difficult thoughts/feelings/sensations etc. in the service of one’s values (Hayes et al., 2012). Unsurprisingly then experts in the current study noted that client language over the course of successful ACT would reflect a growth in willingness (this was noted in relation to a number of processes, including *acceptance* and *defusion*).

Also of note participants believed client language before therapy would reflect a sense of ‘stuckness’. This idea resonates with the literature on identity and chronic pain. That is individuals with chronic pain can feel as if, for example, their real self or identity is stuck or suspended in a time before the pain began; patients may set unrealistic treatment goals if they base them on this ‘suspended self’ (Morley, 2008). Participants noted that over the course of effective ACT this stuckness should be replaced by a sense of empowerment so that ultimately client talk should focus on the pursuit of meaningful activities in the presence of pain. As an example, participants suggested that clients are likely to use acceptance processes to ultimately move towards social/family values. This seems unsurprising given that a) chronic pain can have a profound and detrimental impact on one’s social functioning/participation (see Purdie, 2014) and b) Morley and Eccleston (2004) proposed that there might be an overriding fear in chronic pain of an “ultimate loss of all social contacts, leading to complete abandonment and social isolation” (p. 168).

There was also debate amongst participants over whether acceptance was a cognitive or behavioural process. For example, participants wondered whether a realization that pain was not going to go away was necessary for acceptance to occur. Indeed, acceptance may have both cognitive and behavioural facets, as Hayes and colleagues (2012) point out: “acceptance...refers both to behavioral willingness and psychological acceptance” (p.77).

Defusion

In terms of *defusion* participants anticipated that over the course of successful ACT clients would increasingly use language that reflected their growing awareness (i.e. of their thoughts, emotions, surroundings, etc.). This fits with the model of ACT as it promotes the development of mindfulness skills and the awareness described above is said to emerge from mindfulness (Crane, 2009). The above increase in awareness could be viewed as similar to an increase in *insight*, which has been viewed as a vehicle of change across psychotherapies. Although insight is conceptualized differently in different psychotherapies, as a term it has usually been used to refer to a change in consciousness (Pascual-Leone & Greenberg, 2007). However, in experiential therapies (ACT conceivably being one of these) clients are thought to discover new ways of being (or new aspects of self) via a range of processes/new experiences (e.g. through defusion exercises in ACT; Pascual-Leone & Greenberg, 2007).

The sample also characterized pre-therapy talk as describing buying into/getting hooked by thoughts/judgements about the self etc. and post-therapy talk as describing a distance between the thought/emotion/sensation and the person having the thought/emotion/sensation. Put another way, in line with RFT clients may start to undermine the verbal context of literality and develop contexts where the unhelpful functions of private experiences are reduced (Hayes et al., 2006). This could mean that clients e.g. no longer see their thoughts are truths and as a result the influence of such language on behaviour starts to loosen (Hayes et al., 2006).

Interestingly, participants also thought that in pre-therapy talk the client's identity would be seen as fused with their pain/thoughts/emotions/sensations etc. and in post-therapy talk their identity would not be seen as equal to their private experiences. Again this resonates with the literature on pain and identity, particularly the schema enmeshment model of pain (Pincus and Morley, 2001). This model postulates that within the 'actual-self' (i.e. the person one believes they are) there are three key schemas or stored bodies of knowledge related to pain, illness, and the self. If parts of these schemas are activated simultaneously and repeatedly (as potentially happens in cognitive fusion) the extent to which they overlap is thought to increase and enmeshment can occur. In self-pain enmeshment the pain, illness, *and* self schemas are said to become enmeshed, meaning that parts of the pain and illness become incorporated into the self (Pincus & Morley, 2001; Wells, 2010); this may account for a client viewing their identity as fused with their private experiences.

The degree to which parts of the self are enmeshed or trapped by the pain will impact on people emotionally (Morley, 2008). However, little is known about how one becomes 'un-enmeshed'. One idea, as suggested by Wells (2010), is that un-enmeshment occurs when chronic pain patients are able to disengage from key goals and identify and engage in new goals, thereby allowing them to redefine their self. Thus it may be that cognitive defusion (developed through defusion exercises) allows un-enmeshment to occur and the resulting increase in psychological flexibility allows the client to change or continue with behaviours that are in service of their values. Obviously further research would be needed to establish these links more definitively.

Contact with the present moment

In terms of *contact with the present moment* participants predicted a broadening of awareness over the course of successful ACT that would be reflected in client language. This appeared similar to the increase in awareness discussed in relation to *defusion* (see above). Importantly, participants also believed that psychological *inflexibility* and its associated language would be characterized by a lack of focus on the present. This makes sense since pain is a powerful stimulus that demands attention (Eccleston & Crombez, 1999). That is when an individual is engaged in activity, whether it is observable (e.g. talking, chores) or not (e.g. thinking), pain can ‘interrupt’ their attention (Morley, 2008). As a result pain can interfere with a patient’s ability to perform tasks to their desired standards or the perceived standards of others (Morley, 2008), making it difficult for patients to behave in line with their values.

Also, prior to therapy a client’s attention may be focused on the past (e.g. preoccupation with) or future (e.g. fears for). These ideas overlap with e.g. the concepts of rumination and worry discussed in the CBT literature (see Wells, 1997). They also resonate with the chronic pain and identity literature. That is Markus and Nurius (1986) proposed the idea of ‘possible selves’. These included what people would like to become (i.e. hoped-for selves) and what they were afraid of becoming (i.e. feared selves). Possible selves are important as they are thought to be influential in directing behaviour- people are motivated to approach or achieve representations of their hoped-for selves and avoid their feared selves (Markus & Nurius, 1986). Thus it may be that patients with chronic pain, who show high levels of psychological *inflexibility*, focus on their feared for self. When patients perceive themselves to be close to their feared self they could be motivated to avoid this (e.g. through experiential avoidance; Carver, Lawrence, & Scheier, 1999). This desire to avoid their feared self may override any desire a patient has to move towards their hoped-for self or act in line with their values (Carver, Lawrence, & Scheier, 1999). Ultimately, through mindfulness-based interventions (such as ACT) clients may learn to train their attention and sustain focus on the present moment (Williams, Teasdale, Segal, & Kabat-Zinn, 2007), allowing them greater choice over their actions (see Bishop et al., 2004).

Self-as-context

Interestingly participants noted that a shift in *self-as-context* would be reflected in the growth of a patient’s meta-cognitive awareness (which would be reflected in the way they speak about their pain experience). Teasdale (1999) differentiates between metacognitive knowledge (i.e. *knowing* that cognitions do not necessarily represent reality) and metacognitive insight (i.e. *directly experiencing* cognitions as mental events rather than reality). One idea is that the practice of mindfulness in ACT (and the use of metaphors) enables patients to develop metacognitive insight, which in turn facilitates the disengagement from rumination and difficult private experiences such as pain (e.g. Crane, 2009). The idea that the development of metacognition is an important part of therapy is not unique to ACT.

Also, participants noted that psychologically inflexible language in relation to *self-as-context* would include language that demonstrates a judgemental self. It makes sense that this would shift over the course of ACT given that mindfulness practice promotes a non-judgemental stance towards one's experiences (including stories the mind presents about the self; Williams et al., 2007). So by cultivating greater *self-as-context* (or a greater observing self) an individual is no longer defined by the content of their private experiences (e.g. pain) and difficult situations; thus these experiences, as well as the verbal evaluations they give rise to, can become less disabling/threatening (Flaxman et al., 2011). Otherwise, according to the expert panel, shifts in client language over the course of ACT in relation to *self-as-context* overlap with those described above for *defusion* (namely that over therapy a separation occurs between the self that observes experiences/pain and the experiences one is observing).

Values

In terms of *values* participants noted that over the course of successful ACT client language would shift from not showing to showing an awareness/clarity about what is important to the individual. This makes sense since part of ACT focuses on increasing one's awareness of their values (Harris, 2008, 2009). Indeed research trials that have helped to establish the efficacy and feasibility of ACT for chronic pain have often targeted values and fostered values-based action (e.g. Vowles et al., 2009). Essentially participants in the current study believed that the acceptance and mindfulness skills discussed above would be utilised to help a patient shift their focus from the *control agenda* to *willingness* during ACT so that ultimately patients could use their values to guide their behaviour even in the presence of pain/difficulty/distress etc. (Hayes et al., 2012).

Participants also believed that post-ACT client talk would be characterised by language that reflected *motivation* (e.g. to engage in valued activities). Put another way it may be that clients move into the *preparation* stage of change (i.e. where they intend to take action in the near future or have started to make small behavioural changes) and/or the *action* stage of change (i.e. where they modify their behaviour and commit time and energy to these changes; see Prochaska & Norcross, 2001) over the course of successful ACT.

Committed action

In regards to *committed action* participants thought that pre-therapy client talk would be characterized by a sense of patients failing to initiate activities or their goals failing to provide guidance. In contrast participants thought that post-therapy client talk would refer to actions and behaviours (and imply “doing” rather than “thinking about doing”). This makes sense since ACT aims to cultivate increasingly larger patterns of effective action connected to one’s chosen values (Hayes et al., 2006). The above appears similar to traditional behavioural therapies/interventions, such as behavioural activation (i.e. where patients are helped to re-engage in life through focused activation strategies; Westbrook, Kennerley, & Kirk, 2011). Participants also thought that the language used by clients to reflect *committed action* would overlap with language used to reflect other processes (e.g. *acceptance*).

Interestingly participants also thought that pre-therapy talk would describe patients being able to take committed action only under certain circumstances (e.g. pain being more manageable, having more energy). This appears to be a conditional (i.e. “if/then”) relational frame; these types of frames/verbal rules can restrict patients’ lives and create distress (Hayes & Smith, 2005). In contrast to the above, participants thought that post-therapy client talk would describe a flexible pursuit of goals (e.g. if a goal is truly impossible one can choose to stop/set a different goal). Thus over the course of ACT (and in line with the ACT model) clients may start to undermine unhelpful verbal contexts, which ultimately results in greater flexibility in their behaviour (Hayes et al., 2006).

The Problems with Processes

Despite the richness of ideas above, participants highlighted a number of problems in trying to operationalize or find language (used by chronic pain patients) to illustrate the core processes of psychological in/flexibility. In all three rounds participants noted that it was difficult to separate/distinguish between the content of different processes of psychological in/flexibility as the processes overlap and interconnect. This makes sense since during ACT sessions the therapist and client tend to ‘dance’ around the hexaflex (see Figure 1); they explicitly work with multiple target processes (and work with all processes implicitly; Harris, 2009). However, the above finding also means that it is difficult for experts to operationalize the core constructs in ACT as distinct from each other, suggesting it is hard to determine which processes client language loads on during therapy.

In addition, participants noted that there is currently a lack of empirical support for some of the core processes of psychological flexibility. This point is supported by the relative dearth of research focusing on e.g. self-as-context in comparison to acceptance. Within the above context it makes sense that participants found it most difficult to find language for the 'now as known' processes central to all human psychological activity in round one. Given this it also makes sense that participants believed that the statements they produced were least representative of the 'now as known' processes.

Reaching Consensus?

Ultimately this thesis was about reaching consensus. There was a general consensus among participants that the current study was a good idea (e.g. participants called it interesting and important). No participants expressed reservations regarding the study's research ideas. This suggests that the current research was indeed a valid avenue to explore in order to add our understanding of ACT for chronic pain.

Participants generated the initial data set in round one. That is participants generated a total of 478 items/statements that were said to be *consistent* and *inconsistent* with the core processes of psychological flexibility. There were 22 duplicated items within this data which were removed (leaving 456 items at the end of round one). This means that there was relatively little overlap or consensus (i.e. 4.6% of the whole item pool overlapped) in participants' ideas in round one. This might be unsurprising given that participants gave open-ended responses. However, the above finding does suggest that the processes of psychological flexibility are not easily and consistently operationalized by experts.

In round two participants voted on each statement from the first round (i.e. whether to keep, change, or discard them). Following this there were 160 items at the start of round three. Here participants rated how good an example they thought each statement was of language that was consistent or inconsistent with the core processes of psychological flexibility (*1 = Very Poor*; *7 = Very Good*). The majority of items had a negatively skewed rating distribution, suggesting that the majority of participants agreed that most statements were good examples of patient language in relation to psychological in/flexibility. However, there was a definite divide or split in participants' ratings/decisions regarding particular items in round three (reflected in bimodal and trimodal ratings distributions). This occurred more often in relation to statements that were *inconsistent,* as opposed to *consistent,* with the target processes. This finding that it was more difficult for experts to reach consensus on how to operationalize psychological *inflexibility* than psychological *flexibility* is interesting. However, it is difficult to make sense of, especially since this is the first study to attempt to gather a consensus from experts in the fields of chronic pain and ACT on patient language in relation to psychological in/flexibility in the context of chronic pain. One possibility is that it was more difficult for participants (who were often clinicians) to think about psychological inflexibility as it might have represented times when patients were not shifting/therapy was not working (i.e. it may have threatened their self-esteem). Also it may be that our sample generally spent less time thinking about psychological inflexibility (or change not occurring) than psychological flexibility. This makes sense given that therapists have a tendency to overestimate the benefits of therapy for patients and underestimate the numbers of treatment non-responses/failures (Lambert, 2011).

Ultimately I applied two different consensus cut-offs to the data in round three. Under a more robust (and stricter) consensus agreement of a median score/rating of six (or higher) and an inter-quartile range of one (or lower) 21 statements met consensus. However, under this cut-off *acceptance-inconsistent*, *contact with the present moment-inconsistent*, *values-inconsistent*, and *committed action-inconsistent* language would not be represented in a final pool of statements. It makes sense that participants struggled to reach consensus on *contact with the present moment-inconsistent* language given that these statements were some of the most difficult for people to generate (and some of the least representative of their target process) in round one. However, the same cannot be said of other constructs. This finding suggests that some processes of psychological in/flexibility are harder for experts to agree on how to operationalize than others.

In summary, this was the first study to gather a consensus on client language in relation to the processes of psychological flexibility from an expert perspective and in the context of chronic pain. However, it was not easy for experts to operationalize these processes. Further, participants found it particularly difficult to reach consensus on a subset of processes (outlined above) and were largely split in their decision making regarding processes related to psychological *inflexibility*.

The Importance of Context

Participants in rounds two and three highlighted the importance of context in terms of client language in relation to psychological in/flexibility. Some participants felt items in the current study needed greater contextual information in order for them to determine which of the target processes items loaded on. In essence, it seems that coding short statements without a broader discourse may limit the understanding of the context; this context seems crucial in ACT given that it is rooted in functional contextualism (see Hayes et al., 2006).

Thus in order to determine whether client language is reflective of psychological in/flexibility, in addition to clients' statements/utterances it may be important to consider other verbal and non-verbal behaviours. In terms of verbal behaviours the therapist or researcher may consider the following to help them interpret the meaning of client language: what is said following a statement; the spirit in which a statement is said or *how* it is said; *when* something is said. In terms of non-verbal behaviours the therapist or researcher may consider the following to aid their interpretation of client language: actions following statements e.g. in relation to situational avoidance or willingness; facial expressions; posture; gestures made. Importantly, these different contexts may be consistent or inconsistent with one another. In addition to the above, Hayes and colleagues (2012) describe other contextual information that therapists can look out for that signal a patient is moving from psychological inflexibility to flexibility during ACT (see Table 13).

Table 13.

Signs of Progress Displayed by Clients in the Core Process of Psychological Flexibility

Process	**Indicators of Change**
Acceptance	• Starts to *spontaneously* use acceptance-consistent language (reflecting a more open stance towards feared content) • Spontaneously engages in willingness actions (i.e. those not talked about in session), suggesting acceptance has started to generalize outside of therapy/to other challenges • There is a light/casual/open atmosphere, rather than a tense/serious/self-focused one, during therapy sessions
Defusion	• Conditioned private experiences appear less compelling to the client • Starts to spontaneously recognise troublesome reactions (e.g. notices troublesome thoughts in session) • Begins to notice reactions from an observer perspective (as opposed to someone fused to thoughts/feelings etc.) • There is a lighter and more relaxed/flexible/ambiguous feel

	to therapy sessions
Contact with the present moment	• Client shows more ease in stopping/changing/slowing the direction of sessions as needed • Client perseveres with exercises and difficult private experiences as needed • The client starts to initiate the above (suggesting a generalization of skills)
Self-as-context	• Client describes observing (as opposed to getting caught up/entangled in) private experiences • The above starts to happen spontaneously • Client develops an ability to take themselves more lightly through using humour, irony etc.
Values	• Therapist and client have mutually agreed on a set of values/life directions • Values are accompanied by immediate and longer term goals • Client shows a willingness to create an action plan (to work towards values/goals)
Committed action	• Discussions around commitment involve fewer fusion and avoidance markers than earlier sessions • Client demonstrates greater fluidity/flexibility in their ability to come up with small and large committed actions • Client demonstrates greater fluidity/flexibility in their capacity to accept painful thoughts/feelings/sensations etc. that emerge when performing committed acts

Note. The above is based on work by Hayes and colleagues (2012).

One must also consider the wider therapy context in which client language occurs. Importantly, research suggests that a range of factors common across psychotherapies account for variance in therapy outcomes (i.e. are important in generating change in clients). These factors include: the therapeutic relationship (including therapist empathy), client and therapist belief in the rationale for therapy, therapists delivering specific interventions congruent with the therapy’s rationale, and factors external to therapy (Burns & Nolen-Hoeksema, 1992; Connors, Carroll, DiClemente, Longabaugh, & Donovan, 1997; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Wampold, 2001). Thus, there may be a range of factors (in addition to clients developing the skills of psychological flexibility) that are needed to bring about change in clients over the course of ACT.

Strengths and Limitations of the Current Study

The Ideas

A key strength of the current study is the relevance of its ideas. This is the first study that has attempted to gather a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological in/flexibility. The study has culminated in an item pool or pool of statements thought to typify client language during therapy that reflects psychological in/flexibility. Importantly, this item pool provides the foundation for future research that can focus on developing an outcome and/or process measure for use in ACT with patients with chronic pain. This measure will be strongly rooted in the underlying theory of ACT.

One of the difficulties with the current project was the potential for circular reasoning. That is I asked participants to generate examples of client language in relation to the core processes of psychological flexibility and there was a chance that they would essentially restate the definitions of these processes. However, this thesis appears to have gone beyond this to participants essentially *operationalizing* the core processes of psychological flexibility.

The Sample

In terms of the sample: response rates to invitations to take part in rounds one, two, and three of the Delphi study were 20/45 (44.44%), 15/42 (35.71%), and 14/44 (31.81%) respectively. The response rates for rounds one and two were better than those previously reported for online surveys (i.e. approximately 32%; Watt, Simpson, McKillop, & Nunn, 2002). Further, the sample size for rounds one and two was within the ideal range of 15-20 participants (Henry et al., 1987). Therefore I can be confident that participants provided a representative pooling of ideas when generating statements reflective of the core processes of psychological in/flexibility (Hsu & Sandford, 2007). I can also be confident that participants provided a representative pooling of judgements/ratings in regards to what to do with the statements produced (Hsu & Sandford, 2007).

The response rate was slightly lower than expected, and the sample size slightly smaller than the ideal, for the third round of study. There was also data missing from round three. That is one person did not provide ratings on items that were *consistent* and *inconsistent* with *acceptance* nor those that were *consistent* with *defusion*. The sample size was still good given the length of involvement and task demands required of participants. However, the above could mean that the ratings of statements in round three were not representative of the expert community's judgements. Also, the high response rates above suggest that individuals sampled were highly motivated to take part in the study. Ultimately, this study's findings represent the ideas, views, and opinions of a particular group of people at a single point in time. One cannot know whether these findings would generalize to e.g. those who chose not to take part (as nothing is known about these people) or to non-experts (e.g. novice ACT therapists). Also, as this study focused on ACT it makes sense that I cannot say that the findings generalize to the wider psychotherapy literature/other therapies, although there may well be overlap with say other mindfulness based therapies given their shared theories of psychopathology.

Importantly, I did find that participants across the three rounds met our inclusion criteria. That is participants were highly experienced with both ACT and chronic pain. Also, the sample included female voices, a range of professionals (e.g. psychologists, physiotherapists), and people from a range of countries (reflecting the international movement that is ACT). The above adds to the validity and reliability of the study's finding (i.e. the findings appear credible).

Also, the current study focused on how experts thought patients might talk about their pain experience (in relation to the core processes of psychological in/flexibility) in English. Therefore, I cannot be sure that the study's findings on client talk would translate to other languages. Further, although participants gave general examples about how clients may talk about their pain the examples may not have taken into account (and be specific to) different regional dialects within the English language (within different English speaking countries).

The Surveys

I developed the surveys used in all three rounds for use in this study; participants highlighted a number of difficulties with these. For example, in round one participants were given a reminder of the definitions of the core processes of psychological flexibility before they were asked to generate client language that was consistent and inconsistent with these processes. Participants highlighted that various definitions of the target processes exist and one definition may be favoured over others by individual practitioners. If participants indeed held in mind different definitions of the target processes then the examples of client language they generated may not have reflected the same construct. For example, in terms of *values* participants may have generated language in relation to ‘values’ (as a noun), ‘values clarity/clarification’, and ‘values orientation’. However, participants may have worked through this issue over the following rounds where they were able to vote on what to do with the item pool and see the outcomes of how the group as a whole had voted.

Also, in round one the participants rated how difficult it was to produce statements in relation to the six core processes of psychological flexibility and rated how representative they thought the statements produced were of the target processes (see method section). One person pointed out that it was difficult to make these ratings at the end of the survey as they had forgotten which sections/processes were hard to complete. The same person also noted that their judgements would have been different depending on whether they were rating statements that were *consistent* or *inconsistent* with the target processes. However, participants were asked to make a single judgement combining their ratings for both types of statement. The above factors may have affected the validity of participants’ ratings of task difficulty and statement representativeness in round one.

In addition, a couple of participants thought that the available survey response options in relation to questions in rounds two and three were constraining. The use of a structured questionnaire was necessary in these rounds so that I could gather a consensus from participants on what I should do with the item pool. At the same time the structured format may have meant that participants were unable to express more idiosyncratic ideas about the data and how it should be used. This may have meant that some of the participants’ ideas were not captured, although they were provided with free text space to share any additional comments they had regarding individual items and the rounds in general.

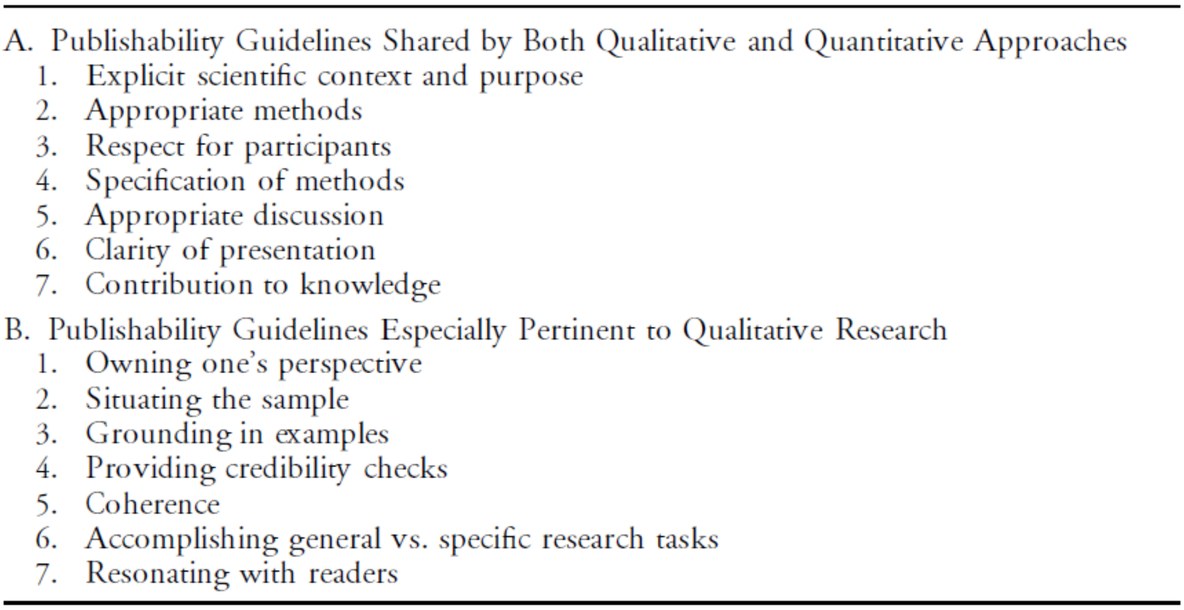
Also, one person noted that the participants’ thoughts about how items were to be used may have affected how they rated items in round three. This view was not expressed by any other participants. However, the above point supports the idea that it could be important to consult this study’s participants further when considering how to use the data gathered (see ideas for future research below).

Publishing Guidelines

In writing this thesis I endeavoured to adhere to a set of guidelines for publishing both qualitative and quantitative research as closely as possible. These guidelines are laid out in Table 14. For example, in regards to guideline A2 (appropriate methods): the methods and procedures used in the current study (i.e. the Delphi method) were appropriate for the intended purpose of the study (i.e. gathering a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological in/flexibility (Elliott, Fischer, & Rennie, 1999). Also, as suggested in guideline A4 (specification of methods) I reported all of the procedures that were used to gather data in the current study and included specific questions that participants were asked (Elliott et al., 1999). As a further example, in relation to guideline B3 (grounding in examples) I provided examples of quotes from participants to illustrate how thematic analysis was conducted with qualitative data from the current study and to highlight the understanding developed from this analysis. Also as recommended by guideline B4 (providing credibility checks) I installed a number of credibility checks into the thematic analysis (e.g. I discussed/checked the development of themes with my research supervisors on multiple occasions).

Table 14.

Guidelines for Publishing Qualitative and Quantitative Research (Including in Psychology)



A. Publishability Guidelines Shared by Both Qualitative and Quantitative Approaches
   1. Explicit scientific context and purpose
   2. Appropriate methods
   3. Respect for participants
   4. Specification of methods
   5. Appropriate discussion
   6. Clarity of presentation
   7. Contribution to knowledge

B. Publishability Guidelines Especially Pertinent to Qualitative Research
   1. Owning one's perspective
   2. Situating the sample
   3. Grounding in examples
   4. Providing credibility checks
   5. Coherence
   6. Accomplishing general vs. specific research tasks
   7. Resonating with readers

Note. The above table is reproduced from Elliott and colleagues (1999) p.220

Clinical Implications

One of the participants in the current study commented that taking part had made them reflect on their work with their own patients. In future ACT-based clinicians may use the findings from this study (i.e. the views of their expert peers) to boost their awareness of the subtleties of client language in relation to psychological in/flexibility. It is hoped that this will allow them to attend even more closely to client language reflective of *inflexibility*, identify where on the ‘inhexaflex’ the client is, and then use targeted/recommended ACT interventions to bring about change. Equally, if clinicians become more attuned to instances of psychologically *flexible* talk they may be more readily able to identify and reinforce these with clients (with reinforcement of the core processes of ACT being an explicit aim in therapy; Harris, 2013). Hopefully the above means that ACT-therapists become even more attuned to their clients and aware of where they are in terms of the processes of psychological flexibility. This could mean that clients receive more targeted interventions, specific to their individual needs in relation to ACT/therapy.

Also, it is hoped that the current study will form the basis of further outcome/process research. That is the pool of items from this study may be used to develop an outcome/process measure for use in ACT. In terms of its clinical utility such a tool may be used to e.g. a) evaluate the effectiveness of an ACT intervention based on the processes thought to be targeted by it or b) measure changes in ACT processes over the course of therapy based on the analysis of client language recorded before, during, and after ACT interventions.

Future Research

Developing an Outcome and/or Process Measure

The next logical research step would be to use the item pool generated in this study to develop an outcome and/or process measure as mentioned above. Ideally this measure would be used to assess change in the core processes of psychological flexibility over the course of ACT with chronic patient patients. Researchers would first need to decide which data from the current study would form the basis of the above measure. This would mean that they would need to decide which consensus agreement to apply to the data (two different cut-offs were trialled in the current study). The consensus agreement would probably depend on how the data were to be used (as different consensus cut-offs would result in different sized item pools). Also, given the problems with target processes discussed above researchers would also need to consider whether to represent every core processes of psychological flexibility in the outcome/process measure produced.

There are a number of different formats that could be used in constructing the above outcome/process measure. One idea would be to create an endorsement measure similar to the CPAQ (McCracken, 1998; McCracken et al., 2004). Here patients would be asked to rate the truth of a list of statements taken from the item pool in this study (e.g. “I am willing to have my pain as it is”) using a Likert scale (example anchors would be *1 = Never True*; *7 = Always True*). The questionnaire could contain subscales with each one representing a different process central to psychological flexibility (with a mixture of statements consistent and inconsistent with each process used). Scores could be calculated for each of the subscales and these could be summed to give an overall psychological flexibility score (work would need to be done to work out meaningful cut-offs for such scores). This type of measure would have its strengths and limitations (see Table 15).

Alternatively, the data from the current study could form the basis of a sentence completion test similar to that produced by Barton (1996). Put simply the final items from the current study could be spliced to give a series short stems which respondents would complete. Researchers would need to determine along what dimensions the stems would need to vary and how the sentence completions would be classified. Again this measure would have its individual strengths and limitations (see Table 15).

A third option would be to use the data from the current study to form the basis of a behavioural or observational measure that could be used to assess clients’ verbal behaviour (from videotapes) during ACT sessions for chronic pain. That is raters could code examples of client utterances reflective of the key processes of psychological in/flexibility. The inter-rater agreement of such a coding framework would need to be determined. Such a measure would be akin to the MI-SCOPE (Martin et al., 2005) in MI, although probably not as sophisticated to begin with given that the MI-SCOPE has been developed and refined over a number of years. Again this measure would have its individual strengths and limitations (see Table 15).

Of note, participants in the current study demonstrated a wish to input into how the current data would be used in any future measure development. Therefore researchers could consider the appropriateness of a further round of consultation with participants from this study. This could be used to e.g. elicit views of experts in ACT and chronic pain on which of the above options for an outcome/process measure would be best. Importantly, the sensitivity, specificity, and psychometric properties of any

Table 15.

Key Strengths and Limitations of Different Types of Outcome/Process Measures that could be Developed from the Current Study

Type of Measure	**Strengths**	**Limitations**
Endorsement measure	• Quick and easy to administer • As many sub-processes of psychological flexibility as desired can be tapped into (via subscales) • Can form part of a clinical interview	• Respondents are unable to make spontaneous productions/utterances that might challenge or extend the underlying model of psychological flexibility • The use of many negative items/statements may bring about depressed mood in respondents and in turn increase negative response bias • Subject to social desirability bias
Sentence completion test	• Low cost and low burden • Engaging for patients; allows open-ended responses • Respondents can make spontaneous productions/ utterances that challenge or extend the underlying model of psychological flexibility • Can form part of a clinical interview	• Interpretation can be time consuming • Requires a literate respondent • May be affected by response style (e.g. someone with a more concrete cognitive style may divulge little psychologically relevant material)
Coding framework (behavioural/observational measure)	• Offers a behavioural or observational (i.e. objective) measure of client language/psychological flexibility	• Costly (e.g. therapy sessions would need to be recorded; raters would need to be trained in its use) • Widespread infrastructures not in place to support use in routine clinical practice • Would not take into account non-verbal behaviour at present (which may be inconsistent with verbal behaviour)

measure produced would need to be investigated. If a valid and reliable measure was established it could be used to investigate the relationship between key theoretical constructs in ACT, general therapy processes, and client outcomes (similar to the work of Martin et al., 2005, in MI). Also, given the importance of contextual information in ACT highlighted above researchers in future may want to consider how to incorporate e.g. other verbal and non-verbal contextual information into outcome/process measures.

Service User Consultation

In the past outcome measures have been criticised for a lack of service user consultation/involvement in their construction (see Shelmerdine, 2013). Although service users were not involved in the current study, people who work directly with them were (and they drew on their work with patients). It does seem important to involve service users (i.e. patients with chronic pain) in the construction of any future measure developed on the basis of the current study. It would be important that patients with a broad range of chronic pain conditions were approached so that the chronic pain community as whole was represented as far as possible in any consultation. Patients could, for example, give their views on the face validity of statement/items if a questionnaire was to be developed. They could also share their views on which type of outcome/process they would find most engaging and appropriate for use with patients. Such discussions may also highlight further strengths and limitations of possible outcome measures not captured in Table 15.

Psycholinguistics

Given that ACT is rooted in a theory of human language and cognition (i.e. RFT; Hayes et al., 2006) it might be useful for future researchers to work with psycholinguists in order to better understand client language in the context of ACT. Research by psycholinguists has played an important part in the classification of language in MI and in linking client language to therapy outcomes (e.g. see Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003). Client language has been more extensively studied in MI than in ACT. Thus, it is not unreasonable to think that psycholinguistics may be able to offer interesting and important insights into how patients use language during ACT and how client language may be related to the processes of psychological flexibility and therapy outcomes.

Conclusion

This is the first study that has attempted to gather a consensus from experts in the fields of chronic pain and ACT regarding client language in relation to psychological in/flexibility. The current study has produced an item pool or pool of statements thought to typify client language during therapy that is consistent and inconsistent with the core processes of psychological flexibility. This data set represents the first known attempt to map out changes over the course of ACT via client language (with the changes being tied to the underlying model of ACT). This thesis has tentatively explored what these ideas indicate is likely to change/shift in terms of client language over the course of successful ACT. Ideas have been put forward for how the findings may be used in clinical practice to improve the experience of ACT for patients with chronic pain. Finally, it is hoped that the data and findings from this study will also form the basis for future research, namely developing an outcome and or/process measure for use in ACT with chronic pain patients.

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APPENDIX A: Study invitation email

Developing a Coding Framework to Access People's Use of Language Following Acceptance and Commitment Therapy for Chronic Pain:

Invitation Email

An Invitation

You are being invited to take part in the above research study. This study is being conducted as part of my Doctorate in Clinical Psychology at the University of Leeds.

This study aims to draw a consensus from experts and experienced practitioners in the field of Acceptance and Commitment Therapy (ACT) and chronic pain regarding how we might expect patients to talk about their pain experience following ACT if therapy has been successful (i.e. if they were to display 'psychological flexibility').

This Delphi study will be run completely online and we expect there to be three rounds of consultation. Our estimate is that the first and second rounds will take about an hour of your time and the third round will be slightly less. The approximate timing of the rounds is end February through to early March, late March early April and late April/May. These timings are approximate.

The data gathered will be used to develop a tool/coding framework (that will be made publicly available). It is thought that this could be used to e.g. analyse transcripts of sessions at the beginning, during, and end of therapy for the presence of psychological flexibility and specific language or processes consistent and inconsistent with ACT.

What Happens Now?

If this study is something that you would be interested in taking part in I would grateful if you could please email me to let me know. I will then send you a website link to the relevant Bristol Online Survey (this contains more in depth study information at the beginning). Please feel free to contact me using the details below if you have any questions.

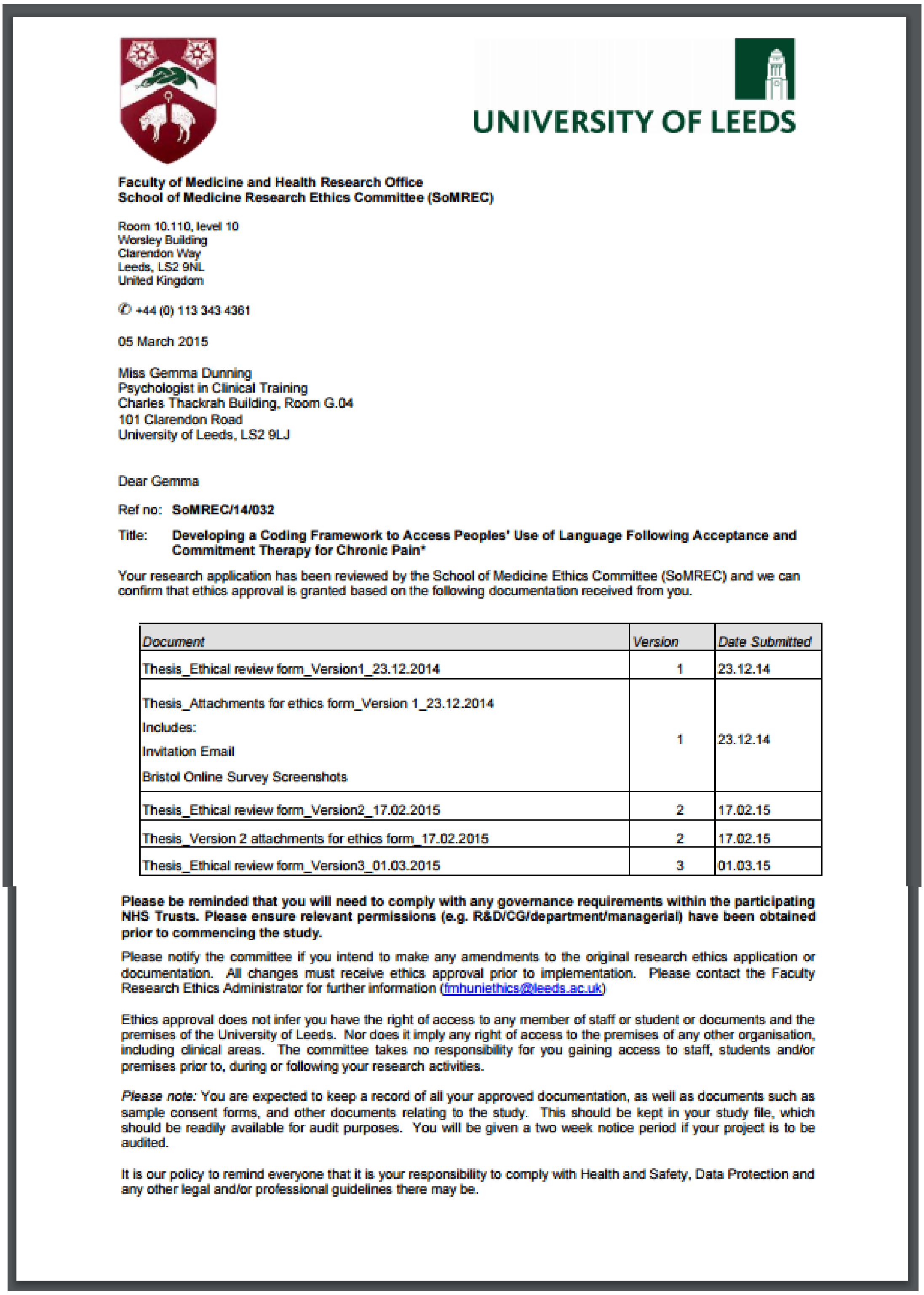
Thank you for taking the time to read this.
With warm regards,

Gemma Dunning (Psychologist in Clinical Training, umgld@leeds.ac.uk)
The University of Leeds
Leeds Institute of Health Sciences
Doctorate in Clinical Psychology
Charles Thackrah Building, Room G.04
101 Clarendon Road
Leeds
LS2 9LJ

Supervised by Professor Stephen Morley (S.J.Morley@leeds.ac.uk) and Dr Gary Latchford (G.Latchford@leeds.ac.uk); address as above.

Version 2 (17.02.2015)

APPENDIX B: Ethics approval letter



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Faculty of Medicine and Health Research Office
School of Medicine Research Ethics Committee (SoMREC)

Room 10.110, level 10
Worsley Building
Clarendon Way
Leeds, LS2 9NL
United Kingdom

✆ +44 (0) 113 343 4361

05 March 2015

Miss Gemma Dunning
Psychologist in Clinical Training
Charles Thackrah Building, Room G.04
101 Clarendon Road
University of Leeds, LS2 9LJ

Dear Gemma

Ref no: **SoMREC/14/032**

Title: **Developing a Coding Framework to Access Peoples' Use of Language Following Acceptance and Commitment Therapy for Chronic Pain***

Your research application has been reviewed by the School of Medicine Ethics Committee (SoMREC) and we can confirm that ethics approval is granted based on the following documentation received from you.

Document	*Version*	*Date Submitted*
Thesis_Ethical review form_Version1_23.12.2014	1	23.12.14
Thesis_Attachments for ethics form_Version 1_23.12.2014 Includes: Invitation Email Bristol Online Survey Screenshots	1	23.12.14
Thesis_Ethical review form_Version2_17.02.2015	2	17.02.15
Thesis_Version 2 attachments for ethics form_17.02.2015	2	17.02.15
Thesis_Ethical review form_Version3_01.03.2015	3	01.03.15

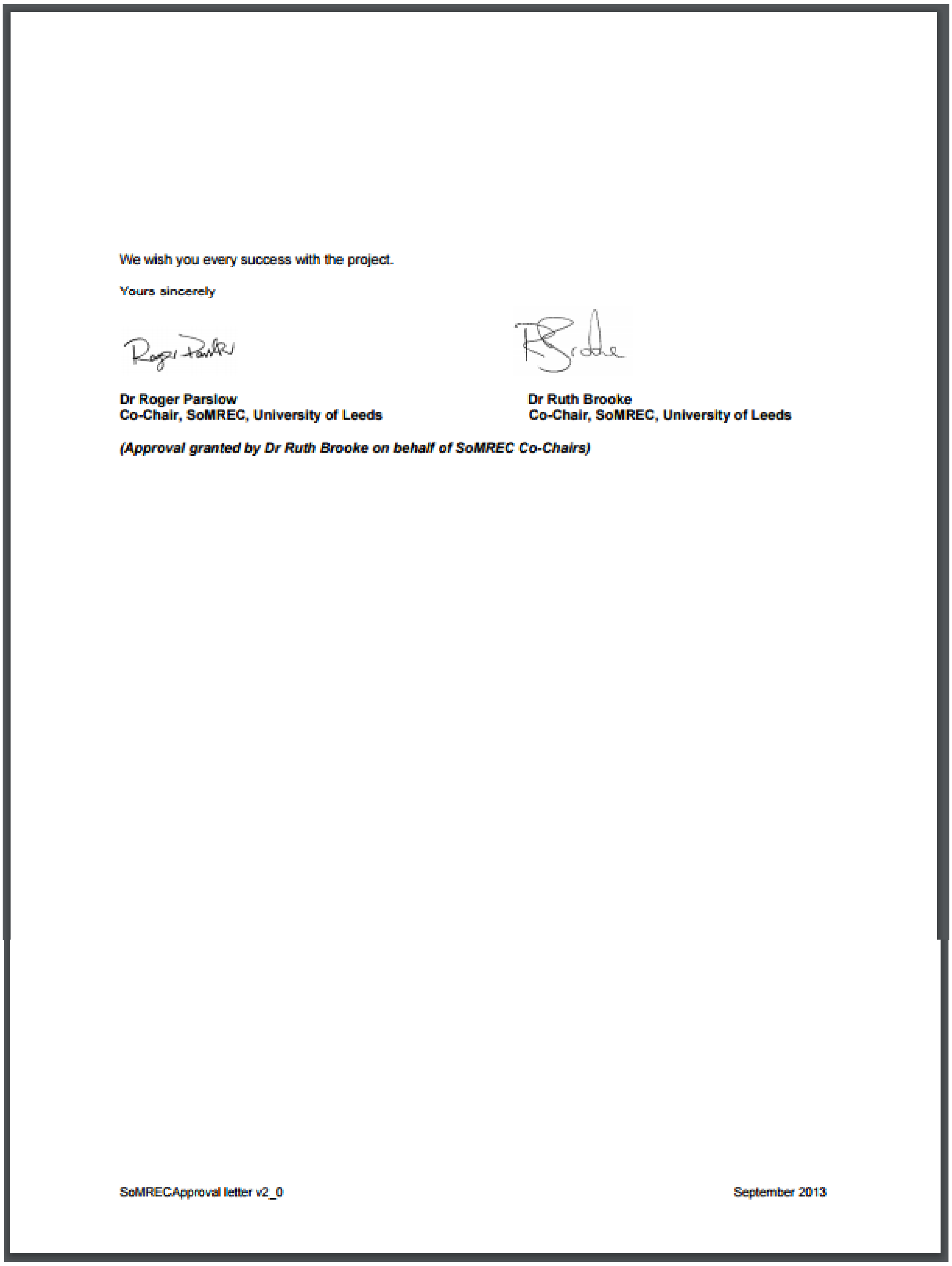
Please be reminded that you will need to comply with any governance requirements within the participating NHS Trusts. Please ensure relevant permissions (e.g. R&D/CG/department/managerial) have been obtained prior to commencing the study.

Please notify the committee if you intend to make any amendments to the original research ethics application or documentation. All changes must receive ethics approval prior to implementation. Please contact the Faculty Research Ethics Administrator for further information (fmhuniethics@leeds.ac.uk)

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.



We wish you every success with the project.

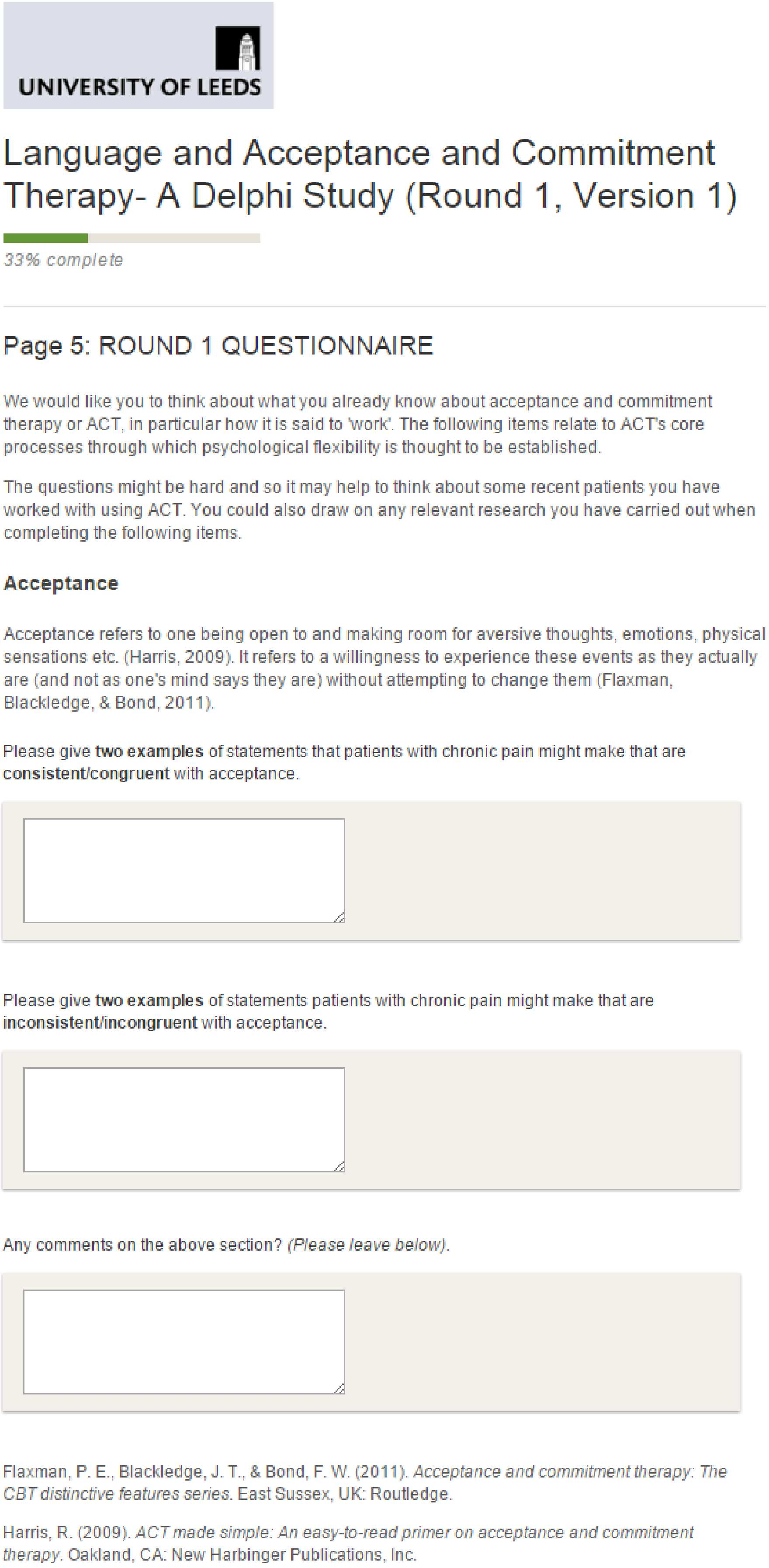
Yours sincerely

Dr Roger Parslow
Co-Chair, SoMREC, University of Leeds

Dr Ruth Brooke
Co-Chair, SoMREC, University of Leeds

(Approval granted by Dr Ruth Brooke on behalf of SoMREC Co-Chairs)

APPENDIX C: Example screenshots (round one questionnaire)



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Language and Acceptance and Commitment Therapy- A Delphi Study (Round 1, Version 1)

33% complete

Page 5: ROUND 1 QUESTIONNAIRE

We would like you to think about what you already know about acceptance and commitment therapy or ACT, in particular how it is said to 'work'. The following items relate to ACT's core processes through which psychological flexibility is thought to be established.

The questions might be hard and so it may help to think about some recent patients you have worked with using ACT. You could also draw on any relevant research you have carried out when completing the following items.

Acceptance

Acceptance refers to one being open to and making room for aversive thoughts, emotions, physical sensations etc. (Harris, 2009). It refers to a willingness to experience these events as they actually are (and not as one's mind says they are) without attempting to change them (Flaxman, Blackledge, & Bond, 2011).

⑥ Please give **two examples** of statements that patients with chronic pain might make that are **consistent/congruent** with acceptance.

⑦ Please give **two examples** of statements patients with chronic pain might make that are **inconsistent/incongruent** with acceptance.

⑧ Any comments on the above section? *(Please leave below)*.

Flaxman, P. E., Blackledge, J. T., & Bond, F. W. (2011). *Acceptance and commitment therapy: The CBT distinctive features series*. East Sussex, UK: Routledge.

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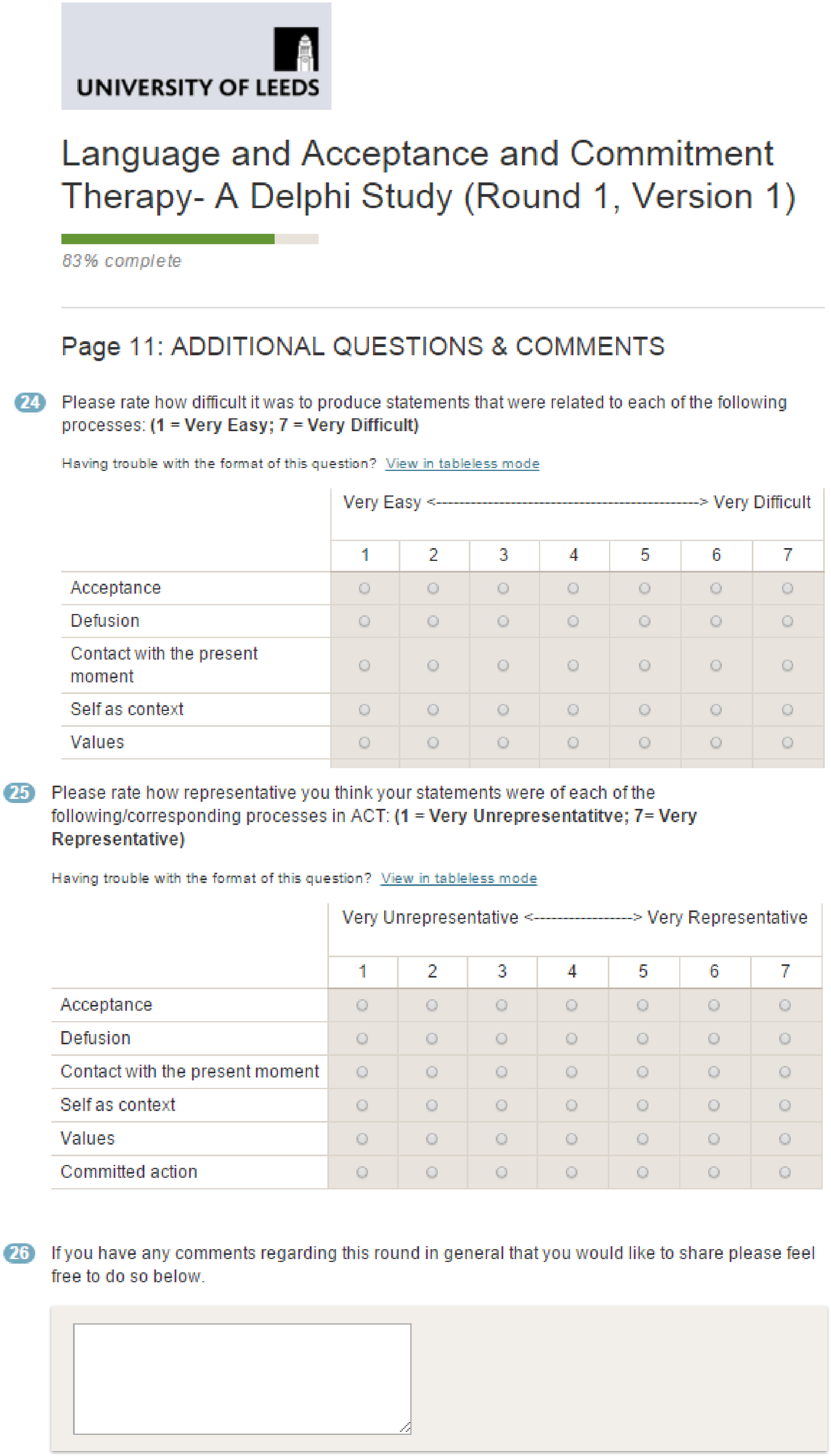

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Language and Acceptance and Commitment Therapy- A Delphi Study (Round 1, Version 1)

83% complete

Page 11: ADDITIONAL QUESTIONS & COMMENTS

㉔ Please rate how difficult it was to produce statements that were related to each of the following processes: **(1 = Very Easy; 7 = Very Difficult)**

Having trouble with the format of this question? View in tableless mode

	Very Easy <---> Very Difficult						
	1	2	3	4	5	6	7
Acceptance	○	○	○	○	○	○	○
Defusion	○	○	○	○	○	○	○
Contact with the present moment	○	○	○	○	○	○	○
Self as context	○	○	○	○	○	○	○
Values	○	○	○	○	○	○	○

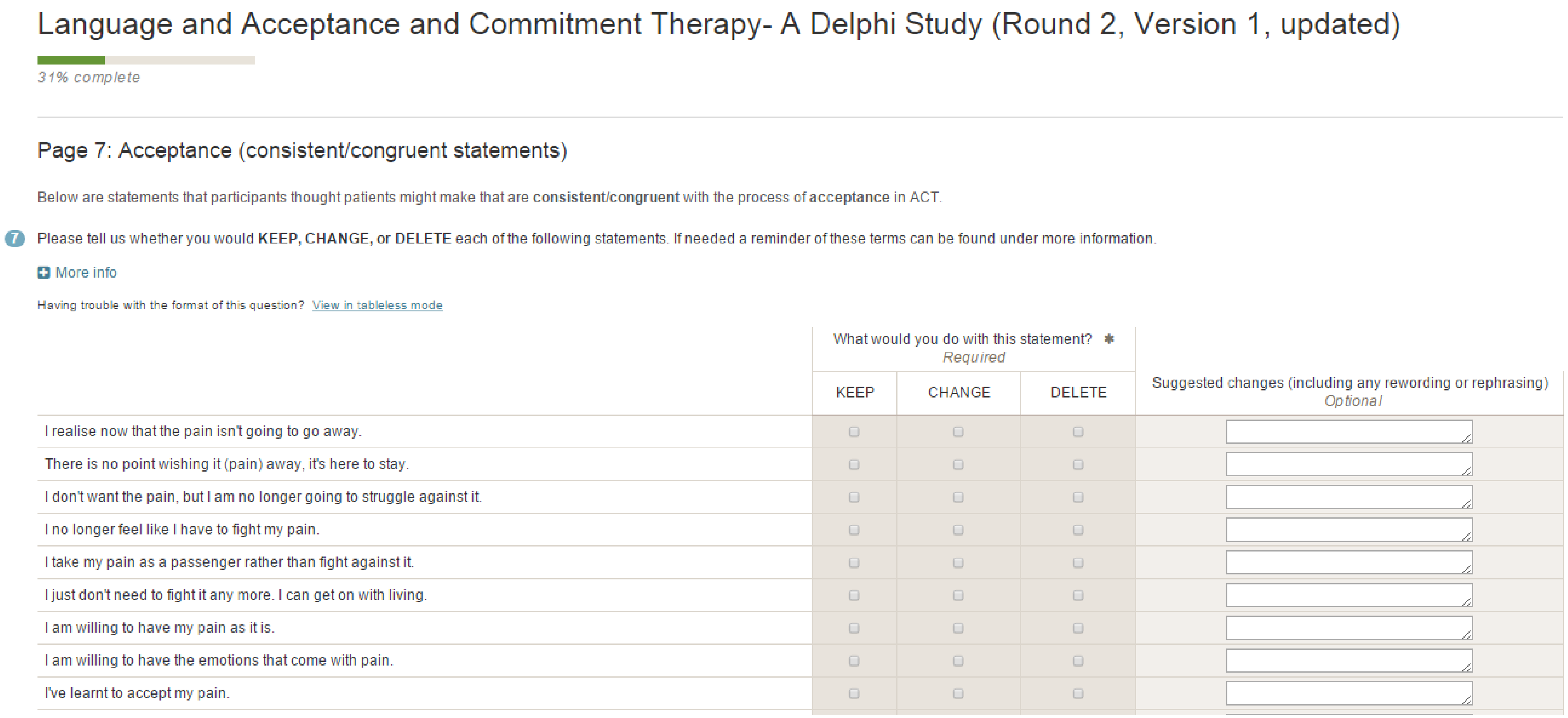
㉕ Please rate how representative you think your statements were of each of the following/corresponding processes in ACT: **(1 = Very Unrepresentatitve; 7= Very Representative)**

Having trouble with the format of this question? View in tableless mode

	Very Unrepresentative <-----------------> Very Representative						
	1	2	3	4	5	6	7
Acceptance	○	○	○	○	○	○	○
Defusion	○	○	○	○	○	○	○
Contact with the present moment	○	○	○	○	○	○	○
Self as context	○	○	○	○	○	○	○
Values	○	○	○	○	○	○	○
Committed action	○	○	○	○	○	○	○

㉖ If you have any comments regarding this round in general that you would like to share please feel free to do so below.

APPENDIX D: Example screenshot (round two questionnaire)



Language and Acceptance and Commitment Therapy- A Delphi Study (Round 2, Version 1, updated)

31% complete

Page 7: Acceptance (consistent/congruent statements)

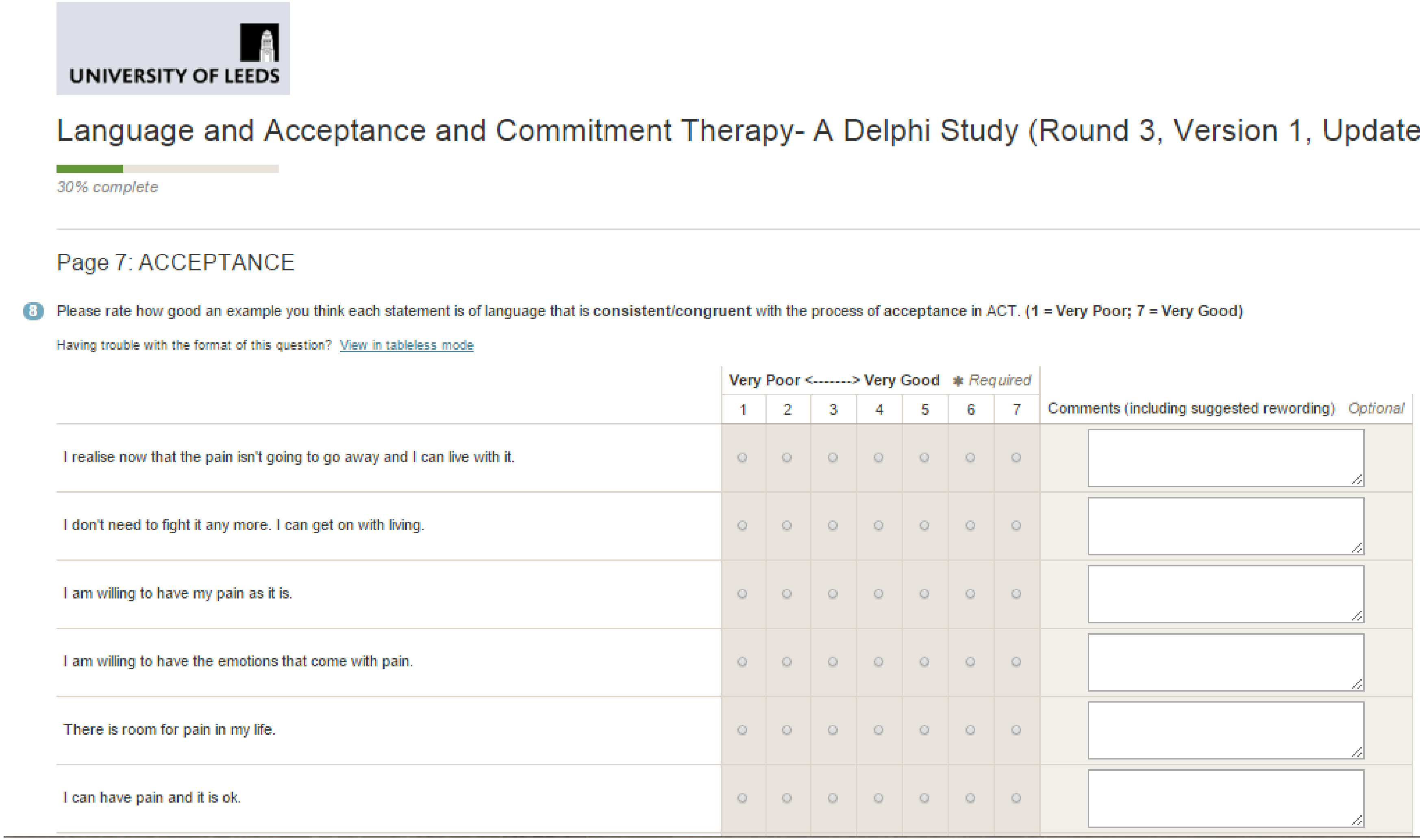
Below are statements that participants thought patients might make that are **consistent/congruent** with the process of **acceptance** in ACT.

7 Please tell us whether you would **KEEP, CHANGE, or DELETE** each of the following statements. If needed a reminder of these terms can be found under more information.

Having trouble with the format of this question? View in tableless mode

	What would you do with this statement? * *Required*			Suggested changes (including any rewording or rephrasing) *Optional*
	KEEP	CHANGE	DELETE	
I realise now that the pain isn't going to go away.	☐	☐	☐	
There is no point wishing it (pain) away, it's here to stay.	☐	☐	☐	
I don't want the pain, but I am no longer going to struggle against it.	☐	☐	☐	
I no longer feel like I have to fight my pain.	☐	☐	☐	
I take my pain as a passenger rather than fight against it.	☐	☐	☐	
I just don't need to fight it any more. I can get on with living.	☐	☐	☐	
I am willing to have my pain as it is.	☐	☐	☐	
I am willing to have the emotions that come with pain.	☐	☐	☐	
I've learnt to accept my pain.	☐	☐	☐	

APPENDIX E: Example screenshot (round three questionnaire)



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Language and Acceptance and Commitment Therapy- A Delphi Study (Round 3, Version 1, Updated)

30% complete

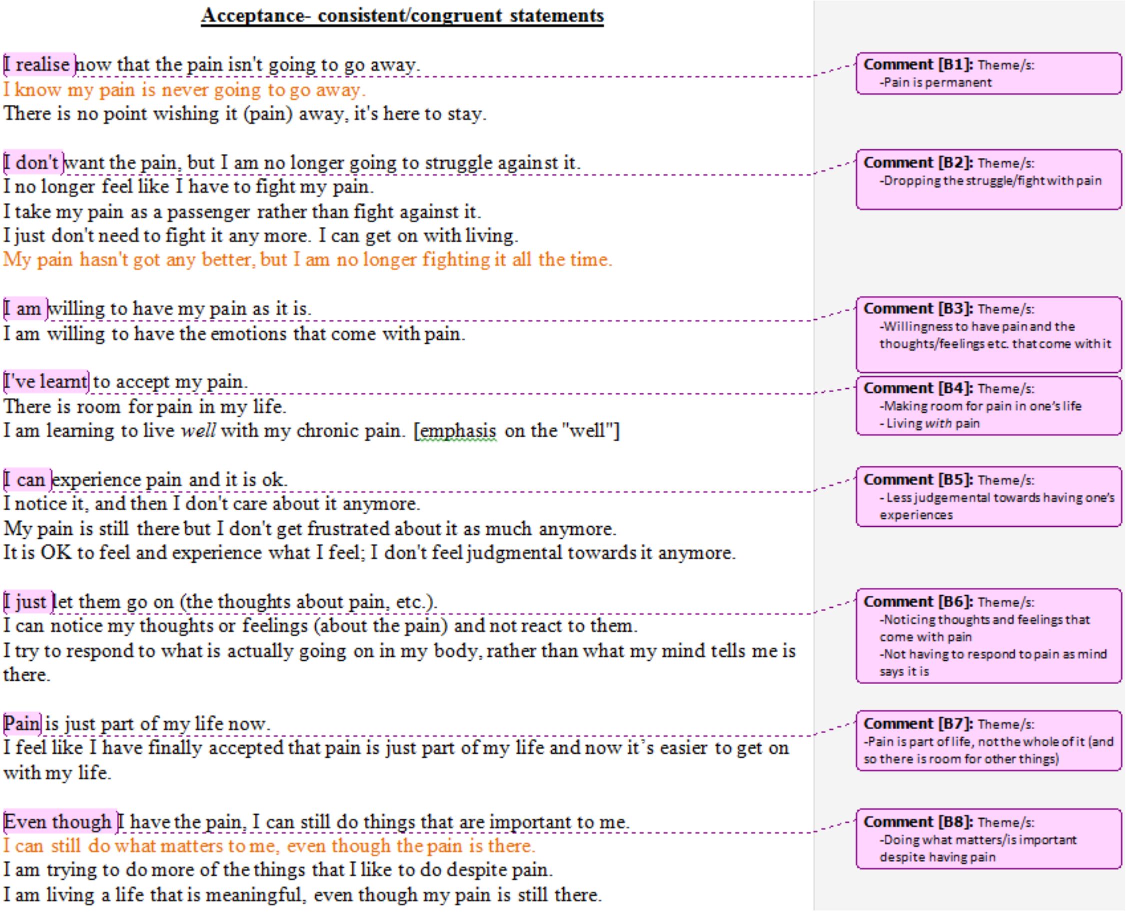
Page 7: ACCEPTANCE

8 Please rate how good an example you think each statement is of language that is **consistent/congruent** with the process of **acceptance** in ACT. **(1 = Very Poor; 7 = Very Good)**

Having trouble with the format of this question? View in tableless mode

	Very Poor <-------> Very Good ✱ *Required*							
	1	2	3	4	5	6	7	Comments (including suggested rewording) *Optional*
I realise now that the pain isn't going to go away and I can live with it.	○	○	○	○	○	○	○	
I don't need to fight it any more. I can get on with living.	○	○	○	○	○	○	○	
I am willing to have my pain as it is.	○	○	○	○	○	○	○	
I am willing to have the emotions that come with pain.	○	○	○	○	○	○	○	
There is room for pain in my life.	○	○	○	○	○	○	○	
I can have pain and it is ok.	○	○	○	○	○	○	○	

APPENDIX F: Example of data preparation (round one)



Acceptance- consistent/congruent statements

I realise how that the pain isn't going to go away.
I know my pain is never going to go away.
There is no point wishing it (pain) away, it's here to stay.

Comment [B1]: Theme/s:
-Pain is permanent

I don't want the pain, but I am no longer going to struggle against it.
I no longer feel like I have to fight my pain.
I take my pain as a passenger rather than fight against it.
I just don't need to fight it any more. I can get on with living.
My pain hasn't got any better, but I am no longer fighting it all the time.

Comment [B2]: Theme/s:
-Dropping the struggle/fight with pain

I am willing to have my pain as it is.
I am willing to have the emotions that come with pain.

Comment [B3]: Theme/s:
-Willingness to have pain and the thoughts/feelings etc. that come with it

I've learnt to accept my pain.
There is room for pain in my life.
I am learning to live *well* with my chronic pain. [emphasis on the "well"]

Comment [B4]: Theme/s:
-Making room for pain in one's life
- Living *with* pain

I can experience pain and it is ok.
I notice it, and then I don't care about it anymore.
My pain is still there but I don't get frustrated about it as much anymore.
It is OK to feel and experience what I feel; I don't feel judgmental towards it anymore.

Comment [B5]: Theme/s:
- Less judgemental towards having one's experiences

I just let them go on (the thoughts about pain, etc.).
I can notice my thoughts or feelings (about the pain) and not react to them.
I try to respond to what is actually going on in my body, rather than what my mind tells me is there.

Comment [B6]: Theme/s:
-Noticing thoughts and feelings that come with pain
-Not having to respond to pain as mind says it is

Pain is just part of my life now.
I feel like I have finally accepted that pain is just part of my life and now it's easier to get on with my life.

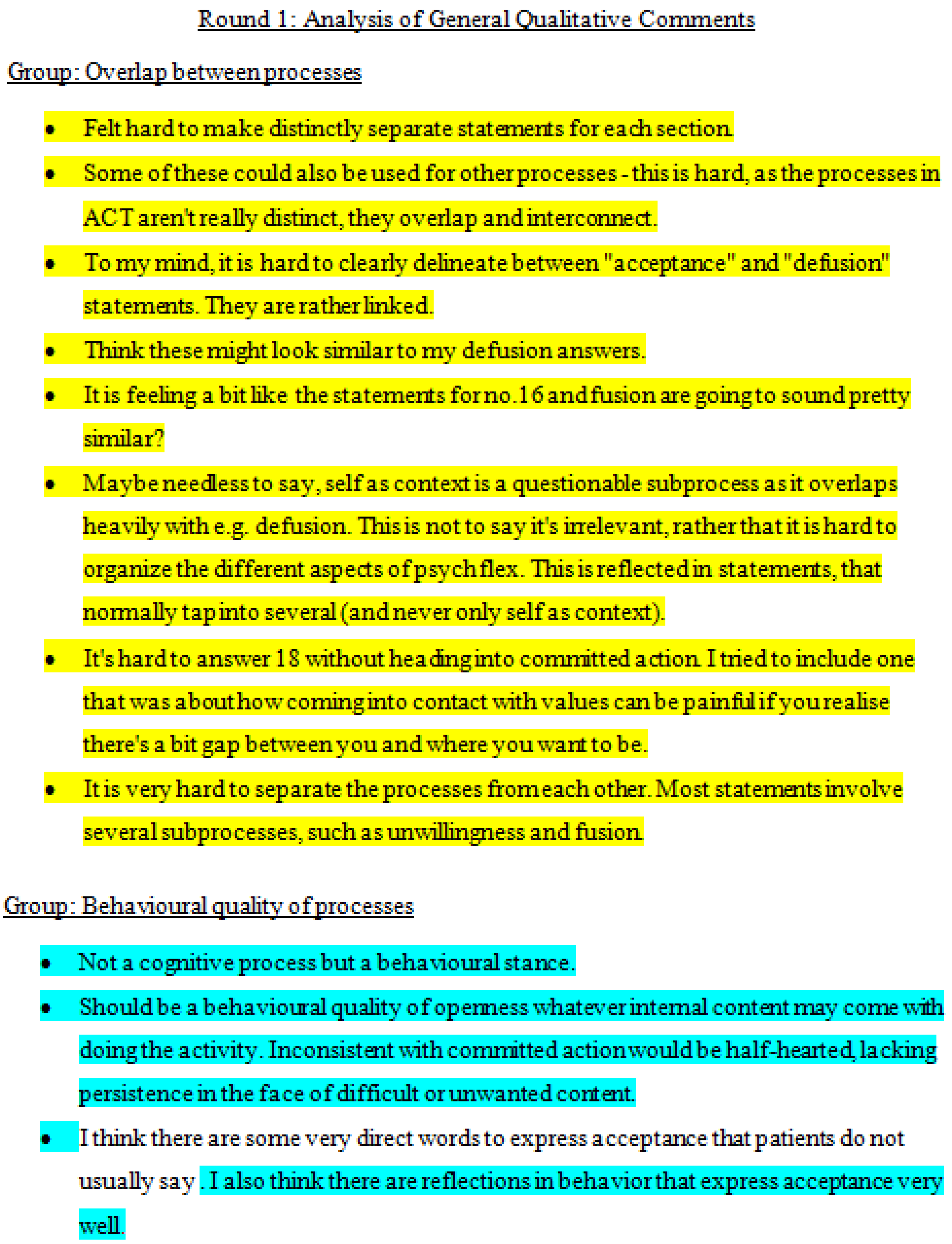
Comment [B7]: Theme/s:
-Pain is part of life, not the whole of it (and so there is room for other things)

Even though I have the pain, I can still do things that are important to me.
I can still do what matters to me, even though the pain is there.
I am trying to do more of the things that I like to do despite pain.
I am living a life that is meaningful, even though my pain is still there.

Comment [B8]: Theme/s:
-Doing what matters/is important despite having pain

Note. Items written in orange represent deleted duplicate items. Comments in the right-hand margin represent my groupings/themes. These themes were not shared with participants. Instead, statements were ordered in the second round questionnaire so that roughly similar items appeared together (i.e. to make items easier for participants to process).

APPENDIX G: Thematic analysis on general qualitative feedback (round one)



Round 1: Analysis of General Qualitative Comments

Group: Overlap between processes

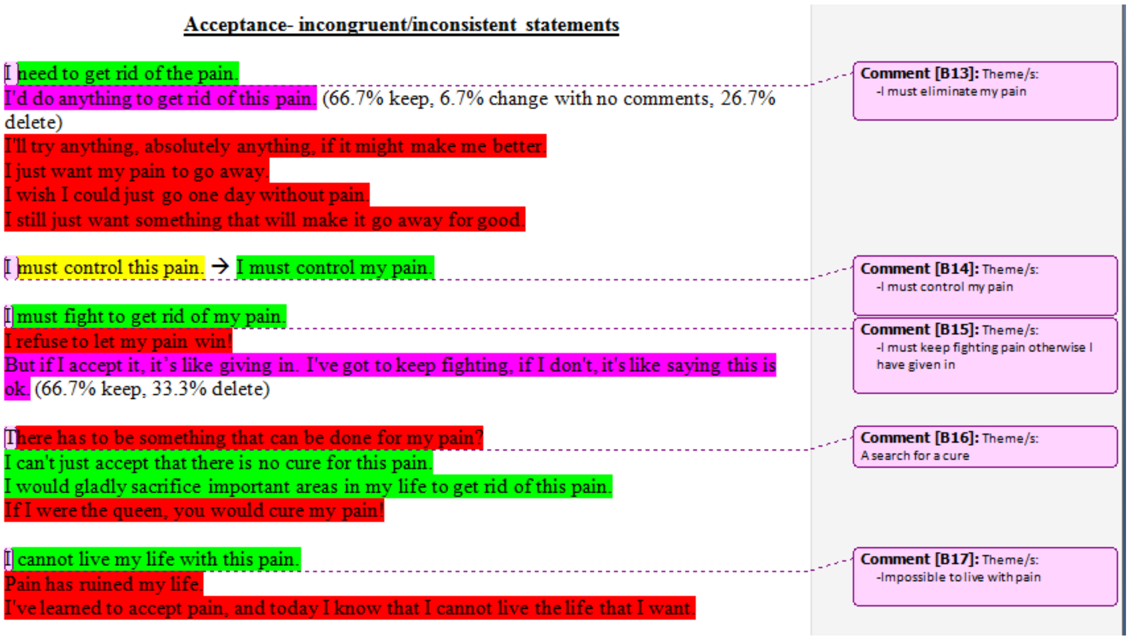
- Felt hard to make distinctly separate statements for each section.
- Some of these could also be used for other processes - this is hard, as the processes in ACT aren't really distinct, they overlap and interconnect.
- To my mind, it is hard to clearly delineate between "acceptance" and "defusion" statements. They are rather linked.
- Think these might look similar to my defusion answers.
- It is feeling a bit like the statements for no.16 and fusion are going to sound pretty similar?
- Maybe needless to say, self as context is a questionable subprocess as it overlaps heavily with e.g. defusion. This is not to say it's irrelevant, rather that it is hard to organize the different aspects of psych flex. This is reflected in statements, that normally tap into several (and never only self as context).
- It's hard to answer 18 without heading into committed action. I tried to include one that was about how coming into contact with values can be painful if you realise there's a bit gap between you and where you want to be.
- It is very hard to separate the processes from each other. Most statements involve several subprocesses, such as unwillingness and fusion.

Group: Behavioural quality of processes

- Not a cognitive process but a behavioural stance.
- Should be a behavioural quality of openness whatever internal content may come with doing the activity. Inconsistent with committed action would be half-hearted, lacking persistence in the face of difficult or unwanted content.
- I think there are some very direct words to express acceptance that patients do not usually say . I also think there are reflections in behavior that express acceptance very well.

Note. Above are examples of participants' general qualitative comments from round one and how these were grouped together during thematic analysis (not all examples of statements within each group are shown). Examples of my working theme names are also displayed.

APPENDIX H: Examples of decision-making regarding statements (round two)



Acceptance- incongruent/inconsistent statements

I need to get rid of the pain.
I'd do anything to get rid of this pain. (66.7% keep, 6.7% change with no comments, 26.7% delete)
I'll try anything, absolutely anything, if it might make me better.
I just want my pain to go away.
I wish I could just go one day without pain.
I still just want something that will make it go away for good.

I must control this pain. → I must control my pain.

I must fight to get rid of my pain.
I refuse to let my pain win!
But if I accept it, it's like giving in. I've got to keep fighting, if I don't, it's like saying this is ok. (66.7% keep, 33.3% delete)

There has to be something that can be done for my pain?
I can't just accept that there is no cure for this pain.
I would gladly sacrifice important areas in my life to get rid of this pain.
If I were the queen, you would cure my pain!

I cannot live my life with this pain.
Pain has ruined my life.
I've learned to accept pain, and today I know that I cannot live the life that I want.

Comment [B13]: Theme/s:
-I must eliminate my pain

Comment [B14]: Theme/s:
-I must control my pain

Comment [B15]: Theme/s:
-I must keep fighting pain otherwise I have given in

Comment [B16]: Theme/s:
A search for a cure

Comment [B17]: Theme/s:
-Impossible to live with pain

KEY CODE:

X = Keep

X = for panel

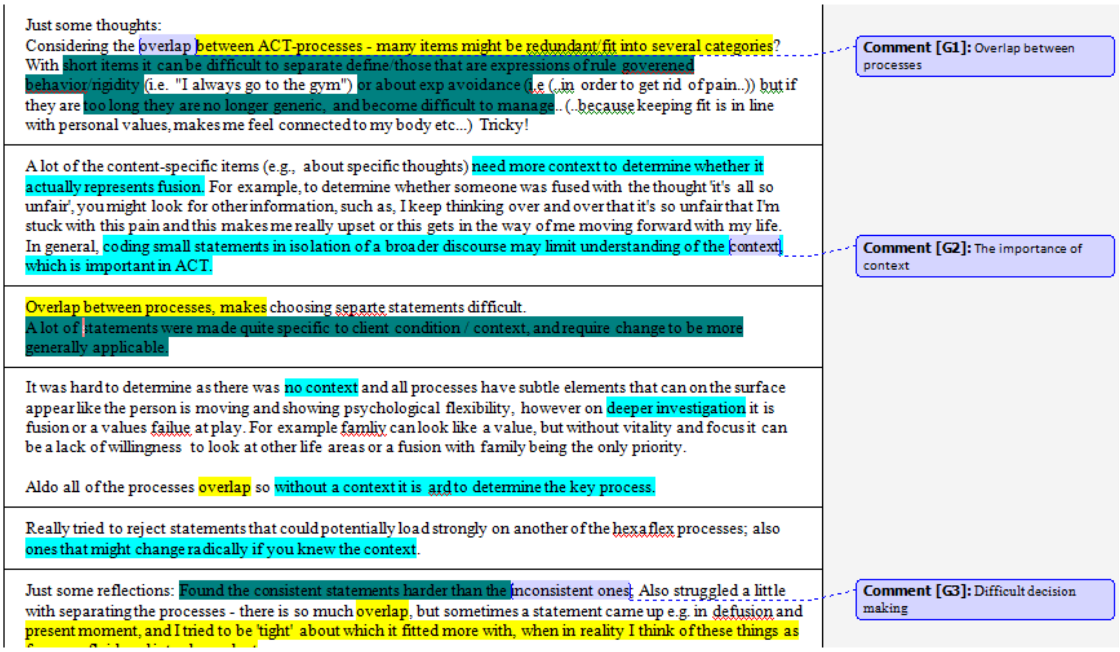
X = Deleting

X = modified statement

X = point of interest/key comment

Note. The above shows examples of decisions made to keep, amend, and delete items in round two, as well as examples of decisions to take items to a panel discussion.

APPENDIX I: Thematic analysis on general qualitative feedback (round two)



Just some thoughts:
Considering the overlap between ACT-processes - many items might be redundant/fit into several categories? With short items it can be difficult to separate define/those that are expressions of rule goverened behavior/rigidity (i.e. "I always go to the gym") or about exp avoidance (i.e (..in order to get rid of pain..)) but if they are too long they are no longer generic, and become difficult to manage.. (..because keeping fit is in line with personal values, makes me feel connected to my body etc...) Tricky!

Comment [G1]: Overlap between processes

A lot of the content-specific items (e.g., about specific thoughts) need more context to determine whether it actually represents fusion. For example, to determine whether someone was fused with the thought 'it's all so unfair', you might look for other information, such as, I keep thinking over and over that it's so unfair that I'm stuck with this pain and this makes me really upset or this gets in the way of me moving forward with my life. In general, coding small statements in isolation of a broader discourse may limit understanding of the context, which is important in ACT.

Comment [G2]: The importance of context

Overlap between processes, makes choosing separte statements difficult.
A lot of statements were made quite specific to client condition / context, and require change to be more generally applicable.

It was hard to determine as there was no context and all processes have subtle elements that can on the surface appear like the person is moving and showing psychological flexibility, however on deeper investigation it is fusion or a values failue at play. For example famliy can look like a value, but without vitality and focus it can be a lack of willingness to look at other life areas or a fusion with family being the only priority.

Aldo all of the processes overlap so without a context it is ard to determine the key process.

Really tried to reject statements that could potentially load strongly on another of the hexaflex processes; also ones that might change radically if you knew the context.

Just some reflections: Found the consistent statements harder than the inconsistent ones. Also struggled a little with separating the processes - there is so much overlap, but sometimes a statement came up e.g. in defusion and present moment, and I tried to be 'tight' about which it fitted more with, when in reality I think of these things as

Comment [G3]: Difficult decision making

Note. Above is a screenshot/example of how participants' general qualitative comments/data from round two were coded during thematic analysis. The comments in the right-hand margin show my working theme names.

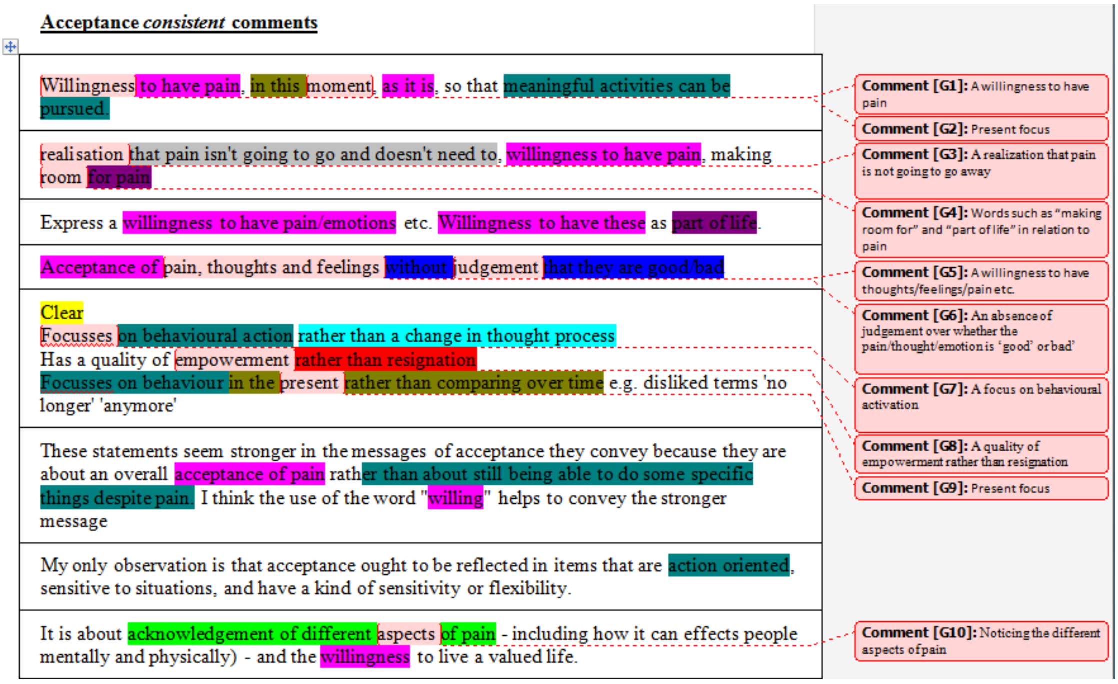
APPENDIX J: Examples of how item-specific feedback was used (round three)

Table J1.

Examples of Participant Feedback on, and Changes Made to, Items in Round Three

Item	**Qualitative Comments**	**Final Item**
Even though I have the pain, I can still do things that are important to me.	• The "even though" and "still" parts of this takes a bit away from the do things. • Long but clear, and functionally relevant.	Even though I have the pain, I can do things that are important to me.
I am willing to have the emotions that come with pain.	• Better to be specific than using "emotions", not everyone understands what is implied.	I am willing to have the emotions/sadness/anger/etc. that come with pain.
I don't need to fight it any more. I can get on with living.	• I don’t need to fight the pain anymore. I can get on with living. • It might be a little better if it said "I now spend my time and energy living/focused on living/doing things that matter to me (something like that). • Two different aspects in one (acceptance and taking action).	I don’t need to fight the pain anymore. I can get on with living.
Pain no longer dictates what I can and cannot do.	• I would prefer “Pain does not dictate what I can and cannot do”. The “no longer” element implies that it did before. • Frankly I would think this hit the target better if it were a bit softer or conditional. • I like it, clear and relevant.	Pain does not dictate what I can and cannot do.
My pain doesn't stop me engaging in social/family events and hobbies anymore.	• Again it's got the time element implied with 'anymore'- is this needed? • I find items like this positive and yet they bother me a bit because it/they sound vaguely inflexible. It makes me wonder "never?" • I like it, clear and relevant (I think "from" is missing).	My pain doesn't stop me from engaging in social/family events and hobbies.
I can't do it because of the pain.	• Prefer: “I can't do what matters to me because of the pain”. • Unclear what "it" refers to.	I can't do what matters to me because of the pain.

APPENDIX K: Thematic analysis on participants' ideas regarding the key characteristics of client language



Acceptance *consistent* comments

Willingness to have pain, in this moment, as it is, so that meaningful activities can be pursued.
realisation that pain isn't going to go and doesn't need to, willingness to have pain, making room for pain
Express a willingness to have pain/emotions etc. Willingness to have these as part of life.
Acceptance of pain, thoughts and feelings without judgement that they are good/bad
Clear Focusses on behavioural action rather than a change in thought process Has a quality of empowerment rather than resignation Focusses on behaviour in the present rather than comparing over time e.g. disliked terms 'no longer' 'anymore'
These statements seem stronger in the messages of acceptance they convey because they are about an overall acceptance of pain rather than about still being able to do some specific things despite pain. I think the use of the word "willing" helps to convey the stronger message
My only observation is that acceptance ought to be reflected in items that are action oriented, sensitive to situations, and have a kind of sensitivity or flexibility.
It is about acknowledgement of different aspects of pain - including how it can effects people mentally and physically) - and the willingness to live a valued life.

Comment [G1]: A willingness to have pain

Comment [G2]: Present focus

Comment [G3]: A realization that pain is not going to go away

Comment [G4]: Words such as "making room for" and "part of life" in relation to pain

Comment [G5]: A willingness to have thoughts/feelings/pain etc.

Comment [G6]: An absence of judgement over whether the pain/thought/emotion is 'good' or bad'

Comment [G7]: A focus on behavioural activation

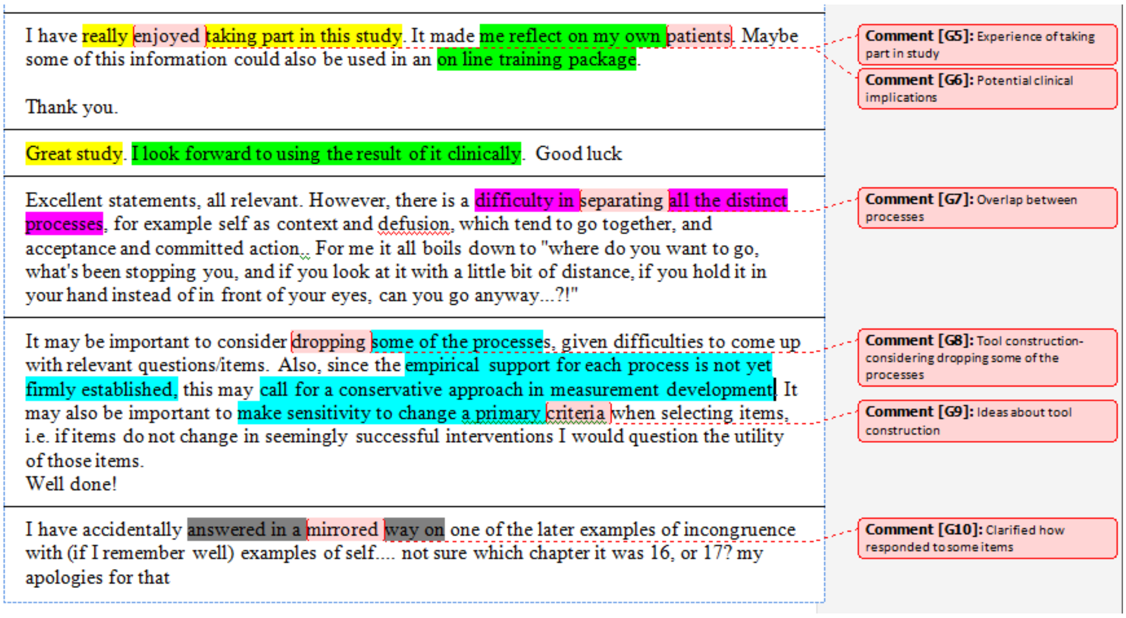
Comment [G8]: A quality of empowerment rather than resignation

Comment [G9]: Present focus

Comment [G10]: Noticing the different aspects of pain

Note. Above is a screenshot/example of how participants' ideas (i.e. regarding what made statements in round three 'good' examples of client language that is consistent or inconsistent with key processes targeted in ACT) were coded during thematic analysis. The comments in the right-hand margin show my working theme names.

APPENDIX L: Thematic analysis on general qualitative feedback (round three)



I have really enjoyed taking part in this study. It made me reflect on my own patients. Maybe some of this information could also be used in an on line training package.

Thank you.

Comment [G5]: Experience of taking part in study

Comment [G6]: Potential clinical implications

Great study. I look forward to using the result of it clinically. Good luck

Excellent statements, all relevant. However, there is a difficulty in separating all the distinct processes, for example self as context and defusion, which tend to go together, and acceptance and committed action,. For me it all boils down to "where do you want to go, what's been stopping you, and if you look at it with a little bit of distance, if you hold it in your hand instead of in front of your eyes, can you go anyway...?!"

Comment [G7]: Overlap between processes

It may be important to consider dropping some of the processes, given difficulties to come up with relevant questions/items. Also, since the empirical support for each process is not yet firmly established, this may call for a conservative approach in measurement development. It may also be important to make sensitivity to change a primary criteria when selecting items, i.e. if items do not change in seemingly successful interventions I would question the utility of those items.
Well done!

Comment [G8]: Tool construction- considering dropping some of the processes

Comment [G9]: Ideas about tool construction

I have accidentally answered in a mirrored way on one of the later examples of incongruence with (if I remember well) examples of self.... not sure which chapter it was 16, or 17? my apologies for that

Comment [G10]: Clarified how responded to some items

Note. Above is a screenshot/example of how participants' general qualitative comments/data from round three were coded during thematic analysis. The comments in the right-hand margin show my working theme names.