

Acceptance and Commitment Therapy: Efficacy and Mechanisms of Therapeutic Action

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DEDICATION

I would like to dedicate this Thesis to my little ladies. To Lucy, for putting up with my absences in recent months and for nurturing my girls. To Arianwen, for helping to bring some perspective to my world and for making me smile and laugh each day—even the tough ones :) And to Gwendolyn, for keeping me company during the late evenings and for being the most content and happy little baby, I cannot wait to watch you grow and develop!

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A POEM

The Guest House

This being human is a guest house.

Every morning a new arrival.

A joy, a depression, a meanness,
some momentary awareness comes
as an unexpected visitor.

Welcome and entertain them all!
Even if they're a crowd of sorrows,
who violently sweep your house
empty of its furniture,
still, treat each guest honourably.
He may be clearing you out
for some new delight.

The dark thought, the shame, the malice,
meet them at the door laughing,
and invite them in.

Be grateful for whoever comes,
because each has been sent
as a guide from beyond.

By Rumi

ABSTRACT

The individual, organisational and societal impact of psychological distress among working populations is well established. Recently, Acceptance and Commitment Therapy (ACT) has been identified as a promising approach for improving the psychological wellbeing of distressed employees. Nonetheless, few studies have examined the efficacy of ACT in the occupational context and even fewer studies have conducted comprehensive tests of the mechanisms of therapeutic action in ACT.

The current research examined the efficacy of a one day ACT intervention that was delivered to NHS employees experiencing psychological distress. A key focus of this research was an examination of the mechanisms of therapeutic action in ACT. In study one, a non-randomised controlled design was used with 17 participants assigned to the ACT intervention and 18 participants assigned to a waiting list. A two-week and three-month follow-up period was used in this study. Participants originally assigned to the waiting list went on to receive the intervention after the three month follow-up and were again assessed at two-weeks and three-months post-treatment. In study two, six of the participants were interviewed about their views on the aspects of the ACT intervention that promoted psychological changes and their responses were analysed thematically.

Compared to the control group, participants who received the intervention displayed statistically significant reductions in the severity of psychological distress at two-weeks and three-months post-treatment. Importantly, the majority of participants displayed clinically significant change at both assessments. In line with ACT's theoretical underpinnings, the intervention significantly increased participants' psychological flexibility and mindfulness skills and decreased cognitive fusion. However, in a multiple-mediator statistical analysis, improvements in psychological distress were only mediated by improvements in psychological flexibility. The themes generated from the thematic analysis converge with the quantitative data—resembling closely the construct of psychological flexibility. Limitations of the study and implications for future research are discussed.

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Chapter One

Introduction

1.1. Focus of the Thesis

Psychological distress among working populations is an important issue that needs addressing. For example, in the United Kingdom (UK), psychological distress among employees is related to increased rates of sickness absence, early retirement, and significant monetary costs (Hardy *et al.* 2003; Health and Safety Executive, 2011; Kessler *et al.* 2008). Thus, the individual, organisational and societal impact of psychological distress among working populations is well established. Recently, Acceptance and Commitment Therapy (ACT) has been identified as a promising approach for addressing psychological distress in the workplace (Flaxman & Bond, 2006; Hayes *et al.* 2006). ACT has been described as an empirically driven approach that pays particular attention to the context and functions of psychological events (Hayes *et al.* 2006), and it uses acceptance, mindfulness and behavioural activation techniques to produce greater psychological flexibility (Hayes *et al.* 2011).

Although the ACT evidence base is in its infancy (Gaudiano, 2009), a growing body of research attests to the efficacy of ACT for a range of clinical presentations (Hayes *et al.* 2011; Powers *et al.* 2009), and studies that have examined the mechanisms of therapeutic action within ACT indicate psychological flexibility to be a key mediator. However, few studies have conducted comprehensive tests of the mechanisms of therapeutic action in ACT, particularly with respect to the different processes that are outlined in the ACT model (Hayes *et al.* 2006). Similarly, few studies have examined the effectiveness of a brief ACT intervention that was delivered to employees at significant risk for psychological distress. As such, the core aims of the current research are to evaluate the efficacy of a brief ACT intervention for National Health Service (NHS) employees experiencing psychological distress whilst examining the processes that foster improvements in participant's psychological functioning.

1.2. Psychological Distress

Psychological distress is the outcome of interest in this Thesis and it has been defined as a state of emotional suffering often characterised by feelings of sadness, hopelessness, restlessness, tension and a loss of interest (Mirowsky & Ross, 1992). These symptoms of psychological distress are often associated with somatic complaints such as insomnia and a loss of energy (Drapeau *et al.* 2011) and they are regarded to negatively impact on the social functioning and day-to-day living of individuals (Wheaton, 2007). Thus, the construct of psychological distress aligns with a dimensional rather than a diagnostic approach to mental health problems. In the current study, a well validated and statistically reliable self-report questionnaire is used to capture the construct of psychological distress—the General Health Questionnaire-12 (GHQ-12: Goldberg *et al.* 1978, 1997). The GHQ-12 is often considered as the gold standard for the measurement of psychological distress (Furukawa *et al.* 2003) and the items on this questionnaire align closely with the aforementioned definition of this construct (Drapeau *et al.* 2011; Mirowsky & Ross, 1992; Wheaton, 2007).

1.3. The Identification of the Literature for this Thesis

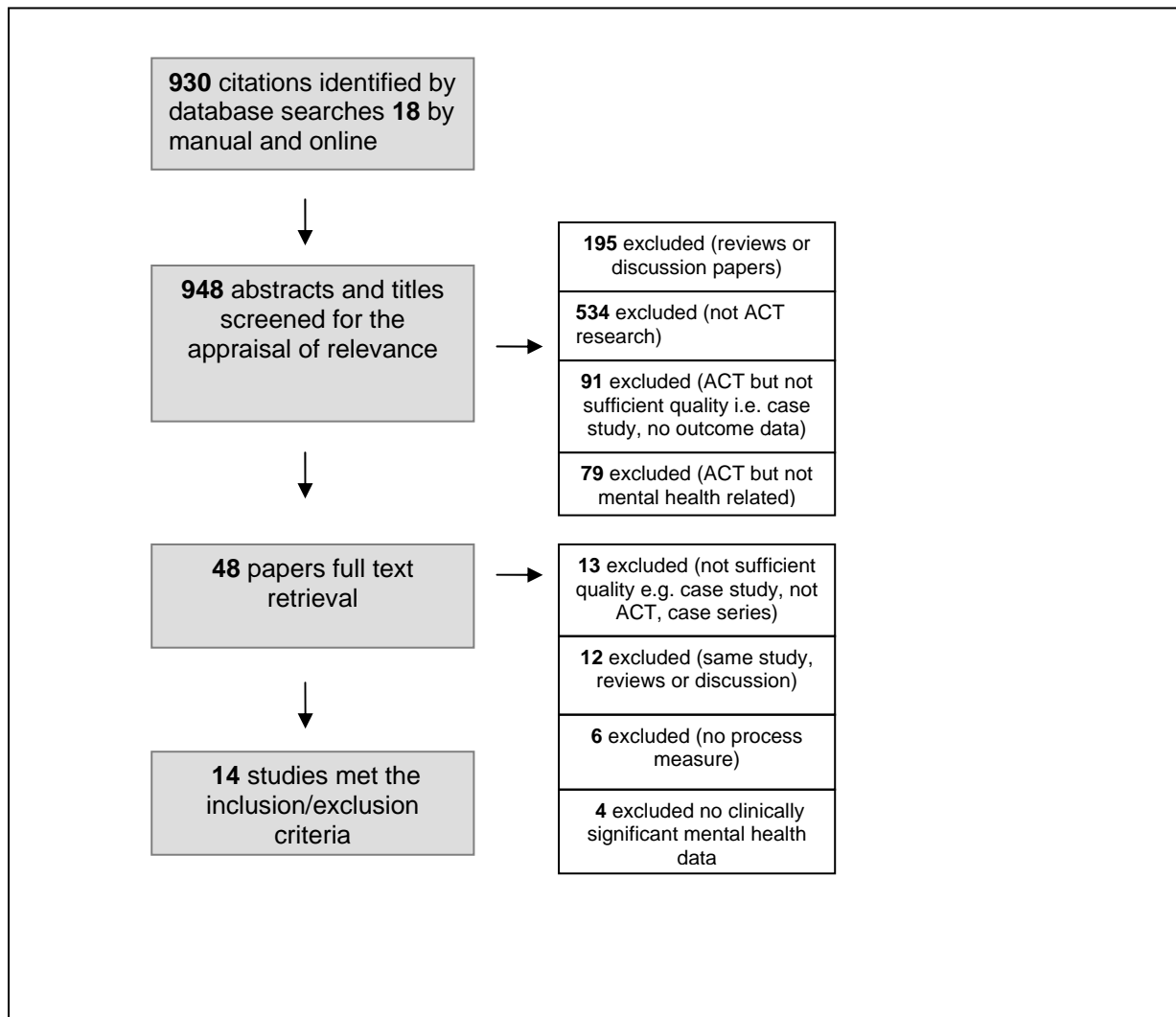
To identify the literature relevant to the focus of this Thesis a comprehensive literature search was conducted for all years up to February 2012. In order to provide a framework to guide the search strategy, the guidelines set forth by the NHS Centre for Reviews and Dissemination and the Cochrane Collaboration were drawn upon (Higgins & Green, 2009, 2011). Nine electronic databases were searched (*Pub Med, Medline, BIOSIS citation index, BIOSIS previews, the Science Citation Index, Embase, Journal citation reports, Web of Science, and the Cochrane Library*) and one Acceptance and Commitment Therapy (ACT) resource website (www.contextualpsychology.org) was screened for additional published articles. Given the relatively recent emergence of ACT and the need to acquire a comprehensive overview of the evidence base, the search term ‘*Acceptance and Commitment Therapy &/or ACT*’ was used. All abstracts and titles identified during this process (N = 948) were reviewed. In order to identify in press and recently published articles, key authors were contacted and their publication records explored. The authors contacted include Steven Hayes, Frank Bond, and Paul Flaxman. Furthermore, the bibliographies of all

articles that met the inclusion criteria were examined for relevant studies, as were the reference lists of key review papers, book chapters and meta-analyses.

1.3.1. The Inclusion and Exclusion Criteria

In order to be included in the systematic literature review aspect of this Chapter (*section 1.6*), studies had to examine the effectiveness of an Acceptance and Commitment Therapy intervention for adults who were experiencing a mental health difficulty. Additionally, studies had to include a test of the underlying ACT model by examining hypothesised mechanisms of change. Scoping searches had indicated a paucity of research in this area and, for this reason, studies using an uncontrolled and non-randomised design were included in addition to randomised controlled trials. Studies that examined the effectiveness of ACT for physical health problems (e.g. pain, diabetes, and cancer), substance abuse, and other non-mental health related outcomes (e.g. attitudinal change) were excluded. Similarly, case studies and case series reports were excluded. Systematic reviews, meta-analyses, and theory papers that were identified during the screening of the titles and abstracts were used to provide a comprehensive overview of this area of research and to support the overall write up of this Thesis. Only English language studies were considered for inclusion. Given the relatively recent emergence of ACT, restrictions on the year of publication were not applied. Due to the fact that ACT is a relatively recent psychotherapeutic approach, and that research into the mechanisms of therapeutic action in ACT is in its infancy, qualitative as well as quantitative studies that examined processes of change in ACT were sought. The methodological quality of the included studies was evaluated in reference to the guidelines set forth in the ‘Strengthening the Reporting of Observational Studies in Epidemiology’ (STROBE) statement (von Elm *et al.* 2008).

Figure 1.1. Summary of the Literature Review Process



1.4. Psychological Distress and the Workplace

There is increasing interest into the individual, organisational, economic and societal costs of mental health difficulties among working populations (Health and Safety Executive, 2011; Kerr *et al.* 2009; Teasdale, 2006). For example, in the United Kingdom, psychological distress among employees is related to increased rates of sickness absence, higher labour turnover and early retirement (Hardy *et al.* 2003; Health and Safety Executive, 2011; Kessler *et al.* 2008). Indeed, across 2010 and 2011, psychological distress¹ was one of the most commonly reported types of illness among employees, resulting in an estimated 10.8 million

¹ It is noteworthy that in the Occupational Health Psychology literature, the terms ‘stress’, ‘occupational stress’ and ‘psychological distress’ are often used interchangeably to describe mental health difficulties. To align with the wider literature, the term psychological distress will be used in this Thesis.

lost working days (Health and Safety Executive, 2011). Taken to the individual level, the annual estimated cost of psychological distress among working populations averages out at approximately £310.00 per employee (Parker 1999), with an overall cost of £3.7 billion a year (Health and Safety Executive, 2004). Emphasising the significance of the issue, policy makers in government have produced guidance to encourage managers and organisations to prioritize the psychological well being of their employees (Hogarth *et al.* 2000; Health and Safety Executive, 2004).

Nevertheless, whilst there is growing recognition of the impact of psychological distress among working populations, the rates of clinically significant mental health problems remain very high. In the United Kingdom, 25% of the working population have been found to experience psychological distress at a clinically significant level (Stride *et al.* 2007). Similarly, prevalence studies estimate that one in five employees meet diagnostic criteria for a psychiatric disorder (Kessler *et al.* 2008). Across occupations, Health Service staff consistently feature as one of the most psychologically distressed workforces (Health and Safety Executive, 2011; Williams, 2003), with nursing staff identified as an occupational group at particularly high risk of psychological distress (Bakker *et al.* 2000; Clegg, 2003). However, despite the well documented costs of psychological distress among working populations, few organisations offer support to employees who are experiencing psychological difficulties (Hilton *et al.* 2008).

In recent years, researchers and clinicians have sought to address workplace distress by designing, implementing and evaluating effective interventions. Over the last three decades, group delivered treatments that are based on the principles of Cognitive Behaviour Therapy (CBT) have been designed and evaluated (Meichenbaum, 1985; Murphy, 1996; van der Klink *et al.* 2001). Whilst treatment gains are often reported in these studies (Richardson & Rothstein, 2008; van der Klink *et al.* 2001), not all individuals show clinically significant improvements in their levels of psychological distress (Flaxman & Bond, 2010b; Vente *et al.* 2008). Consequently, researchers and clinicians have drawn on more contemporary theories of the origins of psychological distress and well being in order to improve the efficacy of worksite interventions. Most notably, a promising development in the occupational literature that mirrors advances in the wider psychotherapy evidence base has been the design and delivery of a group delivered intervention that draws on the principles of Acceptance and Commitment Therapy (Hayes *et al.* 2006; Flaxman & Bond, 2006).

1.5. Acceptance and Commitment Therapy (ACT): Theoretical Underpinnings

Commonly referred to as a '*third wave*' or '*contextual*' behavioural therapy, ACT is grounded in an empirical, principle-focused approach that pays particular attention to the context and functions of psychological events (Hayes *et al.* 2006). Unlike '*second wave*' cognitive-behavioural approaches that focus on changing the nature of psychological events directly (e.g. *challenging the validity of negative automatic thoughts*), ACT seeks to change the function of those events and the individual's relationship to them through processes such as mindfulness, acceptance and attention to values (Hayes *et al.* 2006; Hayes *et al.* 2011). In general terms, the ACT model maintains that it is not distorted cognitions that lead to psychological distress but rather, it is the context in which a person holds the distorted cognitions that determines the occurrence of harmful consequences (Hayes *et al.* 2006). For example, a harmful context according to ACT is one in which a person is fused with the literal meaning of their thoughts (e.g. '*If I think I am not good enough to pass the exam then I might as well not sit the exam*') which can lead them to avoid experiences related to such thoughts (Hayes *et al.* 2006; Luoma & Hayes, 2003). In ACT, people are encouraged to accept and experience the presence of unwanted private events without '*buying into them*' in order to pursue their values and goals (e.g. *being willing to feel anxiety and fear when attending an interview for a promotion in work*). However, before explaining the ACT model of psychological distress and wellbeing more fully, it is important to describe the theoretical, empirical, and philosophical underpinnings of ACT.

1.5.1. The Evolution of the Behavioural Therapies

The '*first generation*' of behaviour therapies represented a challenge to the theoretical and 'scientific' weaknesses of the prevailing psychodynamic and humanistic approaches (Hayes, 2004). Arguing against untested theorizing and interpretations of psychological symptoms, behaviour therapists focused on overt behaviours and emotional reactions, basing their conceptualisations and interventions for a given phenomena on empirically supported theories of animal and human learning. The empirical foundations of the '*first wave*' of behavioural approaches to mental health problems can be traced to the seminal '*classical conditioning*' studies of Pavlov (1927, as cited in Hawton *et al.* 1989) and Watson & Rayner (1920) who discovered that emotional responses such as fear can be conditioned. The initial

principles of '*learning theory*' derived from these studies were extended in the early 1900s by the investigations of Thorndike and Tolman (as cited in Herrnstein, 1970) who showed that if a particular behaviour was consistently followed by a reward (*a reinforcer*) then that behaviour would be more likely to re-occur—a phenomenon later labelled as the '*law of effect*'. Skinner (1953) developed these principles further into what became known as '*operant conditioning*' by specifying the association between different types of reinforcers or punishers and behaviour.

During the mid 1950s and 1960s, the experimental findings derived from the behaviourism tradition were applied to clinical settings for the treatment of psychological problems. In the United States, Ayllon & Azrin (1968) applied the principles of Skinner's work to psychiatric in-patient settings where reinforcers were applied to systematically change a patient's behaviour: an intervention that became known as a '*token economy*'. In the United Kingdom and South Africa, behavioural interventions that demonstrated the initial utility of desensitization and exposure techniques for anxiety-based conditions were developed (Rachman, 1968; Marks, 1969; Wolpe, 1958). However, as clinical practice and research progressed, the theory-practice links that led to the creation of effective behaviourally-based treatments for anxiety related problems were shown to be limited, and their efficacy was not seen among patients with depressive disorders (Salkovskis, 1996). Consequently, researchers and clinicians began to acknowledge the importance of cognitive factors in the development and maintenance of psychological problems (Beck, 1967, 1976; Ellis, 1962). Thus, the '*second wave*' of cognitive-behavioural therapies (CBT) was born.

Around the same time, the 'cognitive revolution' in academic psychology was gaining speed, with theory and research moving away from purely behaviourist accounts of human functioning toward information processing models of behaviour and cognition (Arnkoff & Glass, 1992; Mahoney & Gabriel, 1987). Capitalising on these circumstances, Beck (1967) developed his version² of cognitive therapy for depression, which was later applied to other psychological problems (Beck, 1976). Beck proposed that negative thinking and dysfunctional assumptions are central to the development and maintenance of emotional difficulties (Beck, 1967, 1976), formulating the idea that it is not the event *per se* that results in the negative emotion (e.g. anxiety or sadness) but, rather, it is the person's expectations and appraisals of the event (Clark, 1989). During subsequent decades, the merging of

² Ellis's (1962) Rational Emotive Therapy, which also draws on the findings of cognitive psychology, was being developed around the same time as Beck's Cognitive Therapy and Ellis's influence warrants acknowledgement here.

cognitive and behavioural theories and therapies advanced further (Salkovskis, 1993), and specific CBT models and interventions for particular ‘diagnostic’ categories were developed (e.g. Clark, 1986; Clark & Wells, 1995; Salkovskis, 1985, 1996). A vast evidence base demonstrating the effectiveness of CBT for a range of psychological problems has been established and, in the UK, CBT is now the most widely advocated approach to psychotherapy in the National Institute for Health and Clinical Excellence guidelines (NICE, 2011).

However, whilst CBT has been shown to be an effective treatment, evidence for the mechanisms of psychological change in CBT being consistent with the underlying theoretical model is weak (Gaudinao, 2009; Kazdin, 2007). Studies that have examined the components of change in CBT via mediator and component study designs have brought into question the role of cognitive change techniques such as the challenging of negative thoughts (Longmore & Worrell, 2007; Dimidjian *et al.* 2006; Jacobson *et al.* 1996), leading some authors to conclude that there is ‘*no additive benefit to providing cognitive interventions in cognitive therapy*’ (Dobson & Khatri, 2000, p. 913). Similarly, other researchers have questioned the true efficacy of CBT, highlighting sources of bias in clinical trials and the significant proportion of participants who fail to show psychological benefits after treatment (Lynch *et al.* 2009; Scott *et al.* 2008; Sensky *et al.* 2000). Thus, the need to identify other approaches for the treatment of mental health problems was identified, and the ‘*third wave*’ of behavioural therapies has emerged.

1.5.2. Relational Frame Theory

Whilst having roots in cognitive-behavioural approaches to psychological distress and wellbeing, ACT draws heavily on Relational Frame Theory (RFT)—a contemporary research programme that aims to provide a contextualistic account of human language and cognition (Hayes *et al.* 2001). A central tenet of RFT is the idea that language is based on the learned derivation of relations among events (*relational networks*) which are based on cues that can be arbitrary (Hayes *et al.* 2006, 2011). To help illustrate this position, Hayes *et al.* (2011) provide the following example: Although a nickel is larger than a dime (according to size), young children learn that ‘*is larger than*’ can also be applied arbitrarily, as a dime can be larger than a nickel (according to value). Essentially, RFT proposes that the contextually controlled ability to arbitrarily relate events mutually and in combination, and to change the

functions of specific events based on their relations to others is at the core of human language and cognition (Hayes *et al.* 2006). Studies in line with RFT have found that based on this process of arbitrarily applicable responding, any event can acquire an aversive function without having been directly associated with another aversive event, and without sharing formal properties (Dymond & Roche, 2009). Put another way, language can turn any event into a source of pain (Hayes *et al.* 2011). For example, a successful career can be experienced as a failure because it is '*less than*' a hoped-for ideal. Due to this language process, any object of thought can become related to another so that one is unable to permanently isolate a source of psychological pain from all other events e.g. a once happy memory can become a reminder that the present is not the same as when the loved parent was still alive (Hayes *et al.* 2011; Hooper *et al.* 2010). Thus, ACT is rooted in an empirical and experimental evidence base that informs the models underlying theory of psychological distress and wellbeing.

1.6. The ACT Model of Psychological Distress and Wellbeing

Psychological flexibility is the applied model that underpins the ACT approach to psychological distress and wellbeing (Hayes *et al.* 2011). Within ACT, psychological flexibility is defined as the ability to fully contact and accept the present moment including the thoughts and feelings it contains, and, dependent on what the situation affords, being able to persist or change one's behaviour in accordance with valued goals (Hayes *et al.* 2006). In contrast, psychological inflexibility is defined as the rigid dominance of psychological reactions in guiding behaviour over and above valued goals and contextual contingencies (Hayes *et al.* 2006). Thus, from an ACT perspective, a primary source of psychological distress is the way that language and cognition interact with direct contingencies to produce an inability to persist or change one's behaviour to achieve long-term valued goals (Hayes *et al.* 2006). According to Hayes (2004), this kind of psychological inflexibility is purported to emerge from two main processes, experiential avoidance and cognitive fusion, both of which are direct consequences of human language and cognition.

1.6.1. Cognitive Fusion and Experiential Avoidance

‘Cognitive fusion’ refers to the excessive or inappropriate regulation of behaviour by verbal processes whereby individuals ‘fuse’ with the literal content of internal experiences (thoughts, feelings, memories, sensations) and then use those experiences as the predominant guide for behaviour (Hayes *et al.* 1999). Thus, the term ‘cognitive fusion’ captures the process of treating the content of one’s internal experiences as an accurate reflection of reality. According to ACT, cognitive fusion is a natural consequence of the language process which everyone is susceptible to. However, this process only becomes problematic when individuals become excessively entangled with their internal experience which gives rise to rigid and maladaptive behaviour patterns (Hayes *et al.* 2006). The concept of cognitive fusion is heavily rooted in the RFT thesis on the nature of human language and cognition and its theory of the way in which lived experiences are arbitrarily encoded and related (Hayes, 2004). Thus, in ACT, the content of verbal behaviour (e.g. *thoughts, feelings*) is not assumed to be problematic, instead, the tendency to take that content literally (*cognitive fusion*) and to then make attempts to escape or reduce its impact (*experiential avoidance*) is what is believed to be harmful (Hayes *et al.* 2006).

Experiential avoidance refers to attempts to avoid or alter the form, frequency, or situational sensitivity of unwanted internal events—even when doing so is inconsistent with one’s values and may therefore lead to psychological distress (Hayes *et al.* 1999, 2006). According to Hayes (2004), humans do not have the capacity to avoid psychological pain and distress because aversive states (e.g. negative thoughts) can occur via relational processes in almost any context. As with cognitive fusion, the relational nature of human language and cognition is *not* deemed to be the problem, rather, it is the repeated attempt to avoid certain contexts and internal events that promotes and maintains distress. The concept of experiential avoidance gains support from earlier research into emotional and cognitive avoidance and suppression. For example, research on thought suppression (e.g. a *deliberate attempt not to think about something*) has found that avoidance of an internal event (e.g. *a thought*) can paradoxically increase the salience, intensity, frequency and functional importance of that event (Wegner, 1994; Dejonckheere *et al.* 2003). Hayes (2004) accounts for this phenomenon in accordance with RFT by stating that because part of the avoidance strategy necessarily includes the aversive stimuli (e.g. ‘*I must not think that I am fat*’) using the strategy will ultimately trigger the very effects (e.g. *negative affect &/or increased salience of the thought*) that the rule is aimed at avoiding.

1.6.2. Theoretical Developments within ACT: The Focus on Psychological Flexibility

When the theoretical underpinnings of ACT were first outlined, the overarching term used for its model of psychological ill-health was experiential avoidance (Bond *et al.* 2011; Hayes *et al.* 1996), whereas the term used to positively describe the ACT model was ‘acceptance’—defined as the willingness to experience (*i.e. not alter the form, frequency, or sensitivity of*) unwanted private experiences (*e.g. negative thoughts*) in order to pursue one’s values and life goals (Bond *et al.* 2011; Hayes *et al.* 1996). However, as the experimental and clinical evidence base for ACT has developed, the theoretical model has been extended (Hayes *et al.* 2006, 2011). The concepts of ‘acceptance’ and ‘experiential avoidance’ are still used to describe aspects of the ACT model by illustrating how behaviour can be inflexibly and detrimentally determined by the avoidance of unwanted internal events at the expense of one’s values and goals (Hayes *et al.* 2006). Yet, as the theoretical and empirical evidence base for ACT advanced, these concepts became insufficient descriptors of the key processes implicated in psychological ill-health and well being (Hayes *et al.* 2006). More recently, in order to better encompass the key processes implicated in ACT, the term psychological flexibility has been used to positively describe the ACT model whereas the term ‘psychological inflexibility’ has been used to capture the maladaptive processes (Bond *et al.* 2011; Hayes *et al.* 2006).

Within ACT, acceptance and experiential avoidance are now viewed as examples of psychological flexibility and inflexibility (Hayes *et al.* 2006). These terms are used to refer to adaptive and maladaptive psychological stances and actions that people take when the present moment contains thoughts and feelings that they may not wish to contact (Bond *et al.* 2011). However, as ACT has developed, a greater emphasis has been placed on the contexts that foster cognitive fusion and experiential avoidance, highlighting the times when human behaviour is guided more by relatively inflexible verbal networks than by contacted environmental contingencies (Hayes *et al.* 2006). When these contexts are in place, people are believed to be more likely to act in a way that is inconsistent with their values and life goals given the range of opportunities in the environment (Hayes *et al.* 2006; 2011). The social demand for reason giving and the innate tendency to understand and explain psychological events decreases contact with the present moment and leads people to ‘live in their heads’ (Hayes, 2002). Contexts such as the ‘*conceptualised past and future*’ and the ‘*conceptualised self*’ are examples of verbalised networks that can promote psychological inflexibility and inhibit the pursuit of long-term values and goals (Hayes *et al.* 2006). The

ACT model of psychological distress that illustrates these processes is presented in Figure 1.1³.

1.6.3. ACT as a Psychological Intervention: Six Core Processes

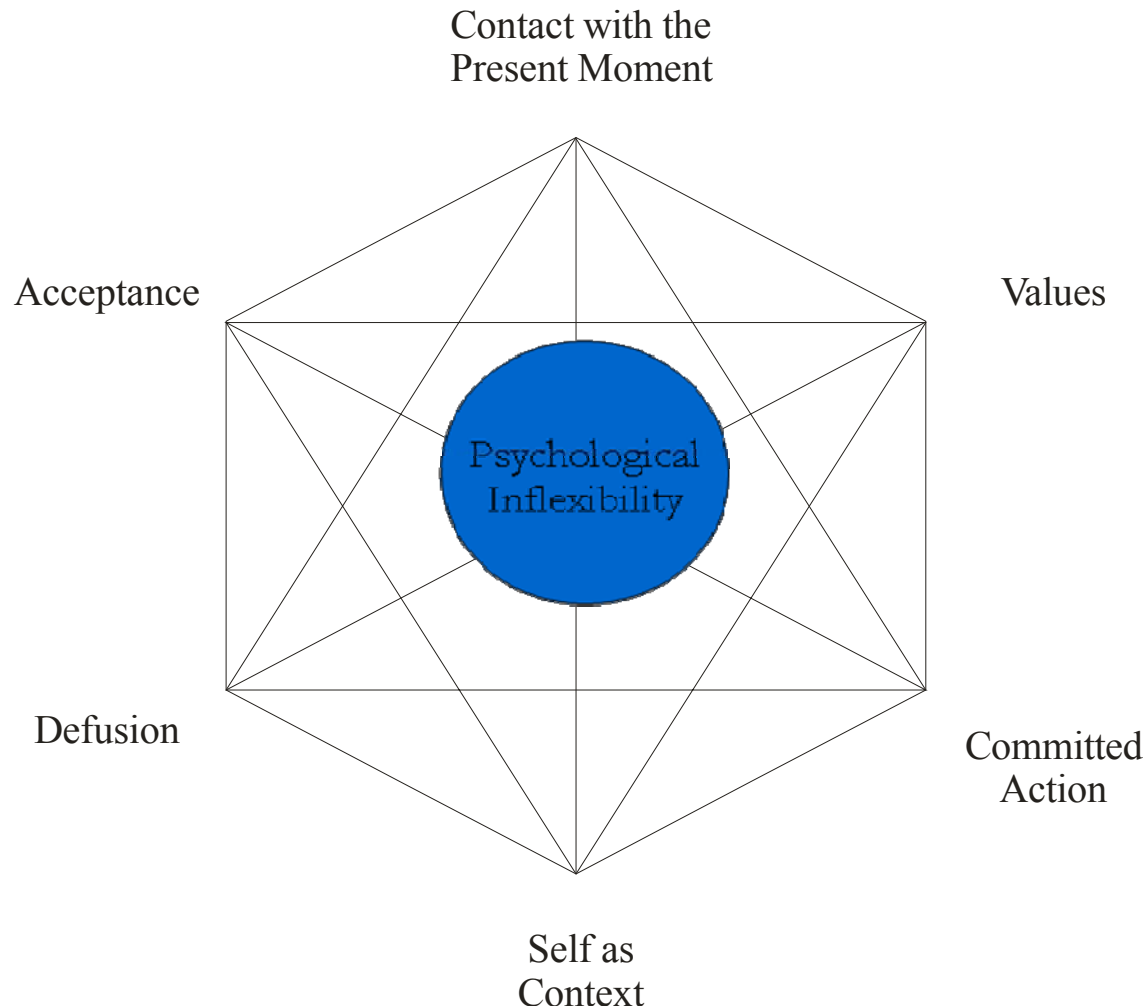
ACT targets the language and cognitive processes that maintain cognitive fusion, experiential avoidance, rigid attentional processes, lack of clarity about values, and other sources of psychological inflexibility (Boulanger *et al.* 2010). According to ACT, these maladaptive psychological and behavioural processes are common across most of the ‘psychiatric disorders’ (Hayes *et al.* 2006). Therefore, from a clinical perspective, the application of ACT is largely the same across the variety of diagnoses set forth in the Diagnostic and Statistical Manual of Mental Disorders (DSM; Hayes *et al.* 2011). The applied ACT approach is centred around six core processes: acceptance, cognitive defusion, self as context, contact with the present moment, values, and committed action—which all combine to promote psychological flexibility (Hayes *et al.* 2006). In the ACT approach, the core processes are taught to clients by means of experiential exercises, mindfulness methods and a specific use of language such as the use of metaphors and paradoxes (Hayes *et al.* 2011). Furthermore, each of the six processes is framed as a positive psychological skill rather than a mere method of avoiding psychological distress (Hayes *et al.* 2011). In this Thesis, the term ‘processes’ is used to refer to the six psychological mechanisms referred to in the ACT model (please see Figure 1.2.). Whereas the term ‘techniques’ is used to refer to the components of the intervention that target the six core processes that are specified in the ACT model. The therapeutic techniques used in relation to these six core processes are depicted in Figure 1.2 and will now be discussed.

1.6.3.1. Acceptance. Framed as an alternative to experiential avoidance, acceptance is conceptualised as the active and aware embrace of unwanted or distressing internal events (*e.g. thoughts, feelings, memories*). (Hayes *et al.* 1999). For example in ACT, anxiety sufferers are taught to experience anxiety as a feeling, fully and without defence (Hayes *et al.* 2006), and are discouraged from making attempts to alter the frequency or form of undesirable internal events.

³ This model of psychological distress is presented in the seminal Hayes *et al.* (2006) paper that outlines the theoretical and empirical developments in ACT

1.6.3.2. Cognitive Defusion. These techniques aim to change the way people interact with or relate to their thoughts by creating contexts in which their distressing functions are reduced (Hayes *et al.* 1999). Service users are taught that '*thoughts are just thoughts*' as opposed to actual truths that need to be followed or resisted or believed or disbelieved (Hayes *et al.* 2006). A number of defusion techniques have been developed including repeating out loud the distressing thought(s) until only its sound remains, labelling the process of thinking ('*I am having the thought that I am worthless*') or treating the thought as an externally observed event by giving it a shape, size, colour, speed or form (Luoma & Hayes, 2010). Thus, instead of analyzing the truthfulness of their thoughts, people are encouraged to become active observers of their mental activity, being orientated to behave in ways that are consistent with their values.

Figure 1.2 The 'Hexaflex Model' of the positive psychological processes that ACT seeks to strengthen (Hayes *et al.* 2006)



1.6.3.3. Values. Acceptance is fostered in ACT as a method of increasing values-based action rather than an end in itself, with values conceptualised as chosen life directions. ACT helps service users establish rich descriptions of what is dear to them in several life domains (*e.g. family, work and education*), encouraging them to act in accordance with their values, and reinforcing even the smallest action if it is values oriented (Hayes *et al.* 1999).

1.6.3.4. Committed Action. Committed action consists of behavioural activation techniques that are common across other behavioural approaches (*e.g. goal setting, shaping, exposure, skills development*). However, in ACT the goals of these techniques are often different to those of other therapies (Hayes *et al.* 2011). For example in ACT, behaviour change efforts are seen as opportunities to make contact with psychological barriers (*e.g. anxious thoughts*), and put into practice the other ACT techniques such as acceptance and cognitive defusion (Hayes *et al.* 2006).

1.6.3.5. Self as Context. This process encourages people to take different perspectives on their current thoughts, feelings and behaviours without particular attachment or investment in them. This process of perspective taking is believed to help people increase their awareness of their own flow of experiences whilst cultivating a transcendent sense of self (Hayes *et al.* 2006). For example, service users are asked to look back on themselves from a wiser future and write themselves a letter of encouragement (Hayes *et al.* 2011). These exercises aim to help people ‘distinguish between the content of consciousness and the person as a perspective taking context for that content whilst reducing attachment to the conceptualized self (Hayes *et al.* 2006).

1.6.3.6. Being Present. ACT encourages non-judgemental contact with psychological and environmental events as they occur with the aim of encouraging people to be in the present moment (Hayes *et al.* 2006). Therapists develop the ability in service users to experience the world more directly so that their behaviour is more flexible and therefore, more consistent with their values (Hayes *et al.* 2006). This process is fostered by mindfulness exercises (*e.g. following the breath, body scan*) and using language as a tool to note and describe events, not simply to predict and judge them. Thus, ACT encourages a sense of ‘*self as process*’, which entails a non-judgemental ongoing description of thoughts, feelings and other internal events (Hayes *et al.* 2006).

1.6.4. Evidence for the Techniques that Target the Six Core Processes

The aforementioned six core processes of ACT are overlapping and interrelated, each supporting the other and all targeting psychological flexibility—the process of fully contacting the present moment without judgement, and being able to persist or change behaviour in accordance with one’s values (Hayes *et al.* 2006). A growing body of evidence derived from component and dismantling studies which test a single technique, or a small set of techniques, are beginning to provide evidence in support of the processes targeted by ACT (Hayes *et al.* 2011; Ruiz, 2010). For example, in comparison to techniques such as thought suppression or distraction, significant effects have been found for values, defusion techniques, and mindfulness exercises (*e.g. combinations of acceptance, present moment awareness, defusion, or self as context exercises*) for anxiety and physical pain presentations (Hayes *et al.* 2011). Likewise, other lines of research using correlational designs have examined the relationship between psychological flexibility and physical illness, job performance and various forms of psychological distress, finding higher levels of psychological flexibility to be associated with more favourable outcomes (Hayes *et al.* 2006). However, largely due to the inter-related nature of ACT’s six core processes, it is arguably difficult to truly isolate and measure the individual components in experimental designs. Nevertheless, other lines of evidence to support the validity of ACT’s underlying theoretical model are emerging from intervention studies that include measures of the hypothesized mechanisms of therapeutic action. Typically, these intervention studies measure changes in psychological flexibility, cognitive defusion or other processes that are targeted by ACT and then test whether these processes mediate any observed improvements in psychological functioning following treatment. An overview of these studies will now be provided.

1.7. Intervention Studies that have Examined the Efficacy of ACT and Examined Potential Mechanisms of Change

As outlined in section 1.2, a systematic literature search was conducted in order to identify ACT intervention studies that targeted an adult mental health problem and examined hypothesised mechanisms of change. Due to the paucity of research in this area, both qualitative and quantitative studies that examined the mechanisms of therapeutic action in an ACT intervention were considered. The systematic literature search identified 14 quantitative studies that met the inclusion and exclusion criteria (see section 1.2). During the literature search no qualitative studies that explored participants' narratives of the mechanisms of therapeutic action in ACT were identified. In order to provide a visual overview of the included studies, key methodological characteristics and conclusions are summarised in Table 1.1. A more detailed narrative review of these studies will now be provided.

1.7.1. Samples and Populations

The majority of studies (N = 7) recruited participants via general media adverts (e.g. general newspapers) or emails sent to employees of organisations and students of Universities. Four studies recruited their sample from mental health services where the ACT intervention was offered as a new treatment approach and three studies relied on both media adverts and referrals from local mental health services. In one study (Woods *et al.* 2006), the recruitment strategy was not specified. All of the studies that recruited their participants from practice based mental health clinics failed to specify whether their sample was representative of the population from which it was drawn. As such, how well the findings from these studies generalise to similar populations is yet to be determined. Replication studies that recruit representative samples will address this shortcoming.

In terms of the nature of the mental health difficulty targeted by the ACT intervention, seven studies recruited participants who met diagnostic criteria for a specific DSM-IV classified 'disorder' (e.g. *obsessive compulsive disorder, social anxiety disorder, generalised anxiety disorder, trichotillomania and psychosis*), often excluding potential participants who met criteria for other 'disorders'. Three studies targeted participants who displayed clinically significant levels of depression and anxiety as identified on symptom checklists (e.g. BDI, HADS-A) and five studies did not use diagnostic criteria as their framework. Instead, these latter five studies conceptualised participants' mental health difficulties as 'psychological

distress', targeting populations thought to be at risk of mental health difficulties such as Social Workers, Public Sector Office Workers and Students studying in another country. In these studies the GHQ-12 was typically used as a measure of psychological distress and the number of participants who scored in the clinical range was specified. Whilst the studies that targeted particular 'diagnoses' often excluded participants with co-morbid difficulties, the exclusion of participants with co-morbid difficulties in the ACT studies was often not as stringent as the more recent CBT intervention studies . For example, whilst participants with more severe co-morbid mental health difficulties were excluded from the majority of ACT studies (e.g. psychosis, substance abuse), those presenting with more common co-morbidities were included (e.g. depression and anxiety). Similarly, some diagnostic specific studies (e.g. Twolig *et al.* 2010) did include participants who met criteria for more than one diagnosis, with 51% of participants in the Twolig *et al.* (2010) study meeting criteria for at least one other DSM-IV diagnosis. Thus, studies evaluating the efficacy of ACT do show attempts to overcome a major criticism of the psychotherapy evidence base—namely, that the findings from treatment trials do not generalise well to mental health service users because those with co-morbid difficulties are often excluded from research trials (Western *et al.* 2004).

Table 1.1. ACT Intervention Studies for an Adult Mental Health Problem that Examined Potential Mechanisms of Therapeutic Action

Reference	Sample*	Design	Intervention Mode	Outcome Measures	Process Measures	Follow-up	Results	Mediational Analyses
Bohlmeijer et al., (2011)	Psychologically distressed adults who responded to an advert & local mental health services. ACT N= 49 Wait list N=44	RCT	Group 8 x 2hr sessions	CESD HADS-A	AAQ-II	3 month	ACT significantly lower depression and anxiety symptoms than the control group. Clinically significant change data reported was not reported in this study.	PF (AAQ-II) mediated improvement in the ACT group.
Brinkborg et al (2011)	Social workers stratified into high (N=68) and low stress groups (N=38) & then randomised to wait list or intervention	RCT	Group 3 x 4hr sessions	GHQ PSS	AAQ-I	Pre & post only	No effects for the low stress group. Significant decrease in stress symptoms for high stress ACT group vs. waitlist, with 42% showing clinically significant change. No effects on the GHQ.	Formal mediation analyses not conducted due to concurrent measurement of mediator and outcome. Correlation analyses found no association between ACT intervention and AAQ.

-----Please see the end of the Table for the key-----

Dalrymple & Herbert (2007)	Adults with generalised social anxiety disorder Recruited via adverts & referrals from a local Anxiety clinic N = 19	UBA	Individual 12 x 1hr sessions	SPAI QoL FNE CGI-S	AAQ-I VLQ	3 month	Significant decreases on all self-report anxiety scales & the CGI-S as well as improvements in quality of life. Clinically significant change data reported was not reported in this study.	Not conducted due to lack of a no-treatment control group. Increased value directed living and PF at follow-up.
Forman et al., (2007)	Students who self-referred to a Counselling service with depression & anxiety symptoms CBT N = 45 ACT N = 55	RCT	Individual 15 x 1hr sessions	BDI BAI QoL CGI-S	AAQ-I KIMS	Pre & Post only	Within-subject analyses found clinically significant change for depression (61.2%), anxiety (55%) and GAF (38.3%) as well as improvements in quality of life. No between group differences.	Not conducted due to the lack of a no-treatment control group. Increases in PF & mindfulness found to correlate with symptom decreases in ACT more so than CT.
Flaxman & Bond (2010)	Psychologically distressed public sector office workers ACT N = 19 CBT N = 23 Waitlist N = 24	RCT	Group 3 x 3hr sessions	GHQ-12	AAQ-I DAS	Pre & Post only	ACT & CBT equally effective in reducing psychological distress. GHQ caseness reduced by 79% in ACT, 26% in CBT & 63% in waitlist. Clinically significant change data was not reported in this study.	Formal mediation analyses not conducted due to concurrent measurement of GHQ, DAS & AAQ-I. Exploratory analyses found AAQ-I mediated improvement in ACT & CBT.

-----Please see the end of the Table for the key-----

Fledderus et al., (2012)	Adults who responded to an advert & had mild-moderate depressive symptoms ACT E N = 99 ACT M N = 105 Waitlist N = 123	RCT	Individual Self-help ACTE = 9 minutes of support via email a week ACTM = 3 minutes of support via email a week	CES-D HADS-A	AAQ-II FFMQ	3 month follow-up for ACT conditions only	Self-help ACTE & ACTM significantly reduced depression & anxiety symptoms & increased positive mental health vs. control group. Clinically significant change for ACTE = 34%; ACTM = 39% & WL = 6%. Intervention effects maintained at 3 months for both ACT groups.	Formal mediation analyses not conducted. Both ACT groups significantly increased PF. ACT-E = increased FFMQ observe. ACTM = decrease describe.
Fledderus et al (2010)	Adults with mild- moderate psychological distress who responded to an advert ACT N = 49 Waitlist N = 44	RCT	Group 8 x 2hr sessions	MHC-SF	AAQ-II	3 months	ACT group showed significantly decreased psychological distress & increased positive mental health at post intervention & 3 months follow-up. Clinically significant change data not reported.	Increased PF during intervention mediated improvements in psychological distress at post-treatment.
Gaudiano et al (2010)	Psychiatric in-patients with psychosis ACT/TAU N=14 TAU N=15	RCT	Individual 3 x 50 minute sessions	Hospital re-admissions CGI-S Frequency, distress & believability of psychotic symptoms (purpose made)	See previous	Pre & Post only for mental health outcomes	ACT group showed significantly reduced distress caused by symptoms. No differences on believability or frequency ratings or on hospital re-admission rates Clinically significant change data not reported in this study.	Partial meditational analyses found believability of hallucinations at post to mediate effect of ACT on hallucination distress.

-----Please see the end of the Table for the key-----

Muto et al., (2011)	Japanese students who were at a University in USA (60% in clinical range of GHQ at baseline) ACT N = 35 Waitlist N = 35	RCT	Internet Self-help	GHQ-12 DASS	AAQ-I	2 months	ACT group showed significantly reduced psychological distress at post-intervention & 2 month follow-up. Clinically significant change post-treatment on the GHQ for ACT = 59% and Waitlist = 10%.	Mediation analyses found PF at post-intervention to mediate improvements in the GHQ-12 at 2 months follow-up.
Ossman et al., (2006)	Adults with social anxiety who responded to an advert. N = 12	UBA	Group 10x 2hr sessions	SPAI	AAQ-I VLQ	3 month	Significant decrease in severity of SPAI symptoms at post-treatment and follow-up. Clinically significant change data not reported in this study.	Not conducted due to the lack of a no-treatment control group. Correlation analyses found PF to increase as SPAI decreased.
Roemer et al (2008)	Adults who met DSM-IV criteria for GAD. Recruited from a clinic. ACT N=13 Waitlist N=9	RCT	Individual 4 x 90 min sessions 12 x 60 min sessions	PSWQ DASS BDI QoL DSM-IV	AAQ-I MAAS	3 & 9 months	ACT group showed significantly reduced self & clinician rated GAD & depression symptoms & improved quality of life. 78% no longer met DSM criteria at post-treatment. Clinically significant change at post-treatment for GAD symptoms for ACT = 75% and Waitlist = 8.3%.	Formal mediation analyses not conducted. Significant increase in PF and mindfulness skills from pre-treatment to post-treatment with these changes maintained at follow-up.

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Twohig et al (2010)	Adults who responded to an advert or referred from local clinics & who met DSM-IV OCD criteria ACT N = 41 PRT N = 38	RCT	Individual 8 x 1hr sessions	Y-BOCS BDI QoL	AAQ-I TAFS TCQ	3 month	ACT significantly greater change over PRT on QoL, OCD & depression symptoms. Clinically significant change at follow-up for OCD in ACT = 66% and PRT = 18%. Significantly increased PF & TCQ in ACT vs. PRT from pre-to post-treatment but not pre treatment to follow-up. TAFS improved in ACT but not PRT.	Formal mediation analyses not conducted.
Woods et al, (2006)	Recruitment strategy not specified. Adults who met DSM-IV criteria for Trichotillomania N = 12 ACT N = 13 Waitlist	RCT	Individual 10 x 1hr sessions	PAI-A PAI-D Y-BOCS No. of hairs pulled per day Treatment compliance	AAQ-I	3 month	ACT significantly fewer hairs pulled, anxiety & depression symptoms & less impairment caused by hair pulling. Clinically significant change data not reported in this study. Increases in PF & greater treatment compliance significantly correlated with reductions in the severity of hair pulling.	Formal mediation not conducted.

-----Please see the end of the Table for the key-----

Zettle et al (2011)	Adults with depression symptoms who responded to an advert N = 12 ACT N = 13 CT	RCT	Group 12 x 1 1/2 hr sessions	BDI HRS-D	ATQ ATQ-B DAS	2 month	ACT significantly greater reduction in depression symptoms at post-treatment. Clinically significant change data not reported in this study.	Post-treatment levels of cognitive fusion (ATQ-B) mediated the effect of treatment at follow-up. The frequency of negative thoughts or dysfunctional attitudes did not.
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* Sample sizes are given for the number of people who completed the study rather than including drop outs and treatment non-completers

PF = Psychological Flexibility; **BDI** = Beck Depression Inventory; **BAI** = Beck Anxiety Inventory; **HADS-A** = Hospital Anxiety and Depression-Anxiety Subscale; **CES-D** = Centre for Epidemiologic Studies Depression Scale; **MHC-SF** = Mental Health Continuum-Short Form; **PSWQ** = Penn State Worry Questionnaire; **DASS** = Depression Anxiety Stress Scale; **QoL** = Quality of Life Inventory; **AAQ-I** = Acceptance and Action Questionnaire I; **AAQ-II** = Acceptance and Action Questionnaire-II; **KIMS** = Kentucky Inventory of Mindfulness Skills; **PAI** = Personality Assessment Inventory; **FFMQ** – Five Facet Mindfulness Questionnaire; **MASS** = The Mindfulness Attention Awareness Scale; **SPAI** = Social Phobia and Anxiety Inventory; **VLQ** = Valued Living Questionnaire; **UBA** = Uncontrolled Before and After Study; **PRT** = Progressive Relaxation Training; **Y-BOCS** = Yale-brown Obsessive Compulsive Scale; **TAFS** – Thought Action Fusion Scale; **TCQ** = Thought Control Questionnaire; **CT** = Cognitive Therapy; **HRS-D** = Hamilton Rating Scale for Depression; **DAS** = Dysfunctional Attitudes Scale; **ATQ-F** = Automatic Thoughts Questionnaire; **ATQ-B** = Automatic Thoughts Questionnaire-Believability Subscale; **GHQ-12** = General health Questionnaire-12 item; **RCT** = Randomised controlled trial.

-----Please see the end of the Table for the key-----

1.7.2. Methodological Characteristics of the Included Studies: A Review and Critique

1.7.2.1. Design and Recruitment. Attesting to the relative recency of ACT, all included studies were published between 2002 and 2012. However one study, Zettle *et al.* (2011) represents a re-analysis of the earliest version of ACT, then termed ‘comprehensive distancing’, which was published by Zettle and Rains (1989)⁴. The majority of studies were randomised control trials. However, many of these studies would not meet the stringent criteria set forth in the CONSORT guidelines because of their methodological limitations. For example, the randomisation procedure was rarely ‘blinded’ or well described, the clinician delivering the intervention was often a researcher in the study, and high attrition rates were frequently observed. In fact, the methodological shortcomings of the ACT evidence base have led some authors to conclude that ACT is not an empirically supported treatment (Ost, 2008). Nevertheless, as highlighted by Gaudiano (2009), many of the methodological shortcomings of the ACT trials are characteristic of the earlier controlled trials of any emerging psychotherapeutic approach.

Another methodological issue that warrants attention when evaluating the quality of evidence for a psychotherapeutic approach concerns the use and choice of a comparison group. Of the 15 studies that met the inclusion and exclusion criteria for this review, seven used a waiting list control condition as the comparison group, two used a ‘treatment-as-usual’ condition (psychiatric in-patient care), three used an active treatment condition (Cognitive Behavioural Therapy or Progressive Muscle Relaxation), in one study both a waiting list and a CBT control group were used, and in two studies a control condition was not used. Likely reflecting the emerging and developing evidence base of ACT, the studies that used an active treatment control condition (e.g. CBT) instead of, or in addition to, a waitlist represent some of the more recently published articles. The use of an active treatment comparison condition in these studies is regarded as further enhancing methodological rigour as it represents an attempt to control for non-specific factors (e.g. therapist contact, the therapeutic alliance). Nevertheless, the usefulness of a waiting list control group is recognised (e.g. Rounsaville *et al.* 2001), particularly when such studies investigate mechanisms of change by testing models of statistical mediation (Kazidin, 2008).

⁴ As identified in the seminal review paper of Hayes *et al.* (2006), ACT intervention studies began to emerge post 2000, with the 1990s spent developing and refining the ACT model.

1.7.2.2. Sample Size and Attrition. Sample size and patterns of attrition are other important factors to consider when evaluating the validity and reliability of a study's findings. Across the included studies, the sample sizes vary considerably, with the smallest sample size being that of Ossman *et al.* (2006) who included 12 participants in an uncontrolled pre-and post intervention design. The largest sample size was achieved by Fledderus *et al.* (2012) who included 99 and 105 participants who were randomised to one of two ACT self-help conditions that differed in their level of email support. In this study, an additional 123 participants were assigned to a waiting list control group. It is evident from the studies reviewed in Table 1.1 that as the intensity of the intervention increases (e.g. weekly individual sessions), the sample sizes often decreases. Thus, less intensive modes of intervention delivery such as self-help or group interventions tended to achieve larger samples.

In terms of attrition, a number of studies cited in Table 1.1 suffered high dropout rates. For example, in the Forman *et al.* (2007) study 52% of participants who completed baseline measures did not enter treatment and of the 48% who did, 42% in the CBT condition and 33.9% in the ACT condition did not finish treatment or were lost to follow-up. Similarly, 50% of participants in the Ossman *et al.* (2006) study and 29% of participants in the Roemer *et al.* (2008) study did not complete treatment or were lost to follow-up. Relatedly, another methodological issue evident in some studies, particularly those that were framed as early or preventative interventions, is the lack of a clinical population at baseline (e.g. Flaxman *et al.* 2010; Brinkborg *et al.* 2011; Muto *et al.* 2011). For example, in the Flaxman *et al.* (2010) study that delivered a brief ACT intervention to office workers, 58% of the sample (N = 146) were excluded from the analyses as they did not show clinically significant symptoms of psychological distress at baseline. What is more, of those who did show clinically significant symptoms at baseline, 38% did not complete treatment nor provide outcome data (Flaxman *et al.* 2010). Similar difficulties in terms of the recruitment of a non-clinical population at baseline is evident in the studies of Muto *et al.* (2011) and Brinkborg *et al.* (2011) who found less than two thirds of their samples to show clinically significant symptoms of psychological distress at pre-treatment. In these studies, the ACT intervention was found to be of little benefit to participants experiencing low levels of psychological distress at baseline (Brinkborg *et al.* 2011; Muto *et al.* 2011).

1.7.2.3. Intervention Delivery and Follow-up. As shown in Table 1.1, seven studies delivered the ACT intervention through a series of individual face-to-face sessions with a therapist, six studies used a group format and two studies delivered a computerised self-help intervention. In one of the self-help studies (Fledderus *et al.* 2012), limited support (*i.e.* 7 minutes of contact time) from a therapist was also provided via email. On average the ACT group interventions were delivered over fewer sessions when compared to the interventions that were delivered on an individual basis, with those provided to psychologically distressed social workers and office workers administered over as little as three half day sessions (Brinkborg *et al.* 2011; Flaxman *et al.* 2010). Frequently, the therapists who delivered the intervention were also involved in the research evaluation—a characteristic of these studies that contravenes the ‘gold standard’ Consolidated Standards of Reporting Trials (CONSORT) guidelines (Boutron *et al.* 2008). Nonetheless, the ACT interventions were frequently although not always standardised and attempts were often made to assess the therapists’ adherence to the manualised protocol. In terms of assessing the maintenance of treatment effects, 11 of the 15 studies re-assessed their participants during a follow-up period which was typically 3 months post-intervention. The remaining four studies only assessed their participants at post-treatment.

1.7.3. Outcomes and Efficacy Data

All of the studies used symptom checklists as their primary outcome measure. Additionally, two studies used re-admissions to a psychiatric hospital as an outcome measure, four studies assessed improvements in participants’ quality of life and one study compared diagnostic ‘caseness’ before and after treatment. When compared to a waiting list control group or treatment as usual, ACT was found to result in statistically significant improvements in symptoms of psychological distress, anxiety, depression and stress, as well as improvements in quality of life, distress caused by psychotic symptoms, and frequency of hair pulling (Table 1.1). Moreover one study found a 78% reduction in the number of participants who met DSM-IV criteria for GAD at post-treatment (Roemer *et al.* 2008). Similarly, within-subject comparisons found participants to show statistically significant reductions in symptoms of depression and anxiety and improvements in general functioning following treatment. When compared to an active treatment control group, ACT was found to produce statistically significant improvements in depressive symptoms when compared to

cognitive therapy (Zettle *et al.* 2011) and greater improvements in OCD and depression symptoms when compared to Progressive Relaxation Training (PRT; Twohig *et al.* 2010). However, two studies found ACT and CBT to be equally effective for psychologically distressed Office Workers and Students who were accessing a University Counselling service (Flaxman & Bond, 2010; Forman *et al.* 2007). When studies conducted a follow-up assessment after the post-treatment phase, participants were in general found to maintain improvements in their psychological functioning.

However, whilst the analysis of between-group differences is useful for summarising group means and how they may differ, this approach is insensitive to individual change and it does not convey the number of participants who showed clinically significant improvements in their functioning following treatment. The clinical significance of change is a statistical measure that has been developed for this purpose (Jacobson & Traux, 1991; Thomas & Truax, 2008). Essentially, the clinical significance of change calculations quantify whether the magnitude of change, per individual, is sufficiently large enough to be clinically meaningful and reliable. Two key aspects are highlighted in these calculations notably: (1) whether the amount of change is large enough so that it is unlikely to be due to measurement error (reliable change); and (2) whether the post-treatment level of functioning is closer to the non-clinical population than that of the clinical population (Jacobson & Traux, 1991; Thomas & Truax, 2008). Of the studies included in this review, only six of 15 reported clinically significant change data. Five of these studies compared ACT with a waiting list control group reporting that a greater percentage of ACT participants demonstrated clinically significant change in terms of symptom severity (median = 55%: Table 1.1). In the other study, ACT was compared to an active treatment condition (PRT) with 66% of ACT participants showing clinically significant change relative to 18% in the PRT group (Twohig *et al.* 2010). Thus, in any study that is examining the efficacy of an intervention it is important to report clinically significant change statistics in order to aid the interpretation of the findings. This is particularly important when considering the clinical application of a study's findings.

1.7.4. Mechanisms of Change in the ACT Intervention Studies

A distinct strength of the ACT literature relative to the evidence base for other psychotherapeutic interventions is the attention paid to the mechanisms that promote psychological change. Given that most psychotherapies are believed to share common components and have been found to produce similar outcomes (Gaudiano, 2009; Luborsky *et al.* 1975, 2002; Rosenzweig, 1936; Wampold *et al.* 1997), many researchers have emphasised the need to pay more attention to the mechanisms of change in effective treatments (Borkovex & Sibrava, 2005; Kazdin, 2007; Lohr *et al.* 2003). Unlike CBT which has been slow to investigate this question (Gaudiano, 2008; Longmore & Worrell, 2007), even the earliest ACT studies made attempts to assess the intervention's potential mechanisms of action (Hayes *et al.* 2006). In ACT, intervention studies typically measure one or more of the six core processes of ACT (*e.g. acceptance, cognitive defusion, self as context, being present, values, and committed action*) and/or the underlying construct that these six core processes are hypothesised to alter, namely, psychological flexibility, thereby providing a test of the theoretical underpinnings of the ACT model.

In the psychotherapy literature, 'mediators' refer to the processes through which psychological changes are thought to occur (Kazdin, 2008). In general, mediation analyses explore the impact of a mediating variable (*e.g. psychological flexibility*) on the relationship between an independent variable (*e.g. treatment condition*) and a dependent variable (*e.g. psychological distress*). Specifically, true tests of mediation require longitudinal designs where the change in the hypothesized mediator is measured temporally before the outcome measure (Hayes, 2009). Therefore, mediation effects are viewed as indirect effects, reflecting the treatment effect on the outcome measure through a pre-specified third variable (the mediator). Mediation does not show causation, but rather the functional importance of the interventions impact on a process, and the effect of that process on an outcome (Hayes, 2009). Statistical analyses of mediation (*otherwise known as indirect effects*) are regarded to be more meaningful than correlation analyses as they require a potential mechanism of change that was targeted by the intervention to continue to be functionally relevant after treatment (Hayes, 2009). In order to provide a more in-depth and precise test of a model's theoretical underpinnings, an exploration of several possible mediators is advocated, including mechanisms not emphasised in the model's underlying theory (Kazdin & Nock,

2003). Thus, by examining several different theoretical constructs one can examine whether the hypothesized mediator is more functionally important than other related processes.

In terms of the studies that met the inclusion and exclusion criteria for this review, six studies measured one potential mechanism of therapeutic action, four studies assessed two potential mechanisms and an additional four studies measured three potential mechanisms (Table 1.1). Psychological flexibility, as measured by the Acceptance and Action Questionnaire (AAQ-I) or the Acceptance and Action Questionnaire version II (AAQ-II), was the most frequently assessed construct with 12 studies assessing this mechanism. Additionally, four studies assessed mindfulness ability, often focusing on sub-scales of a mindfulness questionnaire that provided a close fit with ACTs underlying theoretical model (*e.g. Acceptance, Accept with Awareness*); three studies measured cognitive fusion via questionnaires that assessed the believability of negative automatic thoughts or delusional beliefs; one study assessed value directed action; and two studies assessed the frequency of negative thoughts and/or dysfunctional attitudes. In these latter two studies, a CBT condition was also used and these measures were aimed at examining a hypothesized cognitive mechanism in the alternative treatment condition. Additionally, the inclusion of potential mechanisms not specified by the ACT model in these two studies provides a further test of the functional importance of the hypothesized mediator(s). (Kazdin & Nock, 2003).

However, whilst the vast majority of studies included in this review measured potential mechanisms of therapeutic action only four of these 14 studies conducted formal mediational analyses. In three studies, formal mediational analyses could not be conducted as change in the mediator and outcome measures were assessed at the same point in time (*e.g. Brinkborg et al. 2011; Flaxman & Bond., 2010*). Correspondingly in three studies, formal mediational analyses were not conducted due to the lack of a no treatment control condition. In the remaining four studies it was unclear why mediator analyses were not conducted. Nevertheless, the correlation analyses reported in these studies are in line with ACTs underlying theoretical model, with increased psychological flexibility being consistently shown to correlate with improvements in psychological functioning (Table 1.1). More convincingly, in the studies that have conducted formal mediation analyses, psychological flexibility has been consistently identified as a mechanism of therapeutic action (*e.g. Bohmeijer et al. 2011; Fledderus et al. 2010; Muto et al. 2011*).

Whilst not as robust as the findings for psychological flexibility, increased mindfulness ability has been shown to correlate with decreases in psychological distress, with

the mindfulness constructs of ‘acceptance’ and ‘act with awareness’ indicated (Forman *et al.* 2007). However, another study that has examined mindfulness as a potential mediator failed to confirm these findings (Fledderus *et al.* 2012). A small number of alternative studies have examined the ACT process of cognitive fusion as a potential mechanism of action. One study found improvements in cognitive fusion over time for an ACT condition but not for an alternative therapy condition (e.g. PRT: Twohig *et al.* 2010). Similarly, two other studies have found the believability of hallucinations (Gaudiano *et al.* 2010) or the believability of negative automatic thoughts (Zettle *et al.* 2011), which are used as measures of cognitive fusion, to partly mediate the effect of an ACT intervention on hallucination distress and depression symptoms (Gaudiano *et al.* 2010; Zettle *et al.* 2011). The latter study conducted by Zettle and colleagues provides a more convincing test of mediation due to the use of a longitudinal follow-up period as well as multiple assessments of the mediator and outcome (Zettle *et al.* 2011). Finally, one study found an increase in value directed action following an ACT intervention although this study did not employ a control group (Dalrymple & Herbert, 2007). Thus, across the ACT intervention studies, psychological flexibility has been consistently identified as a mechanism of therapeutic action, with the empirical support for the processes of mindfulness, cognitive fusion and value directed action being less compelling due to the small number of studies that have examined these mediators.

1.8. Chapter Summary

Psychological distress among working populations is an important issue that needs addressing. In the UK, psychological distress among employees is related to increased rates of sickness absence, higher labour turnover, early retirement, and an estimated 10.8 million lost working days per year (Hardy *et al.* 2003; Health and Safety Executive, 2011; Kessler *et al.* 2008). Thus, the individual, organisational and societal costs of psychological distress among working populations is well established. Whilst traditional ‘stress management’ interventions that are based on the cognitive-behavioural model of psychological distress have been shown to be effective (Richardson & Rothstein, 2008; van der Klink *et al.* 2001), many individuals fail to show clinically significant improvements in their functioning following treatment with this approach (Flaxman & Bond, 2010b; Vente *et al.* 2008). Consequently, in order to improve the efficacy of worksite interventions, researchers and clinicians have drawn attention to more contemporary theories of the origins of psychological

distress and well being (Flaxman & Bond, 2006; Hayes *et al.* 2006), and ACT has been identified as a promising approach (Flaxman & Bond, 2006).

Commonly referred to as a ‘third wave’ or ‘*contextual*’ behavioural therapy, ACT is an empirically driven approach that pays particular attention to the context and functions of psychological events (Hayes *et al.* 2006). Unlike ‘*second wave*’ cognitive-behavioural approaches that focus on changing the nature of psychological events directly (e.g. *challenging the validity of negative automatic thoughts*), ACT seeks to change the function of those events and the individual’s relationship to them through processes such as mindfulness, acceptance and attention to values (Hayes *et al.* 2006; Hayes *et al.* 2011). In ACT, people are encouraged to accept and experience the presence of unwanted private events in order to pursue their values and goals (e.g. *being willing to feel anxiety when doing exams in order to achieve the goal of obtaining a University degree*) and psychological flexibility is the applied model that underpins ACTs approach to psychological distress and wellbeing (Hayes *et al.* 2006). Although the research is in its infancy, a growing body of evidence attests to the efficacy of ACT for a range of clinical presentations (Hayes *et al.* 2011; Powers *et al.* 2009), and studies that have examined the mechanisms of therapeutic action within ACT indicate psychological flexibility to be a key mediator. However, few studies have conducted comprehensive tests of alternate mediators within ACT or performed statistical tests that fully satisfy the requirements of mediation analysis.

The systematic literature search identified two recent studies that delivered an ACT intervention in an occupational setting (Brinkborg *et al.* 2011; Flaxman & Bond, 2010), although neither study conducted a follow-up assessment after post-treatment which negated the opportunity to perform a satisfactory mediator analysis. Nevertheless, ACT was found to be effective in reducing psychological distress among Public Sector Office Workers (Flaxman & Bond, 2010) as well as decreasing the experience of stress among Social Workers (Brinkborg *et al.* 2011). However, whilst a reduction in the experience of stress was observed in the latter study, an effect of ACT on clinically significant psychological distress was not (Brinkborg *et al.* 2011) and, in both samples, a sizeable proportion of the sample was excluded from the analyses due to the absence of clinically significant psychological distress at baseline. Thus, comprehensive tests of the mechanisms of therapeutic action have not been conducted, and the efficacy of ACT for other occupational groups at risk of clinically significant psychological distress is not established. Indeed, in order to advance the evidence base, established authors have highlighted the need to investigate potential mechanisms of

therapeutic change for worksite ACT interventions, especially among samples that are followed up post treatment (Flaxman & Bond, 2010).

1.9. The Present Thesis

In light of the literature review presented in this Chapter, the aims of the current thesis are as follows: (1) to evaluate the efficacy of a brief and relatively novel ACT intervention for NHS employees experiencing psychological distress; (2) to examine alternate mechanisms of therapeutic action within the ACT intervention that align with the model's underlying theoretical underpinnings; and (3) to explore participants' views of the aspects of the ACT intervention that they felt lead to improvements in their psychological functioning. Study One (Chapter 2) addresses aims one and two via a quantitative longitudinal design that compares participants who received an ACT intervention with those assigned to a waiting list. A three month follow-up period was used in this study. Potential mechanisms of therapeutic action that assess the core processes of ACT were assessed in this study in order to permit the statistical analysis of hypothesised mediators. Study Two (Chapter three) addresses aim three via a qualitative design and canvasses participants' opinions of the aspects of the ACT intervention that promoted psychological changes as well as improvements in their cognitive, behavioural and emotional functioning.

Chapter Two

Study One

The Efficacy of the Acceptance and Commitment Therapy Intervention and the Mechanisms of Therapeutic Action

2.1. Overview and Aims

The two core aims of this study are: (1) to evaluate the efficacy of a brief and relatively novel Acceptance and Commitment Therapy (ACT) intervention that was delivered to NHS employees experiencing psychological distress; and (2) to examine the mechanisms of therapeutic action within the ACT intervention. The potential mechanisms of therapeutic action examined in this study align with the theoretical underpinnings of ACT and include psychological flexibility, mindfulness (*which captures the processes of self as context and contact with the present moment*), cognitive fusion and values. Additionally, in order to provide a test of the specificity of the hypothesised mediators (Kazdin & Nock, 2003), two psychological processes that are not specified in ACT's underlying theory (*negative automatic thoughts and active coping*) were examined to discover whether they acted as mediators. This study uses a longitudinal design with quantitative measures of both the outcome variable (psychological distress) and process measures, and comparisons are made between participants who received the ACT intervention and those assigned to a waiting list. A 3-month follow-up period was used in this study. In the light of the evidence reviewed in Chapter 1, the following hypotheses were made:

- 1). Participants in the ACT intervention group will show significantly lower levels of psychological distress at three months post-treatment when compared to those assigned to the waiting list.
- 2). A greater proportion of participants in the ACT group will meet the criteria for clinically significant change (Jacobson & Truax, 1991) at three months post-treatment when compared to those assigned to the waiting list.

3). Participants in the ACT intervention group will show significantly higher levels of psychological flexibility, value directed action and mindfulness, and significantly lower levels of cognitive fusion at three months post-treatment when compared to participants assigned to the waiting list.

4). the potential mediators that are not specified in the ACT model (*i.e. active coping, negative automatic thoughts*) will not be impacted on by the intervention and will not be related to the outcome measure.

5). Changes in the hypothesised mediators at two weeks post-treatment will predict changes in the outcome variable at three months post-treatment. In keeping with this, each of the hypothesised mechanisms of therapeutic action (*psychological flexibility, cognitive fusion, value directed action and mindfulness*) will serve as mediators in simple-mediation analyses⁵

6). When analysed in a multiple-mediation analysis⁶ (Preacher & Hayes, 2008), given that psychological flexibility is the central construct of the ACT model, it is predicted that this mechanism will serve as a statistically stronger mediator of the relationship between the independent variable (*i.e. treatment condition*) and dependent variable (*psychological distress*) than mindfulness, cognitive fusion and values. Thus, it is predicted that when the hypothesised mediators are statistically compared in the multiple-mediation analysis (Preacher & Hayes, 2008), psychological flexibility will be a significantly stronger mediator than mindfulness, cognitive fusion and values.

⁵ Simple mediation refers to a statistical technique that tests whether an independent variable impacts on a dependent variable indirectly through a third ‘mediating’ variable (Preacher & Hayes, 2004). Simple-mediation analyses only examine one potential mediator. Please see section 2.2.8.4 for more details.

⁶ Multiple-mediation is an extension to the simple mediation technique where the indirect effects of 1-10 mediators can be examined simultaneously (Preacher & Hayes, 2008). Please see section 2.2.8.4 for more details.

2.2 Method

2.2.1 Design

The current study used a non-randomised control group design. Participants in the control group were assigned to the waiting list. Allocation to the ACT or waiting list condition was based upon the order in which the participants self-referred into the research study (e.g. the first 10 were assigned to the ACT intervention whereas the following 10 were assigned to the waiting list condition). As the research study was nested within a routine clinical service, it was deemed to be unethical to randomly assign participants to a waiting list condition, whereas it was deemed to be ethically acceptable to make use of the naturally occurring waiting list. The independent variable is ‘treatment’ with two conditions: (1) treatment given—a one-day, group-delivered ACT intervention; or (2) no treatment given—assignment to a waiting list. For the dependent variable (outcome measure) a commonly used measure of psychological distress (GHQ-12: Goldberg *et al.* 1997) was used. Mediator variables included measures of psychological flexibility, mindfulness, cognitive fusion, valued living, problem focused coping and the frequency of negative automatic thoughts. For the treatment condition, the outcome and process variables were measured at baseline—two weeks pre-treatment (T1), two weeks post-treatment (T2), and three-months follow-up (T3). The waiting list control group completed measures at the same time points as the ACT intervention group. However, those in the waiting list condition did not complete T2 measures. Nevertheless, given that those in the waiting list condition took part in the ACT intervention after the three month follow-up period, they were asked to complete additional measures at two weeks and three months post-treatment. In light of the relative novelty of the ACT intervention, it was felt that following up those in the waiting list condition would add to the reliability of the efficacy findings.

2.2.2. Rationale for Using Quantitative Methodology

A quantitative methodology was chosen for the purposes of this study in order to determine the effectiveness of a relatively novel ACT intervention and to examine the mechanisms of therapeutic action. A quantitative design was chosen to address these research questions as, in order to convincingly ascertain the effectiveness of an intervention, there needs to be a direct comparison of the relevant psychological variables in an intervention

group and a control group (Eccles *et al.* 2003; Kazdin, 2003). By using a quantitative design, the results of the current study are more easily generalised to other populations and the design can be widely replicated (Barker *et al.* 2002; Heiman, 2001). Additionally, quantitative methods are increasingly being developed to address questions of process and mediation, and these approaches are viewed as more objective than their qualitative counterparts (Preacher & Hayes, 2008). Nevertheless, the ‘*micro*’ levels of experience often identified from participant accounts were deemed by the current researcher to offer an additional perspective on the questions of efficacy and mediation (Bryman, 1992). As such, study 2 (Chapter 3) presents a qualitative analysis of participants’ experiences of the ACT intervention. Quantitative and qualitative methodologies are often viewed as complementary, each providing valuable information to address the research question (Barker *et al.* 2002; Mays & Pope, 2006).

2.2.3. The Participants

2.2.3.1. Power Analysis. A study conducted by Flaxman & Bond (2010b) investigated the impact of a worksite ACT intervention on office workers’ levels of psychological distress—as measured by the GHQ12. In this study, 119 participants (61 in the intervention group and 58 in the control group) provided complete data at all assessment points. The study found a between groups effect size of $d = .50$, which is classified as a medium effect size (Cohen, 1988). For the purposes of the current study, a power analysis was conducted in order to ascertain the required number of participants. Based on the effect size for the Flaxman & Bond (2010b) study, and using standard parameters of $\alpha = .05$ for .80 power to be detected, an estimated 50 participants ($N = 25$ intervention vs. $N = 25$ control group) are needed (Cohen, 1988).

2.2.3.2. Recruitment. Notices advertising the ACT workshops were posted on the intranet of the NHS Local Health Board (LHB) within which the research was conducted (please see Appendix 1). Additionally, in order to increase the number of participants recruited at a given time point, an email advertising the ACT workshop was sent to all managers employed by the LHB to cascade down to their staff. The workshops were available for all employees to self refer into. No inclusion or exclusion criteria were used for attendance at the workshops or the research study other than being an employee of the LHB. At the point of self-referral, contact details (e.g. name, address, telephone number, email) were recorded by the receptionists who work for the service. The employees who self-

referred into the service were informed that they would be placed on a waiting list and sent a provisional booking along with an invitation to take part in the research study. Batches of ‘welcome packs’ were sent out in the post once a sufficient number of employees had registered their interest in attending the workshop. The welcome packs contained an information sheet about the workshop (e.g. workshop aims, date and venue), an information sheet about the research study which included an invitation to participate, a consent form, the baseline questionnaire, and a stamp addressed envelope (*please see Appendices 2-4*). Additionally, the welcome packs contained a consent form which required the signature of the employee’s manager in order to confirm their day-release from work. Employees were informed that they had to return this form in order to confirm their place on the workshop. It was made clear to the employees that their participation in the research study was entirely voluntary. Those who were happy to take part in the research study (*both those assigned to the ACT condition and those assigned to the waiting list*) were asked to return the baseline questionnaire 1 week before the workshop.

During the data collection period for this Thesis, six workshops were scheduled (three for the treatment condition and three for the waiting list condition), and 50 employees were booked to attend. Of these 50 employees, 35 (70%) consented to participate in the research study. For audit purposes, the service within which this study was nested routinely collects brief questionnaire measures from its service users. Included in these audit measures were the GHQ-12 and a questionnaire collecting demographic information. Thus, it is possible to compare the participants who consented to taking part in the research study with those who attended the intervention but refused to participate in the research study. There were no statistically significant differences between those who consented to participate in the research study and those who did not in terms of GHQ-12 scores, gender, age, job role, banding of job role, marital status, educational level, and the number of years spent working for the LHB. Thus, the sample of participants included in this Thesis would appear to be representative of the population of NHS employees who self-referred themselves to the ACT intervention.

2.2.3.3. Participant Characteristics. The characteristics of the sample are presented in Table 2.1. The sample was largely female, well educated and employed in ‘frontline’ clinical roles. No remuneration was offered for participation in the study. Of the 35 participants who entered the study, 17 were assigned to the treatment condition and 18 to the waiting list. Those assigned to the ACT condition were not significantly different from the participants assigned to the waiting list on any of the demographic variables that were measured (*e.g.*

gender, age, job role, NHS banding, marital status, educational level, or the number of years spent working for the LHB). However, two participants assigned to the treatment condition did not attend the ACT intervention and two participants assigned to the waiting list did not return their follow-up questionnaire or attend the intervention. As these 4 participants did not receive the intervention, they are excluded from subsequent analyses. A flow chart of participation through the study is presented in Figure 2.1.

Table 2.1. Characteristics of the Sample

	ACT (N = 15)	Waitlist (N = 16)	Sample (N = 31)
Personal			
Age (<i>M</i> years/ <i>SD</i>)	38.2 (10.4)	40.9 (9.0)	39.7 (9.6)
Gender (% female)	80%	87.5%	83.9%
Married/Partner (%)	60%	75%	67.7%
Profession & Education			
University degree (%)	60%	75%	67.7%
Nursing (%)	60%	63%	61%
Allied Health Professional (%)	20%	6%	13%
Non-clinical e.g. HR, Admin (%)	20%	31%	26%
NHS Banding (median/range)	5 (2-7)	5 (2-8)	5 (2-8)
Years worked for LHB (<i>M</i> years/ <i>SD</i>)	11.4 (10.6)	14.6 (9.1)	13.1 (9.8)

2.2.4. Measures

The choice of measures was guided by the following principles: (1) use of measures found to be valid and reliable in previous studies that have evaluated the efficacy of ACT and/or investigated the mechanisms of therapeutic action within ACT; (2) the selection of process measures that are both consistent with ACT's underlying theory of psychological distress and reflect the six core processes of ACT (Hayes *et al.* 2006); (3) the selection of measures that converge with those used in other studies that have evaluated the efficacy of an ACT intervention and/or evaluated the processes of therapeutic change in ACT; and (4) the selection of measures that, when presented together, could be completed in approximately 15-

20 minutes. Thus, in order to keep participant burden to a minimum, brief questionnaires were chosen. Additionally, this decision was taken as it was thought to increase the likelihood of participation at each data collection point. To inform the selection of the most appropriate measures, lead authors in the field (e.g. Steven Hayes, Paul Flaxman and Frank Bond) were contacted regarding their views on the selected questionnaires. Similarly, the forums on the ACT website (www.contextualpsychology.org) were used to canvass the opinions of other ACT researchers on the different measures that were under consideration.

2.2.4.1. Outcome Measure

The General Health Questionnaire – 12 (GHQ-12: Goldberg *et al.* 1988; 1997) was chosen as the primary outcome measure. This widely used 12-item scale was devised as a measure of general mental health (Goldberg *et al.* 1997; McDowell & Newell, 1996) defining symptoms of psychological distress in terms of thoughts, behaviours, emotions and day-to-day functioning. In the current sample the Likert method for scoring the GHQ-12 was chosen over the binary approach (*often used to identify probable cases of ‘psychiatric disorder’*) as it produces a wider and smoother distribution (Goldberg *et al.* 1997)⁷. Symptoms are scored on a 4-point Likert rating scale with total scores ranging from 0 to 36. Higher scores indicate greater psychological distress, with the cut score of 11/12 shown to be the best threshold for identifying participants who would likely meet the criteria for a clinically significant ‘psychiatric disorder’ (Goldberg *et al.* 1997). Numerous studies attest to the reliability and validity of this scale (Donarth, 2001; Goldberg *et al.* 1997; Hardy *et al.* 2003). Alpha coefficients range from .82 to .86 in the validation studies (Goldberg & Williams, 1988) and .73 to .90 in samples of employees (Bond & Bunce, 2000; Flaxman & Bond, 2010). The inter-item internal consistency of the GHQ-12 in the current sample was extremely high at each data collection point: Time 1 baseline, $\alpha = .91$; Two weeks post treatment, $\alpha = .99$; Three month follow-up, $\alpha = .92$.

⁷ For the analyses of clinically significant change, the caseness scoring method is used as these analyses required comparisons between the current dataset and the norms in the literature. Please see section 2.2.8.3 for a more detailed discussion of this point.

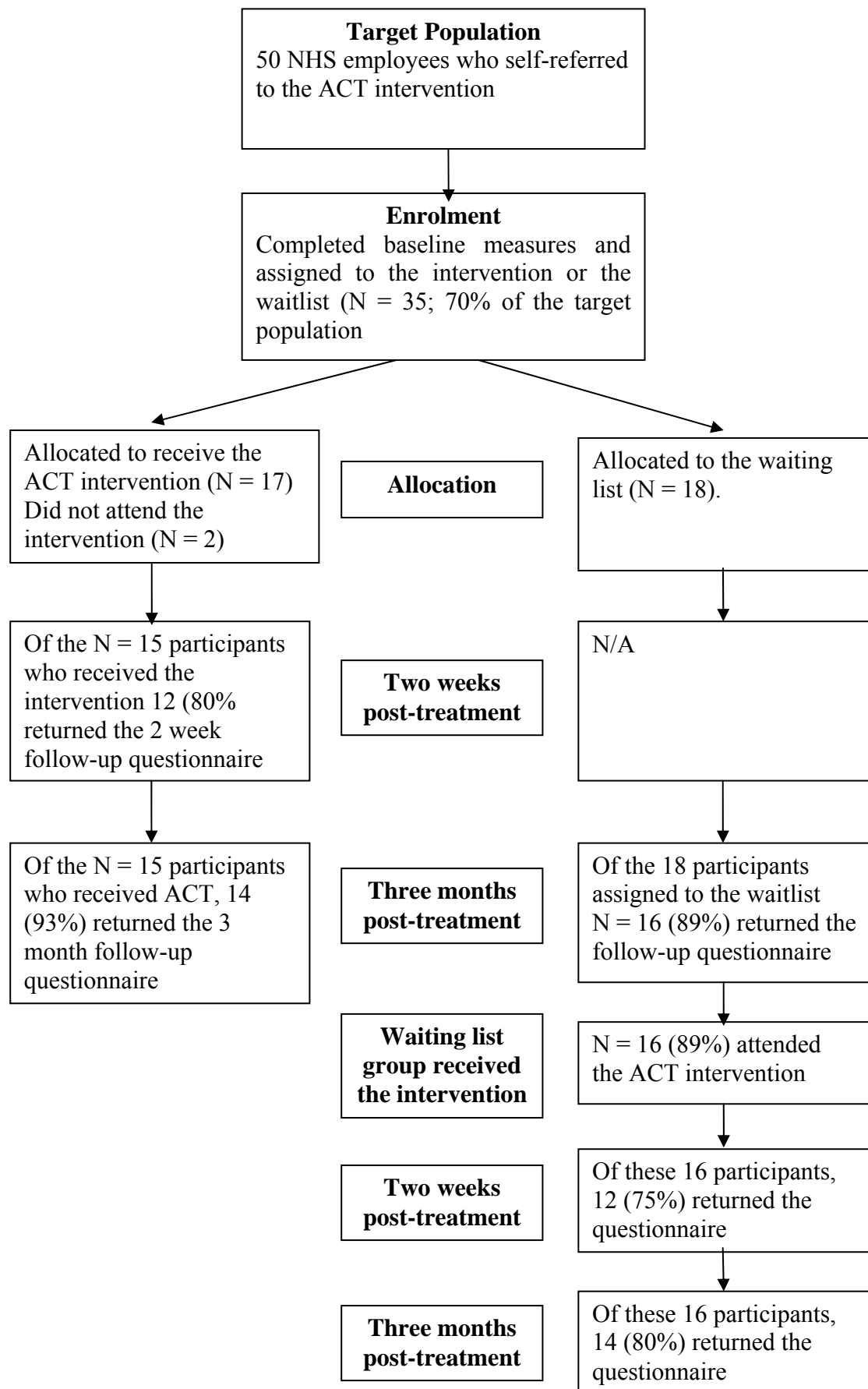
2.2.4.2. Process Measures

The Acceptance and Action Questionnaire-II (AAQ-II: Bond *et al.* 2011). The AAQ-II was developed in order to establish an internally consistent measure of psychological flexibility—the central construct in ACT’s model of mental health and behavioural effectiveness (Hayes *et al.* 2006). The AAQ-II is a 7-item scale with responses to each item scored on a 7-point Likert scale ranging from ‘never true’ to ‘always true’. Confirmatory factor analyses across seven different samples have found the AAQ-II to be a one-dimensional measure of psychological flexibility with high concurrent and predictive validity (Bond *et al.* 2011). Acceptable alpha coefficients have been observed across seven different samples (ranging from .76 to .87) and the scale has excellent test-retest reliability data (Bond *et al.* 2011). Lower mean scores on the AAQ-II indicate greater psychological flexibility. Alpha coefficients for the current sample were extremely high: $\alpha = .84$ at pre-intervention; $\alpha = .92$ at two weeks post-treatment; and $\alpha = .88$ at three months post-treatment.

Values Attainment and Persistence with Barriers: Values Bull’s Eye (Lundgren *et al.* 2008). This scale measures participants’ perceived attainment of their values as well as their persistence in achieving their values. This scale has good psychometric properties with a test-retest reliability of .86 and good criterion related validity (Lundgren *et al.* 2006, 2008). This measure is increasingly being used in ACT intervention studies, and it has been shown to act as a mechanism of therapeutic action in an ACT intervention study for people with epilepsy (Lundgren *et al.* 2008).

The Five Facet Mindfulness Questionnaire (FFMQ: Baer *et al.* 2006). This 39-item scale measures five domains of mindfulness including observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. The FFMQ has good psychometric properties in students, community members, and experienced meditators (Baer *et al.* 2006, 2008). Alpha coefficients in the validation samples range from .86 to .95 (Baer *et al.* 2006, 2008). Alpha coefficients for the current sample were extremely high: $\alpha = .89$ at pre-intervention; $\alpha = .90$ at two weeks post-treatment; and $\alpha = .94$ at three months post-treatment. The total score is used in the current sample with higher mean scores indicating greater mindfulness ability.

Figure 2.1. Participant Flow through the Study



The Automatic Thoughts Questionnaire-B (ATQ-B; Zettle & Hayes, 1986). The ATQ-B is a 30-item questionnaire that produces two distinct subscales that measure the frequency (ATQ-F) and believability (ATQ-B) of negative automatic thoughts. The ATQ-B (Zettle & Hayes, 1986) is a revision of the original measure, the ATQ-F, first published by Hollon & Kendall (1980). Zettle & Hayes (1986) revised the original questionnaire by adding a believability scale. On the revised measure, participants are asked to rate on a 5-point scale how frequently (e.g. ‘*not at all*’ to ‘*all the time*’) they experience each negative thought (e.g. *I’ve let people down*) and how believable they deem each negative thought to be (e.g. ‘*not at all*’ to ‘*totally*’). Scores for each of the items on each scale are then summed to form a total score. This measure is commonly used in intervention studies to examine the impact of CBT on the frequency of negative automatic thoughts, and the believability scale has been used by researchers in the ACT community as a proxy measure of cognitive fusion (Hayes *et al.* 2004). Numerous studies attest to the validity and reliability of this scale (e.g. Hollon & Kendall, 1980; Harrel and Ryon, 1983; Hayes *et al.* 2004).

The alpha coefficients taken from the validation paper for the ATQ-F are extremely high, $\alpha = .97$ (Hollon & Kendall, 1980). Similarly, the ATQ-B has been shown to have excellent internal consistency in both clinical ($\alpha = .95$) and non-clinical ($\alpha = .97$) populations (Zettle *et al.* 2011). In the current sample, the alpha coefficients for the subscale that measured the frequency of negative automatic thoughts were extremely high: $\alpha = .95$ at pre-intervention; $\alpha = .97$ at two weeks post-treatment; and $\alpha = .98$ at three months post-treatment. Higher mean scores on this scale indicate a greater frequency of, and intrusion from, negative automatic thoughts. Similarly, the alpha coefficients for the cognitive fusion scale (ATQ-B) in the current sample were also extremely high at each data collection point: $\alpha = .94$ at pre-intervention; $\alpha = .96$ at two weeks post-treatment; and $\alpha = .97$ at three months post-treatment. Higher mean scores on this scale indicate a greater fusion with the negative automatic thoughts that are experienced.

Active Coping (COPE; Carver *et al.* 1989). The active coping subscale from the COPE inventory was used for the current study. This 4-item scale captures the process of taking active steps to try to remove or circumvent the stressor or to ameliorate its effects (Carver *et al.* 1989). Individual items were rated on a scale ranging from 1 (‘*almost never*’) to 5 (‘*almost all of the time*’), with total scores ranging from 4 to 20. Higher mean scores equate to greater active coping. Numerous studies attest to the validity and reliability of the COPE

and its subscales (e.g. Carver *et al.* 1989; Carver *et al.* 1993) and this measure has been used in an evaluation of a CBT treatment trial (Wong & Sun, 2006). Alpha coefficients for the active coping subscale in the initial validation paper, measured across three different samples, range from .56 to .69. Alpha coefficients for the current sample were $\alpha = .84$ at pre-intervention; $\alpha = .76$ at two weeks post-treatment; and $\alpha = .93$ at three months post-treatment.

2.2.5. The Intervention

The ACT intervention was delivered during normal working hours, over the course of a day, to groups of 6-10 participants. The intervention was based on the manual described by Flaxman & Bond (2006) which was originally developed for employees experiencing psychological distress and delivered over the course of three half days, spread over a three month period. However, after an initial pilot of the original intervention protocol in the LHB that was conducted prior to this research study, it was discovered that it was too difficult for a significant number of employees to get time off work to attend all three training sessions. As a result, the intervention was adapted to enable its delivery in one day. Each intervention was delivered by the same therapist who is a qualified counsellor. The therapist has extensive experience of delivering individual and group interventions and she was trained in the protocol by one of the originators (Dr Paul Flaxman) and she has attended regular CPD events on ACT, including training that was hosted by Dr Steven Hayes who developed ACT. The therapist received regular supervision during the course of the study from a senior therapist who had also received extensive training in ACT. The intervention was delivered on NHS premises with the assistance of a standardised Power-Point presentation, handouts, and pen and paper exercises that remained unchanged throughout the course of the study.

The core aim of the intervention was to promote psychological flexibility which was achieved via a number of different techniques and experiential exercises that map onto the six core processes of ACT (*i.e. Acceptance, Contact with the Present Moment, Committed Action, Cognitive Fusion, Self as Context, and Valued Directed Action*). The intervention began with some ground rules (*e.g. confidentiality, only sharing information that one is comfortable with, break times, etc.*) and an overview of the ACT model as well as the signs and effects of psychological distress in the workplace. The aim of the morning session was:

(1) to challenge the effectiveness of experiential avoidance strategies; (2) to outline the ACT perspective of the language process and the deleterious effects of cognitive fusion; (3) to show that, in the realm of thoughts and emotions, control is the problem, not the solution; and (4) to introduce psychological acceptance and mindfulness as alternatives to experiential avoidance. Throughout the course of the intervention a didactic approach was adopted and interaction between participants, as well as between the therapist and the participants was encouraged.

During the morning session a number of different ACT techniques and individual and group exercises were used. For example, participants were asked to brainstorm the psychological barriers that prevent them from living a valued life (*e.g. anxiety, worry, negative thinking*) and they were then asked to list the avoidance strategies that they have used to change or remove undesirable psychological content. When examples of experiential avoidance were elicited, the therapist aimed to draw from the participants the reasons why these strategies were ineffective, highlighting the ‘un-workability’ and costs of internal control attempts. For example, the paradoxical effects of attempts to suppress unwanted thoughts and feelings were discussed and participants were encouraged to think of examples when their attempts to control or eliminate unwanted thoughts and feelings had been counterproductive. Throughout the intervention, metaphors were used by the therapist such as ‘*struggling in quick sand*’ to help the participants observe the counterproductive effects of attempting to escape sinking in the sand and of attempting to avoid thoughts and emotions. Additionally, when the different examples of cognitive fusion and experiential avoidance were being worked through, the therapist highlighted how these processes are examples of psychological inflexibility, orientating participants back to the ACT model.

Toward the end of the morning session and during the beginning of the afternoon session the concept of ‘psychological acceptance’ was introduced as an alternative to experiential avoidance, and mindfulness exercises were practiced. For example, when holding their breath, participants were encouraged to notice and internally describe their thoughts and feelings whilst changing the language they use *e.g. ‘I am having a feeling of anxiety’* rather than ‘*I’m anxious*’. Similarly, participants were encouraged to view their ‘*thoughts as just thoughts*’ and their ‘*feelings as just feelings*’ rather than actual truths. Around this time, techniques such as ‘*thanking one’s mind for the thoughts that it produces*’ were also introduced. These techniques aimed to build a sense of ‘*self as context*’ and participants were encouraged to ‘*contact with the present moment*’ and observe their internal experiences without becoming attached to them. These processes are further fostered by

techniques such the ‘leaves on the stream’ exercise where participants were guided through a visualisation where they were asked to imagine themselves sitting next to a gentle stream in a beautiful valley, with leaves floating gently down the stream. During this exercise participants were asked to notice when thoughts, feelings or images came into their awareness and to imagine placing each one on a leaf and then watch that leaf float down the stream.

As the afternoon session progressed, other techniques and exercises were used to increase participants’ ability to observe themselves without becoming entangled in their thoughts and feelings. For example, a cloud and sky metaphor was described where the clouds are the ‘*verbal chatter*’ of the mind, behind which lies the blue sky—which was conceptualised as the observing self. The theme here is that one does not have to remove the clouds to know that there is blue sky; if we learn to look, we will see that it is always there. During this exercise participants were encouraged to make contact with the observing self (*the blue sky that lies behind the clouds of mind chatter*) which was described as a sense of self that is not the content of their mind (e.g. *worries, negative thoughts*), but rather the context in which that content occurs; a place that they can get to by being in the present moment through practising acceptance and mindfulness techniques. Following the mindfulness and acceptance exercises, participants were encouraged to reflect on their experiences and relate them back to the content of the morning session. ACT consistent descriptions such as ‘*it was as if I became detached from my thoughts*’ were reinforced and recollections that contain judgements or anxieties such as ‘*I don’t think I did it right or my mind kept wandering off*’ are ‘opened up’ and it was explained to the participants that there is no right or wrong way—rather, what is important is the noticing of the mind wandering off and then gently bringing it back to the present moment. In fact, the noticing of the mind wandering off was framed as a moment of awareness.

Toward the end of the afternoon, participants were asked to complete a values and goals exercise that aimed to identify individuals’ valued life directions. Participants were asked to rate how important particular values and goals are to them, and the extent to which they were behaving consistently with their values and goals. During this exercise participants were encouraged to identify psychological barriers that prevent them from following a valued directed path in life, and the acceptance and mindfulness exercises were framed as techniques that can facilitate valued directed living. The concepts of experiential avoidance and cognitive fusion were reviewed and linked into this section of the intervention, and the concepts of ‘*self as context*’ and ‘*present moment focus*’ were framed as processes that can

promote valued directed living. As the intervention draws to a close, a summary of the ingredients for successful and vital living was generated in collaboration with the participants. This summary aimed to draw together the six core processes of ACT whilst emphasising their ability to promote psychological flexibility. Finally, participants were encouraged to put into practice the knowledge and skills that they acquired during the day and go on to lead happy and fulfilling lives.

2.2.6. Procedure

Welcome packs that included the baseline questionnaires, consent form and the date, time and venue of the ACT workshop that the participants were assigned to were sent via the post. As detailed in section 2.2.1, assignment to the treatment or waiting list condition was based upon the order in which the participant self-referred into the intervention. Participants assigned to the ACT intervention and the waiting list were asked to return the baseline questionnaire one week before the intervention was delivered. The questionnaires took approximately 20 minutes to complete. Following the intervention, the participants assigned to the treatment condition completed post-treatment questionnaires at two weeks and three months post-intervention. Those assigned to the waiting list condition completed questionnaires at the three month follow-up. Subsequently, those assigned to the waiting list received the intervention at the three month follow-up period and these participants were again followed-up at two weeks and three months after receiving the ACT intervention (Figure 2.1). Given the relative novelty of the intervention, it was felt that the reliability of the efficacy findings would be increased if those assigned to the waiting list condition were also followed-up after they had received the intervention.

2.2.7. Ethical Considerations

The physical, emotional and psychological welfare of the participants was paramount during all stages of the research and the British Psychological Society's Code of Ethics' (2006) was adhered to. Research and Development approval was obtained from the NHS Local Health Board in which the researcher was employed and the study was conducted and Ethical Approval was obtained from the Local Research Ethics Committee of the NHS (confirmation of approvals is provided in Appendix 5). Participation was entirely voluntary.

An information sheet which included an invitation to take part in the research study was sent to potential participants when they self-referred into the workshop. The researcher's and the workshop co-ordinator's contact details were provided on the information sheet in case potential participants had any questions about the research study and/or the workshop.

All participants completed a consent form and were assured of complete confidentiality and anonymity of responses. To help ensure this, participants were allocated an ID number from the outset based on the last four digits of their main telephone number which they were asked to write on all questionnaires. Access to information was restricted to those connected to the research; this included the principal researcher and the clinical and academic supervisors. The information sheet that was sent to the participants clearly stated that their decision to take part in the research project would not affect their eligibility to attend the workshop. Additionally, it was made clear on the information sheet that the participant's responses on the questionnaires and during the interview would only be reviewed by the lead researcher and his clinical and academic supervisors. Given that all of the people invited to participate were employed by the LHB, it was assumed that all potential participants were proficient in the English language and could therefore understand the consent form and make an informed decision.

2.2.8. Data Analysis

2.2.8.1. Data Screening. For each participant, questionnaire responses were considered valid if they had less than 10% missing data. No participant had more than 10% missing data. Five participants had some missing data. One participant missed three items on the Automatic Thoughts and Believability Questionnaire (ATQ-B: REF); one participant missed 4 items on the mindfulness questionnaire and 2 items on the ATQ-B. For these participants, an item mean was calculated from their responses to the completed questions and this value was substituted for the missing response when the total scores were calculated. One participant failed to complete the ATQ-B questionnaire as well as 20 items (50%) from the mindfulness questionnaire. For this participant, the total scores derived from the ATQ-B were coded as missing; for the mindfulness questionnaire, item mean scores were used as substitutes for the missing responses when the total scale and sub-scale scores were calculated. Additionally, two participants failed to complete the COPE questionnaire—these participants were coded as missing for analyses that included the active coping measure. All variables, at each time point, were screened for normality and linearity following the

guidelines set forth by Field (2005) and Tabachnick & Fidell (2001). Additionally, statistical tests of the assumptions of particular parametric techniques (e.g. ANOVA & MANOVA) were conducted. Please see section 2.3.1 for the outcome of these tests.

An intention-to-treat (ITT) analysis, where all participants are included in the analysis regardless of whether or not they completed treatment/adhered to the protocol (www.consort-statement.org), was not conducted for a number of reasons. Firstly, this procedure is most applicable to randomised control trials (RCTs) as it upholds randomisation (www.consort-statement.org), and the current study used a non-randomised control trial design. Secondly, ITT analyses are not without their limitations (Altman *et al.* 2001), and they are most useful when there is evidence of selective attrition. In the current study, the 4 participants who did not attend the intervention were not significantly different from the 31 participants with complete data on all measures. Thus, analyses presented in this Chapter are based on all participants who provided data at the given assessment (see Figure 2.1). This decision aligns with the definition of a '*modified intention-to-treat analysis*' (Abraha *et al.* 2007) as participants who did not receive the intervention are omitted from the analyses. All statistical analyses were conducted in SPSS version 18.

2.2.8.2. Statistical Significance. For the demographic and descriptive data, between group differences on categorical and continuously distributed data were examined with the Pearson chi-squared test of independence or the independent samples t-test. The non-parametric Mann Whitney U test was used for statistical comparisons on the ordinal data. The impact of the intervention was assessed with a repeated measures ANCOVA that tested for the effects of Time and Group whilst adjusting for pre-intervention differences in psychological distress. The magnitude of the difference between the 2 groups at post-treatment was quantified by calculating a Cohen's *d* effect size (ES). Significance was judged at the $p < .05$ level, but trends up to $p < .10$ were also identified. However, where possible, the exact *p*-values (*rounded up or down*) are reported in order to facilitate a critical evaluation of the data (Greenwald *et al.* 1996).

2.2.8.3. Clinical Significance. Whilst the statistical comparison of between group differences is useful for summarising group means and how they differ, this method has been criticised for being insensitive to individual change (Jacobson & Truax, 1991; Thomas & Truax, 2008), and thus, less clinically useful. To address this shortcoming, Jacobson & Truax (1991) developed two statistical criteria that quantify whether the magnitude of change

shown by each individual is large enough to be deemed both clinically meaningful and reliable. The first criterion of clinically meaningful change requires the individual's post-treatment level of functioning to be closer to the non-clinical population than the clinical population (Thomas & Truax, 2008). To determine whether the level of change is clinically meaningful, a 'cut-off' score is identified (Jacobson & Truax, 1991).

Given that normative data on the outcome measure (GHQ-12) is available in the literature from a study of over 5000 UK public sector employees (Stride *et al.* 2007), the most widely advocated method for identifying the cut-score that determines clinically meaningful change (criterion C) was used in the current analysis (Jacobson & Truax, 1991). Criterion C specifies that the level of change shown by an individual at post-treatment needs to be less than the value that is halfway between the normative sample mean and the population mean (Jacobson & Truax, 1991). However, in the Stride *et al.* (2007) study, the caseness scoring method was used for the GHQ-12 as opposed to the Likert method. As such, the data obtained from the current sample on the GHQ-12 was re-scored according to the caseness method for the analyses of clinical significance⁸. The normative sample mean derived from the Stride *et al.* (2007) study is 2.85 ($SD = 3.32$). Based on the data from the current and normative samples, the cut-off score for the analyses that determine whether the change shown by a participant following the ACT intervention is clinically meaningful is a mean of 5.40.

The second criterion of reliable change which is used to determine clinical significance examines whether the magnitude of change is greater than that expected from random error (Jacobson & Truax, 1991). This value, referred to as the reliable change index (RCI), is computed by dividing the pre-treatment to post-treatment difference score by the standard error of the difference score ($RCI = \text{Score at end of treatment} - \text{score at beginning} \div \sqrt{2 \times [SD \times \sqrt{(1 - r)}]^2}$). To determine the standard error, it is recommended that the test-retest reliability data for the outcome measure (GHQ-12) is used when this data is available as it takes into account the reliability of the measure (Jacobson & Truax, 1991). As such, the test-retest reliability estimate for the GHQ-12 of $r = .73$ was used (Goldberg & Williams, 1988; Hardy *et al.* 1999), which generated a standard error of 2.72. The RCI value was then computed for each participant by dividing baseline (time one) to two week post-intervention

⁸ The caseness method of scoring the GHQ-12 is advocated for when the researcher/clinician wishes to screen for and detect likely cases of 'psychiatric disorder' (Goldberg *et al.* 1997). The Likert scoring method which is used for the majority of analyses reported in this Thesis is advocated for when the researcher/clinician wishes to assess severity, and for instances when a more normally distributed range of scores is favoured (Goldberg *et al.* 1997).

(time two) and baseline (time one) to three month (time three) post-intervention difference scores by 2.72 and then multiplying by 1.96. According to this criterion, participants whose change scores were greater than the RCI value of 5.33 were considered to show reliable change. Finally, based on the data derived from both the clinically meaningful and RCI calculations, four categories of change have been identified (Thomas & Truax, 2008; Jacobson *et al.* 1999). These categories are as follows: (a) *recovered*, the participant meets both criteria; (b) *improved*, the participant shows a significant RCI without moving into the non-clinical range; (c) *same*, the patient does not meet either criterion; and (d) *deteriorated*, the participant shows a reliable worsening of symptoms (Thomas & Truax, 2008; Jacobson *et al.* 1999). A chi-square test was used to test whether the proportion of participants who met the criteria for clinically significant change differed between the intervention and the waiting list condition.

2.2.8.4. Statistical Mediation. Mediators refer to processes through which changes are hypothesised to occur (Kazdin & Nock, 2003). In general, mediation analyses examine the impact of a mediating variable (e.g. psychological flexibility) on the relationship between an independent variable (IV: *e.g. an ACT intervention*) and a dependent variable (DV: *e.g. psychological distress*). Thus, this type of analysis reflects the treatment effect (IV) on the outcome (DV) through a third variable (mediator), with mediation effects referred to as indirect effects (Baron & Kenny, 1986; Preacher & Hayes, 2008). Mediation does not show causation, but rather the functional importance of the treatment impact on a process (*a* path) and that process's effect on the outcome whilst controlling for the treatment (*b* path). As such, mediation is the combination of these two relationships, which elevates it above correlational analyses by requiring the mediator to be functionally relevant over and above the treatment effect (Kazdin & Nock, 2003; Preacher & Hayes, 2008).

It is advocated that the selection of potential mediators should be based on theoretically meaningful a priori hypotheses and that, in order to provide a comprehensive theoretical test of specificity, several possible mediators should be tested, including processes that are not specified in the underlying theory (Kazdin & Nock, 2003). In line with this suggestion, the selection of mediators chosen for the current study was consistent with the underlying theory of the mechanisms of therapeutic action in ACT (see Chapter One). In brief, the current study examined psychological flexibility (AAQ-II; Bond *et al.* 2011), cognitive fusion (ATQ-B; Zettle & Hayes, 1986), value directed living (Lundgren *et al.*

2006)⁹ and three mindfulness related process (e.g. self as context, contact with the present moment & acceptance) which were captured with a well validated measure of mindfulness (FFMQ; Baer *et al.* 2006). Additionally, processes not specified by the ACT model were examined in order to provide evidence of specificity (Kazdin & Nock, 2003). These included a measure of the frequency of negative automatic thoughts (ATQ-F; Zettle & Hayes, 1986) and a measure of active coping (Carver *et al.* 1989). Both of these processes are not identified as mechanisms of therapeutic action in ACT (Hayes *et al.* 2006; 2011), but have been highlighted as intervention targets in ‘*second wave*’ cognitive-behavioural approaches and they have been used as process measures in the empirical literature (Beck & Weishaar, 2000; DeRubeis *et al.* 1990; Heppner *et al.* 2004; Hofman, 2012).

In order to examine whether any of the hypothesised mechanisms of therapeutic action mediated improvements in participant’s psychological functioning, a number of data analytic steps were followed. Firstly based on ACT theory, and in line with the hypotheses, a repeated measures MANCOVA was conducted to determine if the intervention significantly impacted on the hypothesised mediators. The MANCOVA was then followed up with a series of repeated measures ANCOVAs. In line with ACTs underlying theory, it was predicted that the ACT intervention would increase participants’ psychological flexibility and their mindfulness ability and decrease cognitive fusion. Secondly, bivariate correlations were calculated to explore the relationship between the hypothesized mediators (*assessed at two weeks post-treatment*) and the outcome variable (*changes in psychological distress assessed at the three month follow-up*). Thirdly, and informed by these analyses, formal tests of statistical mediation were conducted with a non-parametric bootstrap approach to examine the specificity of the hypothesised mediators of therapeutic change (Preacher & Hayes, 2008).

Traditionally, mediation analyses have been conducted using the causal steps approach (Baron & Kenny, 1986). However, this method has been criticised for a number of reasons (MacKinnon *et al.* 2002). Firstly, it does not provide a thorough test of statistical mediation as it fails to directly examine the significance of the difference between the direct and indirect or mediated effects (Zettle *et al.* 2011). Secondly, this approach artificially reduces power through being susceptible to the mathematically mutual relation between the *a*

⁹ Unfortunately the questionnaire chosen to capture the values construct was deemed to be too complicated and time consuming by the first group of participants, the group facilitator and the clinical lead for the service. As such, this measure was removed from the questionnaire pack. Please see Chapter 4 and the extracts from the reflective log presented in the appendices for a more detailed discussion of the circumstances surrounding the removal of the values measure from this study.

path (*treatment on the mediator*) and *b* path (*mediator on outcome after controlling for treatment*), whereby an increase in one coefficient increases the other must necessarily decreases the other or vice versa (Preacher & Hayes, 2008). Thirdly, statistical tests of mediation that move beyond the Baron & Kenny (1986) approach have been sought because this traditional method is prone to violations of the parametric assumption of normality (Mackinnon *et al.* 2002; Preacher & Hayes, 2004).

To address these shortcomings, a non-parametric bootstrap approach which tests the significance of the *a* and *b* paths through the cross-product of the coefficients has been developed, and this approach is increasingly recognised as the best available test of mediation (MacKinnon *et al.* 2002; Preacher & Hayes, 2004, 2008). The non-parametric bootstrapping approach directly assesses the significance of the indirect (mediating) effect and it is particularly suited to smaller data sets (Preacher & Hayes, 2004). The distributional problem of non-normality is addressed through bootstrapping, whereby *k* samples of the original size are taken from the obtained data (*with replacement after each specific selected number*) and mediation effects are then calculated in each sample (Preacher & Hayes, 2004). In the present analyses, parameter estimates are based on 5,000 bootstrap samples and a bias-corrected confidence interval is provided for the tested mediators—if lower and upper bounds do not contain zero, the indirect effect is significant at the $p < .05$ level. The coefficients for the indirect effects that are produced via the bootstrapping approach are unstandardised (Hayes, 2009; Preacher & Hayes, 2004), and multiple mediators can be analysed and contrasted within the same model (Preacher & Hayes, 2008). Thus, multiple mediation analyses consider the total indirect effect (*the combination of all of the mediators in the model*) as well as specific indirect effects (Preacher & Hayes, 2008). Mediation analyses are thus conducted to evaluate the hypothesised mediators after adjusting for the pre-intervention scores on the outcome and mediator variables. Two-week and three month post-treatment scores are used for the mediators in the ACT and control group. For the outcome variable, change scores in psychological distress from pre-intervention to three-months post-treatment are used.

2.3. Results

2.3.1. Assumptions for parametric statistics

In order for the parametric analyses to be conducted, the assumptions of the statistical tests presented in this section of the Thesis were examined according to the guidelines set forth by Field (2005) and Tabachnick & Fidell (2007). The skewness and kurtosis values for the dependent and process values were calculated. All variables met the assumption of normality, with the z-scores for the skewness and kurtosis values for the outcome and process measures falling below the value of 2.58 which is the recommended cut-off for smaller samples (Field, 2005). A visual examination of the histograms with the normal distribution curve fitted and the non-significant results for the Kolmogorov-Smirnov test confirmed this conclusion. In order to screen for outliers the frequency distributions for each variable and the corresponding box-plots were examined. With the exception of a data entry error that was corrected, no statistical outliers were identified. For the repeated measures ANCOVA analyses, Levene's test of equal variances (homogeneity of variance) was non-significant, indicating that this assumption had been met. For the MANCOVA, the Mahalanobis distances value indicated that the normality assumption had been met and that there were no multivariate outliers. Similarly, the values for the Levene's test and the Box M test were not significant, indicating that the assumption of the equality of error variances and covariance matrices were met. Additionally, the assumptions of linearity and multicollinearity were met and none of the process measures were correlated at 0.9 or greater.

2.3.2. Sample and Group Comparability

In order to contextualise the sample, the pre-intervention mean on the GHQ-12 for participants in the current study was compared to existing norms obtained from a benchmarking study of over 5000 UK employees (Stride *et al.* 2007), and a large ACT based intervention study of UK office workers (Flaxman & Bond, 2010b). Given that the caseness scoring method was used for the GHQ-12 in these two studies, the data obtained from the current sample on the GHQ-12 was re-coded according to this scoring criterion. According to a one sample t-test, the pre-intervention mean for psychological distress for participants in the current study ($M = 8.19$) was significantly higher than the mean observed for the sample of

over 5000 UK employees ($M = 2.85$), $t_{(1, 30)} = 8.20$, $p < .001$, and the sample of UK office workers ($M = 4.02$), $t_{(1, 30)} = 6.41$, $p < .001$. Similarly, in the latter study conducted by Flaxman & Bond (2010b), only 48% of the sample scored above the cut-score on the GHQ-12—being classified as a ‘*probable case of psychiatric disorder*’. In contrast, 90.3% (28/31) of the current sample met this criterion at baseline. Thus, the severity and prevalence of psychological distress in the current study is greater than the rates observed in comparable studies.

Given the non-randomised assignment of participants to either the waiting list or intervention group in the current study, it is important to examine group comparability at baseline. At the pre-intervention assessment, participants in the control group were not significantly different from those in the intervention group on the outcome and process measures including psychological distress-GHQ-12 (ACT $M = 22.0$ vs. waiting list $M = 20.9$, $t_{(1,29)} = .484$, *ns*); psychological flexibility-AAQ-II (ACT $M = 29.7$ vs. waiting list $M = 30.7$, $t_{(1,29)} = .325$, *ns*); mindfulness-FFMQ (ACT $M = 107.1$ vs. waiting list $M = 114.6$, $t_{(1,29)} = -1.193$, *ns*); cognitive fusion-ATQ-B (ACT $M = 81.0$ vs. waiting list $M = 76.6$, $t_{(1,29)} = .160$, *ns*); frequency of negative automatic thoughts-ATQ-F (ACT $M = 77.3$ vs. waiting list $M = 78.3$, $t_{(1,29)} = -.119$, *ns*); and coping (ACT $M = 9.8$ vs. waiting list $M = 11.4$, $t_{(1,27)} = .220$ *ns*). Similarly, the number of participants who scored in the clinical range of the GHQ-12 at baseline was not significantly different for those in the intervention group (93.3%) vs. the control group (87.5%), $\chi^2(1) = .301$, *ns*. The absence of statistically significant differences at baseline between the intervention and control group is of particular importance given the non-random assignment of participants to the groups.

2.3.3 Attrition

At baseline (time one), 35 participants entered the study, completed the baseline questionnaires, and were assigned to the intervention ($N = 17$) or the control group ($N=18$) based on the order in which they self-referred into the study. However, two participants assigned to the intervention group did not attend the intervention and two participants in the control group did not return the three month follow-up questionnaire. Additionally, one participant assigned to the intervention group attended the workshop but did not return their two week and three month follow-up questionnaire. Thus, the attrition rate for this study is 14.3% from recruitment.

Table 2.2. Means and Standard Deviations for the Outcome Measure (GHQ-12)

	ACT (N = 14)	Waitlist (N = 16)
Pre-intervention	21.79 (5.45)	20.94 (6.76)
Post-Intervention	11.14 (5.38)	20.50 (6.76)

2.3.4. Statistical Significance of Change

The effect of treatment. Descriptive statistics for the outcome measure of psychological distress (GHQ-12) are presented in Table 2.2. In order to test for the effect of treatment condition (ACT vs. waiting list) on psychological distress, a repeated measures ANCOVA was conducted with the pre-intervention values for the GHQ-12 added as a covariate. A significant effect of time and group was observed. At three months post intervention, GHQ scores had significantly decreased in the ACT group relative to the waiting list condition, $F(1,27) = 26.494$, $p < .001$. The magnitude of the difference between the two groups as quantified by Cohen's d effect size was $d = 1.53$ which is deemed to be a large effect (Cohen, 1988).

At pre-intervention, 93.3% of participants in the ACT group (14/15) and 87.5% (14/16) of participants in the waiting list condition demonstrated clinically symptoms of psychological distress and were classified as '*a probable of minor psychiatric disorder*'—as defined as a score of 12 or more on the GHQ-12 (Goldberg *et al.* 1997). This between group difference was non-significant $\chi^2(1) = 0.68$, *ns*. At three months post-treatment, 87.5% of participants in the waiting list condition remained classified as a '*probable case of minor psychiatric disorder*'. Put another way, all of the participants' in the waiting list condition who had shown clinically significant symptoms of psychological distress at the pre-intervention assessment continued to do so at three months post-treatment. In contrast, only 29% (4/14)¹⁰ of participants in the ACT condition were classified as a '*probable case of minor psychiatric disorder*' at the three month follow-up assessment. Thus, 9 of 13¹¹ participants (69%) who were classified as a probable case on the GHQ-12 at the pre-intervention assessment no longer met the criteria for this definition at three months post-

¹⁰ One participant in the ACT condition did not return their two week or three month follow-up questionnaire

¹¹ One participant in the ACT condition failed to return the two week and three month follow-up questionnaires

treatment. The between group comparison at the three month follow-up in terms of the proportion of participants who met the criteria for a '*probable case of minor psychiatric disorder*' was significant, $\chi^2(1) = 11.23, p < .001$.

Table 2.3. Categories of Change on the GHQ-12 at Three Months Post-treatment

	ACT (N = 14)	Waitlist (N = 16)
Three Months Post-Treatment		
Recovered	50%	0%
Improved	0%	0%
Same	50%	93.8%
Deteriorated	0%	6.2%

2.3.5. Clinical Significance of Change

The previous set of statistical analyses are useful in terms of summarising the between group differences and providing a test of the efficacy of the ACT intervention. However, the comparison of group means has been criticised for being less clinically useful and insensitive to individual change (Jacobson & Truax, 1991; Thomas & Truax, 2008). As detailed previously, two statistical criteria have been specified that quantify whether the magnitude of change shown by each individual is large enough to be deemed both clinically meaningful and statistically reliable (Jacobson & Truax, 1991). The first criterion of clinically meaningful change requires the individual's post-treatment level of functioning to have crossed a cut-score and be closer to the non-clinical than the clinical population (Thomas & Truax, 2008). According to the Jacobson & Truax (1991) criteria, the cut-score for the current study is 5.40. The second criterion of reliable change requires the magnitude of change shown by the individual to be greater than that expected from random error (Jacobson & Truax,

1991). For the current study, this value is 5.24 or greater. Based on both the clinically meaningful and reliable change calculations, four categories have been defined: (a) *recovered*, the participant meets both criteria; (b) *improved*, the participant shows reliable

change without moving into the non-clinical range; (c) *same*, the patient does not meet either of the criteria; and (d) *deteriorated*, the participant shows a reliable worsening of symptoms (Thomas & Truax, 2008; Jacobson *et al.* 1999).

Following the above criteria, participants' pre-intervention (time one) and two week (time two) and three month (time three) post-intervention scores on the outcome measure of psychological distress (GHQ-12) were examined. At two weeks post-treatment, 50% (6/12)¹² of participants in the ACT intervention group met the criteria for clinically significant change and were defined as '*recovered*'. The remaining 50% of participants in the intervention group were classified as the '*same*' at the two week follow-up assessment. At three months post-treatment, 50% (7/14) of participants in the intervention group were defined as '*recovered*' having met the criteria for both reliable and clinically meaningful change. The remaining 50% (7/14) of participants in the intervention group were defined as the '*same*'¹³. In contrast, after having spent three months on the waiting list for the intervention, 93.8% (15/16) of participants in the control group were classified as the '*same*' and one participant (6.2%) had '*reliably deteriorated*'. The distribution of change in the ACT and waiting list groups comparing the categories of '*recovered*' versus '*same/deteriorated*' was significant, $\chi^2(1) = 10.45, p < .002$ ¹⁴. The three month post-intervention comparison for participants in the ACT and waiting list groups is presented in Table 2.3.

In order to gain additional evidence for the efficacy of the ACT intervention, participants assigned to the waiting list condition took part in the intervention after their time spent on the waiting list. Subsequently, these participants were also followed-up at two weeks and three months post-intervention. At the two week follow-up after receiving the ACT intervention, 50% of participants initially assigned to the waiting list (6/12)¹⁵ were classified as '*recovered*'. The remaining 50% of participants (6/12) assessed at this time point met the criteria for the '*same*'. Similarly, at the 3 month follow-up assessment after receiving the ACT intervention 14 of 16 participants initially assigned to the waiting list completed the final questionnaire. Of these 14 participants, 9 (64.3%) met the criteria for clinically

¹² Three participants in the ACT intervention group did not return the 2 week follow-up questionnaire. Of these three participants, two subsequently returned the 3 month follow-up questionnaire. Neither of these two participants met the criteria for clinically significant change at 3 month post-treatment.

¹³ Of these participants, one was classified as the same at the 2 week assessment, demonstrating further improvements in their psychological functioning by 3 months follow-up. Thus, the majority of participants in the ACT intervention group demonstrated clinically significant improvements in their psychological functioning at the 2 week and three month follow-up assessments.

¹⁴ The values for the Fisher's Exact Test are reported here as two cells violated the assumption of the expected frequency.

¹⁵ Four participants in the waiting list group did not return the 2 week follow-up questionnaire.

significant change and were classified as ‘*recovered*’. The remaining 5 participants were classified as the ‘*same*’. Relative to the two week follow-up data, 5 of the 6 participants classified as ‘*recovered*’ at two weeks also met this criteria at three months post-intervention. One participant showed continued improvement from the two week to the three-month follow-up and moved into the ‘*recovered*’ category. Additionally, one participant classified as ‘*recovered*’ at the two week follow-up deteriorated by the three month assessment and moved into the ‘*same*’ category. Three of the nine participants who met the criteria for clinically significant change at the three month follow-up had not previously returned their two week follow-up questionnaire.

2.3.6. Mechanisms of Therapeutic Action

Based on the underlying theory of ACT, it was predicted that the ACT intervention would increase psychological flexibility and mindfulness and decrease cognitive fusion. It is important to reiterate here that lower scores on the AAQ-II equate to greater psychological flexibility (Bond *et al.* 2011). Additionally, in order to address the specificity of the hypothesised mediators (Kazidin & Nock, 2003), the impact of ACT on two psychological processes that are not implicated in ACTs underlying theory (*e.g. negative thinking and active coping*) and thus, are not targeted by the ACT intervention, were examined. Descriptive statistics for the process measures at pre-and post-intervention are presented in Table 2.4. In order to test for the effect of treatment condition (ACT vs. waiting list) on the hypothesised mediators, a repeated measures MANCOVA was calculated with the pre-intervention scores on the mediators added as a covariate. A significant multivariate effect of time and group was observed, ($F(5, 22) = 4.43, p < .02$). Univariate ANCOVA tests revealed that for psychological flexibility, mindfulness and cognitive fusion a significant effect of time and group was present. At three months post intervention, participants in the ACT group had significantly lower scores on psychological flexibility¹⁶ ($F(1, 27) = 5.08, p < .04$) and cognitive fusion ($F(1, 26) = 7.77, p < .01$) and significantly higher scores for mindfulness ($F(1, 27) = 9.23, p < .005$). In contrast, the between group comparison for the frequency of negative automatic thoughts ($F(1, 26) = 0.97, ns$) and active coping was non-significant ($F(1, 25) = 2.13, ns$). Thus, in line with ACTs underlying theory and the hypotheses set forth in section 2.1, the ACT intervention significantly impacted on the mechanisms of therapeutic

¹⁶ Recall that lower scores on the AAQ-II equate to higher psychological flexibility

action in the predicted direction. In contrast, the ACT intervention did not significantly impact on the mediators not specified in the ACT model.

Table 2.4. Means and Standard Deviations for the Process Measures

	ACT (N = 14)	Waitlist (N = 16)
Psychological Flexibility		
Pre-intervention	30.43 (6.84)	30.69 (9.03)
Post-Intervention	24.00 (8.94)	30.31 (8.65)
Mindfulness		
Pre-intervention	106.71 (21.15)	114.56 (13.78)
Post-intervention	119.79 (18.71)	112.50 (13.27)
Cognitive Fusion		
Pre-intervention	81.46 (23.12)	79.63 (24.91)
Post-intervention	62.00 (25.83)	78.19 (31.58)
Negative Thoughts		
Pre-intervention	76.77 (25.44)	78.38 (23.91)
Post-intervention	68.15 (32.12)	78.38 (31.77)
Coping		
Pre-intervention	9.71 (2.70)	11.43 (3.69)
Post-intervention	11.43 (4.12)	11.64 (3.32)

In order to characterise the relationship between both the hypothesised and the non-hypothesised mediators of therapeutic action and psychological distress, bivariate correlations were calculated. These analyses examined the relationship between change scores in the mediators at two weeks post-treatment and change scores in the outcome variable at three months post-treatment across both the intervention and waiting list groups. Change scores in psychological flexibility at two weeks post-treatment were significantly related to psychological distress at three months post-treatment ($r = .602, p < .001$). Similarly, change scores in cognitive fusion at two weeks post-treatment were significantly related to psychological distress at three months post-treatment ($r = .382, p < .04$). Mindfulness change

scores at two weeks post treatment and changes in psychological distress at the three month follow-up were only associated at the trend level ($r = -.295, p < .09$). In contrast, active coping change scores at two weeks post-treatment and psychological distress scores at the three month follow-up were not significantly related ($r = .217, ns$). Similarly, changes in the frequency of negative automatic thoughts at the two week follow-up was not significantly associated with psychological distress at three months post-treatment ($r = .268, ns$). Given that the ACT intervention did not significantly impact on the mechanisms of therapeutic action that are not specified in the ACT model (e.g. *negative thinking and active coping*), subsequent mediation analyses with these variables will not be pursued.

Each putative mechanism of therapeutic action specified in the ACT model (*psychological flexibility, mindfulness and cognitive fusion*) was examined for its ability to mediate the relationship between the treatment condition and psychological distress. Firstly, a set of simple mediation tests were conducted to test the significance of each potential mediator individually (Preacher & Hayes, 2004). The results of these non-parametric bootstrapping analyses are presented in Table 2.5 where the mediator is deemed to be significant if the confidence interval does not contain zero (Preacher & Hayes, 2008). When considered individually, changes in psychological flexibility and mindfulness at two weeks post-treatment were indicated as significant mediators of the effect of treatment condition on psychological distress at the three month follow-up. In contrast, changes in cognitive fusion assessed at two weeks post-treatment did not qualify as a significant mediator (Table 2.5). Given that cognitive fusion did not qualify as a significant mediator in the simple mediation analyses, this hypothesised mechanism of therapeutic action will not be considered in the subsequent multiple mediator analysis.

Table 2.5. Simple and multiple mediation of the indirect effects of treatment condition on psychological distress at three months post-treatment through changes in psychological flexibility, mindfulness and cognitive fusion

	<i>Point estimate^b</i>	<i>BCa^a 95% CI</i>	
		<i>Lower</i>	<i>Upper</i>
Simple indirect effects			
Psychological flexibility	4.20	1.13	7.73
Mindfulness	1.41	.11	4.55
Cognitive Fusion	.54	-.42	2.64
Multiple indirect effects^c			
Psychological flexibility	3.61	.18	7.46
Mindfulness	.59	-.73	2.90
Total indirect effect	4.20	.76	9.81
Contrast ^d	-3.02	-6.80	.63

^a *BCa* = bias corrected and accelerated bootstrapping confidence intervals that include corrections for both bias and skewness. N = 5000 bootstrap resample. Confidence intervals containing zero are interpreted as not significant.

^b Point estimate for the indirect effect of treatment condition (IV) on psychological distress (DV) through the proposed mediators (*ab* path)

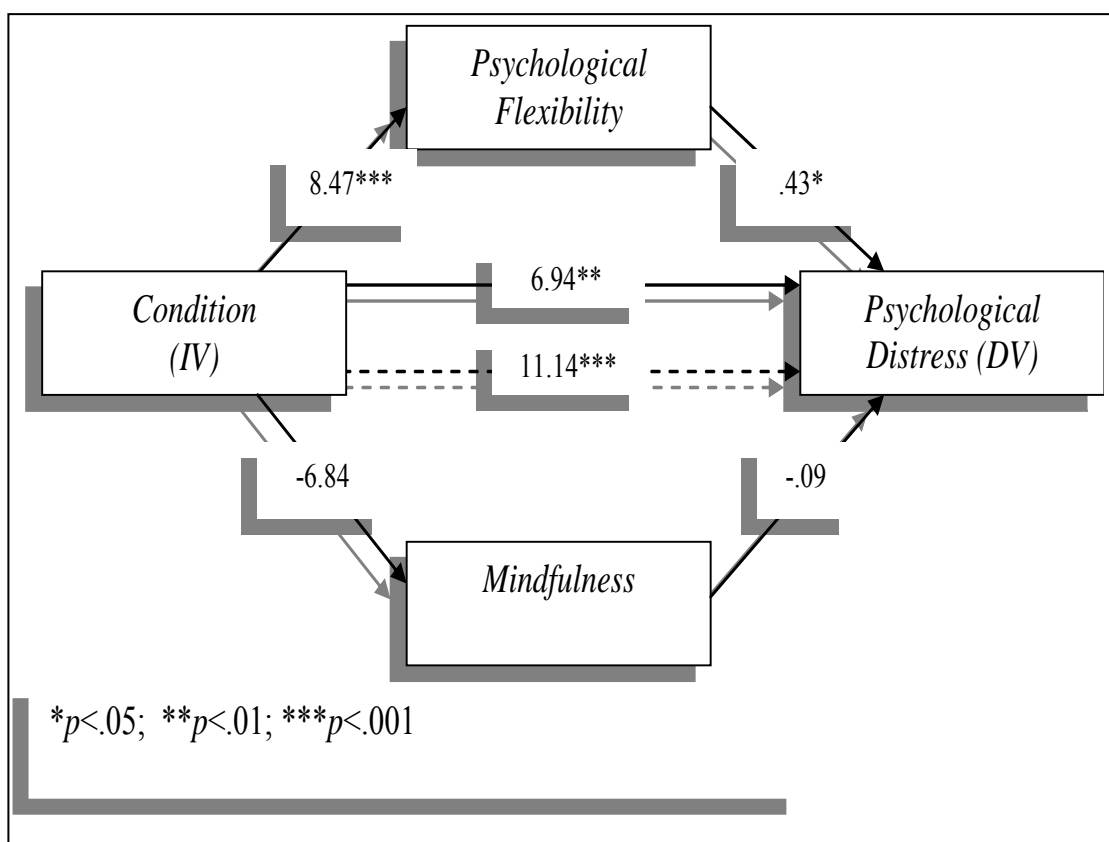
^c Multiple mediation model that included psychological distress and mindfulness as proposed mediators

^d Comparison of the indirect effects: psychological flexibility vs. mindfulness

Next, the non-parametric bootstrapping procedure was used to examine the indirect effect of the intervention on psychological distress through both psychological flexibility and mindfulness simultaneously. As depicted in Table 2.5, the total indirect effect of the treatment condition on psychological distress through the hypothesised mediators was significant. When the individual indirect effect of psychological flexibility (controlling for mindfulness) and mindfulness (controlling for psychological flexibility) were considered in the multiple-mediation model, only psychological flexibility was significant. However, the contrast testing the two putative mediators was itself not significant, indicating that the magnitude of these indirect effects could not be distinguished (Preacher & Hayes, 2008b; Preacher & Hayes, 2008). As depicted in Figure 2.2, whilst the indirect effect of the intervention through psychological flexibility was significant, this mechanism of therapeutic action only met the criteria for partial mediation as the path between the independent variable

(treatment condition) and dependent variable (psychological distress) remained significant after the impact of the hypothesised mediators was taken into account. Thus, psychological flexibility partially, although not wholly mediates the impact of ACT on psychological distress.

Figure 2.2: Multiple mediation model of the indirect effects of treatment condition on psychological distress at 3-months post-treatment through changes in psychological flexibility and mindfulness



2.4. Discussion

The first core aim of this study was to evaluate the efficacy of a brief and relatively novel ACT intervention that was delivered to NHS employees experiencing psychological distress. At three months post-treatment, and relative to the control group, participants assigned to the treatment condition evidenced a statistically significant reduction in their overall level of psychological distress. Indeed, at the three month follow-up assessment the magnitude of the between group difference in the overall level of psychological distress met the criteria for a large effect size (Cohen, 1988). Importantly, at the pre-intervention assessment, the intervention and control groups were highly comparable on the outcome and demographic measures. At baseline, the majority of participants in both groups evidenced clinically significant levels of psychological distress (ACT = 93% vs. waiting list = 88%). At the three month follow-up assessment, 69% of participants who had received the intervention had moved into the non-clinical range. In contrast, all of the participants in the control group who had scored above the cut-score at baseline continued to do so at the three month follow-up assessment. These findings attest to the efficacy of this brief ACT intervention and are consistent with the hypotheses set forth in section 2.1.

As discussed previously, whilst statistically significant between group differences are informative in terms of providing a test of the efficacy of the ACT intervention, the comparison of group means is less clinically useful and insensitive to individual change (Jacobson & Truax, 1991; Thomas & Truax, 2008). As such, the data was analysed according to the clinically significant change criteria which determines whether the magnitude of change shown by each individual is large enough to be deemed both clinically meaningful and statistically reliable (Jacobson & Truax, 1991; Thomas & Truax, 2008). At two weeks and three months post-treatment, 50% of participants in the ACT group met this criterion and were classified as '*recovered*'; the remaining 50% were classified as '*the same*'. In contrast, after having spent three months on the waiting list for the intervention, 94% of participants in the control group were classified as the '*same*' and 6% had '*reliably deteriorated*'. Further adding to these findings, the between group comparison regarding the proportion of participants who met the criteria for clinically significant change at three months post-treatment was significant.

In order to garner further evidence for the efficacy of the ACT intervention, participants assigned to the control group took part in the intervention after their time spent

on the waiting list. Following participation in the ACT intervention, 50% of participants initially assigned to the waiting list demonstrated clinically significant change at two weeks post-treatment. By the three month follow-up, this figure had risen to 64%. Thus, this brief and relatively novel ACT intervention had a significant impact on participants' experiences of psychological distress resulting in clinically significant reductions in symptom severity at two weeks and three months post-treatment. These findings are in line with those of other studies that have examined the impact of a brief ACT intervention on psychological distress (e.g. Brinkborg *et al.* 2011; Flaxman & Bond, 2010). In order to facilitate the integration of the findings from Study One and Study Two, a more detailed discussion of the current findings in relation to those of past research is presented in the General Discussion (Chapter 4).

The second core aim of the current study was to examine the mechanisms of therapeutic action within the ACT intervention. In line with recommendations, the choice of mechanisms was theoretically informed and tested within the context of a longitudinal design (Kazdin, 2007; Kazdin & Nock, 2003). Consistent with ACT's theoretical underpinnings, psychological flexibility, mindfulness, and cognitive fusion were examined in terms of whether they mediated the relationship between ACT and psychological distress. Additionally, in order to provide a test of the specificity of the hypothesised mediators (Kazdin, 2007; Kazdin & Nock, 2003), two psychological processes that are not specified in ACT's underlying theory (*negative automatic thoughts and active coping*) were examined for their ability to qualify as mediators. In line with the hypotheses, the ACT intervention significantly increased psychological flexibility and mindfulness and decreased cognitive fusion. In keeping with this, changes in psychological flexibility at two weeks post-treatment predicted changes in psychological distress at the three month follow-up. Similarly, changes in mindfulness at two weeks post-treatment predicted changes in psychological distress at the three month follow-up. However, this latter finding was only significant at the trend level. In contrast, cognitive fusion at two weeks post-treatment was not significantly associated with psychological distress at three months follow-up. Providing additional evidence for the role of psychological flexibility as a mechanism of therapeutic action in ACT, neither of the non-ACT specific mechanisms (e.g. negative thinking and active coping) qualified as mediators in this study.

In order to further interrogate the relationship between the ACT intervention, the hypothesized mediators (*psychological flexibility and mindfulness*) and psychological distress, non-parametric bootstrapping analyses were used to test the significance of each

potential mediator individually and in combination. In the simple mediation analyses, both psychological flexibility and mindfulness qualified as mediators. However, when the indirect effect of the intervention through psychological flexibility and mindfulness was considered in the multiple-mediation model, only psychological flexibility remained significant (Preacher & Hayes, 2008). Thus, psychological flexibility was identified as the key mediator in this ACT intervention. Neither mindfulness nor the contrast between the two mediators were themselves significant. This latter finding indicates that the magnitude of the indirect effects of psychological flexibility and mindfulness could not be distinguished, (Preacher & Hayes, 2008b). In the context of correlated mediators, this is unsurprising (Preacher & Hayes, 2008b), and suggests that the impact of the ACT intervention on mindfulness that was demonstrated in this study is non-trivial. Indeed, the theoretical model that underpins ACT describes an interlocking relationship between psychological flexibility and mindfulness—with the mindfulness skills of acceptance, awareness, and being able to create a sense of '*self as context*' described as processes that promote psychological flexibility (Hayes *et al.* 2006, 2011).

Whilst this study documented a significant indirect effect of the ACT intervention on psychological distress through psychological flexibility, evidence for only partial mediation was observed. The ACT intervention continued to impact on psychological distress even after the ACT-consistent mediators were taken into account. Thus, other mechanisms of therapeutic action not measured in this study are likely to be important. A more detailed discussion of this point, along with a more comprehensive comparison of the current set of findings with those reported in previous studies, is presented in Chapter Four (General Discussion). Similarly, the theoretical, clinical and service implications of the current set of findings, as well as their limitations, are presented in the General Discussion. However, before presenting this material, it is important to explore in more detail which elements of the ACT intervention participants found most helpful and how they went about making changes to their lives. To help towards a fuller understanding of the impact of the ACT intervention, it was felt to be important to explore participants' narratives regarding the benefits of the intervention and its impact on their daily lives. It was hoped that this might help to generate new insights into the mechanisms of therapeutic action in ACT. Chapter Three will now present the findings of the qualitative aspect of this research.

Chapter Three

Study Two

Participants' Experiences of the Impact of an Acceptance and Commitment Therapy Intervention

3.1. Overview and Aims

The results of Chapter Two revealed that the brief Acceptance and Commitment Therapy (ACT) intervention was effective in reducing participants' level of psychological distress, with 69% of participants who scored in the clinical range of the GHQ-12 at the pre-intervention assessment no longer doing so at three months post-intervention. In line with these findings, the majority of participants who displayed clinically significant symptoms of psychological distress at baseline evidenced clinically significant change at three months post-treatment. In terms of process, the statistical analyses revealed that the ACT intervention significantly increased participants' psychological flexibility and mindfulness ability and decreased their cognitive fusion. Notably, increases in participant's psychological flexibility were found to mediate the observed decrease in psychological distress. However, what is less clear from these findings is which elements of the ACT intervention participants' found most helpful and how they went about making changes to their lives. These questions are particularly important given the paucity of research in this area and the relative novelty of the intervention. As such, the aim of the current study is to explore participant's experiences of the ACT intervention and their conceptualisations of the psychological processes that helped them change.

3.2. Method

3.2.1. Design

A qualitative design, guided by the principles of Thematic Analysis (Boyatzis, 1998; Braun & Clarke, 2006), is used in the current study to explore participants' views and experiences of psychological change following a brief Acceptance and Commitment Therapy intervention. Semi-structured interviews were used to explore participants' opinions of the intervention and their account of the emotional, cognitive, behavioural and relational changes that they experienced following the intervention. The data from the participants' narratives were then analysed to elicit themes and sub-themes which described their experiences.

3.2.2. Qualitative Research: Principles and Rationale

The use of qualitative methodologies within psychological research has increased in recent decades with such methods used to gain insight and understanding into people's experiences (Willig, 2008). Qualitative methodologies have been described as being well suited for obtaining complex and in-depth information about thoughts, feelings and experiences which are less accessible, and less well described, by quantitative approaches (Strauss & Corbin, 1998; Willig, 2008). Additionally, qualitative methods exemplify a common belief that they can provide a '*deeper*' understanding of social and psychological phenomena than would otherwise be obtained from purely quantitative approaches (Barker *et al.* 2002). Thus, in light of the aims of the current Thesis, and in order to gain in-depth understanding of the aspects of the intervention that were most helpful, both qualitative and quantitative methods were chosen.

The current study aimed to explore participants' experiences of a brief Acceptance and Commitment Therapy intervention and their views on the psychological processes that helped them change. To fully address the research aims of this Thesis, a qualitative study was deemed to be an appropriate adjunct to the quantitative analyses as it would afford an in-depth understanding of the participants' views and opinions. Additionally, it was felt that a qualitative study would provide an informative context to the quantitative results, helping to generate new insights and meaning. Whilst the quantitative findings presented in Chapter 2 indicate how well the findings can be generalised to different populations, the qualitative analyses presented in the current Chapter will enrich our understanding of the processes of

psychological change in ACT. This is particularly important given the relative novelty of the intervention and the paucity of qualitative research in this area.

3.2.3. Thematic Analysis: Principles and Rationale

Thematic analysis is a method for identifying and analysing themes and commonalities within data, providing a way of organising, describing and interpreting a given phenomenon (Braun & Clarke, 2006; Boyatzis, 1998). In Thematic Analysis, a theme captures something important about the data, representing some level of patterned response or meaning (Braun & Clarke, 2006). Unlike some qualitative methods such as Grounded Theory (e.g. Glaser, 1992; Strauss & Corbin, 1998) and Interpretative Phenomenological Analysis (Smith & Osborn, 2003), Thematic Analysis is not aligned to, or constrained by, a particular theoretical or epistemological position (Braun & Clarke, 2006). Through this theoretical freedom, Thematic Analysis is regarded to provide a flexible research method that helps generate rich, detailed, and complex accounts of data (Boyatzis, 1998; Braun & Clarke, 2006).

However, whilst Thematic Analysis is widely used, the method has been criticised for being poorly demarcated (Braun & Clarke, 2006; Roulston, 2001). Addressing this shortcoming, Braun & Clarke (2006) have produced a set of guidelines and recommendations that have been followed in this study (*see section 3.2.10*). In particular, Braun & Clark (2006) recommend that whilst Thematic Analysis is not constrained by a particular epistemological position, the researcher should state their theoretical orientation at the outset. In this study, the approach to data analysis was informed by an essentialist/realist paradigm—which, due to the unidirectional relationship assumed to exist between meaning, experience and language, enables the researcher to theorise meaning and experience in a straight forward manner (Braun & Clark, 2006; Widdicombe & Wooffitt, 1995). Owing to the use of both qualitative and quantitative approaches in this Thesis, it was felt that Thematic Analysis, and the essentialist/realist position, are more consistent with the positivist-quantitative approach adopted in Chapter 2.

3.2.4. Ensuring Quality in Qualitative Research

The increased use of qualitative methodologies over recent decades has led to the generation of guidelines to help ensure the reliability and validity of the findings (Mays & Pope, 2006). One of the most widely used set of guidelines has been produced by Elliott, Fischer, & Rennie (1999) who conducted a literature review and a peer consultation to arrive at their recommendations. The current study adhered to the principles of these guidelines. In order to ensure methodological rigour and quality, Elliott *et al.* (1999) recommend the following:

Owning one's perspective. The researcher is required to make clear their own values, assumptions and interests in order to acknowledge the role that they may have on the collection and interpretation of the data. To aid transparency, the researcher's position and perspective is outlined in section 3.2.5.

Situating the sample. It is recommended that the participants' life circumstances are described in order to help the reader determine the generalisability of the findings. Please see section 3.2.8 for this information.

Grounding in examples. Examples and direct quotes from the data should be provided to allow the reader to consider the accuracy of the researcher's interpretations and to reflect on alternative explanations. As such, direct quotes from the participants' narratives are presented to illustrate the themes and sub-themes derived from the data.

Providing credibility checks. It is recommended that the researcher checks the credibility of the themes and categories generated during the analysis by consulting with others such as participants and colleagues. To achieve this, the researcher discussed sections of the analysed transcripts with the clinical and academic supervisors and a peer independent of the current research. Additionally, copies of the emerging themes and categories were sent to participants for feedback.

Coherence. It is advocated that the data is presented in a way that is characterised by coherence and integration in order facilitate the reader's understanding. To help achieve this, Tables are used to supplement and summarise the narrative accounts and commonalties and differences between themes and sub-themes are discussed.

General versus specific research tasks. The researcher is required to state the aims of the study outlining their intention to create a general understanding of a phenomenon or a specific instance. The aims of the current study are discussed at the beginning of this Chapter

(Chapter Three) and at the end of Chapter One. The limitations of these aims and the findings of this research are discussed in section 3.4 and Chapter Four.

Resonating with the Reader. The researcher is encouraged to present the report in such a way that connects with the reader and enriches their understanding of the phenomenon. To help achieve this, draft copies of the Thesis were read by the academic and clinical supervisors, by a peer, and by a non-psychologist.

3.2.5. The Researcher's Perspective

When conducting and presenting the findings of qualitative research it is recommended that the researcher outlines their own perspective in order to facilitate the reader's interpretation of the analysis (Elliot *et al.* 1999; Silverman, 2000). Additionally, a process of self-reflection is advocated throughout all stages of qualitative enquiry to promote the researcher's awareness and acknowledgment of the impact of their own values, assumptions and personal history on the research (Elliot *et al.* 1999; Silverman, 2000). As such, the researcher kept a reflective diary throughout the research process, extracts from which can be viewed in Appendix 6. In keeping with the spirit of the qualitative approach, background information about the researcher is provided below.

The researcher is a 31-year old white male, of working class origin, who grew up in both urban and rural areas of South and West Wales. He is the father of two little girls, has experience of delivering Psychological therapy in the NHS, and has conducted research within a University and NHS context. Prior to the current programme of Clinical Psychology training, the researcher completed an MSc in Social Science Research Methods, a PhD in Developmental Psychology, has worked as an Assistant Psychologist, and has held a number of different Support Worker posts. Most pertinent to the current line of enquiry, the researcher has had an interest and practice in Mindfulness and Meditation throughout his twenties, and his specialist final year placement is in Dialectical Behavioural Therapy—a psychological model that shares similar assumptions, methods and techniques to Acceptance and Commitment Therapy (Linehan, 1993; Hayes *et al.* 2011).

During the years prior to Clinical Psychology training, the researcher was involved in a study that examined the issue of whether Mindfulness based CBT was effective for Obsessive Compulsive Disorder, and also conducted a service evaluation of an Acceptance and Commitment Therapy intervention. It was during this time that the researcher became

interested in *why* Psychological interventions may be effective, a question not asked during these studies due to the methodology employed e.g. quantitative designs, small sample sizes, no theory driven process measures. This interest led the researcher to consult the literature on *why Psychological therapy maybe effective?* And during his Clinical Psychology training he has endeavoured to ask the service users he has been working with about what is helpful, unhelpful, and why. Fortunately, the researcher has shared his training with a cohort of other South Wales trainees, friends, and some excellent supervisors who have supported and stimulated his reflections on the mechanisms of change in Psychological therapy.

Against this background, the researcher embarked on his Clinical Psychology Doctoral Thesis in an area that was of personal and professional interest to him—hoping that his curiosity would help carry him through. The researcher acknowledges that his personal and professional history has influenced his choice of Thesis topic, and may influence his interactions with the participants and subsequent data analysis. Nevertheless, it is also possible that the data analysis may benefit from the researcher’s experiential knowledge (Mays and Pope, 2006; Silverman, 2000), and throughout the design, data collection, and data analysis stages, the researcher attempted to keep an open, objective, and critical approach to the research (Huberman and Miles, 2002; Silverman, 2000). Attempts to maintain this approach were supported by the keeping of a reflective log and discussions with supervisors, friends, and colleagues.

3.2.6. Ethical Approval, Consent and Confidentiality

Please see chapter 2.2.7 for details of the ethical considerations undertaken during the course of this study.

3.2.7. Recruitment

The overarching recruitment strategy is detailed in Chapter Two section 2.2.3.2 In brief, when consenting to take part in the quantitative research study, participants were also asked if they would be happy to be contacted to take part in a telephone interview about their experiences of the workshop (please see Appendix 2). Of the 31 participants who took part in the quantitative research arm of the study, 24 agreed to the telephone interview. Participants were then contacted in the order in which they self-referred themselves into the study,

starting with the first, to arrange the telephone interview. All interviews took place three to four months after taking part in the ACT intervention. As with Study One, no inclusion or exclusion were used, other than the fact that the participant was to be an Employee of the NHS LHB and had been through the ACT intervention. The first six participants that agreed to a telephone interview and actually made the appointment defined the current sample. Two additional participants agreed to a telephone interview but did not make the actual appointment. One of these participants experienced a serious life event and the other was hospitalised. The six participants who were interviewed were not significantly different from the overall sample on any of the demographic measures or on the GHQ-12 or the AAQ-II.

3.2.8. Participant Portraits

In order to aid and contextualise the reader's understanding and interpretation of the results, pen portraits of the participants are presented. To protect confidentiality, pseudonyms have been used and identifiable information removed.

Richard is a 53 year old married male, and both a father and a grandfather. He has worked for the NHS for eight years in a maintenance and equipment role. He has had difficulties managing psychological distress at various points throughout his adult life. Prior to attending the workshop, **Richard** was finding it increasingly difficult to deal with the management style of his supervisors and he scored in the clinical range of the GHQ (25/36). After attending the workshop, **Richard** showed clinically significant change at the two week follow-up, yet still scored in the clinical range of the GHQ (14/36). At the three month follow-up, Richard showed further clinically significant change, and had moved into the non-clinical range of the GHQ (11/36). **Richard** reported finding the workshop beneficial in terms of helping to change the way he approached life.

Jane is a 44 year old married female and a mother of two. She has worked in the NHS for 24 years in a qualified nursing role. Prior to attending the workshop, **Jane** had been suspended from work and felt mistreated and unsupported by the organisation. **Jane** scored in the clinical range of the GHQ at pre-treatment (22/36). However, at the three month follow-up, Jane showed clinically significant change and no longer scored in the clinical range of the

GHQ (11/36). **Jane** reported finding the workshop beneficial and had actively practiced the techniques she learnt on the day.

Mandy is a 59 year old single female. She has two children and is divorced following an abusive marriage. **Mandy** had worked for the NHS for 33 years in a Scientific and Technical role. **Mandy** had long suffered difficulties with her mental and physical health which have impacted upon her work performance. She scored in the non-clinical range of the GHQ at pre-treatment (11/36), two weeks (11/36) and three month follow-up (6/36). **Mandy** reported finding the workshop beneficial but felt that she had done a lot of the work in getting herself better prior to attending. **Mandy** felt that quicker access to the workshop would have helped her in the early stages of her recovery.

Sarah is a 48 year old married female with children and grandchildren. She has worked for the NHS for six years in an unqualified nursing role. She has recently changed job roles as she was unhappy where she was working. **Sarah** reported being very distressed prior to the workshop and had been on a period of extended sick leave due to her psychological difficulties. She cited both work and family life factors that had precipitated her recent period of psychological distress. Prior to the workshop **Sarah** scored in the clinical range of the GHQ (19/36). She displayed clinically significant change at the two week follow-up, yet continued to score in the clinical range of the GHQ at (12/36). By the three month follow-up, Sarah continued to improve, displaying further clinically significant change as she moved into the non-clinical range of the GHQ. **Sarah** reported finding the workshop beneficial and had actively practiced the techniques she learnt on the day.

Amanda is a 44 year old married female who is a mother to 3 teenage children. She has worked for the NHS for 11 years in an Allied Professional Role. **Amanda** reported feeling overwhelmed by work pressures and ill health among close family members prior to her referral to the workshop. She scored in the clinical range of the GHQ (23/36) pre-treatment. Amanda showed clinically significant change at the two week (13/36) and three month follow-ups (13/36), yet continued to score in the clinical range of the GHQ. **Amanda** reported finding the workshop extremely beneficial and has used the techniques she learnt on the day in her personal and professional life.

Hannah is 41 years old, single and she lives alone. She has worked for the NHS for 20 years in an Allied Professional role, working in her current position for 11 years. Stressors in both her personal and professional life were cited by **Hannah** as being factors that led to her self-referral to the service. **Hannah** cited work as 'being her life' and recently felt disillusioned because of organisational restructuring and the resultant removal of a career progression pathway. She scored in the clinical range of the GHQ (18/36) at pre-treatment and at two weeks follow-up (14/36). Hannah went on to display clinically significant change at the three month follow-up moving into the non-clinical range of the GHQ (11/36). **Hannah** reported finding the workshop really helpful, particularly in terms of helping her re-appraise her direction in life.

3.2.9. Interviews and Procedure

Participants took part in individual, digitally recorded, semi-structured interviews over the telephone. Semi-structured interviews have been described as non-directive and open-ended in nature, which allow participants to expand on ideas that are pertinent to them, thereby guiding and shaping the direction of the interview (Willig, 2008). Interviews were conducted at a time that was convenient for the participants, and were between 18 and 35 minutes in length. Prior to the interview, participants were reminded of their right to withdraw from the study at any time. Measures were in place to provide support for participants in the event that someone became distressed. However this situation did not arise.

For the purposes of the current study, a semi-structured interview schedule was constructed in order to provide a framework to guide and prompt the conversation (please see Appendix 7). The development of the interview questions was influenced by the theoretical model that underpins Acceptance and Commitment Therapy (Hayes *et al.* 2006) and by the particular content of the intervention (Flaxman & Bond, 2006). The questions were centred on the emotional, cognitive, behavioural and relationship changes that people had made in their personal and professional lives since attending the workshop. However in line with the sentiments echoed by Willig (2008), participants were supported in deviating away from the questions when discussing issues and topics that were important to them. The interview schedule was constructed in consultation with the researcher's clinical and academic

supervisors. Additionally, an NHS employee and a peer read the interview schedule in order to gain feedback on the accessibility of the wording.

3.2.10. Data Analysis

The process of data analysis was guided by the recommendations set forth by Braun & Clark, (2006). In order to reduce the impact that the researcher's personal and professional interest in the topic had on the results, an inductive approach to data analysis was adopted (Patton, 1990). Thus, the data was coded without trying to fit it into a pre-existing coding frame (Braun & Clark, 2006), such as coding for examples that fitted with the theoretical underpinnings of ACT. Nevertheless, and as discussed in section 3.2.6, the current author aligns with the view that a researcher's personal and professional background likely influences all stages of the research process

Data analysis commenced during data collection when the researcher began to note down themes and points of interest when transcribing the interviews. Interviews were transcribed verbatim either on the day of the interview or on the following day. Following the completion of data collection, the researcher immersed himself in the data through repeated reading, searching for patterns and meaning (Boyatzis, 1998). Initially, codes were generated across the entire dataset in order to capture interesting features of the data. Subsequently, codes were collated into potential themes, and the themes were reviewed in relation to the coded extracts and the entire dataset (Braun & Clark, 2006). During analysis a rich thematic description of the data set was sought in relation to themes important to the research questions. In addition, dominant themes less proximal to the research questions were also coded in order to help contextualise, connect and deepen the understanding and meaning of the other themes (Braun & Clark, 2006). Finally the themes and their sub-themes were refined, their meanings were clearly defined, and extracts from the data were selected to help illustrate the themes.

3.3. Results

The results of the Thematic Analysis of the qualitative data will now be presented. The analysis has attempted to convey the participants' views of what has changed for them since attending the ACT intervention, as well as summarising their conceptualisations of the psychological processes that helped them change. As the participants described their experiences of taking part in the ACT intervention and their views of the processes of change, it was evident that all of the six participants who were interviewed reported positive gains. Quotes from individual interviews are used to illustrate the different themes and sub-themes in order to help the reader evaluate the validity of the researcher's interpretations of the data. As discussed in section 3.2.8, pseudonyms have been used for the participants to protect their confidentiality. In order to help provide an overview, the overarching themes and sub-themes are presented in Table 3.1.

3.3.1. Precipitating Factors

Whilst participants were not directly asked about the history of their psychological distress or the factors that precipitated their referral to the ACT intervention, this information was often discussed. When reflecting on the changes they had made, it seemed important for participants to be able to contextualise their difficulties and make attributions about the circumstances that led to their referral. This theme, termed 'Precipitating Factors' is divided into 2 subthemes: (1) Personal and Professional Stressors; and (2) Loss of Control, and it is related to the themes termed 'Comparisons between Well and Unwell Selves' and 'Components of Change'. When discussing the changes they had made, participants often referred back to their account of the factors that precipitated their referral to the ACT intervention, highlighting differences in their approach to life. It was as if participants needed to anchor their experiences to a particular event, or make comparisons between themselves at different points in time in order to put into words the changes they felt that they had made since attending the ACT intervention.

3.3.1.1. Personal and professional stressors

Participants reflected on the difficulties that they were experiencing prior to referring themselves to the workshop, often attributing their pre-intervention distress to challenging events in their personal lives (e.g. family illness), to adverse circumstances in the workplace (e.g. poor management styles), or to a combination of the two. The quotations below illustrate the range of attributions made by participants about the circumstances that led to their self-referral.

‘I think ultimately the problem with the NHS which was evident from some of the people there was the style of management ... not every manager, but certainly a higher percentage, they don’t seem to have any good people skills ... I felt sorry for the people who were there you know, they were really struggling ... it’s not good, especially in an organisation that is supposed to be caring, it’s bizarre’ (Richard)

‘My problems weren’t all work related, they’re because family members are ill as well, and that was impacting on me and my ability to make sure that everyone was ok’ (Amanda)

‘The situation that made me go to the workshop was I had my medication changed and lots of pressures in work and no support from the manager and I became stressed, I collapsed and I just flipped’ (Mandy)

Table 3.1. The Overarching Themes and Sub-Themes

Theme	Sub-theme
Precipitating Factors	Personal and Professional Stressors
	Loss of sense of control
Comparisons Between Well and Unwell Selves	Self Comparisons
	Other People's Comparisons
Components and Process of Change	From Awareness to Pacing
	Respond not React
	Distance from Difficulties
	Acceptance rather than Rumination
	Positive and Present Moment Thinking
	Interpersonal Effectiveness
	Valuing Oneself and Prioritising Values
Agency and Responsibility for Continued Self-Improvement	No sub-theme identified
Taking Solace from Others	No sub-theme identified
Keeping the Skills Alive	Passing the Skills and Techniques onto Others
	Continued Practice of the Techniques
	Refresher Courses

3.3.1.2. Loss of Control

Often when discussing the factors that precipitated their referral to the ACT intervention, participants reported feeling like they had lost their sense of control over their lives. Across personal and professional contexts, participants recalled feeling overwhelmed by the demands of a given set of circumstances—which often led to feelings of being unable to cope. For example, when reflecting on herself prior to taking part in the ACT intervention **Mandy** said:

‘I felt like I didn’t have control and I only get stressed if I don’t have control of a situation and it’s out of my hands..’ (Mandy)

Another participant commented;

‘It just built up into so much stress and it took over, and it does, stress does makes you ill then, and your anxious, making rash decisions rather than sitting down and thinking about them, and going on guilt trips ...’ (Amanda)

3.3.2. Comparisons between Well and Unwell Selves

When talking about how things had changed since attending the ACT intervention, participants often made comparisons of themselves at different points in time. Most often, participants compared how they thought, felt, and acted now with the psychological distress they felt prior to the ACT intervention. During these reflections, participants typically emphasised the positive gains they had achieved in terms of their mental health and their newly found sense of optimism. To help validate their own observations, participants often recalled comments made by family members and friends who had noticed the changes they had made. This theme ‘Comparisons between Well and Unwell Selves’ is separated into 2 sub-themes: (1) Self Comparisons; and (2) Other People’s Comparisons.

3.3.2.1. Self-comparisons

Participants often compared their thoughts, feelings and behaviour at different points in time to help illustrate the changes they had made since attending the ACT intervention. Often, participants' would convey a sense of feeling like their former psychologically well selves:

'As time is going on I am more like the person I used to be and I feel more like myself again ...' **(Jane)**

'I used to have dark thoughts and sleep all day but I am so much better now. I feel like a normal person again you know ... I am much happier with family life and I am doing more and not neglecting things, like when I was unwell and depressed I would neglect things and not clean the house and that, but now I am keeping on top of things again' **(Sarah)**

'Before I was ill I was always really good at saying I can't do anything about that so forget it and I am more like that again I am more like just forget it and get on with it again now' **(Mandy)**

3.3.2.2. Other People's Comparisons

As well as making comparisons between their pre- and post-intervention selves, participants also recalled the comments that other people had made about the changes that they had observed.

'My kids have said that I am more like me again, and that they've noticed the difference, I was quite unwell I think ...' **(Mandy)**

‘One of my colleagues who I am friendly with said I am quite different you know ... like a lot calmer and less wound up ...’ (Hannah)

‘Family and friends as well have commentated. I do a joint clinic on a Wednesday with Gill and she said that I seemed a lot calmer, especially last week after the incident, and we just laughed about it. She said we thought we would have to get cover for you and we expected you to be in work in tears, and I said it was out of my control really, wasn’t it?’ (Amanda)

3.3.3. Components of Change

This is the larger of the themes and it captures participants’ views of the psychological changes they had made since attending the workshop. This theme includes participants’ examples of differences in their cognitive, behavioural and emotional functioning as well as their views on the techniques and processes that helped them change. When they were asked about what had changed for them, participants often described psychological coping skills that they had learnt during the ACT intervention, reflecting on how these techniques and new ways of approaching life impacted upon other psychological processes and behaviours. Seven sub-themes make up the overarching ‘Components of Change’ theme including; From Awareness to Pacing; Respond Not React; Distance from Difficulties; Acceptance rather than Rumination; Positive Thinking; Interpersonal Effectiveness; and Valuing Oneself and Prioritising Values. These seven sub-themes are not independent. Rather, the processes that they capture were often described as being inter-linked and over-lapping, interacting in different ways for different people to promote change and recovery from psychological distress.

3.3.3.1. From Awareness to Pacing.

This sub-theme captures the comments participants made about being more aware of their personal resources and limitations and then acting more in accordance with them. Narrative examples that make up this theme include those where participants spoke of taking a slower and more measured approach to life—rather than burning out and pushing oneself

too hard. Within this sub-theme, participants expressed an increased ability to state their personal limits in work, which in turn impacted positively on their time management skills and their work performance. Additionally, participants spoke of being more aware of dysfunctional behavioural patterns, describing new ways of overcoming such behaviours.

‘After I was off work I came back part-time and before the stress resilience workshop I found it difficult, but since the workshop I’ve been able to say “no that’s enough”, it has helped me manage things better by being able to manage my time more effectively’ (Mandy)

‘I notice when I am avoiding things and then later on I just think get on with it and then when I deal with things I feel better ... I approach things more calmly now as well, I am slower and not rushing around manically. I take my time more now and I don’t rush things and I am not so wound up, I am more laid back now, things will take as long as they take ...’ (Sarah)

‘It helped me, as well, to turn around and say “no that’s enough, I am not taking on too much now” ... it helped me to say no (to duties in work,) ... it helped me know what my limits are and I am managing to prioritise now as well, like one step at a time’ (Mandy)

3.3.3.2. Respond not React

Since attending the workshop, many participants reported finding that they were more able to respond rather than react automatically to challenging events and stressful situations. This new way of approaching life was described as being related to a greater sense of awareness and acceptance of life’s difficulties, as well as taking a more measured and slower pace to life. The conceptualisation of being better able to Respond not React overlaps closely with the sub-themes: From Awareness to Pacing; Distance from Difficulties; Acceptance rather than Rumination; and Inter-personal Effectiveness:

‘Sometimes you have to just take a step back and let things go over your head and not take the bait and respond straight away ...’ (Mandy)

‘It was really interesting (talking about an emotionally challenging situation), it was totally out of my control and normally I would get really stressed out or angry but instead I just stayed there calmly as I thought “there is nothing that you can do” so I just accepted it and didn’t let it get to me’ (Amanda)

‘The course helped me manage things in a calmer way, the previous six months and even before that I was more likely to respond in an aggressive way when I was attacked. If someone is aggressive to you, you react in the same way back don’t you? But I don’t do this so much now, so the course changed this, you know ...’ (Richard)

‘I definitely respond more rather than react straight away; I step back and think about things a bit more, rather than reacting straight away now ...’ (Hannah)

3.3.3.3. Distance from Difficulties

Participants often described being better able to untangle themselves from their stresses and worries, thereby lessening the impact they had on their functioning and daily life. This sub-theme captures the comments people made about being able to take a step back from their difficulties and consider different points of view or alternative ways of responding. This theme is closely linked to ‘Respond not React’ as participants described being able to create some distance from their difficulties as a process that facilitated their ability to respond positively to a challenging situation rather than reacting in an automatic fashion.

‘It helped me to take a step back and see things from different points of view ... now I am more like, “nothing is as bad as it seems”, you know, and I am putting that into practice....’ (Sarah)

'I put things into perspective a bit more now, like I said I try not to let things get to me and upset me so much now. I have a bit more of a distance from my thoughts, like before I would've reacted straight away and got wound up with things, but now I try to take a step back and think about things differently, you know, like difficult situations I find myself in ...'
(Hannah)

'I am trying not to let things get to me more, you know, I look at my successes rather than the negatives, like the glass is half full rather than half empty ... it's like having the thought and then letting it pass...' **(Richard)**

'Sometimes I have bad days but I am more accepting of them now and I think "ok, today's a bad day but I will feel better tomorrow or soon," you know. I don't get so bogged down in my thoughts and feelings anymore ...' **(Sarah)**

3.3.3.4. Acceptance Rather than Rumination

This sub-theme summarises the comments participants made about making attempts to accept the difficulties in their lives, rather than ruminating and trying to change them. When describing these changes, participants often portrayed a greater sense of acceptance of both their internal (*e.g. worries, negative thoughts*) and external (*e.g. workplace stressors*) worlds.

'I don't try to control things all the time now and I accept that I can't control everything ... I am definitely more accepting of myself, I was much worse before but now I feel like a normal person again ... if I worry about something I just try to think "so what!"' **(Sarah)**

'I am a bit more like "what will be will be" now, you know. I am more accepting of things now, like not wanting things I can't have, or not being able to afford to go to places that I want to ...' **(Mandy)**

'I am able to dismiss things a lot better without feeling guilty about it ...' (Amanda)

'I am more likely now to just accept that sometimes there is nothing you can do about it' (Richard)

'I tend not to worry too much, I get a bit down about things sometimes, but everybody does. If I can't do anything about it I tend not to really worry about things any more ...' (Jane)

'I did feel a bit like I didn't have any direction in my life, if I'm honest. I still feel like that a bit ... I think I am just more accepting of it now ...' (Hannah)

3.3.3.5. Positive and Present Moment Thinking. This subtheme captures a cognitive technique that some participants described using where they tried to generate positive thoughts and images when faced with challenging situations. Typically, participants reported using this technique when they noticed themselves thinking negatively and/or when situations in work were causing them distress. Present moment thinking was also a core feature of this theme, where participant's described trying to focus on the present rather than worrying about the future. Thus, this sub-theme is related to other aspects of the overarching 'Components of Change' theme, in particular, From Awareness to Pacing, Distance from Difficulties and Acceptance Rather than Rumination.

'I've been trying to stop letting things bother me and thinking things like "it's not the end of the world", you know ... I say things like "it doesn't matter, it's not important" and I try to be more in the here and now ... It's not a black hole anymore, I can see the light at the end of the tunnel ...' (Sarah)

'I put things in better order now, like the worry of possibilities that could happen. I think "what's the point in worrying about them until they happen", you know ... it's definitely

helped me deal with things more rationally and not get so het up about it all you know...
(Jane)

'It's pointing out your strengths as well, isn't it? And that helped a lot in work as they can be so negative there ... I feel more relaxed now and I try to think more positively. I've always been told I over analyse things and I try to do this less.' (Richard)

'I think being kind to myself, looking at myself and saying "it's ok, there's not that much wrong with you, your problems can be sorted"' (Mandy)

'We can beat ourselves up quite easily, and when we are feeling really negative we can kind of project that onto other people and take things that they say the wrong way. But really there is a totally different meaning to what they are trying to get over to you ... when you're feeling negative you put up these walls up you know. It's really not a good place to be, better to keep positive and you get a lot more positive back then ... more for the positive now, find the positive in the negative, there's usually one in there ...' (Amanda)

3.3.3.6. Interpersonal Effectiveness. This sub-theme captures the times when participants spoke of managing their interactions with other people more effectively, particularly within the work context. This sub-theme is related to aspects of each of the other sub-themes presented so far. For example, participants often reported being more 'accepting' and trying to 'distance themselves from their difficulties' when talking about managing interpersonal situations more effectively. New ways of interacting and managing situations were described by participants as examples of how they were helping to prevent challenging circumstances from escalating. Most participants referred to the work context when discussing these changes whilst fewer people referred to their personal lives.

'When I start to get wound up in work I just think "this isn't important, there are a lot more important things in life." If nobody has died it's not the end of the world is it ...' (Mandy)

'If something is said I tend to challenge it directly now, you know, rather than letting things build and build as the atmosphere in work was absolutely appalling for a period ... I try to rationalise my thoughts and feelings and discuss things to clear the air that way rather than festering on my own ...' **(Richard)**

'If something is said I am more likely to say "what do you mean" or "can you explain that," rather than avoid it and get worked up about it ...' **(Richard)**

'I am definitely better at managing stress in work ... I try to distance myself from people more. I try to not let myself get upset by other people and protect myself more, not to be influenced by other people's moods, you know, like when I leave work that's it, you know' **(Hannah)**

'I did have an incident last week, I was in a terrible situation, all out of my control and normally I would have gotten into a right flap, but I didn't. I was surprised at how calm I stayed; I really did find it useful ...' **(Amanda)**

3.3.3.7. Valuing OneSelf and Prioritising Values. A sub-theme that emerged across participants when discussing the changes that they had made since attending the workshop was that of 'Valuing Oneself and Prioritising Values'. This theme summarises the comments participants made about acting in accordance with, and prioritising, their values (e.g. spending time with family). Across participants' narratives, this sub-theme appeared to be an important component of the change process, capturing the observable and more objective changes that people had made:

'What I have tried to do is to take a bit more time off work and do things that are relaxing like going to a Spa and things like that. Which is relaxing you know, chilling out from time to time ... I try to plan holidays and things, to help split up the year and to have things to look forward too ...' **(Hannah)**

'I am planning things around myself more now rather than planning around what other people are doing. Like I mentioned, my dad is unwell and my husband has a heart problem and normally I would get stressed out and spread myself too thinly, but what I've done is manage my time better. I don't fit myself into other people I fit them into what my priorities are. It has been brilliant.' (**Amanda**)

'I try to concentrate more on the family ... we do like walking a lot now, and we try to go out every week on my day off with my granddaughter. Exercise is the key ...' (**Richard**)

'I spend more time with my family ... we laugh and have more fun together.' (**Mandy**)

'Valuing oneself, very important. If you don't keep yourself topped up then everything around you just falls. It's so important to look after yourself first and then you can prioritise and take on other things but knowing your limits ... I try not to take things home with me now. It's been important for me to not take on other people's aggression, anger and upset. It's benefitted me all round, it really has ...' (**Amanda**)

3.3.4. Agency and Responsibility for Continued Self-Improvement

Change was conceptualised by many participants as an evolving process whereby they recognised the responsibility and capacity they had for continued self improvement. Often, participants mentioned that the ACT intervention had encouraged them to take control of their lives and better manage their time more effectively. When discussing these issues, participants often referred to their priorities and values in life, stating that since attending the intervention they had made attempts to organise their lives in a way that best suits them. Thus, the theme links closely and shares common elements with the themes 'From Awareness to Pacing' and 'Valuing Oneself and Prioritising Values'. Generally, participants

described finding it helpful to hold their values and priorities ‘*in mind*’ when changing their approach to life and when striving to become ‘*masters of their own ceremony*’.

‘It’s not cured everything, but I am definitely better than I was. It will take time but I am getting there. I’ve still got a lot to learn and I’ve got to keep helping myself you know ... Most of the time I let things go over my head now, it’s like a learning thing really though, and I’ve got to keep helping myself’ (Sarah)

‘I think what it does do is encourage you to fight your own battles more really ...’ (Richard)

‘It’s just like not letting external things taking control, like you being in control of your life really ...’ (Amanda)

‘It’s helped me put things into perspective ... not thinking that it’s the end of the world you know ... It’s helped me think that, whatever the issue, it can be sorted, and how you deal with it is up to you ... I am definitely better since attending, it’s helped me see things a bit differently. It started to get me out and to talk to people. It made me feel calmer about things really.’ (Jane)

3.3.5. Taking Solace from Others

This theme summarises the comments participants made about the value of receiving the ACT intervention in a group format. Participants reported finding it helpful to spend time with others who had similar challenges, highlighting the benefits of sharing their difficulties and discovering common ground:

'It was nice to know that other people felt the same as me you know, that I wasn't on my own ... It was helpful to hear other people's stories, well, what they are happy to tell you anyway. I met some nice people. It was good and it was helpful ...' (Sarah)

'You know there were people there (at the workshop) who were really stressed and got upset with things as that's how they deal with it ... But it was nice you know, to know that other people have similar difficulties. Everyone was relating and helping each other and we had a lovely team with us. It was great ...' (Amanda)

'It was useful to get out of the house and meet other people who are off sick ... it was good to chat to them ...' (Sarah)

'Knowing others are feeling the same and finding that helpful' (Hannah)

3.3.6. Keeping the Skills Alive

This theme captures the comments participants made regarding how they went about practicing the techniques that they had learnt and about how they had kept the skills *'fresh'* in their minds. Additionally, this theme also captures the suggestions people made about having refresher courses to help keep them orientated to change. The mindfulness techniques that encouraged a sense of *'self as context'*, along with a present moment focus, were frequently recalled and participants described being better able to notice and observe their thoughts and feelings since practicing these techniques. Three subthemes make up this overarching theme including: (1) Continued Practice of the Techniques; (2) Passing the Skills onto Others; and (3) Refresher Courses. The overarching theme of *'Keeping the Skills Alive'* is related to the themes termed *'Components of Change'* and *'Agency and Responsibility for Self-Improvement'*. As one would expect, it was the participants who reported the continued practice of the techniques who also reported the most gains, and these participants seemed to have a more clear and coherent understanding of the *'Components of Change'*.

3.3.6.1. Continued practice of the techniques

Many participants spoke of making time to consciously practice the exercises and techniques. Alternatively, some participants reported noticing themselves putting the techniques into practice without making a conscious decision to do so. Thus for some participants, it was if the skills they had learnt during the workshop were becoming integrated into the way that they approached their daily life. The comments that are encapsulated in this sub-theme share particular similarity with the theme termed ‘Agency and Responsibility for Self-Improvement’—conveying the participants understanding that in order to reduce and better manage their psychological distress, the ongoing practice of the skills and techniques that they had learnt during the workshop was required.

‘She taught us a good thing like to relax, close your eyes and put your worries onto a leaf and watch the leaves floating down the stream ... At the time I thought it was funny as I am not usually that type of person but I’ve kept on board with that, and I try to think that it’s just an emotion or it’s only a thought, or it’s only an emotion or it’s only a thought and it will pass ...’ (Sarah)

‘Because I’ve got a physical disability as well when I was ill I was thinking I can’t do this anymore but now I am more like this will pass.’ (Mandy)

‘I do use the leaf exercise a little bit, to make the problems smaller and to think is it really as big a problem as I think it is? (Hannah)

‘She did some relaxation which I’ve done. Just thinking about being on a beach and it’s warm, starting up from your toes and working your way up. I’ve forgotten what she called it now but I’ve done that ... yeah like a meditation type thing really isn’t it, where you shut the world out and almost feel the sand under your fingers. I enjoyed that, I nearly went to sleep.’ (Jane)

3.3.6.2. Passing the Skills and Techniques onto Others

A surprising finding, although one that makes sense given that the majority of participants were employed in a ‘*helping*’ professional role were the comments participants made about teaching the skills that they had learnt from the workshop to service users, colleagues and friends. For some participants, actively passing on the skills and techniques to other people seemed to help them to continue to make change to their own lives.

‘... As the morning went on I realised that yes this is useful for me and it’s valid in the workplace and in your personal life and I’ve been passing it onto my patients. Anyone I meet now who is stressed I tell them to “go on line now and apply for that course, you know as it will really benefit you”... it’s been a brilliant experience I’ve gotten a lot from it ...’
(Amanda)

‘My relationships are better with my colleagues and we can laugh again, I’ve tried to pass on the tips, I’ve suggested a colleague should go for it ...’ **(Mandy)**

‘You know it’s been helpful to pass on some of the techniques to my patients who all have chronic health conditions. I’ve been able to pass on some of the skills to help them deal with things, it has been so useful. I didn’t realise how much it would benefit me personally and how I can pass on the skills to others ... That’s what I’ve been telling my patients to do, to prioritise your problems, and deal with your problems when you’re ready—rather than stressing over them. It’s been brilliant honestly, I do thank you ...’ **(Amanda)**

3.3.6.3. Refresher Courses

This final sub-theme captures the requests that people had made for refresher sessions and follow-up courses to help them maintain the positive changes they had made in their

lives. Participant's often made this suggestion toward the end of the interview after reflecting on what had changed for them and why, and what they would like to continue to improve.

'It was very beneficial and nice to meet others who felt the same. Perhaps like a part two to the workshop would be helpful you know' **(Hannah)**

'I think it would be good if you could have a follow-up session, like to keep you on track ...'
(Sarah)

'It would be good to have more things like this you know, it has really helped.' **(Richard)**

3.4. Discussion

The results presented in this chapter provide an insight into participants' views of what had changed for them and their conceptualisations of the psychological processes that helped them change. The analyses suggest that the ACT intervention helped to raise participants' awareness of their values, which in turn helped them to prioritise what is important to them. New ways of approaching life were often described by participants such as cultivating the ability to respond positively and effectively to challenging situations rather than reacting in an automatic and sometimes escalatory fashion. Participants described using psychological techniques such as noticing and accepting difficult thoughts and feelings, positive thinking, and focusing their mind on the present rather than worrying and ruminating about the past or future. The key aspects of the results will now be discussed.

3.4.1. Precipitating Factors and Comparisons between Well and Unwell Selves

The analysis of the participant's narratives revealed that when speaking of the changes they had made since attending the ACT intervention, participants often made comparisons of themselves at different points in time. Whilst not directly asked about their history of psychological distress or the factors that precipitated their self-referral to the intervention, participants often contextualised their difficulties by speaking about the personal and professional stressors that led to them seeking help. These initial conversations about the nature and extent of people's difficulties seemed both to help build rapport, and provide a framework and point of reference for subsequent explorations. Frequently, participants compared how they thought, felt, and acted now with the psychological distress that they had felt prior to the ACT intervention. During these reflections, participants often emphasised the positive changes that they had noticed in terms of their approach to life, often conveying a sense of feeling like their former psychologically well selves. Typically, when asked to describe what had changed for them and why, participants often mentioned the observations that family members, friends and colleagues had made. These conversations then seemed to flow naturally into more thorny questions that attempted to explore the participant's views on the psychological processes that underpinned their positive life changes.

3.4.2. Components of Change

Given that one of the core aims of this Thesis was to examine the mechanisms of change in this brief ACT intervention, it is unsurprising that the largest theme constructed from the data describes the participant's views on the psychological, interpersonal, and day to day changes they had made. This theme captures the examples participants gave regarding the positive changes they had made, as well as their reflections on the psychological processes that underpinned these changes. Often, the techniques and exercises taught during the ACT intervention were cited as key ingredients for the change process. The over-arching 'Components of Change' theme is sub-divided into seven sub-themes that were often described as being inter-linked, over-lapping in different ways for different people. These sub-themes seem to reflect aspects of both the ACT intervention and the underlying ACT model of psychological distress and well being. However, not all sub-theme so easily relate back to the intervention and the underlying theoretical model. Key aspects of the sub-themes and their inter-linking nature will now be discussed.

In line with the theoretical model that underpins ACT (Hayes *et al.* 2006), as well echoing the common elements that are shared across many of the '*third wave*' contextual psychotherapies (Hayes *et al.* 2011), psychological processes that relate to the key features of mindfulness practice and the construct of psychological flexibility were often described by participants. For example, the sub-themes of 'From Awareness to Pacing', 'Respond not React', 'Distance from Difficulties' and 'Acceptance rather than Rumination' mirror closely the 'Self as Context' and 'Contact with the Present Moment' dimensions of the ACT hexaflex which, in turn, are key psychological processes emphasised in mindfulness (Kabat-Zinn, 1991). When discussing these new ways of being, participants often spoke of taking a slower and more measured approach to life and an increased awareness of their own dysfunctional behavioural patterns. Participants described trying to accept their difficulties, rather than ruminating and trying to change them. In relation, a sense of trying to '*live in here and now*' and '*taking a step back*' from life's problems were sentiments expressed by many participants. These new ways of approaching life were cited as being integral to the handling of personal and professional challenges more effectively.

In relation, the sub-theme of 'Interpersonal Effectiveness' captures the more concrete examples that participants gave of how they had changed. New ways of interacting and managing situations were often cited as examples of how participants felt better able to

prevent challenging situations from escalating. This sub-theme is related to aspects of each of the other sub-themes. For example, participants often reported being more *‘accepting’* and trying to *‘distance themselves from their difficulties’* when talking about managing interpersonal situations more effectively. As well as being more effective in the interpersonal context, participants also described being more effective at prioritising their values (*e.g. spending time with family and enjoying hobbies*). The sub-theme ‘Valuing Oneself and Prioritising Values’ captures these conversations, describing the more concrete examples of the changes people had made to their lives such as reassessing their priorities, valuing family time, and re-engaging in old hobbies. At a more distal and behavioural level, these sub-themes are somewhat related to the ACT model, and they help to contextualise and ground the changes people experienced at the psychological level in more directly discernible behavioural examples.

The final subtheme of ‘Positive and Present Moment Thinking’ less closely aligns to ACTs theoretical model. Whilst a focus on the present moment is a concept described in both ACT and Mindfulness theory, positive thinking strategies are not interventions that are taught in ACT. Rather, the challenging of negative thoughts and a focus on positive thinking are ideas more commonly associated with *‘second wave’* cognitive-behavioural approaches. In ACT, the noticing and acceptance of unwanted thoughts and images is encouraged rather than active attempts to change or replace these internal phenomena (Hayes *et al.* 2006, 2011). In order to facilitate the integration of the results of both empirical chapters, this finding, as well as a more detailed analysis of the implications of the overall findings for ACT theory are presented in the General Discussion (Chapter 4).

3.4.3. Agency for Self-Improvement and Keeping the Skills Alive

For many participants, change was conceptualised as an evolving process that entailed the continued practice of the techniques and skills that they were taught during the intervention. The comments that are encapsulated by the themes of ‘Agency and Responsibility for Self-Improvement’ and ‘Keeping the Skills Alive’ convey the participants understanding that in order to reduce and better manage their psychological distress, the ongoing practice of the skills and techniques that they had learnt during the intervention was required. Frequently, participants mentioned that the ACT intervention had encouraged them to take control of their lives and better manage their time more effectively. Interestingly,

participants also described passing the ACT techniques and skills onto others, which in turn seemed to help participants put into practice what they had learnt in their daily lives. Finally, many participants suggested that refresher sessions would be useful to help them maintain the positive changes they had made in their lives. Thus in closing, the analysis of the qualitative data revealed that the key features of the ACT model were reflected in the participant's views and experiences of the psychological processes that helped them change. However, not all of the themes are so clearly explained by the ACT model, and other processes that are not so specific to ACT are likely important. The General Discussion (Chapter 4) will now explore these issues more fully.

Chapter Four

General Discussion

4.1. Overview

The core aims of this thesis were to evaluate the efficacy of a brief and relatively novel ACT intervention for psychological distress and to examine the mechanisms of therapeutic action within that intervention. Study One addressed these aims via a non-randomised controlled trial that compared participants who received the ACT intervention with those assigned to a waiting list. In order to study the impact of the intervention on the severity of psychological distress, a longitudinal design that included a two week and three month follow-up period was used. Quantitative measures of hypothesised mechanisms of therapeutic action that assessed the key features of ACT were collected and statistical analyses of mediation were conducted. Study Two sought to augment the findings of Study One by exploring participant's views on the aspects of the ACT intervention that they felt promoted changes in their psychological functioning. Thematic analysis was then used to analyse the participants' narratives and to identify themes that encapsulated their views on the components and mechanisms of therapeutic change within ACT. It was hoped that the collection of both qualitative and quantitative sources of information would enrich the understanding of the mechanisms of change in ACT and provide new insights for future research.

This Chapter aims to examine the principal research findings and their wider implications. Firstly, the key findings of both studies will be outlined and comparisons will be made to those of existing studies. Next, the current set of findings will be discussed in relation to the theoretical model that underpins ACT, and areas of consistency and inconsistency will be highlighted. Subsequently, the clinical and service implications of this research will be considered and the methodological strengths and limitations of the findings will be summarised. Following this, some recommendations for future research will be discussed. Finally, overall conclusions from this research will be drawn.

4.2. Main Findings and their Relation to Past Research

In terms of addressing the aim of establishing the efficacy of this brief and relatively novel ACT intervention, evidence for both statistically and clinically significant improvements in the severity of participants' psychological distress was obtained. At three months post-treatment, and relative to the control group, participants who received the ACT intervention evidenced a statistically significant reduction in the severity of psychological distress. Indeed, by the three month follow-up, the magnitude of the between group difference in the severity of psychological distress met the criteria for a large effect (Cohen, 1988). When compared to similar studies that delivered a brief ACT intervention for psychological distress to social workers (Brinkborg *et al.* 2011) and public sector office workers (Flaxman & Bond, 2010b), it is evident that the magnitude of effects in the current study are greater. For example, post-treatment effect sizes reported in both comparable studies only met the criteria of small to medium effects when a brief ACT intervention was compared to a waiting list (Brinkborg *et al.* 2011; Flaxman & Bond, 2010b). Similarly, the current study produced larger effects sizes than an ACT-based self-help intervention that was targeted at participants showing mild to moderate symptoms of depression (Fledderus *et al.* 2012), and comparable results to another ACT based self-help intervention that targeted a psychologically distressed student population (Muto *et al.* 2011).

Another notable difference that is arguably a major strength of the current study is the research setting and the population under-investigation. Almost all of the participants in the current study displayed clinically significant levels of psychological distress at the pre-intervention assessment. In contrast, less than a third of participants in the Flaxman & Bond, (2010) study, and only two thirds of participants in the study conducted by Brinkborg and colleagues (2011) displayed clinically significant symptoms of psychological distress at baseline. As such, participants who did not display clinically significant psychological distress in these two studies were excluded from the main analyses by the authors. Indeed, when compared to a study of over 5000 UK employees (Stride *et al.* 2007), and an ACT intervention study of UK office workers (Flaxman & Bond, 2010b), the participants in the current study evidenced significantly higher levels of psychological distress at baseline. These findings may reflect the fact that rather than being delivered for the purposes of a research trial, the ACT intervention evaluated in the current study was nested within a routine clinical service. Thus, it could be argued that the present study has greater ecological validity than comparable research trials and that the findings are more easily generalised to other

clinical settings. Indeed, the criticism often levied at RCTs concerning highly selected samples and the disparity between the populations typically studied in research trials with those seen in routine clinical services seems less applicable to the current study. Additionally, the focus on the broader construct of psychological distress in this study rather than discrete diagnostic categories, as well as the broad and unrestrictive inclusion and exclusion criteria further strengthens this claim.

Additional evidence for the efficacy of this brief ACT intervention is demonstrated by the findings derived from the analyses of clinically significant change (Jacobson & Truax, 1991). At two weeks and three months post-treatment 50% of participants who received the ACT intervention met the criteria for clinically significant change and were classified as ‘*recovered*’. In contrast, by the three month follow-up, none of the participants on the waiting list met this criterion and 6% had further deteriorated. That said, when those assigned to the waiting list condition went on to receive the ACT intervention and were again followed up three months later, 64% had ‘*recovered*’ from their psychological distress having met the criteria for clinically significant change. These findings compare favourably to the wider literature. For example, 59% of participants in the Muto *et al.* (2001) study, 69% of participants in the Flaxman & Bond (2010b) study and 39% of participants in the Fledderus *et al.* (2012) study met the criteria for clinically significant change following an ACT intervention (see Table 1.1). What is more, the findings that attest to the efficacy of this brief ACT intervention are further strengthened by the interview data. For example, all of the participants who were interviewed reported reductions in the severity of their psychological distress since attending the intervention with many mentioning the ACT techniques and exercises as important factors in their recovery.

The findings of the qualitative data analysis presented in Study Two also add important information to our understanding of the mechanisms of therapeutic action in ACT—thereby addressing the second core aim of this research. For instance, the themes generated from the analysis of the interview data revealed that for many participants the techniques and exercises taught during the ACT intervention were seen as important factors in their recovery. When asked about *what* had changed for them and *why*, participants often spoke of psychological processes that closely resemble the construct of ‘psychological flexibility’—which is integral to the ACT model. For example, the sub-themes of ‘From Awareness to Pacing’, ‘Respond not React’, ‘Distance from Difficulties’ and ‘Acceptance

rather than Rumination' mirror closely the 'Self as Context', 'Acceptance' and 'Contact with the Present Moment' dimensions of the ACT 'hexaflex' which are described as being key ingredients for psychological flexibility (Hayes *et al.* 2006). Similarly, the qualitative analyses revealed that since attending the ACT intervention many participants felt better orientated to their values and that their actions were more values consistent. However, not all of the themes constructed from the qualitative analysis so closely reflected the theoretical underpinnings of ACT; these themes will be discussed in section 4.3.

Complementing the results of the qualitative analysis, the quantitative analyses revealed that the ACT intervention made a significant impact on the psychological processes that were predicted to change. Several findings support this conclusion. Firstly, at three months post-treatment, and relative to the control group, participants who had received the ACT intervention had significantly increased psychological flexibility and mindfulness ability and decreased cognitive fusion. Secondly, the bivariate correlations revealed that the increases in psychological flexibility and mindfulness ability that were observed at two weeks post-treatment predicted improvements in psychological distress at the three month follow-up. Decreases in cognitive fusion at two weeks post-treatment, however, did not predict later improvements in psychological distress and this mechanism was not significant in the mediation analyses. Thirdly, and in keeping with these findings, both psychological flexibility and mindfulness qualified as individual mediators of the relationship between the ACT intervention and psychological distress in the non-parametric bootstrapping analyses. However, when both mechanisms were examined in a multiple-mediation analysis, only psychological flexibility remained significant. Mindfulness no longer qualified as a significant mediator once the effects of psychological flexibility had been taken into account. What is more, providing evidence of the specificity of the ACT-consistent mediators (Kazdin, 2007), the mechanisms of therapeutic action not specified in the ACT model (*e.g. negative automatic thoughts and active coping*) did not qualify as mediators in this study.

These findings are somewhat consistent with the three existing studies identified during the systematic literature review that conducted formal mediation analyses. For example, Fledderus *et al* (2010) found that in their group-delivered ACT intervention for psychological distress, increases in psychological flexibility at post-treatment fully mediated improvements in psychological wellbeing three months later. Likewise, in their evaluation of a self-help intervention delivered to Japanese students living abroad, Muto and colleagues

(2011) also found increases in psychological flexibility to qualify as a partial mediator of improvements in psychological distress. Similarly, in their group delivered ACT intervention for depression and anxiety symptoms, Bohlmeijer *et al.* (2011) found increases in psychological flexibility to fully mediate the effects of the intervention on depressive symptoms three months later. However, none of these three studies measured potential mechanisms of therapeutic action other than psychological flexibility. In the three studies identified during the systematic literature review that measured mindfulness as a potential mediator in ACT, formal mediation analyses were not conducted (Fledderus *et al.* 2012; Forman *et al.* 2007; Roemer *et al.* 2008) and the findings are somewhat inconsistent. Nevertheless, in line with the findings of the current study, all of these three studies found their ACT intervention to increase mindfulness skills at post-treatment (Fledderus *et al.* 2012; Forman *et al.* 2007; Roemer *et al.* 2008), although these effects were not always maintained at follow-up (Roemer *et al.* 2008).

A small number of existing studies have also examined cognitive fusion as a potential mechanism of therapeutic action in ACT (Gaudiano *et al.* 2010; Twohig *et al.* 2010; Zettle *et al.* 2011). In line with the findings of the current study, each of these three studies found ACT to decrease cognitive fusion—as indexed by a reduction in the believability of negative thoughts and hallucinations (Gaudiano *et al.* 2010; Twohig *et al.* 2010; Zettle *et al.* 2011). Furthermore, in the one study that did conduct formal mediation analyses, post-treatment levels of cognitive fusion were found to mediate the effects of ACT on depression two months later (Zettle *et al.* 2011). This finding stands in contrast with the results of the current study where cognitive fusion did not qualify as a mediator of improvements in psychological distress. Finally, the withdrawal of the values measure¹⁷ from the current study negated any statistical analyses of this hypothesised mechanism of therapeutic action. Nevertheless, the findings of the qualitative analysis did reveal that many participants cited being better orientated to, and acting more in accordance with one's values as an important factor in their recovery.

¹⁷ Please see section 4.4. for more information on this

4.3. The Theoretical Implications of the Current Findings

The current set of findings are somewhat consistent with the theoretical model underlying ACT. Most notably, the non-parametric bootstrapping analyses confirmed the indirect effect of ACT on psychological distress through psychological flexibility. Given the central role of psychological flexibility in the ACT model, this finding lends encouraging support to ACT's theoretical model. Similarly, the results of the multiple-mediator analyses that found the indirect effect of mindfulness on psychological distress to become non-significant once psychological flexibility had been considered, could be interpreted as consistent with the ACT model. The mindfulness skills of 'Acceptance', being able to 'Contact with the Present Moment', and creating a sense of 'Self as Context' are outlined as essential components of psychological flexibility (Hayes *et al.* 2006). However, psychological flexibility is described as being comprised of other processes in addition to mindfulness (Hayes *et al.* 2006). Thus, when both mechanisms are considered together in a multiple-mediator analysis, it is unsurprising that psychological flexibility is indicated as the key mediator given that this construct is purported to capture other psychological processes (*e.g. defusion and committed action*) in addition to mindfulness. Nevertheless, the non-significant contrast between the magnitude of the indirect effects of mindfulness and psychological flexibility underscores the importance of mindfulness in ACT.

The results of the qualitative analysis also draw attention to the importance of mindfulness in ACT as well as highlighting the close resemblance between psychological flexibility and mindfulness. For example, the sub-themes of 'From Awareness to Pacing', 'Respond not React', 'Distance from Difficulties' and 'Acceptance rather than Rumination' are processes that are implicated in both mindfulness (Kabat-Zinn, 1991) and ACT (Hayes *et al.* 2006). When reviewing the literature on ACT, it is evident the theoretical model underpinning this approach has been developed and revised over the last decade. For example, and as discussed in Chapter One, the earlier ACT literature emphasised the central role of experiential avoidance and acceptance, whereas psychological flexibility and psychological inflexibility are now described as the central tenets of the ACT model. The findings from the current study suggest that it would be helpful for the ACT theorists to pay more attention to the similarities and differences of mindfulness and psychological flexibility in future writings. Indeed, the most recent review paper on ACT (Hayes *et al.* 2011) draws attention to the similarities between ACT and the other '*third wave*' contextual

psychotherapies such as Dialectical Behaviour Therapy (Linehan, 1993) and Metacognitive Therapy (Wells, 2000), and mindfulness is a common element that is shared across these different approaches.

Although psychological flexibility was highlighted as a key mechanism of therapeutic action in this brief ACT intervention, it did not explain the full effects of ACT on psychological distress. As such, it only met the criteria of a partial mediator. Thus, other factors and processes not measured in the current study are implicated. In the wider psychotherapy literature, non-specific factors such as the therapeutic alliance and '*hope and expectancy effects*' regarding the restorative abilities of the treatment are often highlighted as factors integral to successful outcomes (Hubble *et al.* 1999; Lambert, 2003). Given the brief nature of this intervention, the therapeutic alliance seems like a less plausible mechanism. Nonetheless, factors more proximal to the individual, such as their motivation to change or their ability to continue practicing the techniques and skills that were learnt during the ACT intervention, maybe more salient. Certainly, the themes constructed from the qualitative data analysis including 'Agency and Responsibility for Continued Self-Improvement' and 'Keeping the Skills Alive' seem to capture some of these more proximal processes and thus, warrant attention in future tests of the ACT model. Additionally, the theme 'Taking Solace from Others' draws attention to group process factors that could be important in explaining improvements in psychological functioning following a group delivered ACT intervention. Therefore, future tests of the ACT model should pay attention to non-specific as well as ACT specific factors when examining *why* an intervention works. Furthermore, the current research suggests that it would be fruitful for the theory that underpins ACT to emphasise non-specific as well as specific factors.

4.4. Clinical and Service Implications

This research adds to the emerging evidence base for ACT and the findings have a number of clinical and service implications. Remarkably, this brief one day intervention was effective in reducing the severity of clinically significant psychological distress for the majority of participants. Specifically, both statistically and clinically significant improvements in the severity of psychological distress were observed in this study and all of the participants interviewed reported improvements in their day-to-day functioning and more fulfilling occupational and personal lives. The service organisation within which the

intervention was delivered struggled to deliver on demand for therapy within its existing resources. Resourcing services internal to the organisation with the aim of reducing psychological distress among employees could be seen as self-referential. However, this research clearly demonstrates the effectiveness of this service and the clinical skills and value of its staff. During the course of this study, the demand for the ACT intervention and the resultant waiting list times increased. The results of this study strongly support the case for continued funding to be made available in order that the service can continue, and to widen access to this brief intervention. Moreover, the frequency of ACT group sessions could be increased, thereby offering more choice and opportunity to service users.

At the Welsh and UK level, the need to expand access to psychological therapies is recognised (Layard *et al.* 2006; National Institute for Health and Clinical Excellence, 2011; Welsh Assembly Government, 2010, 2012). In England, the increased access to psychological therapies programme (IAPT) is well established, funding was made available for these mental health services (Department of Health, 2007), and a stepped care model of service delivery is in operation. In Wales, whilst the need to increase access to psychological therapies at the primary and secondary care level is recognised (Welsh Assembly Government, 2010, 2012), mental health services are arguably not as developed as they are in England, particularly at the primary care level. Given the efficacy of this brief, group delivered ACT intervention for mild to moderate psychological distress, it seems plausible to suggest that its delivery across primary care mental health services in Wales could be a valuable addition to existing services. In England, whilst services have been set up to increase access to primary care mental services, interventions based on CBT are dominant (National Institute for Health and Clinical Excellence, 2011). Thus, incorporating this brief intervention into existing services would offer greater choice and additional options for those people for whom low intensity CBT is not effective. As the evidence base for ACT accumulates, the implementation of brief group delivered ACT based interventions would be further warranted.

At the local level, the findings of this research demonstrate the efficacy of this intervention and are thus a testament to the benefits of the service. The quantitative analyses revealed that the ACT intervention is working in ways in which it is hypothesised to, with participants showing greater psychological flexibility and mindfulness skills following the intervention and decreased cognitive fusion. Similarly, the qualitative analysis revealed that each of the different components that made up the intervention were cited by the participants

as important factors in their recovery. Accordingly, this research suggests that each of the different elements of the workshop are important and, as such, the nature and content of this group-delivered ACT intervention should remain unchanged. However, not all participants demonstrated clinically significant gains following treatment. This finding is unsurprising given the severity of psychological distress that was shown by the majority of participants and the brief nature of the intervention. The findings of the qualitative analysis suggest that, for some participants, additional input such as refresher courses or supplementary sessions may be required. Therefore, future service development initiatives could include refresher courses, or indeed service-user-led groups where those participants who are interested could meet up in their lunch time or following work to practice the ACT techniques and exercises and share their experiences. Initiatives such as these could be a viable option given the current economic climate. The service user led group would require minimal demand on this already stretched service and could require little more than the setting up of a mailing list and the provision of a space or materials. Interested participants could take up the role of the group facilitator and this suggestion aligns with the theme of ‘keeping the skills alive’ which was generated from the qualitative analysis.

4.5. Methodological Strengths and Limitations

4.5.1. Strengths. Reflecting on this programme of research, it appears to have a number of strengths. Firstly, this study evaluated a novel ACT intervention that was delivered in a unique health care setting to participants who displayed clinically significant symptoms of psychological distress. As mentioned previously, past research that has evaluated a brief ACT intervention (e.g. Brinkborg *et al.* 2011; Flaxman & Bond, 2010) has been complicated by the fact that a significant proportion of the recruited participants did not display clinically significant symptoms of psychological distress at baseline and, thus, were excluded from the analyses. Thus, it could be argued that the findings of the current study will generalise better to clinical populations in other settings than those of past research. Additionally, given that this study was nested within a routine clinical service, the current research meets the call for novel evaluations of the effectiveness of psychological in ‘usual service conditions’ (Department of Health, 1999; Stiles *et al.* 2008, 2008b). Given the context of the current research and the decision to operate broad inclusion and exclusion criteria, it could be argued

that the findings are ecologically valid, and provide a refreshing complement to the efficacy evidence obtained from formal randomized trials.

The use of both qualitative and quantitative methodologies in the current research and the convergent evidence observed from these different lines of enquiry is another major strength. The use of advanced statistical techniques offered a contemporary and flexible means of testing the hypotheses regarding the mechanisms of therapeutic action in ACT and the measurement and analysis of several possible mediators provides a comprehensive test of the ACT model. The finding that psychological flexibility mediated improvements in psychological distress in this brief, group-delivered ACT intervention lends support to the theoretical model that underpins ACT. Furthermore, the themes generated from the qualitative analysis regarding the importance of processes that closely resembled the construct of psychological flexibility both enrich and corroborate the findings of the quantitative research. Excellent retention rates were observed in this study and the inclusion of an additional two week and three month follow-up of the waiting list control group after they received the intervention further attests to the efficacy of this intervention.

4.5.2. Limitations. Whilst the research presented in this Thesis has many strengths, it is not without limitations. The lack of a double-blind randomisation procedure for the allocation of participants to the intervention or control group contravenes the best practice guidelines set forth by the Cochrane Collaboration and the NHS Centre for Reviews and Dissemination (Higgins & Green, 2009, 2011). Thus, concerns regarding the risk of bias and the baseline equivalence of the intervention and control groups could be raised. Largely due to the lack of a randomised controlled trial (RCT) design, the efficacy findings would not meet the inclusion criteria for the most stringent meta-analytic studies (e.g. Higgins & Green, 2011). Nevertheless, the intervention and the waiting list control group were equivalent at baseline on the demographic, process and outcome measures and this finding goes some way toward addressing this concern. Additionally, given that this research was conducted within the context of a routine clinical service, it was deemed to be ethically unacceptable to randomly assign participants to the intervention and waiting list control groups.

Another design limitation of the current research is the lack of an active treatment control group and as a consequence, the non-specific effects of therapy are not controlled for. Consequently, it is possible that the observed decreases in psychological distress are attributable to factors related to the group process, the therapist, or the participants' own

individual characteristics (e.g. their motivation to change, intellectual level or concentration span). Nevertheless, the findings of the mediation analysis indicate that the intervention brought about change through mechanisms that are consistent with ACTs underlying theoretical model and these findings partly challenge these interpretations. Additionally, treatment adherence was not assessed in this study. Thus, whilst the same therapist delivered the intervention with the aid of a standardised manual and Power Point presentation, it is possible that the content and the manner in which the intervention was delivered was not consistent across the intervention groups. In addition, whilst a lot of thought and consultation went into selecting the most appropriate measures for this study, the values measure did not work well in this context as it was too ‘lengthy’ and ‘complicated’. Consequently, this measure was removed from the questionnaire pack after an initial pilot. Future studies should use a less comprehensive measure of value directed living in order to provide a complete test of the ACT model.

Further methodological limitations of the quantitative research include the fact that the sustained effects of the intervention remain untested because only a three month follow-up period was used. Nevertheless, the use of a three month post-treatment follow-up is an improvement when compared to similar studies that used only a post-treatment follow-up (e.g. Brinkborg *et al.* 2011; Flaxman & Bond, 2010). The reliance on self-report measures is another source of possible bias in both the qualitative and quantitative aspects of this study, given that these sources of information can be inaccurate because of demand bias and memory distortions. As with any qualitative study, the findings are highly subjective and may not generalise to a wider population. Despite the rich insight into the participants’ experiences that was gained from the qualitative study, these experiences belong to the individual and may not be representative. Similarly, the influence of the researcher’s background and experiences on the data analysis and interpretation may be a distorting factor. Nevertheless, measures were taken to ensure high methodological rigour throughout the qualitative aspect of this research and the best practice guidelines set forth by Elliott *et al.* (1999) were adhered to. Finally, the use of telephone as opposed to face-to-face interviews may have affected rapport and thus the quality and quantity of information obtained from the interviews.

4.6. Recommendations for Future Research

Following on from the methodological limitations of this research, future studies would benefit from utilising a randomised controlled trial design that meets the stringent criteria set forth in the CONSORT guidelines (CONSORT, 2010). Thus, treatment adherence should be assessed, a double blind randomisation procedure used, and a longer follow-up conducted in order to evaluate the lasting effects of this brief ACT intervention. Additionally, the use of an active treatment control group would further this research considerably and enable a control for the non-specific effects of therapy. Similarly, future studies could include measures of the non-specific effects of therapy, particularly those that capture constructs such as the individual's motivation to change, their willingness to practice the ACT techniques after the intervention or indeed measures of group process or engagement related factors. Further avenues for future research could include an evaluation of the impact of the ACT intervention on work performance, absenteeism and quality of life. Such studies could include an economic evaluation of the intervention to ascertain whether the ACT intervention reduced sickness absence rates and thus, produced economic benefits. Finally, an evaluation of this brief ACT intervention could be conducted in other contexts such as primary care settings, including General Practitioner surgeries.

4.7. Conclusions

This brief—one day ACT intervention was effective in reducing clinically significant symptoms of psychological distress among NHS employees. Relative to the waiting list control group, participants who received the ACT intervention evidenced a statistically significant reduction in the severity of psychological distress at two weeks and three months post-treatment. Attesting to the efficacy of this intervention, the magnitude of the between group difference at the three month follow-up is classified as a large effect according to the Cohen criteria (Cohen, 1988). Complementing the findings of statistical significance, the majority of participants evidenced clinically significant change at two weeks and three months post-treatment. What is more, all of the participants who were interviewed reported reductions in the severity of their psychological distress and improvements in their day-to-day functioning. Importantly, these improvements in psychological well being were noticed by the participants in both personal and professional aspects of their lives.

The findings of the qualitative and quantitative data analysis also add important information to our understanding of the mechanisms of therapeutic action in ACT. For instance, in line with ACT's theoretical underpinnings, the intervention significantly increased participants' psychological flexibility and mindfulness skills and decreased their cognitive fusion. The formal mediation analyses indicated that the beneficial effects of this brief ACT intervention were in part attributable to the observed gains in mindfulness and psychological flexibility. However, when both mechanisms of therapeutic action were examined in a multiple mediator analysis, only psychological flexibility remained significant, with this mechanism meeting the criteria of a partial mediator. In line with these findings, the themes generated from the analysis of the interview data revealed that, for many participants, the techniques and exercises taught during the ACT intervention were seen as important factors in their recovery. Furthermore, the themes generated from the qualitative data analysis such as 'From Awareness to Pacing', 'Respond not React', 'Acceptance rather than Rumination' and 'Distance from Difficulties' closely resemble the construct of psychological flexibility, thereby converging with the findings from the quantitative data analysis. Future research should seek to replicate these findings and examine additional mechanisms of therapeutic action in ACT—a greater focus on non-specific therapeutic factors such as the participant's motivation to change or group process factors could be a promising line of enquiry.

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Psychological Coping Skills Workshops offered by the Employee Wellbeing Service

The Employee Wellbeing Service is offering 2 different workshops during 2011 which are designed to increase employee's psychological coping skills. The workshops run on a monthly basis and 12 staff members are able to attend each month. The workshops are free of charge to Cardiff and Vale ULHB employees. We offer 1) Acceptance and Commitment Therapy for Stress Resilience and Psychological Coping Skills; and 2). Cognitive Behaviour Therapy for Assertiveness and Psychological Coping Skills. These workshops run on alternate months and they are designed for individual employees who would like to increase their ability to deal with stress, worry and anxiety. Staff can nominate themselves for the training in work time with the approval of their manager.

The workshops will take place in the Employee Wellbeing Department in Denbigh House from 9.30 to 4.30. Anyone wanting to attend will need to contact Lynda Bishop or Sue Parry in the Employee Wellbeing Service, telephone number 029 2074 4133 and leave their contact details. An information and registration pack will then be issued.

At the Employee Wellbeing Service, we are committed to improving the services that we offer employees. As such, we are running a research study to evaluate how effective the workshops are in improving the psychological well being of employees. We are also investigating which aspects of the workshops work best in terms of improving participants' psychological well being and reducing distress.

To achieve this, we are comparing the two workshops that we are delivering. We hope that by better understanding which aspects of the workshops work best, we will be able to improve on the services run by the Employee Wellbeing Service. There is no obligation to participate in the research study; you can attend the workshop(s) without taking part in the research study. After booking onto a workshop, we will send you further details about what the research study entails so that you can make an informed decision about whether or not you would like to participate.



The Employee Wellbeing Service

Consent Form Version 2. 14/03/2011

The Efficacy of Workshops Designed to Reduce Psychological Distress

Researcher: Cerith Waters.

Please write the last 4 digits of your personal mobile number in this Box *(if you don't have a mobile, please use your home landline)*

Please put your initials in the boxes below if you agree with the statement:

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.
3. I understand that the information I provide will, remain secure and confidential, and held no longer than necessary for the purposes of this research.
4. I agree to take part in the questionnaire aspect of the study.
5. I agree to be contacted to complete a 10-15 minute telephone interview 3 months after the workshop.

Name of participant

Date

Signature

Name of Researcher

Date

Signature



The Employee Wellbeing Service

The Efficacy of Workshops Designed to Reduce Psychological Distress

Version 2. 14/03/2011

Please write the last 4 digits of your mobile telephone number here (*if you do not have a mobile, please use your home landline number*)

Before completing this questionnaire, please read the points detailed below.

1. Before completing each section in the questionnaire, please read the instructions on each page carefully.
2. The questionnaire takes about 20 minutes to complete. Please ensure that you complete **every** item in each section.
3. Once you have completed the questionnaire, please seal it in the envelope provided (including this cover sheet and the consent form), and send it to;

Dr Cerith Waters,
Denbeigh House,
Heath Park,
University Hospital of Wales,
Cardiff,
CF14 4XW.

If you have any questions about the questionnaires or the training, please feel free to email Cerith Waters (waterscs@cardiff.ac.uk)

DEMOGRAPHIC DETAILS

This information is required for statistical purposes only. Please complete all of the sections below.

Age_____

Gender_____

Marital Status (please tick to the right of one option):

Single			Married/ Partner	
Widowed			Divorced/ Separated	

Formal education (please tick the highest level completed):

No formal qualifications			Degree	
CSE/ O Level/ GCSE/ NVQ 1-2			Postgraduate degree	
A Level/ NVQ3			Other (please state)	

Please select the Profession/Discipline that best describes your job role

1. Nursing
2. Medical
3. Dental
4. Dietetics
5. Estates and Maintenance
6. Management
7. Administrative and Clerical
8. Human Resources
9. Pharmacy
10. Physiotherapy
11. Occupational Therapy
12. Psychology
13. Other Clinical
14. Radiography
15. Scientific and Technical
16. Ancillary
17. Other (please state)

What is your current job band/grade?_____

How long have you worked for the Trust (to the nearest year)?_____

How long have you held your current position (to the nearest year)?_____

General Health Questionnaire-12

The following questions ask how your health has been in general, **over the last few weeks**. Please answer **all** the questions simply by underlining the answer which you think most nearly applies to you. Remember, this is about complaints you have experienced in the last few weeks, **not** those you had in the past.

Have you recently.....

1. Been able to concentrate on whatever you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
2. Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
3. Felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
4. Felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less than usual
5. Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
6. Felt you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
7. Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
8. Been able to face up to your problems?	More so than usual	Same as usual	Less so than usual	Much less able
9. Been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
10. Been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
11. Been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
12. Been feeling reasonably happy all things considered?	More so than usual	Same as usual	Less so than usual	Much less able

The Positive and Negative Affect Scale (PANAS)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way in the ***past few weeks***.

Use the following scale to record your answers

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely
_____	interested	_____	irritable	
_____	distressed	_____	alert	
_____	excited	_____	ashamed	
_____	upset	_____	inspired	
_____	strong	_____	nervous	
_____	guilty	_____	determined	
_____	scared	_____	attentive	
_____	hostile	_____	jittery	
_____	enthusiastic	_____	active	
_____	proud	_____	afraid	

Working Life

1). How many days have you had off work due to physical sickness in the last three months? _____

2). How many days have you had off work due to psychological strain (e.g., *feeling stressed or unhappy*) in the last three months? _____

3). During the last month, how many days were you able to work, but had to cut back on what you did, or did not get as much done as usual because of physical illness? _____

4). During the last month, how many days were you able to work, but had to cut back on what you did, or did not get as much done as usual because of psychological strain (e.g., *feeling stressed or unhappy*)? _____

PSYCHOLOGICAL FLEXIBILITY

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true
1. Its OK if I remember something unpleasant.						
2. My painful experiences and memories make it difficult for me to live a life that I would value.						
3. I'm afraid of my feelings.						
4. I worry about not being able to control my worries and feelings.						
5. My painful memories prevent me from having a fulfilling life.						
6. I am in control of my life.						
7. Emotions cause problems in my life.						
8. It seems like most people are handling their lives better than I am.						
9. Worries get in the way of my success.						
10. My thoughts and feelings do not get in the way of how I want to live my life.						

Coping

The statements below describe various ways that people deal with personal problems or stressful situations (e.g., arguments with a friend or partner, feeling low, etc.).

This is not asking what you think you **should** do when faced with problems and challenges. Instead, use the scale to indicate how you **actually** think, feel, and behave when solving the problems that life throws at you.

Scale:

1	2	3	4	5
Almost never	Occasionally	About half of the time	Often	Almost all of the time

1. I don't sustain my actions long enough to really solve my problems.	
2. I get preoccupied thinking about my problems, and overemphasize some parts of them.	
3. I spend time doing unrelated chores and activities instead of acting on the problems I am faced with.	
4. I take direct action to get around the problem.	
5. I act too quickly, which sometimes makes my problems worse.	
6. I feel so frustrated that I just give up working on my problems at all.	
7. I take additional action to try to get rid of the problem.	
8. I do what has to be done, one step at a time.	
9. I avoid even thinking about my problems.	
10. I concentrate my efforts on doing something about it.	
11. I continue to feel uneasy about my problems, which tells me that I need to do some more work on them.	
12. I am not really sure what I think or believe about my problems.	
13. I misread another person's motives and feelings without checking with the person to see if my conclusions are correct.	

5-FACET MINDFULNESS QUESTIONNAIRE

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

- _____ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- _____ 2. I'm good at finding words to describe my feelings.
- _____ 3. I criticize myself for having irrational or inappropriate emotions.
- _____ 4. I perceive my feelings and emotions without having to react to them.
- _____ 5. When I do things, my mind wanders off and I'm easily distracted.
- _____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- _____ 7. I can easily put my beliefs, opinions, and expectations into words.
- _____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- _____ 9. I watch my feelings without getting lost in them.
- _____ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- _____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- _____ 12. It's hard for me to find the words to describe what I'm thinking.
- _____ 13. I am easily distracted.
- _____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
- _____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- _____ 16. I have trouble thinking of the right words to express how I feel about things
- _____ 17. I make judgments about whether my thoughts are good or bad.
- _____ 18. I find it difficult to stay focused on what's happening in the present.
- _____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
- _____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____ 21. In difficult situations, I can pause without immediately reacting.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____ 24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behavior.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

The BULLs-eye Instrument about valued life

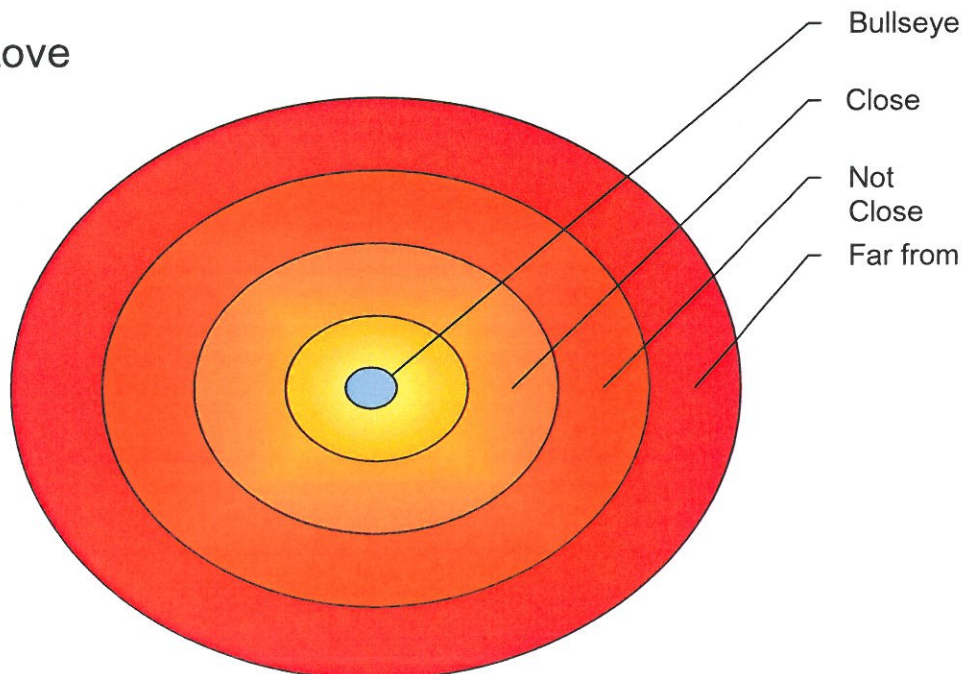
INSTRUCTIONS Answer these questions thoughtfully. Your answers provide a measure of the consistency between your activities in the last two weeks and what you value most in your life in three important areas--areas of love, work, and play. and your ability to persist when you experience barriers.

Part A: There are three dartboards in this section.

1. The first bull's eye represents love. On the lines below, write about love. In a world where you could create what you want, what would love in your life look like right now? Who would you love? How would you express love? How would you see love coming to you from others?

Now, place an **X** on the dartboard to indicate how your life has been in the past 2 weeks with regard to how you want it to be in matters of love. An X in the bull's eye indicates you lived exactly like you want your life to be in matters of love. The further away from the bull's eye that you place your **X** represents the amount of difference between the last 2 weeks and what you value in matters of love. Outside the outer ring indicates the greatest difference between what you value and your behavior during the past 2 weeks. Place your **X** on the left side of the dartboard.

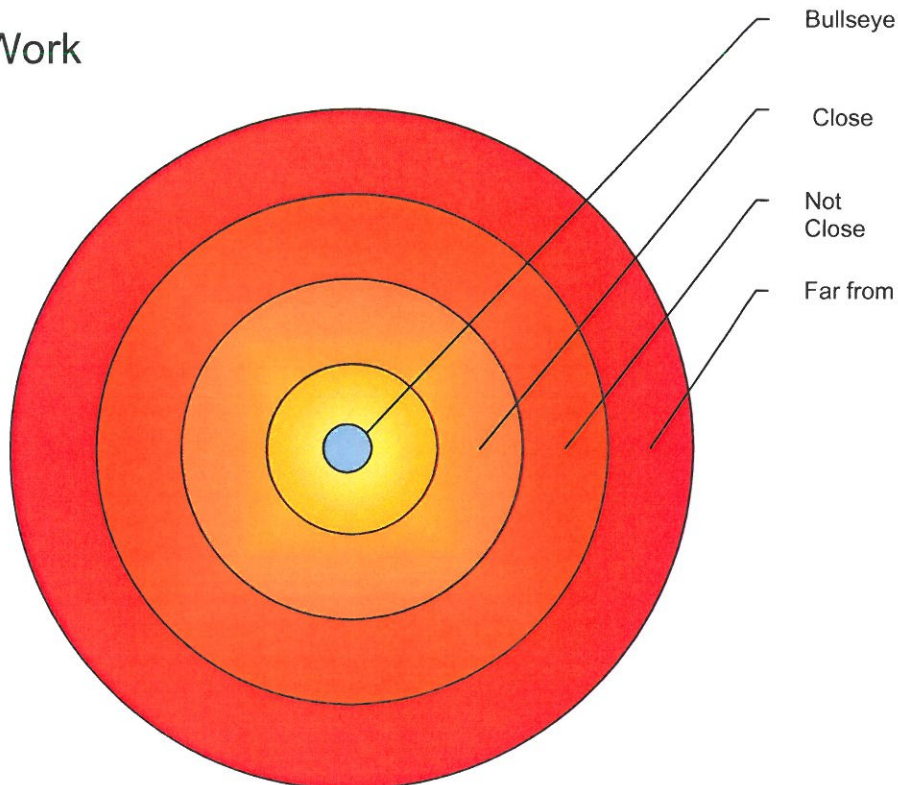
Love



2. The second bull's eye represents work. On the lines below, write about work. In a world where you could create what you want, what would work in your life look like right now? What would you do? How would you feel when you did it? Who would notice?

Now, place an **X** on the dartboard to indicate how your life has been in the past 2 weeks with regard to how you want it to be in matters of work. An X in the bull's eye indicates you lived exactly like you want your life to be in matters of work. The further away from the bull's eye that you place your **X** represents the amount of difference between the last 2 weeks and what you value in matters of work. Outside the outer ring indicates the greatest difference between what you value and your behavior during the past 2 weeks. Place your **X** on the left side of the dartboard.

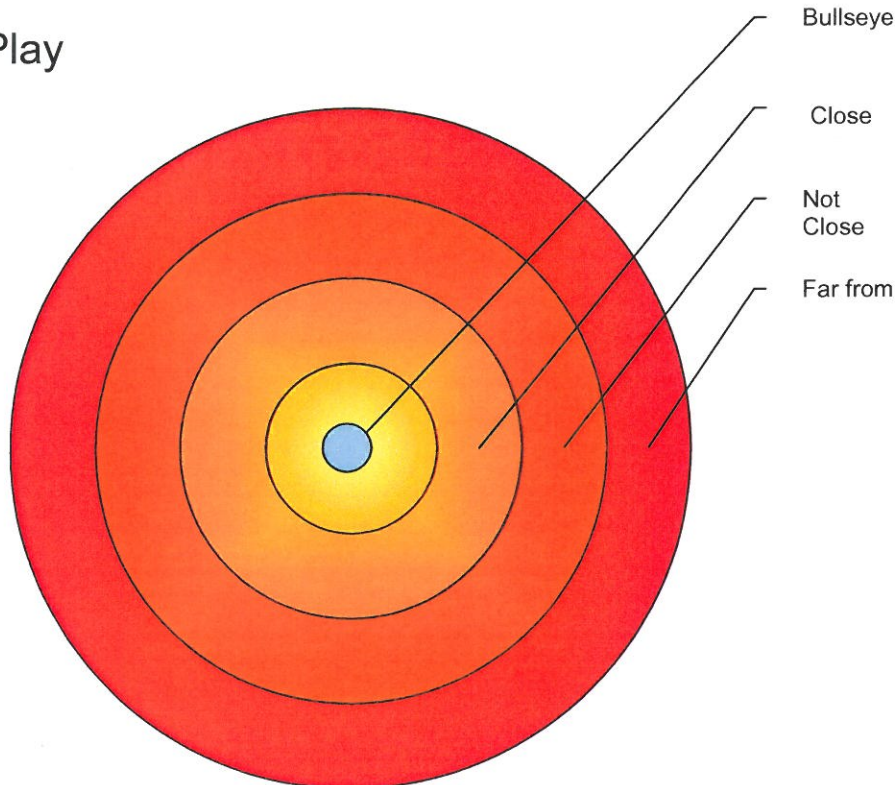
Work



3. The second bull's eye represents play. On the lines below, write about play. In a world where you could create what you want, what would play in your life look like right now? What would you do? How would you feel when you did it? Who would notice?

Now, place an **X** on the dartboard to indicate how your life has been in the past 2 weeks with regard to how you want it to be in matters of play. An X in the bull's eye indicates you lived exactly like you want your life to be in matters of play. The further away from the bull's eye that you place your **X** represents the amount of difference between the last 2 weeks and what you value in matters of play. Outside the outer ring indicates the greatest difference between what you value and your behavior during the past 2 weeks. Place your **X** on the left side of the dartboard.

Play



Part B

4. Write down what stands between you and the life you value (what you wrote on the previous three). What are the barriers? The obstacles?

5. Rate how often you persist in doing things you want to do when you run into barriers. Think about love, work and play in your life. How often do barriers prevent your living in ways that show what is important to you? Put the **X** on the dartboard to show how often you persist when you experience barriers to pursuing your dreams about love, work and play. An **X** inside the bull's eye indicates that you always persist. An **X** outside the last ring indicates that you never persist.

Persistence



ATQ-B

Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you over the last week. Please read each item carefully and circle the appropriate answers on the answer sheet in the following fashion (1 = "not at all", 2 = "sometimes", 3 = "moderately often", 4 = "often", and 5 = "all the time"). Then, please indicate how strongly, if at all, you tend to believe that thought, when it occurs. On the right hand side of the page, circle the appropriate answers in the following fashion (1 = "not at all", 2 = "somewhat", 3 = "moderately", 4 = "very much", and 5 = "totally").

Frequency	Items	Degree of Belief
1 2 3 4 5	1) I feel like I'm up against the world	1 2 3 4 5
1 2 3 4 5	2) I'm no good.	1 2 3 4 5
1 2 3 4 5	3) Why can't I ever succeed?	1 2 3 4 5
1 2 3 4 5	4) No one understands me.	1 2 3 4 5
1 2 3 4 5	5) I've let people down.	1 2 3 4 5
1 2 3 4 5	6) I don't think I can go on.	1 2 3 4 5
1 2 3 4 5	7) I wish I were a better person	1 2 3 4 5
1 2 3 4 5	8) I'm so weak.	1 2 3 4 5
1 2 3 4 5	9) My life's not going the way I want it to.	1 2 3 4 5
1 2 3 4 5	10) I'm so disappointed in myself.	1 2 3 4 5
1 2 3 4 5	11) Nothing feels good anymore.	1 2 3 4 5
1 2 3 4 5	12) I can't stand this anymore.	1 2 3 4 5
1 2 3 4 5	13) I can't get started.	1 2 3 4 5
1 2 3 4 5	14) What's wrong with me?	1 2 3 4 5
1 2 3 4 5	15) I wish I were somewhere else	1 2 3 4 5
1 2 3 4 5	16) I can't get things together.	1 2 3 4 5
1 2 3 4 5	17) I hate myself.	1 2 3 4 5
1 2 3 4 5	18) I'm worthless.	1 2 3 4 5
1 2 3 4 5	19) Wish I could just disappear.	1 2 3 4 5
1 2 3 4 5	20) What's the matter with me?	1 2 3 4 5
1 2 3 4 5	21) I'm a loser.	1 2 3 4 5
1 2 3 4 5	22) My life is a mess.	1 2 3 4 5
1 2 3 4 5	23) I'm a failure.	1 2 3 4 5
1 2 3 4 5	24) I'll never make it.	1 2 3 4 5
1 2 3 4 5	25) I feel so helpless.	1 2 3 4 5
1 2 3 4 5	26) Something has to change	1 2 3 4 5
1 2 3 4 5	27) There must be something wrong with me.	1 2 3 4 5
1 2 3 4 5	28) My future is bleak.	1 2 3 4 5
1 2 3 4 5	29) It's just not worth it.	1 2 3 4 5
1 2 3 4 5	30) I can't finish anything.	1 2 3 4 5

Working Alliance Inventory

On the following pages there are sentences that describe some of the different ways a person might think or feel about his or her therapist (group facilitator). If the statement describes the way you always feel (or think) circle the number 7; if it never applies to you circle the number 1. Use the numbers in between to describe the variations between these extremes. Work fast, your first impressions are the ones we would like to see. (PLEASE DON'T FORGET TO RESPOND TO EVERY ITEM.)

1. The group facilitator and I agree about the things I will need to do in therapy to help improve my situation.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

2. What I am doing in therapy gives me new ways of looking at my problem.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

3. I believe the group facilitator likes me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

4. The group facilitator does not understand what I am trying to accomplish in therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

5. I am confident in the group facilitator's ability to help me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

6. The group facilitator and I are working towards mutually agreed upon goals.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

7. I feel that the group facilitator appreciates me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

8. We agree on what is important for me to work on.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

9. The group facilitator and I trust one another.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

10. The group facilitator and I have different ideas on what my problems are.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

11. We have established a good understanding of the kind of changes that would be good for me.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

12. I believe the way we are working with my problem is correct.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always



The Employee Wellbeing Service

Participant Information Sheet Version 2. 14/03/2011

The Efficacy of Workshops Designed to Reduce Psychological Distress

Thank you for booking into a psychological coping skills workshop delivered by the Employee Wellbeing Service. In order to ensure that we are providing the best service possible, we are evaluating the effectiveness of our workshops. As such, we would like to invite you to take part in a research study. When completed, the findings of the study will be used to improve on the delivery of future workshops run by the Employee Wellbeing Service. The study will also be submitted as part of Dr Cerith Waters's training in Clinical Psychology.

Before you decide whether or not to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read this information sheet carefully. If you have any questions, or would like more information, please feel free to contact us. Our contact details are provided at the end of the information sheet.

What is the study about?

We are doing this study in order to evaluate how effective the workshops are in improving the psychological well being of employees. We are also investigating which aspects of the workshops work best in terms of improving participant's psychological well being and reducing distress. To achieve this, we are comparing the two workshops that are delivered by the Employee Wellbeing Service. The two workshops that we are aiming to compare are 1) Acceptance and Commitment Therapy for Stress Resilience and Psychological Coping Skills; and 2). Cognitive Behaviour Therapy for Assertiveness and Psychological Coping Skills. We hope that by better understanding which aspects of the workshops work best, we will be able to improve on the services run by the Employee Wellbeing Service.

Why have I been chosen?

We are asking all Employees who are attending the workshops between March 2011 and October 2012 to take part in the study.

Do I have to take part?

No – you only take part if you want to. If you decide to take part you can withdraw at any time, without giving a reason. If you don't want to take part, or if you decide to stop and withdraw, it won't affect your eligibility to attend the workshop. If you decide not to take part, you will still be able to make use of future services provided by the Employee Wellbeing Service

What do I have to do?

If you do decide to take part, you are first asked to sign a consent form to show that you have agreed to be included in the study and you are required to complete the questionnaires that we have sent you. The questionnaire packs used in the study take approximately 20 minutes to complete. We have provided a stamp addressed envelope for the return of the questionnaires. The questionnaires are designed to measure your mood and feelings, your general psychological well being, and your thoughts and thinking styles. Secondly, on the day of the workshop, you will be asked to complete a similar set of questionnaires before and after you have taken part in the workshop. In the Employee Wellbeing Service we are committed to improving the services we offer Employees. As such, we have always allocated time before and after the workshops for the completion of evaluation measures which are used for audit purposes. Thus, the current study has not altered the usual delivery of the workshops and taking part in this research will not alter the services you receive. The questionnaires that the Employee Wellbeing Service collects for audit purposes take approximately the same amount of time as the questionnaires in the research study and they are very similar in their content.

Thirdly, three months after the workshop, you will be contacted by the Chief Researcher (Cerith Waters) and sent a final set of questionnaires. Again, these questionnaires will take approximately 20 minutes to complete. If returning the questionnaires by post, we will pay for the postage. Only the chief researcher will have access to the information provided on the questionnaires. The Head of Employee Wellbeing will ensure management of the programme and, in exceptional circumstances will retain authority to designate an alternative chief researcher in which case, participants would be notified. No one else within the NHS will have

access to the information you provide. Additionally, to ensure that the information you provide us with remains anonymous, we ask you to write the last 4 digits of your telephone number on the questionnaires. That way, we can track progress through the research programme but the questionnaires you complete will not be linked to your name.

In addition to the questionnaire aspect of the study, we are hoping to conduct a 10-15 minute telephone interview with a smaller number of Employees three months after the workshop. You are able to refuse taking part in this aspect of the study and still take part in the questionnaire study. Or, you are able to take part in the questionnaire study and the telephone interview. Throughout the course of the study, your personal information will be treated with the utmost respect, and all information will be anonymised.

Will my taking part in this study be kept confidential?

If you agree to take part, all of the information that you give us will be kept anonymous and confidential. Any information arising from the research programme stored on laptops and NHS computers will have your name and address removed so that you cannot be identified from it. Any information kept on paper will be stored in a locked cabinet in an NHS building.

What will happen to the results of the research study?

The results of the questionnaires (and, if applicable the interview) will be written up as part of a study. This study will be submitted as part of Dr Cerith Waters's training in Clinical Psychology. The results will then be used to improve on the content and delivery of future workshops offered by the Employee Wellbeing Service. Additionally, the results may also be published in an academic journal, as well as possibly being used in academic presentations. A summary of the findings will also be made available to participants upon request from the Employee Wellbeing Service. It would be impossible to identify you within the study write up, as no personal information will be identified in any publication of the results. All results will be shown as group results – no individual results will be used.

What are the disadvantages or risks of taking part?

We don't think there are any, but if you are worried about anything, please do not hesitate to contact us via the details provided at the end of the information sheet.

What are the benefits of taking part?

There are no direct benefits to you for taking part, but you will be helping in an important research study which will contribute to better services being provided in the future.

Who is organising and funding the research?

Cardiff and Vale University Health Board is sponsoring the research.

Who has reviewed the study?

This research has been reviewed and approved by an Ethics Committee and by the NHS Research and Development Committee.

What if something goes wrong?

It is very unlikely that you will be harmed by taking part in this study, but remember that you don't have to take part if you don't want to, and can stop taking part at any point. Please talk to us if you are worried or upset about something in the questionnaires. Our contact details are provided at the end of the information sheet. In the very unlikely event that taking part harms you, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for legal action, but you may have to pay for it. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaints mechanisms are available to you. In the unlikely event of you disclosing information regarding the possibility of risk or harm coming to yourself or a named other, this information will be passed on to the relevant clinicians/authorities.

If you would like more information about the research study, please contact:

Cerith Waters, Clinical Psychology Training, 1st Floor, Archway House, Llanishen, Cardiff, CF14 5DX. Tel: 02920 206464

Email: waterscs@cardiff.ac.uk

If you have a query about the workshops, please contact:

Ruth Nash, Employee Well being Consultative Supervisor/Co-Ordinator, Denbeigh House, Heath Park, University Hospital of Wales, CF14 4XW. Tel: 02920 744133

Email: Ruth.Nash@wales.nhs.uk



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Bwrdd Iechyd Prifysgol
Caerdydd a'r Fro
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From: Professor JI Bisson
R&D Director
R&D Office, 2nd floor TB2
University Hospital of Wales
Cardiff
CF14 4XW

08 February 2011

Dr Cerith Waters
Trainee Clinical Psychologist
South Wales Doctoral Programme
Archway House
77 Ty Glas Avenue
Cardiff

Dear Dr Waters

Project ID : 11/MEH/5050 : The Efficacy Of Workshops Designed To Reduce Psychological Distress Among NHS Employees

Thank you for your recent communication regarding the above project, which was reviewed on 08 February 2011 by the Chair of the Cardiff and Vale Research Review Service (CaRRS).

Documents submitted for review were:

Document	Version	Date
NHS REC Form	3.1	Received 31 January 2011
SSI Form	3.1	Received 31 January 2011
Protocol	-	undated
Patient Information Sheet	1.0	28 January 2011
Patient Consent Form	1.0	28 January 2011
Stem Questions for Interview	-	undated
Questionnaires: Time 1,2,3,4	-	undated

I am pleased to inform you that the Chair had no objection to your proposal.

You may now contact the R&D Office to obtain the sponsor signature needed for your submission to the NHS Research Ethics.

R&D approval and final acceptance of sponsorship by Cardiff and Vale UHB is now subject to the following:

- Evidence of favourable opinion from the relevant NHS Research Ethics Committee
- Evidence of appropriate Informed Consent training for Dr Cerith Waters

Once the above are in place, an R&D approval letter will be issued. You should not begin your project before receiving this written confirmation from the R&D Office.

Please ensure that you notify R&D if any changes to your protocol or study documents are required in order to obtain a favourable opinion from the Research Ethics Committee.

If you require any further information or assistance, please do not hesitate to contact the staff in the R&D Office.

Yours sincerely,



Professor Jonathan I Bisson
Chair of the Cardiff and Vale Research Review Service (CaRRS)

CC R&D Lead Prof Nick Craddock
Professor Neil Frude, Academic Supervisor

[ENCS] Obtaining a sponsorship signature - guidelines



GIG
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Busnes
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South East Wales Research Ethics Committee - Panel D

Telephone: 02920 376822/6823

22 March 2011

Dr Cerith Waters
Trainee Clinical Psychologist
Cardiff and Vale University Health Board
South Wales Doctoral Programme In
Clinical Psychology, Archway House,
77 Ty Glas Avenue, Llanishen
CF14 5DX

Dear Dr Waters

Study Title: The efficacy of workshops designed to reduce psychological distress among NHS employees
REC reference number: 11/WA/0034

Thank you for your letter of 14 March 2011, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair, Dr K Craig.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation [as revised], subject to the conditions specified below.

Ethical review of research sites

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

Conditions of the favourable opinion

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

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

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For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where the only involvement of the NHS organisation is as a Participant Identification Centre (PIC), management permission for research is not required but the R&D office should be notified of the study and agree to the organisation's involvement. Guidance on procedures for PICs is available in IRAS. Further advice should be sought from the R&D office where necessary.

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

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Protocol	2	14 March 2011
Response to Request for Further Information	C Waters	14 March 2011
REC application		28 January 2011
The Efficacy of Workshops Designed to Reduce Psychological Distress	2	14 March 2011
Participant Information Sheet	2	14 March 2011
Questionnaire: Stem Questions for the Interview	1	28 January 2011
Advertisement	2	14 March 2011
CV	Prof Frude	23 January 2011
Letter from Sponsor	C&V UHB	
Investigator CV	C Waters	14 March 2011
Participant Consent Form	2	14 March 2011

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

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

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

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

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

11/WA/0034

Please quote this number on all correspondence

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

Yours sincerely

pp. 
Dr K J Craig
Chair

Email: jagit.sidhu@bsc.wales.nhs.uk

Enclosures: "After ethical review – guidance for researchers" - SL- AR2

Copy to: R&D Office for Cardiff & Vale UHB

April 11th 2011.

Appendix 6

This research project seems to have gotten off to a sticky start! The EWS service is undergoing a lot of changes at the moment in terms of the directorate under which it falls and I think staff are feeling uncertain of their future so it seems the last thing they need is to be facilitating a research project! I've been thinking about Barry Mason's unsafe uncertainty model for myself & the EWS staff. I have arranged to meet the new Clinical lead as Jane is leaving her role as head of service which I think is adding to the uncertainty felt by the staff. I've been so busy lately with the other coursework that not being physically present enough in the EWS is not helping to get things off the ground. Anyway, onward & upwards, I must stay positive to help galvanise support!!

Stem Questions for the Interview

- 1). Looking back on the workshop, what sought of impact has it had on you?
 - 2). Have you found that you have been able to put into practice some of the techniques that you learnt in the workshops?
 - 3). Which techniques have you found that you have practiced?
 - 4). How has workshop and the techniques that you learnt changed the way you approach life?
 - 5). Have you found that you have been able to better manage stressful situations in work or life outside work since the workshop?
- Can you tell me a little more about it?
- 5). Have you found that you have altered the way you think, feel or behave since attending the workshop?
- Can you tell me a little more about it?
- How have you noticed these changes in your daily life?
- Have other people noticed these changes in you?
- 6). What did you find most useful about the workshop?

7). Would further workshops of this nature be useful too you?

- What would you like more of?

-What would you like to be different?

Transcript	Codes
<p>Looking back, what impact did the workshop have?</p> <p>It really helped me to be able to prioritise things and not to let things take over,</p> <p>I did have an incident last week, I was in a terrible situation, all out of my control and normally I would have gotten into a right flap but I didn't, I was surprised at how calm I stayed, I really did find it useful...</p> <p>When I first sat there in the morning I wasn't sure as my problems weren't all work related, they're because family members are ill and that was impacting on me and my ability to make sure that everyone was ok, so at first I was thinking that this wasn't for me but as the morning went on I realised that yes this is useful for me and its valid in the workplace and in your personal life and I've been passing it onto my patients, it's been a brilliant experience I've got a lot from it....</p> <p>You know it's been helpful to pass on some of the techniques to my patients who all have chronic health conditions and I've been able to pass on some of the skills to help them deal with things, it has been so useful, I didn't realise how much it would benefit me personally and how I can pass on the skills to others....</p> <p>You know I am really, really surprised, like last week I was at the garage and I was supposed to dropping my son off to his job, went to fill my car up, I got back into the car and the light was on for saying that the passenger door was open so I got out of my car to sort that out and the wind blew the door shut and my car locked on me for 2 ½ hours....and the garage attendant went up the wall because my car was running next to the pump but...</p> <p>...it was really interesting, it was totally out of my control and normally I would get really stressed out or angry but instead I just stayed their calmly as I thought there is nothing that you can do so I just accepted it and didn't let it get to me...</p> <p>and that's what I've been telling my patients to do, to prioritise your problems, and deal with your problems when you're ready, rather than stressing over them, it's been brilliant honestly so I do thank you....</p>	<p>-Putting life into perspective -Acceptance -Staying calm</p> <p>-Passing on the skills learnt in the workshop to patients, colleagues and friends</p> <p>-Ambivalence to excitement</p> <p>-Passing on the ACT skills to others</p> <p>-Personal development Positive effects of workshop</p> <p>-Acceptance in Action -Doing things differently -Broadening perspective on stressful experiences -Putting ACT skills into practice</p> <p>-acceptance -respond not react</p> <p>-passing on the skills to others</p>

<p>Noticed better able to manage stress in the workplace?</p> <p>Definitely yes, I try not to take things home with me now, we're under a lot of pressure in Podiatry we only get 20 minutes and time can over and people can get angry and it's been important for me to not take over on peoples aggression, anger and upset, it's benefitted me all round, it really has...</p> <p>you know it was brilliant, anyone I meet now who is stressed I tell them to go on line now and apply for that course, you know as it will really benefit you.....</p> <p>You know there were people there (at the workshop) who were really stressed and got upset with things as that's how they deal with it, but it was nice you know, to know that other people have similar difficulties, everyone was relating and helping each other and we had a lovely team with us it was great.....</p>	<ul style="list-style-type: none"> -prioritising -sticking to values and priorities -increased awareness of own values/goals -passing on the skills to others -group process -solace in others problems
<p>Noticed better able to manage stress in your personal life? (6 mins 21 seconds)</p> <p>Yes, I am planning things around myself more now rather than planning around what other people are doing, like I mentioned my dad is unwell and my husband has a heart problem and normally I would get stressed out and spread myself too thinly but what I've done is manage my time better I don't fit myself into other people I fit them into what my priorities are, it has its been brilliant,</p> <p>I have (put values into practice) like I said, everything we went through on the day, I've totally benefitted from it..... and there were some things on the day and I was thinking that's not really valid for me but when I've come away and something's gone on I've sat back and thought about it I've thought oh wow, that was really valid there and I thought that was really useful.....</p> <p>I am a lot happier and I am a lot better at coping with things so thank you for the course, I've seen it in myself and I've seen it in the people that were there on the day it really benefitted people, personally and in work, it helps in both ways and each benefits the other....</p>	<ul style="list-style-type: none"> -values -doing things differently -Reflecting on actions -observable benefits for self and for others on the course
<p>Have you changed the way you related to your difficult thoughts and feelings?</p> <p>Yes I have, Well my sister she had a lot of problems, she had a problem with drinking, and I tried to keep on the responsibility with that but I've handed that back to her and our relationship has really</p>	<ul style="list-style-type: none"> -example of a change in a relationship (maybe too specific/confidentiality).

<p>been better and</p> <p>I've been passing this onto other people, like them taking control and making their life different,</p> <p>it's just not like letting external things taking control, like you being in control of your life really.....</p> <p>Have you found that your worries or difficult feelings interfere less in your life?</p> <p>Yes, obviously with my husband being so unwell finances aren't good in our house and I used to get really stressed out but I sat down and made different management plans and I don't know it's been loads better you know, not going around with that heavy feeling all the time...</p> <p>More accepting of difficult thoughts and feelings?</p> <p>Yes, I am able to dismiss things a lot better without feeling guilty about it...</p> <p>Any examples?</p> <p>Can't think, ummmmm, you've got me now..... Like I said I've used most things</p> <p>More aware of values in life?</p> <p>Definitely....</p> <p>Any examples?</p> <p>Valuing oneself, very important, if you don't keep yourself topped up then everything around you just falls, it's so important to look after yourself first and then you can prioritise and take on other things but knowing your limits.....</p> <p>It just built up into so much stress and it took over, and it does, stress does makes you ill then, and your anxious, making rash decisions rather than sitting down and thinking about them, and going on guilt</p>	<p>-passing on the skills to others</p> <p>Master of own ceremony</p> <p>-tackling problems head on</p> <p>-acceptance</p> <p>values</p> <p>doing things differently prioritising comparison with unwell self</p>
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trips that don't need to be there really, there's no need for it, not when you sit down and think about it and put things in their priorities where they belong and keeping yourself safe...

Honestly it's been marvellous I've really benefitted

Anyone else noticed/commentated on changes in you?

Family and friends as well have commentated, I do a joint clinic on a Wednesday with X and I was telling her about it and she said you feel a lot calmer, especially last week after the incident, and we just laughed about it, she said we thought we would have to get cover for you and we expected you to be in work in tears, and I said it was out of my control really wasn't it

Yeah, it's been marvellous, you can explain to other people then about not getting involved in these things (external stressors) and you can put them in a box and they will deal with themselves....

Noticed reduction in difficult thoughts/feelings?

Yes, because we can beat ourselves up quite easily and when we are feeling really negative we can kind of project that onto other people and take things that they say the wrong way but really there is a totally different meaning to what their trying to get over to you but when you're feeling negative you put up these walls you know, it's really not a good place to better to keep positive and you get a lot more positive back then...more for the positive now, find the positive in the negative, there's usually one in there (laughs).....

-Others commentated
-Comparisons with former self
-Acceptance
-Doing things differently

-passing on skills to others

-comparison with former self
-world view