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The application of mindfulness to anxiety: An exploration of the effectiveness of using mindfulness based interventions in treating patients with anxiety

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Disorders such as generalised anxiety disorder (GAD), panic disorder and social phobia are the most prevalent anxiety disorders (Kessler et al., 1994) and several different theories and models of treatment have been developed. Cognitive-behavioural therapy (CBT) has been identified as first-line treatment for anxiety (Bystritsky, 2006). Evidence suggests that it does not benefit everyone and CBT has been criticised for its focus on the content of thoughts. Little research has focused on what mindfulness-based interventions can contribute to our understanding and treatment of these disorders. This review describes anxiety, its aetiology, underlying mechanisms and maintaining factors according to several models. Discussion of the clinical application of mindfulness and active mechanisms follows. The integration of CBT and mindfulness is considered and a rationale for its use in understanding and treating these anxiety disorders is presented. Directions for further research are discussed.

Empirical paper

The contribution of mindfulness-based approaches in the understanding and treatment of anxiety disorders is unclear. The study had two components; firstly it investigated the impact of a mindfulness-based intervention on adults with persistent anxiety. Results suggested that the intervention was associated with an increase in mindfulness and significant decreases in symptoms of anxiety, depression and stress, and in overall scores on the Clinical Outcomes in Routine Evaluation outcome measures (CORE-OM; Mental Health Foundation & Core

System Group, 1998). Secondly, it explored how adults with persistent anxiety experienced a mindfulness-based intervention. Five superordinate themes emerged through the IPA analysis (Smith, 1996); these were (1) Getting to grips with mindfulness, (2) Timing (3) Integration (4) Sense of change and (5) Shared experience. Methodological issues, clinical implications and directions for future research are addressed.

Key words: mindfulness, anxiety, mechanisms of change

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Glossary of abbreviations

ACT	Acceptance and commitment therapy
ASS	Anxiety Stress Scales (of the DASS)
BPD	Borderline personality disorder
CBT	Cognitive-behavioural therapy
C	Completer
CORE-OM	The Clinical Outcomes in Routine Evaluation - Outcome Measure
DASS	The Depression Anxiety Stress Scales
DBT	Dialectical behaviour therapy
DNC	Did not complete
DO	Dropout
DSM-III-R	Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised
ES	Effect size
GAD	Generalised anxiety disorder
GP	General practitioner
HADS	The Hospital Anxiety and Depression Scale
IPA	Interpretative phenomenological analysis
MAM	Managing Anxiety Mindfully
MBCT	Mindfulness-based cognitive therapy
MBSR	Mindfulness-based stress reduction
M	Mean
MQ	Mindfulness Questionnaire

NC	Non-completer
NICE	National Institute for Health and Clinical Excellence
N/A	Not applicable
RCTs	Randomised control trials
SD	Standard deviation
SPSS	Statistical Package for the Social Sciences
PC	Personal computer
TAU	Treatment as usual

What can mindfulness contribute to the understanding and treatment of anxiety?

Kerry Ozcelik

Prepared for submission to the Journal of Cognitive Psychotherapy (see Appendix 1)

Abstract

Anxiety disorders such as generalised anxiety disorder (GAD), panic disorder and social phobia are the most prevalent anxiety disorders (Kessler et al., 1994). Over the years a number of different theories and models of treatment have been developed to address these disorders. Cognitive-behavioural therapy (CBT) has been identified as first-line treatment for anxiety (Bystritsky, 2006). However, there is evidence to suggest that it does not benefit everyone and CBT has been criticised for its focus on the content of the thought. More recent years have seen the introduction of acceptance-based approaches that adopt different approaches to our thoughts within a range of disorders. There is mounting evidence supporting the use of acceptance-based interventions with some anxiety disorders. Little research has focused on what mindfulness-based interventions can contribute to the understanding and treatment of GAD, panic disorder and social phobia. This review describes anxiety, its aetiology, underlying mechanisms and maintaining factors according to several models. Discussion of the clinical application of mindfulness, and active mechanisms follows. A rationale for the use of mindfulness in understanding and treating anxiety disorders is presented. The integration of CBT and mindfulness in the treatment of anxiety disorders is considered. Finally, directions for future research are addressed.

Key words: mindfulness, anxiety, mechanisms of change

Introduction

What is anxiety?

Anxiety is an inevitable part of every day life for most of us. It is a strong emotional state involving anticipatory process with regard to the possibility of future negative events (Borkovec & Sharpless, 2004). Although unpleasant most people cope with anxiety; however for some, the anxiety does not subside and "anxiety becomes a disorder when it interferes with a person's ability to function" (American Psychiatric Association, 2000).

Generalised anxiety disorder (GAD), panic disorder (with or without agoraphobia) and social phobia, are the most prevalent anxiety disorders (Kessler et al., 1994) and patients with these disorders are more likely to seek treatment from a primary care physician than a psychiatrist (Shear & Schulberg, 1995). The worldwide lifetime prevalence of all anxiety disorders is estimated to be at 28.8% (Kessler et al., 2005). In 2000 a UK community based survey of psychiatric morbidity among 8,800 adults (Singleton, Bumpstead, O'Brien, Lee & Meltzer) found mixed anxiety and depressive disorder to be the most common (88 cases per 1000).

Given that GAD, panic disorder and social phobia are among the most prevalent of the anxiety disorders the following review focuses on the psychological models and treatment that addresses these disorders. GAD is a disorder characterized by chronic, pervasive, uncontrollable worry (American Psychiatric Association, 1994) as well as associated somatic complaints. Patients with panic disorder are

primarily concerned with potential harm to their physical well-being caused by the panic symptoms (Goldstein & Chambless, 1978) whilst patients with social phobia are more concerned with social failure and negative evaluation by others (Chambless & Gracely, 1989).

Anxiety versus fear

Unpleasant emotions depend on the activation of an evolutionary primitive sub-cortical circuit, which includes the amygdala (which forms part of the limbic system, involving memory and emotional reactions) and neural structures. This motivational system mediates autonomic reactions (e.g. heart rate change) and somatic reflexes (e.g. startle change) that originally promoted survival in dangerous conditions (Lang, Davis & Ohman, 2000). Distinction has been made between fear and anxiety, and variations in the neural circuit and its outputs may separately characterise cue-specific fear (as in specific phobia) and more generalized anxiety.

Fear is thought to be a reaction to an explicit threatening stimulus, with escape or avoidance as the reflective response and is associated with phobias (Lang et al., 2000). The amygdala plays a central role in the mediation of specific fear reactions (LeDoux, 1998) and detects potential threats. Through connections with the hypothalamus, it mediates defence responses such as fight-or-flight and freezing (Lang et al., 2000). In contrast, GAD is prompted by less explicit and more generalised cues, involving physiological arousal, often without organised functional behaviour and is considered to involve more complex processes and

mechanisms of the brain (Lang et al., 2000).

The following review aims to examine the psychological models and treatment of GAD, panic disorder and social phobia and the aetiological and maintaining factors, and mechanisms of change in intervention. Discussion of mindfulness-based programmes is included to establish what they have to offer to the understanding and treatment of these anxiety disorders. The distinction between fear and anxiety will be considered.

Models and treatment of anxiety disorders

A number of different psychological models and treatments have been developed for these anxiety disorders. This review will proceed within an overview and evaluation of some of these models.

1) Behavioural model

The focus of these models (e.g. Mowrer, 1960) is on fear. It is suggested that anxiety develops through pathological fears that are acquired through classical conditioning processes (learning) and maintained through operant conditioning (reinforcement). For example, an immediate evaluative response occurs when the individual detects internal or external stimuli that contain a threatening message. In response to this, the individual engages in a sequence of secondary defensive responses, where the goal is to eliminate the threat (e.g. avoidance of situations that cause them fear). This helps them in the short term, but limits what they can do and the anxiety returns when these situations arise again.

How do behavioural models seek to treat fear?

Accordingly, behavioural treatments use learning principles to extinguish anxious responses to inappropriately feared stimuli. The most widely employed technique is systematic exposure to situations and stimuli that evoke pathological fear. With repeated, prolonged exposure, anxiety responses gradually diminish, a process known as habituation (Wolpe, 1958). Although these theories provided a fundamental basis for behaviour theory and therapy, this approach was not without criticism. There was limited evidence for the role of direct traumatic

conditioning in the development of most fears and phobias (Lazarus, 1984) and evidence that habituation is not a necessary condition for improvement (Emmelkamp, 1974; Rachman, Craske, Tallman & Solyon, 1986). As these models and treatment focus on anxiety disorders based on fear, it is unclear how more generalised anxiety could be approached.

2) Cognitive-behavioural model

Interest in cognitive processes as potential causes of psychopathology led to the development of cognition focused models (James, 1993), which included some behavioural elements. The central idea of cognitive models is the notion that it is not events per se, but people's expectations and interpretations of events that are responsible for the production of anxiety. Anxiety disorders are thought to be caused and maintained by a disturbance in information processing leading to an overestimation of danger or perceived threat, and an associated underestimation of ability to cope (Beck, Emery & Greenberg, 1985).

This model identifies different levels of thinking that contribute to anxiety. Firstly, early experiences lead the individual to develop a set of core beliefs about themselves, others and the world. These are used to perceive, govern and evaluate behaviour and influence how the individual interprets situations and interacts with others (Beck, Rush, Shaw & Emery, 1979) and may maintain anxiety. For example, an individual with social phobia could have the negative core belief that 'I'm un-likeable.' When the core beliefs are negatively framed individuals are more likely to perceive and interpret situations within this negative orientation.

Secondly, once core beliefs are formed the individual develops cognitive rules for living that help protect them from exposure any negative beliefs, such as 'If I appear anxious people will think badly of me.' They then proceed to to try and avoid appearing anxious. Anxiety arises when an event occurs that activates the negative core belief. For example, when an individual is in a group with other people and interprets laughter as a sign that people are laughing at them and do not like them, this can trigger their core belief that 'I am un-likeable.'

According to this model, we have negative automatic thoughts (NATs) which are irrational thoughts or images that are elicited in specific situations and contribute to anxiety. The individual with social phobia may have the NAT 'what I say sounds stupid' which increases their anxiety as they worry about what they say in social situations.

Maintaining factors

Cognitive-behavioural models of anxiety indicate a number of factors that contribute to the maintenance of anxiety disorders. Clark (1999) suggests that selective attention towards threat cues, or hyper-vigilance, plays a role in enhancing the perception of threat. For example, people with panic disorder have an attentional bias towards threat cues as they are afraid of bodily sensations and symptoms, fearing the presence of a serious physical disorder. Medical investigations indicate this is not so, however, the individual remains unconvinced. One reason for this could be that their fears lead them to focus their attention on their bodies and they become aware of bodily sensations that

other people would not normally notice.

Images are also thought to play a part in the maintenance of anxiety disorders. Beck (1976) suggested that spontaneously occurring images are common in anxiety disorders and enhance the perception of threat. According to Clark and Wells (1995) socially anxious people use thoughts, feelings and sensations to construct an image of themselves, which they assume reflects what others observe. This information can present an inaccurate picture of the way that they appear to others and distort their view of themselves. Clark and Wells (1995) propose that this in-situation processing maintains the individual's negative self-perception, as he/she develops internal negative images that go unchallenged.

Another factor contributing to the maintenance of anxiety is avoidance which helps sustains the individual's negative beliefs, as their expectations remain untested. Three types of avoidance have been identified. Firstly, avoidance of specific situations. Secondly, avoidance of activities that might initiate feared sensations (such as avoidance of exercise in people with panic disorder). Thirdly, avoidance strategies used once symptoms have started (e.g. using something to lean against in people with panic disorder, who fear that they may fall).

It is proposed (Clark & Wells, 1995) that safety-seeking behaviours contribute to the maintenance of anxiety by preventing challenge of the individuals' negative beliefs. For example, when in socially anxious situations a socially phobic person uses safety-seeking behaviours designed to prevent or minimise the feared

catastrophe. These might include the use of alcohol, avoidance of eye contact, or over-rehearsing situations.

It has been suggested that some people find social situations anxiety provoking due to a real social skills deficit (Trower, Yardly, Bryant & Shaw, 1978), which can also be a maintaining factor for anxiety.

How does cognitive-behavioural therapy (CBT) seek to address the maintaining factors?

CBT uses a combination of cognitive and behavioural strategies (Beck et al., 1985). Cognitive strategies can be divided into three: (a) self monitoring, or the identification and labelling of thoughts, (b) logical analysis, involving restructuring thought content, and (c) hypothesis testing (Jarrett & Nelson, 1987). Behavioural strategies focus on changing the reinforcement associated with the problem and include: (a) exposure, (b) activity scheduling, (c) learning new behaviours and skills, and (d) physical control strategies.

What is the efficacy of CBT?

Evidence has emerged for the efficacy of cognitive-behavioural approaches for each of the anxiety disorders (Barlow, 2002) and CBT has been classed as a first-line treatment for anxiety (Bystritsky, 2006). It is one of the most extensively used and researched forms of psychotherapy (Butler, Chapman, Forman & Beck, 2006), and is recommended for the treatment of anxiety by the National Institute for Health and Clinical Excellence (NICE, 2004).

Considerable research has been carried out regarding the efficacy of CBT for the anxiety disorders. A review of randomised controlled trials (RCTs) using CBT to treat anxiety showed it reduced severity of symptoms across a range of anxiety disorders (Butler et al., 2006). A meta-analysis (Barlow, 2002) confirms that CBT is associated with recovery from, or improvement in, anxiety symptoms for panic disorder (Gould, Otto & Pollack, 1995), GAD (Borkovec & Ruscio, 2001) and social phobia (Gould, Buckminster, Pollack, Otto & Massachusetts, 1997).

A review of meta-analysis literature regarding the empirical status of CBT carried out by Butler et al. (2006) described treatment efficacy in terms of an effect size (ES). ES has been categorised by Cohen (1988, 1992) where 0.2 is indicative of small, 0.5 medium and 0.8 large ES. According to this study a large ES was found for CBT for generalised anxiety disorder (GAD), panic disorder and social phobia.

Although the principles of CBT have been applied to a range of psychological problems, a number of studies failed to find high end-state functioning (i.e. scores on outcome measures within normative ranges) for a large population of the treated sample (Chambless & Ollendick, 2001). For example, Butler, Fennell, Robson and Gelder (1991) found that only 32% of their 19 patients with GAD who received CBT evidenced a "good outcome", defined as scores in the normal ranges on three measures of anxiety. A waiting-list comparison study of 26 patients with GAD allocated patients to either a CBT or a treatment-delayed group (Ladouceur et al., 2000). 58% of all participants (the total group)

demonstrated high end-state functioning at 12-month follow-up. However, as there was no placebo group the effects of contact (i.e. attending the group) cannot be ruled out as a mechanism of change.

In addition, studies have found that some patients with anxiety disorders fail to respond to CBT, showed no change or an exacerbation or re-emergence of their symptoms, particularly with panic disorder (Brown & Barlow, 1995; Cowley, Ha & Roy-Byrne, 1997). Only approximately 50% of patients with GAD achieve significant change with CBT (Chambless & Gillis, 1993). CBT has been used to treat GAD for several decades and although efficacious interventions have been developed, it remains the least successfully treated of all anxiety disorders (Brown, Barlow & Liebowitz, 1994). Fisher and Durham (1999) analysed the clinical significance of change following CBT for GAD, and found that overall recovery (defined by improvement in anxiety symptoms) at six-month follow-up was modest (50-60%). Durham, Chambers, MacDonald, Power and Major (2003) carried out a follow-up study (which ranged between eight-fourteen years after treatment) of two RCTs that used CBT to treat GAD. 50% of participants were markedly improved, of which only 30-40% were symptom free.

By the 1980's numerous studies found that exposure-based procedures were consistently effective for the treatment of panic disorder (Barlow, 1988; Jansson & Ost, 1982). Follow-up studies of four years or more have revealed maintenance of gains in many cases (Burns, Thorpe & Cavallaro, 1986; Cohen, Monteiro & Marks, 1984). However, 25% to 40% of patients with panic do not

respond in a clinically meaningful fashion, and relatively few of the patients who did respond were "cured." (Barlow & Lehman, 1996). More recently treatment has targeted cognitive, physiological, and behavioural components of panic disorder (Clark et al., 1994). Results found that in most studies 80% of people treated with CBT were panic-free (Barlow & Lehman, 1996).

However, not every study has reported positive results. Research carried out by Black, Wesner, Bowers and Gabel (1993) found that only approximately 32% of patients were panic free following treatment. The results of a longitudinal analysis found that whilst positive outcomes are maintained at a three-month follow-up, assessments of idiographic response and longer time periods (of two years) revealed that a large proportion of the sample experienced fluctuating symptoms of panic, indicating some symptom re-emergence (Brown & Barlow, 1995).

Two effectiveness studies of CBT for panic disorder have recently been published. The first, (Addis et al., 2004) compared CBT-based panic control treatment to 'treatment as usual' (TAU) in a clinical practice setting in the USA. 65% of participants were taking medications prior to commencing treatment. Although patients in both groups demonstrated a significant improvement, the use of medication was not monitored and thus it is difficult to ascertain whether improvement was due to the differential use of medication between the groups.

The second study (Roy-Byrne et al., 2005) was conducted in primary care with panic disorder patients. 70% had at least one co-occurring mood or anxiety disorder. This compared TAU (pharmacotherapy) with a combination of a shortened modified version of CBT and pharmacotherapy, and found that patients who received the latter fared significantly better. However, this study has limitations. Firstly, all care was delivered in university settings, limiting the generalisability. Secondly, patients received CBT free, but had to pay for medication; this might have influenced compliance and favoured CBT. Thirdly, the multiple treatment components (CBT and pharmacotherapy) make it difficult to determine the contribution of each.

In addition, RCTs do not routinely account for patients who refuse treatment, or have been excluded on the basis of severity or complexity of their disorder, or for those failing to complete or respond to treatment (Orsillo, Roemer & Holowka, 2005). Some of the CBT studies discussed do not make it clear whether their analysis includes data from responders that did not complete treatment (e.g. Gould et al., 1997). Therefore an additional limitation of some of the studies relates to that fact that an 'intention-to-treat' analysis may not have been performed. RCTs frequently lack ecological validity of real treatment settings because of the inclusion criteria (e.g. no co-morbidity); this is not reflected by clinical settings and affects the generalisability of these studies.

Another criticism of some of these studies (e.g. Addis et al., 2004; Brown & Barlow, 1995) is the use of different definitions to describe 'treatment responders,' making it difficult to draw comparisons between their effectiveness. The outcome measures used have also been criticised for over-reliance on measures of symptom reduction, whilst ignoring other information regarding the impact of treatment, such as data regarding quality of life and qualitative information (Orsillo et al., 2005). Future studies may benefit from using a qualitative approach that focuses on trying to understand lived experience and how patients make sense of therapy experiences (e.g. Smith, 1996). This may complement quantitative methods, providing a fuller understanding of psychological processes (Brown 1998).

More recently a number of authors (see Longmore & Worell, 2007) questioned the necessity of direct modification of negative cognitions. For example, Hayes (2004) identified three empirical irregularities in the literature. Firstly, component analyses do not show that cognitive interventions provide added value to therapy (e.g. Borkovec, Newman, Pincus & Lytle, 2002). Secondly, CBT is often associated with a rapid early improvement in symptoms that happen before the cognitions are addressed (e.g. Ilardi & Craighead, 1994) and thirdly, measured changes in thoughts do not seem to occur before changes in symptoms (e.g. Ilardi & Craighead, 1999). These irregularities question thought modification as the main mechanism of change.

Several areas of research have added further criticism to CBT. For example, CBT has focused on challenging cognitions, however, attentional and metacognitive perspectives (e.g. Wells, 2002) suggest that it is the function of problematic cognitions (e.g. avoidance) that is important, rather than the content, frequency or situation (Barlow, 2002; Borkovec & Roemer, 1994). This questions the effectiveness of CBT where the focus of therapy is on the content of the thought, rather than the function.

In summary, cognitive-behavioural models identify a number of factors that contribute to the maintenance of anxiety, many of which appear to relate to phobias and not general anxiety. CBT is a widely used treatment for anxiety and uses a complex mixture of techniques. Overall studies support the efficacy of CBT in the treatment of anxiety but it does not benefit everyone and the existing RCTs are limited in their ecological validity and generalisablility. GAD remains one of the least successfully treated anxiety disorders (Brown et al., 1994). Perhaps one reason for this is that the behavioural components of CBT are more geared toward treating people with social phobias and panic disorder. As GAD is characterised by more general worry the cognitive component may be more geared toward it. However, in light of the increasing criticism of this component, which questions thought modification as the main mechanism of change, it is possible that new strategies are needed in the treatment of GAD.

3) The third wave of behaviour therapy

The increasing criticism of CBT paved the way for the emergence of a new third wave of therapies, known as acceptance-based approaches (Hayes, 2004), which tackles our thoughts in a different way from CBT, including:

- Acceptance and commitment therapy (ACT; Hayes, Strosahl & Wilson, 1999)
- Dialectical behaviour therapy (DBT; Linehan, 1993a, 1993b)
- Worry-based models (Roemer & Orisillo, 2002)
- Mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982, 1990)
- Mindfulness-based cognitive therapy (MBCT; Teasdale, Segal & Williams, 1995)

These interventions are consistent with the traditional cognitive-behavioural approaches, in that they are also grounded in theory and involve empirical evaluation (Hayes, 2004). Anxiety disorders are thought to develop where there is an unwillingness to stay in contact and experience the anxiety, including thoughts and images (e.g. experiential avoidance; Hayes et al., 1999), and responses are characterised by rigidity and derogatory judgement (Orsillo et al., 2005). These models of anxiety have been criticised, as it has been suggested that the acceptance of threat-related thoughts and feelings may be at odds with the primary, adaptive function of fear and anxiety to protect the individual from danger (Craske & Hazlett-Stevens, 2002).

How do acceptance-based approaches seek to address anxiety?

These approaches build on traditional cognitive and behavioural approaches, but differ in a number of ways as they (1) abandon a sole commitment to first-order change (thought challenging), (2) are more sensitive to the context of the anxiety, (3) adopt more experiential and indirect change strategies, and (4) broaden the focus of change through more flexible methods (Hayes, Follette & Linehan, 2004). The struggle to control or change cognitions and content is seen as problematic, and therefore the presence of undesired cognitions is not considered to be the definitive targets of the change process, in contrast to CBT (Block & Wulfert, 2000; Hayes et al., 2004; Hayes & Gifford, 1997; Hayes, Jacobson, Follette & Dougher, 1994; Hayes & Strosahl, 2004; Hayes & Wilson, 1994; Hayes, Wilson, Gifford, Follette & Strosahl, 1996; Martell, Addis & Jacobson, 2001).

Acceptance-based treatments have been used to address a range of mental health conditions and this literature review proceeds in two parts. Firstly, there is a review of the efficacy of integrative approaches that use mixtures of techniques, for example, ACT (Hayes et al., 1999), DBT (Linehan, 1993a, 1993b) and Worry-based models and treatment (Roemer & Orisillo, 2002). Secondly, there is a discussion of mindfulness, its integration with CBT and the efficacy of mindfulness-based approaches.

3.1) Integrative approaches

a) Acceptance and commitment therapy (ACT: Hayes et al., 1999)

This uses acceptance and mindfulness strategies, together with commitment and behaviour change strategies, to increase psychological flexibility. Core processes include:

(1) psychological acceptance - this involves promoting acceptance of private events and experiences without unnecessary attempts to change their frequency or form

(2) cognitive defusion - attempts are made to change the way that the individual interacts with, or relates to, their thoughts by creating contexts in which their unhelpful functions are diminished

(3) mindful contact with ongoing experience - ACT promotes ongoing non-judgmental contact with psychological and environmental events as they occur

(4) self as context - ACT helps the individual get in contact with a sense of self which is always there, observing and experiencing and yet distinct from one's thoughts, feelings, sensations, and memories

(5) clarified values - ACT uses a variety of exercises to help the individual clarify their personal values and choose life directions in various domains (e.g. family, career, spirituality)

(6) committed action - encourages the individual to develop patterns of effective action linked to chosen values

Empirical evidence for the effectiveness of ACT is in its early stages (for a review, see Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004). One of the strengths is that randomised control trials (RCTS) using it have been conducted in the following areas:

- psychosis (Bach & Hayes, 2002)
- depression (Zettle & Raines, 1989)
- substance abuse and dependence (Gifford et al., 2004; Hayes, Wilson et al., 2004)
- workplace stress (Bond & Bunce, 2000, 2003)
- chronic pain and stress (Dahl, Wilson, & Nillson, 2004; Gutiérrez, Luciano, Rodríguez, & Fink, 2004)
- mathematics anxiety (Zettle, 2003)
- specific social phobia (Block & Wulfert, 2000)

The number of different strategies used by ACT makes it hard to isolate the mechanisms of change and, so far, the efficacy of ACT in the treatment of GAD, panic disorder and social phobia, remains unclear.

b) Dialectical behaviour therapy (DBT: Linehan, 1993a, 1993b)

In response to the key problems with CBT, Linehan, Armstrong, Suarez, Allmon and Heard (1991) made significant modifications to standard CBT. They added in new strategies and reformulated the structure of treatment to include acceptance and validation. During DBT four modules are taught: mindfulness, interpersonal effectiveness, emotion regulation and distress tolerance.

Two randomised control trials (RCTs) of DBT have indicated that it is more effective than treatment as usual (TAU) in the treatment of borderline personality disorder (BPD; Linehan et al., 1991) and treatment of BPD and co-morbid diagnosis of substance abuse (Linehan, et al., 1999). In the first study (Linehan et al., 1991) clients receiving DBT were significantly less likely to drop out of therapy, or to engage in parasuicial (risky and self destructive) behaviours and when engaging in parasuicidal behaviours, had less medically severe behaviours. Patients were less likely to be hospitalised, had fewer days in hospital, and had higher scores on global and social adjustment. In the second study, (Linehan et al., 1999) DBT was more effective than TAU at reducing drug abuse. Follow-up indicated that patients had greater gains in global and social adjustment.

One of the strengths of both of these studies was that RCTs were conducted independently of Linehan's research clinic. Koons et al. (2001) assigned 20 women veterans diagnosed with BPD to either DBT or TAU. Patients showed statistically significant reductions in suicidal ideation, depression, hopelessness,

and anger compared to those enrolled in TAU. However, one of the weaknesses of DBT is the use of a number of different strategies which makes it difficult to determine the active mechanisms of change and it is limited in the range of disorders that it is used to treat. There was no indication of how different the programme was from standard CBT, which makes it difficult to compare treatments.

c) Worry based model of GAD

Recently a number of different models of anxiety, in particular generalised anxiety disorder (GAD) have been developed. For example, in 2002 Roemer and Orisillo developed a model which began with Borkovec's (see Borkovec, Alcaine & Behar, 2004) model of worry, suggesting that worry allows individuals to deal with emotional material at an abstract level as it precludes adaptive response to present moment occurrences. By diverting attention from what is currently happening it does not allow the individual to quiet emotional distress and put it aside. Therefore, in the long run, the individual is continuously confronted with troubling emotional material, has a more intense experience of anxiety, and repeatedly engages in frequent worry to dull this experience.

Roemer and Orsillo (2002) connect Borkovec's conceptualisation of GAD to the work of Hayes et al. (1999), who focused on experiential avoidance which "occurs when a person is unwilling to remain in contact with particular private experiences (e.g. bodily sensations, emotions, thoughts, memories, behavioural dispositions) and takes steps to alter the form of frequency of these events and

the contexts that occasion them" (Hayes et al., 1999, pp. 58). GAD is thought to develop when individuals are unwilling to deal the anxiety with which they are struggling.

From this model they developed a mindfulness and acceptance-based programme for GAD. They suggested that a general attitude of awareness and acceptance, in the present, would be an antidote to the GAD pattern of attempting to control or reduce non-specific anxiety. Their treatment protocol employs psycho-education, early cue detection, mindfulness techniques, monitoring, and relaxation. An initial pilot with four generally anxious individuals was carried out (Orsillo, Roemer & Barlow, 2006). Two patients demonstrated a substantial reduction in anxious and depressive symptoms following the 10-week protocol, while the third showed modest improvement. The fourth client missed several sessions and did not display symptom improvement.

Following their pilot study Roemer and Orsillo (2002) carried out a trial treating patients with GAD. A treatment manual was developed, which drew from existing cognitive-behavioural treatments for GAD: Acceptance and commitment therapy (ACT; Hayes et al., 1999), Dialectical behaviour therapy (DBT; Linehan, 1993a), and mindfulness-based cognitive therapy (MBCT; Teasdale et al., 1995). 16 patients received 16 sessions of individual therapy and were taught a variety of mindfulness skills, many of which were drawn from Kabat-Zinn (1990, 1994). The results demonstrated a significant main effect of time, indicating that treatment was associated with reductions in worry, anxiety, stress and depressive

symptoms, improvement in quality of life and decreases in experimental avoidance of emotions and fear.

There are several strengths to this study. A range of validated measures, including symptoms and quality of life were used and treatment was manualised enabling the components to be identified and repeated. Sessions were recorded, allowing adherence to the protocol to be monitored. Their research is not without criticism as both the pilot study and trial were low in participants, which limits generalisability. No control group was used and some patients were taking medication, which makes it difficult to ascertain which variables effected change. A number of different strategies were used meaning that the active mechanisms of change cannot be determined.

Following on from this work Mennin, Heimberg, Turk and Fresco (2002) proposed that individuals with GAD have difficulty in understanding their emotional experiences and possess few skills to modulate their emotions. This causes people with GAD to experience emotions as subjectively aversive and to utilize worry to control, avoid, or blunt emotional experience. Acceptance therapy involves an allowance of feelings and proposes an end to experiential avoidance as a habitual mode of coping. Through mindful action, the individual with GAD is able to step back from his/her worries, gain perspective, and permit feelings to emerge that provide direction for action, thus breaking the maladaptive worry cycle. However, this model remains to be tested and it is unclear how the modulation of emotion would be measured.

In summary, acceptance-based conceptualisation of anxiety disorders do not appear to differentiate between anxiety and fear. A number of strategies are used in intervention and promote different approaches to our thoughts. There is mounting evidence to support the efficacy of these approaches with anxiety, particularly GAD. However, research is in its infancy and the mechanisms of change are unclear.

A summary of the models of anxiety disorders discussed so far is presented in Table 1.

Table 1:

Summary of models of anxiety disorders

Key
❑ = Aetiological factors of anxiety
• = Maintaining factors

Models of anxiety disorders	**Aetiological and and maintaining factors of anxiety**
Behavioural model	❑ Conditioning/past experience/habitual responding • Avoidance
Cognitive - behavioural model	❑ Disturbance in information processing • Selective scanning/ attention • Spontaneously occurring visual images • Avoidance behaviour • Safety seeking behaviour • Skills deficits
Acceptance Based-models	❑ Emotional factors/ judgement • Experiential avoidance • Rigid/derogatory judgement of experiences
Worry-based model of GAD	❑ Worry/poor emotional process • Experiential avoidance

3.2) Mindfulness-based approaches

Although mindfulness is included as a component in all of the acceptance-based approaches and research has provided some promising results, the use of a mixture of techniques makes it difficult to determine the mechanisms of change. The Medical Research Council guidelines (2000) for good practice in clinical trials provided a framework that takes the form of a series of phases of investigations into the evaluation of a complex intervention. Phase I of this framework, the 'modelling phase, involves "standardising the content and the delivery of the intervention by determining the critical components of the intervention, and how they relate to, and impact on, each other" (pp. 7). According to the guidelines this essential phase takes place prior to any randomised control trial of an intervention. This highlights the importance of the need to standardise interventions and identify the mechanisms of change.

In light of some of the criticisms of CBT and acceptance-based approaches, and the importance of standardising and developing a more comprehensive understanding of interventions, this review explored mindfulness and its contribution to understanding anxiety disorders and the mechanisms of change.

What is mindfulness?

Mindfulness is a form of meditation and is central in Buddhist teachings (Thera, 1962), which focuses on the importance of the consciousness for the individual's well being. There are two broad approaches to meditation: exclusive meditation, which is a concentration-based approach that directs attention to a single stimulus or focal point (e.g. transcendental meditation, the mantra), and inclusive meditation, which invites the individual to welcome and explore any internal or external sensations that arise in the given moment, in the here and now (e.g. mindfulness; Tacon, 2003).

Mindfulness has been defined as: "keeping one's complete attention to the present experience on a moment-to-moment basis" (Marlatt & Kristeller, 1999, pp. 68). Teaching contains instructions on the practice of techniques used to help develop the state of mindfulness. As well as formal mindfulness meditation, these techniques include mindfulness of movement (e.g. yoga and mindful walking) (Kabat-Zinn, 1990).

There has been some speculation as to the components of mindfulness. Four of the more widely known models will receive discussion.

1) A two-component model of mindfulness has been proposed (Bishop et al., 2004) incorporating:

- attention and awareness
- acceptance

Anchoring attention and awareness to the breath helps to develop self-regulation of attention skills, which increases the recognition of internal and external events, but discourages the individual from engaging with them. This process facilitates the ability to observe events with acceptance, which is characterised by curiosity and openness.

2) According to Bourne (2004) learning to be mindful has four processes:

- cultivating the right attitude - which is one that allows the individual to experience the full benefits of meditation
- developing the right technique - this refers to sitting in the appropriate position, finding the right environment and taking time to practice
- developing concentration - involves working on the ability to concentrate and focus the mind
- maintaining practice - which requires the individual to establish a routine.

3) Kabat-Zinn (1990, 1994) describes eight aspects of the attitude that is cultivated in mindfulness. These are presented as follows:

- beginner's mind - this involves perceiving a thought, feeling, situation or person as if it was for the first time
- non-striving - mindfulness is not goal-driven, the only intention participants bring, is to be there and to observe in the here and now
- acceptance - as the individual learns to simply be with whatever they experience in the moment, acceptance is cultivated
- non-judging - the individual learns to simply observe their thoughts and

experiences, without reacting to them

- patience - the individual is encouraged to allow things to unfold in their own time, letting the practice of meditation develop, as it will, without rushing it
- letting go - when the individual holds on to an experience, whether pleasant or painful, it impedes their ability to simply be present in the here and now without judgement or striving. Therefore, letting go is the natural consequence of a willingness to accept things as they are
- trust - this means that the individual honours their own instincts, feelings and reactions, regardless of what others or an authority might think or say
- commitment and self-discipline - this requires a strong commitment to work on yourself, with the discipline to persevere and follow through the process

4) Dimidjian and Linehan (2003) have also defined some of the key features of mindfulness as:

- observing, noticing, or bringing awareness intentionally to present experience
- describing, labelling and noting what these experiences are
- participating in reality, in the moment, non-judgmentally and with acceptance

Bishop et al. (2004) argue that some of the qualities of mindfulness suggested by Kabat-Zinn (1990) such as patience and trust, and others suggested by Epstein (1995), Welwood (2000), Kornfield (2002) and, Baer (2003), such as non-reactivity, wisdom and compassion are outcomes of being mindful, rather than

operational features. They caution that a definition that mixes operational features with possible benefits reduces the utility of the construct.

In summary, mindfulness is a meditation that has its roots in Eastern traditions. There has been a growing interest in the psychotherapeutic applications of mindfulness in the absence of its Buddhist roots. The core operational features of mindfulness have received much speculation. There does seem to be some general consensus that attention in the present (awareness) is a component of mindfulness. The factors (qualities and attitudes) that are cultivated or developed by mindfulness are also open to discussion. This overall confusion makes it difficult to determine those factors that are outcomes of mindfulness and those that are operational features. The discrepancies remain to be resolved.

How does mindfulness seek to address the underlying mechanisms of anxiety?

There are a number of hypotheses regarding how mindfulness may facilitate change for people with anxiety disorders. These will now be discussed:

1) Becoming more mindful

- Self-observation/awareness

Several authors have described improved self-observation resulting from mindfulness as a mechanism of change. It has been suggested that this promotes detachment from the content of our thoughts (Segal, Williams & Teasdale, 2002). In terms of anxiety, it may help the individual to be aware of their cognitions, emotions and maladaptive behaviours as they occur and employ more adaptive coping responses at an earlier point.

Thinking about mental events is also known as "metacognition" (Flavell & Ross, 1981). Humans are continually engaged in metacognitive thinking, which can help to sustain anxiety (Toneatto, 2002). Traditional CBT attempts to replace maladaptive metacognitions. However, mindfulness is different as it involves participant observation, without evaluation of any of the content. GAD is characterised by a focus on potential events and worry serves as an avoidant function. Individuals with GAD are habitually responding to non-existent perceived threat, rather than focusing on the present moment experience. Attention to cues, responses and contingencies in the present can set the stage for replacing habitual patterns of responding with intentional, flexible ways of responding (Borkovec, Hazlett-Stevens & Diaz, 1999; Martin, 1997). This effect may be beneficial for generally anxious individuals given their habitually avoidant styles of attending to information (Matthews, 1990).

- Non-judgemental stance

Kabat-Zinn (1990) suggests that humans spend a large amount of their time operating on "automatic pilot" (pp.21) largely detached from the moment; preoccupied by a stream of thoughts and concerns about the past, present and future. He suggests that the non-judgemental observation of pain and anxiety-related thoughts may lead to an understanding that they are "just thoughts" and not reflections of truth or reality, which may then impact on the individual's desire to avoid them and thus change his or her relationship with their thoughts.

- Acceptance

The relationship between acceptance and change has received much discussion, and acceptance has been described as one of the foundations of mindfulness (Hayes et al., 1994). Hayes (2004) suggests that acceptance involves "experiencing events fully and without defence, as they are" (pp. 30). Anxiety patients are taught to feel anxiety, as a feeling, fully and without defence (Hayes, Luoma, Bond, Masuda & Lillis, 2006). An individual that experiences a panic attack or anxiety may engage in numerous maladaptive behaviours in attempts to prevent future attacks. However, if the individual could accept that panic attacks/anxiety can occur, and that they are time limited and not dangerous, then they would become brief experiences that can be tolerated rather than dangerous experiences to be avoided (Hayes, 1994).

- Attention

A core aim of mindfulness is to develop skills in sustained attention. Patients are taught to be fully aware and present in their moment-to-moment experiences. This keeps attention anchored to the present and helps the individual to notice when they are operating on automatic pilot, leading to a further ability to redirect attention in a sustained and purposeful way. The ability to switch attention can play an important role in the modifying of cognitive cycles, where thoughts or events are regarded as an object of observation and further processing is not required. The experience is noted and the individual might then choose to pursue a certain train of thought or having noticed where their mind is going, they might choose to bring their attention back to breathing, rather than their anxious

thoughts; thereby allowing the chain of conditioned habitual responses, to be broken (Segal et al., 2002). Linehan (1993b) suggests that control of attention may be a useful skill for individuals who have difficulty completing tasks because they are distracted by worries, memories, or negative moods.

2) Exposure

Kabat-Zinn (1982) describes the mechanism of exposure as helping to promote change. He suggests that the sustained, non-judgemental observation of anxiety-related sensations, without attempts to avoid or escape them may lead to reduction in emotional reaction that is usually elicited by anxiety symptoms. According to Kabat-Zinn (1990), mindfulness involves intentionally exposing ourselves to observing the fear and anxiety when it comes up and exploring with increasing degrees of acceptance. "When you move in close to your fears and observe them as they surface in the form of thoughts, feelings, bodily sensations, you will be in a much better position to recognize them for what they are and know how to respond to them appropriately" (Kabat-Zinn, 1990, pp. 334). This means that the individual will be less prone to being overwhelmed or swept away by their fears and anxieties, or have less need to compensate in self-destructive or self-inhibiting ways. The individual learns non-avoidance and non-entanglement until the worry subsides. Mindfulness may be beneficial for individuals who experience GAD because it could provide exposure to intolerable feelings of uncertainty (Dugas, Gagnon, Ladouceur & Freeston, 1998). This may then reduce the need to worry as a form of experiential avoidance, and thus breakdown the factors maintaining the disorder (Roemer & Orsillo, 2001).

In summary, a review of the proposed mechanisms of change provides a framework for understanding anxiety and how mindfulness can help. Although mindfulness does not appear to differentiate between fear and anxiety, factors associated with becoming more mindful and exposure can be used to promote change in anxiety disorders characterised by both. However, as analysis appears to be in the early stages there is limited data to support the proposed mechanisms of change.

Table 2 is a summary of the models of anxiety and aetiological and maintaining factors discussed. Additionally, the table explores how the techniques employed by mindfulness and cognitive-behavioural therapy (CBT) could potentially be used to address anxiety if it is conceptualised in a different way. The table indicates that there are a number of mechanisms and techniques in both mindfulness and CBT that could possibly be used to address different conceptualisations of anxiety.

Table 2:

Models of anxiety and how CBT and mindfulness techniques could be used to address these different models

Key
❑ = Aetiological factors of anxiety
• = Maintaining factors

Models of anxiety disorders	**Aetiological and and maintaining factors of anxiety**	**CBT techniques/mechanisms of change**	**Mindfulness techniques/mechanisms of change**
Behavioural model	❑ Conditioning/past experience /habitual responding • Avoidance	Behavioural experiments/exposure	Exposure & acceptance Non-judgemental stance & self observation
Cognitive-behavioural model	❑ Disturbance in information processing	Thought modification/ activity scheduling	Non-judgemental stance/self observation & attention
	• Selective scanning/ attention	Thought modification/behavioural experiments	Non-judgemental stance & attention
	• Spontaneously occurring visual images	Thought modification/ behavioural experiments/exposure	Exposure & acceptance
	• Avoidance behaviour • Safety seeking behaviour	Behavioural experiments Physical control strategies Thought modification	Exposure & acceptance Self observation
	• Skills deficits	Skills training	Group support
Acceptance Based models	❑ Emotional factors/judgement • Experiential avoidance	Behavioural experiments/ exposure	Exposure & acceptance Self observation
	• Rigid/derogatory judgement of Experiences	Thought modification	Non-judgemental stance & attention
Worry based model of GAD	❑ Worry/poor emotional process • Experiential avoidance	Thought modification Behavioural experiments/ exposure	Exposure, acceptance, attention & self observation

The integration of mindfulness and CBT

Despite the criticisms of CBT, these interventions have demonstrated some efficacy for anxiety disorders, suggesting the need for treatment development. A combined approach could capitalise on the efficacy of established treatments like CBT and increases the likelihood of their impact. Therefore this review will proceed with consideration of the compatibility of CBT and mindfulness in the treatment of generalised anxiety disorder (GAD), panic disorder and social phobia. To gain an understanding of the compatibility of CBT and mindfulness the similarities, differences and issues of integration will be addressed.

a) Differences

There are a number of differences between CBT and mindfulness. For example, mindfulness operates by modifying our relationship to our thoughts. The issue of treatment becomes that of detachment from our thoughts through awareness. Conversely, Segal et al. (2002) point out that this runs counter to CBT's purpose of modifying the beliefs regarding the content of dysfunctional thoughts. Both approaches change our relationship with our thoughts, but through different techniques (Teasdale et al., 2002; Barber & DeRubeis, 1989).

There are also a number of differences in the attitudes that are cultivated by both approaches these are summarised in Table 3.

Table 3:

A comparison of CBT to the eight attitudes cultivated in mindfulness

Attitudes cultivated by mindfulness practice (Kabat-Zinn, 1990,1994)	**How CBT approaches each attitude**
Beginner's mind*	Encourages an ongoing process of learning about repetitive patterns of thought & thinking styles. Identifies challenges and replaces thoughts.
*Non-striving**	Concerned with setting goals for change.
*Acceptance**	The goal of CBT is not one of accepting, but one of promoting change.
*Non-judging**	Focuses on the content of cognitions and requires the individual to make judgments about their thoughts.
*Patience**	CBT is goal directed & concerned with measures monitoring and evaluating outcomes.
*Letting go**	CBT is very attached to identifying, recording & working on the content of our thoughts.
*Trust**	Patients are taught that they cannot trust their negative thoughts and that they need question and change them.
*Commitment & self-discipline**	Both CBT and mindfulness requires a strong commitment to work on yourself, with the discipline to persevere and follow through the process.

* Please refer to page 37 for explanation of these attitudes

b) Similarities

Mindfulness-based approaches and CBT are similar in several ways. Firstly, one of the goals of mindfulness is to expand the patient's awareness of his or her experience and is similar to CBT's emphasis on increasing awareness of situational cues, and cognitive, emotional and behavioural responses. Secondly, in both interventions, patients are taught to observe their emotional responses and become more aware of their action, which helps to control fear and anxiety. Thirdly, both approaches encourage sustained exposure to anxiety-related sensations to help reduce the emotional reaction that is usually elicited by anxiety symptoms. Fourthly, cognitive changes in both appear to result from viewing one's thoughts as temporary rather then as accurate reflections of reality and truth. Finally, both CBT and mindfulness aim to increase the patient's overall quality of life.

c) *Integration*

Although there are a number of incompatibilities between CBT and mindfulness, there are similarities and it is possible that some aspects of each therapy can be integrated (Ciarrochi, Robb & Godsell, 2005). Outcome from studies discussed earlier (Hayes et al., 1999, Linehan, 1993a, 1993b, Roemer & Orisillo, 2002) have provided support to the efficacy of using an integrated approach using components from both.

Additionally, mindfulness-based cognitive therapy (MBCT; Segal, Williams & Teasdale, 2001) combines Kabat-Zinn's (1990) method of mindfulness with techniques drawn from CBT as a relapse prevention programme for depression. Aspects of CBT included in the programme are primarily those designed to facilitate 'decentred' views that 'thoughts are not facts' and 'I am not my thoughts' (Hayes et al., 2004).

MBCT has shown to be effective in the prevention of relapse in major depression. For example, two randomised control trials (RCT's; Teasdale et al., 2000; Ma & Teasdale 2004) have shown that when compared to treatment as usual (TAU) MBCT halved relapse rates for patients with three or more previous episodes of depression. Participants reported being able to develop a different ('decentred') relationship to their experience, so that their depression and thoughts could be viewed from a wider perspective.

However, so far there are a limited number of MBCT research studies and those that have been carried out have involved the same researcher. This approach is currently used as a relapse prevention programme for depression, so the effect of mindfulness and cognitive therapy for other disorders remains open to question.

In summary, although there are a number of differences between the attitudes cultivated in both, and their approach to our thoughts, there seems to be some overlap. Research has shown some promising results with regards to combining

acceptance-based approaches (which have mindfulness components) with CBT and components from CBT have also been combined with mindfulness programmes. However, theory regarding the compatibility of these two approaches is in the early stages and research is limited. What also remains unclear is the efficacy of using mindfulness-based interventions alone to treat GAD, panic or social phobia. Therefore, a review of mindfulness-based interventions in relation to anxiety will now proceed.

Appraisal of mindfulness literature

a) Clinical applications of mindfulness-based interventions for anxiety

Clinical interventions based on mindfulness are being described in the empirical literature with increasing frequency. According to Salmon, Santorelli and Kabat-Zinn (1998), over 240 clinics and hospitals in the United States and abroad were offering stress reduction programmes based on mindfulness. Intervention packages have been developed to teach mindfulness skills, and programmes such as mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982, 1990) and mindfulness-based cognitive therapy (MBCT; Teasdale et al., 1995) teach mindfulness as primary skills.

b) The efficacy of mindfulness-based interventions for anxiety

The results from a number of studies support the clinical effectiveness of mindfulness (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth & Burney, 1985; Kabat-Zinn, Lipworth, Burney & Sellers, 1987; Kabat-Zinn & Chapman-Waldrop, 1998; Majumdar, Grossman, Dietz-Waschkowski, Kersig & Walach, 2002). However, the main focus of these studies has been on the use of mindfulness interventions

with physical health problems.

In recent years mindfulness has been incorporated into interventions addressing a range of mental health conditions. Evidence suggests that mindfulness-based interventions can lead to reductions in a variety of problematic conditions, including pain, anxiety, eating disorders and depressive relapse (e.g. Kabat-Zinn, 1982: Kabat-Zinn et al., 1992; Kristeller & Hallett, 1999; Shapiro, Schwart & Bonner, 1998: Teasdale, Segal & Williams, 2000).

Outcome studies have recorded reductions in a number of areas, with effect sizes (ES) ranging from medium to large. For example, in studies of pain (e.g. Kabat-Zinn, et al., 1985) ES was = 0.36; GAD and panic disorder (Kabat-Zinn et al., 1992) ES = 0.88; eating disorders (Kristeller & Hallett, 1999) ES = 1.65; and depressive relapse (Teasdale et al., 2000) ES = 0.60. ES for GAD and panic disorder (Kabat-Zinn et al., 1992) were in the large range, which is comparable to the ES found in CBT, which has also found large ES (Butler et al., 2006) for GAD, panic disorder and social phobia.

In 2003, Baer carried out a meta-analysis of empirical literature surrounding mindfulness-based interventions and found 21 studies in total, 19 of these evaluated MBSR or a variant of this and two evaluated MBCT. Dependent variables included clinician and self-report measures of medical symptoms, pain, anxiety, depression, eating behaviours and general psychological functioning. The overall mean ES post intervention was 0.59, a medium ES (Cohen, 1988,

1992).

Only one of 19 studies reviewed by Baer (2003) examined the application of MBSR to GAD and panic disorder. This was carried out by Kabat-Zinn et al. (1992). Their research examined 22 patients with either generalised anxiety or panic disorder and found significant improvements in several measures of anxiety and depression at the end of treatment and at a three-month follow-up. Miller, Fletcher and Kabat-Zinn (1995) reported a three-year follow-up on the same participants and found that these improvements were maintained. The mean ES for post-treatment was 0.88 and at the three-month follow-up was 1.35. These ES are in the medium to large range (Cohen, 1988, 1992) indicating a significant effect of treatment, which increased after three months.

This study used rigorous assessment procedures, including structured clinical interviewing and selection according to DSM-III-R criteria and validated measures. There are a number of weaknesses. For example, no randomised control group (RCT) was used and over half of the participants had received concurrent pharmacological treatment during treatment, and since completing MBSR, over half had received additional treatment making it difficult to determine the effect of the intervention. Furthermore, this study did not measure mindfulness as a variable, so it is impossible to determine whether mindfulness is an active mechanism of change.

In 2004, Grossman, Niemann, Schmidt and Walach carried out a meta-analysis looking at the effects of MBSR on health and found 20 studies met the criteria. Results showed that overall, both controlled and uncontrolled studies showed similar ES of approximately 0.5. This medium ES (Cohen, 1988, 1992) suggests that MBSR may help with a broad range of problems (including anxiety).

However, when considering the findings of both meta-analyses (Baer, 2003; Grossman et al., 2004) there are a number of criticisms that affect their validity. For example, only nine of the studies reviewed by Baer (2003) and eight of those reviewed by Grossman et al. (2004) had a control group. Researchers were therefore unable to control for the effects of time, demand characteristics, placebo effects or comparison to other treatments. Small sample sizes in both of these meta-analyses limits the generalisability of the findings. In four of the studies reviewed by Baer (2003) that compared mindfulness interventions to TAU, the other treatment was pharmacological and so not directly comparable to psychological intervention. Six of the studies included in Baer's meta-analysis had sample sizes below the recommended size needed to gain a reliable ES (Cohen, 1988, 1992). Additionally, only one study, with a small sample size, used a mindfulness-based intervention to treat patients with a diagnosis of anxiety, as previously discussed (Kabat-Zinn et al., 1992). This limits the generalisability of findings.

An additional criticism of the studies described is that they do not measure mindfulness as a variable and the effects of becoming more mindful on anxiety are unclear. In addition, they use a number of different techniques within the mindfulness programme, and it is difficult to specify which techniques help to promote change.

Few of the studies describe whether participants have received any previous psychological input, which may have had an impact on the outcome. The therapists' training in mindfulness is unclear from the studies, which makes it difficult to draw comparisons. A number of the studies were not based on clinical populations, which affects the applicability of their findings.

In addition, the effects of social support on physical and psychological well-being have been documented (e.g. Cobb, 1976; Dean & Lin, 1977; Heitzmann & Kaplan, 1988; Turner, 1981). It may therefore be that social support is a key agent in the therapeutic process and mindfulness per se is not. Such curative mechanisms of a group are believed to operate in every type of therapy group (Lese & MacNair-Semands, 2000).

In summary, there is increasing evidence to suggest that mindfulness-based interventions are successful in alleviating psychological distress across a number of disorders. However, several factors that make it difficult to draw clear conclusions concerning the efficacy of mindfulness-based interventions for GAD, panic disorder and social phobia. Firstly, only one study has evaluated the

effectiveness of mindfulness in the treatment of anxiety. Secondly, many of the approaches that teach mindfulness are integrated with cognitive-behavioural techniques. This makes it difficult to determine the effects on mindfulness training on its own. Thirdly, there are significant methodological weaknesses in existing studies. Fourthly, the studies to date have not measured mindfulness as an outcome variable and it is unclear as to the effects of increased mindfulness on treatment outcome. Finally, the effects of social support are unclear.

Future studies

The current status of mindfulness research has been reviewed and the application of mindfulness to the understanding and treatment of anxiety is in the early stages. The task of developing a more adequate account of mindfulness is made difficult by several factors. For example, different processes are described with the same term (i.e. mindfulness). In short, mindfulness needs to be operationalised and the core constructs need to be identified, defined and tested.

Several factors need further research to enable a better understanding of the use of mindfulness and address some of the methodological flaws of research. Future studies should include randomised control trials (RCTs) where mindfulness-based interventions are used alone, and compared to other established psychological interventions. This would help to clarify whether the effects are due to mindfulness training or confounding variables such as placebo effects or the passage of time (Chambless & Hollon, 1998). The compatibility of mindfulness with pharmacotherapy has received little attention in the literature and exploration

of this may be of some benefit.

The active mechanisms of change need to be identified, and mindfulness needs to be measured as an outcome variable, to clarify the effects of increased mindfulness on treatment. The effect of social support needs further exploration. Studies to date have not included information about the training of therapists or programme adherence (Baer, 2003). This lack of attention creates controversy in the field as to how therapists are trained to deliver interventions competently. This cannot be resolved in the absence of empirical data and therefore represents critical areas for future research.

Studies highlighted by the literature review have been mainly based on quantitative data analysis. However qualitative methodologies could be useful in the exploration of mindfulness, as patients' experiences and accounts may provide invaluable insight into experiences of change and highlight elements of mindfulness practice that participants do not find helpful. This could also provide access to the individual's personal experience of anxiety, which could help to inform intervention.

Further research is needed to establish the efficacy of this approach in the treatment of people with GAD, panic disorder or social phobia. Larger samples are required, where individuals are diagnosed with specific disorders, which would help to establish which disorders mindfulness is most beneficial for and possibly achieve greater generalisability of results.

Summary and Conclusions

The aim of this literature review was two-fold. Firstly, to consider current models and treatment of generalised anxiety disorder (GAD), panic disorder and social phobia, which are the most prevalent of the anxiety disorders (Kessler et al., 1994), and secondly to consider how mindfulness can contribute to their understanding and treatment.

There has been distinction between the bio-physiological processes of panic disorder and social phobia (based on fear) and disorders like GAD (based on anxiety) (Lang et al., 2000). A number of theories and models of treatment have been developed to address these disorders. Cognitive-behavioural therapy (CBT) has been identified as first-line treatment for anxiety (Bystritsky, 2006). However, there is evidence to suggest that it does not benefit everyone and CBT has been criticised for its focus on the content of the thought, rather than the function.

In recent years acceptance-based interventions have been used to treat a number of disorders and have encouraged a different approach to our thoughts from CBT. Although mindfulness is included as a component in all of these approaches and research has provided some promising results, the use of a mixture of techniques makes it difficult to determine the mechanisms of change.

In light of some of the criticisms of CBT and the importance of standardising and developing a more comprehensive understanding of interventions, a review of the proposed mechanisms of change underpinning mindfulness has provided a new

framework to help establish an understanding of how mindfulness could help to alleviate anxiety. Factors associated with becoming more mindful, and exposure to anxiety, have been suggested to promote change in anxiety disorders characterised by both fear and anxiety.

The hypotheses regarding how mindfulness may effect change suggests that it might be a way of facilitating a non-judgemental perspective, where experiences are accepted as just that, as opposed to accurate reflections of the self or reality (Teasdale, Segal & Williams, 2003). This perspective may help a patient to understand that their anxiety-related thoughts are "just thoughts." This may impact on their behaviour, allowing them to reduce avoidance contributing to the maintenance of their anxiety. Responding mindfully to experiences may also provide exposure to feared experiences and re-evaluation of cognitions, thus reducing anxiety and the need for avoidance. GAD is characterised by a focus on potential events and worry may serve as avoidance, in that individuals are habitually responding to non-existent perceived threats, rather than focusing on the present moment experience. The focus of mindfulness may therefore help to change ways of responding.

A review of the efficacy of mindfulness-based interventions suggests that there is still considerable work to be done before any further conclusions can be drawn as to the effectiveness of mindfulness when used alone or in conjunction with CBT.

In conclusion, this review indicates that there is a theoretical rationale for the use of mindfulness in the understanding and treatment of GAD, panic disorder and social phobia. However, the efficacy of the use of mindfulness-based interventions when used alone or in combination with CBT remains open to question. Further research is needed as discussed.

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Appendices

Appendix 1

Instructions to Contributors: The Journal of Cognitive Psychotherapy

Instructions to Contributors

The Journal of Cognitive Psychotherapy: An International Quarterly is devoted to the advancement of the clinical practice and theory of cognitive psychotherapy in its widest sense. This scholarly journal seeks to merge theory, research, and practice and to develop new techniques by an examination of the clinical implications of theoretical development and research findings. To this end the journal will publish empirical research studies, case studies, theoretical articles, literature reviews on clinical topics, and articles specifying the clinical implications of topical research.

Manuscripts are solicited in the following areas:

1. Empirical Research. Such studies should have direct clinical relevance to theory and practice that is well described in the article.
2. Theoretical articles. Articles that outline or propose new theoretical developments relevant to cognitive therapy are welcomed if they have clear implications for cognitive accounts of psychology or clinical practice.
3. Literature reviews. Such reviews can focus on empirical studies of cognitive models, or research demonstrating the efficacy of specific techniques, the practice of cognitive psychotherapy with specific populations, different therapeutic modalities (e.g., group therapy, family therapy), or reviews of assessment methodologies useful in cognitive psychotherapy.
4. Treatment manuals, including the descriptions of new treatment methods or descriptions of their applications to populations of interest (e.g., treatment resistant). Such manuals should clearly illustrate the specific sequential clinical interventions. In particular, authors should clearly indicate variations in interventions and their rationales, as well as empirical evidence for the manual. .
5. Case studies. Authors should describe therapeutic procedures in sufficient detail to permit replication by other clinicians and should include measures of outcome and, whenever possible, followup. The development and investigation of innovative procedures are especially welcomed.

The journal publishes reviews and abstracts of books, tapes, films, and other clinical resources, as well. Publishers should send two copies of such materials to the Editor.

Finally, the journal seeks to publish special issues devoted to topics of particular interest, suggestions for which are welcomed by the editors.

The original and three copies of each manuscript and a diskette with an electronic document should be submitted in English to Dr. John H. Riskind, Journal of Cognitive Psychotherapy: An International Quarterly, George Mason university, Department of Psychology, MSN 3F3, Fairfax, VA 22030-4444. Manuscripts must be prepared according to the Publications Manual of

the American Psychological Association, 5th edition, and must be typed double-spaced through including abstract, text quotation, and references, and tables. Use one side only of 8.5 x 11" or 8.25 x 11.75"white bond paper, with a minimum 1.5" margin on all four sides. Articles should include an abstract of no more than 150 words. Manuscripts are submitted for unidentified review; therefore the author's name, degree, and affiliation (department and institution) should appear on the cover sheet only, which should also include the article title; authors' names, degrees, and affiliations; and the complete mailing address, email address, and telephone number of the author designated to review proofs.

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Journal of Cognitive Psychotherapy: An International Quarterly

The use of a mindfulness based intervention to treat patients with anxiety

Kerry Ozcelik

Prepared for submission to the Journal of Cognitive Psychotherapy - see Appendix 1

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The use of a mindfulness-based intervention to treat anxiety

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Abstract

The contribution of mindfulness-based approaches in the understanding and treatment of anxiety disorders is unclear. This study had two components; firstly it investigated the impact of a mindfulness-based intervention on adults with persistent anxiety. Data for this investigation was collected via questionnaires routinely administered to patients attending the mindfulness-based programme delivered by a Psychological Therapies Service. This participant sample consisted of 33 patients. The results suggest that the mindfulness-based intervention is associated with an increase in mindfulness and significant decreases in symptoms of anxiety, depression and stress, and in overall scores on the Clinical Outcomes in Routine Evaluation outcome measures (CORE-OM; Mental Health Foundation & Core System Group, 1998). Secondly, the study explored how adults with persistent anxiety experienced mindfulness as an intervention for a psychological disorder. 10 semi-structured interviews were conducted and analysed according to the principles of interpretative phenomenological analysis (IPA; Smith, 1996). Five superordinate themes emerged through the analysis; these were (1) Getting to grips with mindfulness, (2) Timing (3) Integration (4) Sense of change and (5) Shared experience. Methodological issues are examined and finally, the clinical implications of the study and directions for further research are discussed.

Key words: mindfulness, anxiety, interpretative phenomenological analysis

1. Introduction

Anxiety is a primitive bio-physiological process meant to protect the individual during times of danger through preparing and priming him or her to act in self-preserving ways. Anxiety is a strong emotional state involving an anticipatory process regarding the possibility of future negative events (Borkovec & Sharpless, 2004). "Anxiety becomes a disorder when it interferes with a person's ability to function" (American Psychiatric Association, 2000).

Anxiety disorders, such as generalised anxiety disorder (GAD), panic disorder (with or without agoraphobia) and social phobia are amongst the most prevalent of the psychiatric disorders (Kessler et al., 1994). The worldwide lifetime prevalence of all anxiety disorders is estimated to be 28.8% (Kessler et al., 2005). In 2000 a UK survey of psychiatric morbidity among 8,800 adults was carried out (Singleton, Bumpstead, O'Brien, Lee & Meltzer). According to the survey one in four GP consultations involve a mental health problem, 164 adults per 1000 had a neurotic disorder where the most common disorder among the population as a whole was mixed anxiety and depressive disorder (88 cases per 1000).

Over the years a number of different theories and models of treatment have been developed to address these disorders. Cognitive-behavioural therapy (CBT) has been identified as first-line treatment for anxiety (Bystritsky, 2006). However, there is evidence to suggest that it does not benefit everyone; a substantial number of individuals continue to report significant difficulties after treatment,

some patients drop out, and others are not offered treatment in the research trials (Brown & Barlow, 1995; Cowley, Ha & Roy-Byrne, 1997).

The increasing criticism of CBT paved the way for the emergence of a new third wave of therapies, known as acceptance-based approaches (Hayes, 2004). Mindfulness has also been referred to as an integral element of these multifaceted approaches. Mindfulness is a form of meditation (Thera, 1962), which focuses on the importance of the consciousness for the individual's well-being, it is defined as "keeping one's complete attention to the present experience on a moment-to-moment basis" (Marlatt & Kristeller, 1999, pp. 68). The individual is encouraged to attend to internal processes, such as cognitions, perceptions, sensations, emotions and bodily sensations and the external environment (Kabat-Zinn, 1990). Teaching contains instructions for exercises used to help develop the state of mindfulness, including sitting meditation and mindfulness of movement (e.g. yoga and walking).

There are a number of hypotheses regarding how mindfulness may facilitate change for people with anxiety disorders:

(1) Becoming more mindful

It has been proposed that the factors associated with becoming more mindful (i.e. self-observation/awareness, the non-judgemental stance, acceptance and attention) can be used to promote change in anxiety disorders characterised by both fear and anxiety (Kabat-Zinn, 1982).

(2) Exposure

Kabat-Zinn (1982) suggests that the sustained observation of anxiety-related sensations, without attempts to avoid or escape them, may lead to a reduction in emotional reaction that is usually elicited by anxiety symptoms.

In recent years, mindfulness has been incorporated into interventions addressing a range of mental health conditions and studies have recorded reductions in a number of areas where treatment effect size (ES) are used to describe outcome (Kabat-Zinn, Lipworth & Burney, 1985; Kabat-Zinn et al., 1992; Kristeller & Hallett, 1999; Teasdale, Segal & Williams, 2000). Only one study has examined the application of a mindfulness-based stress reduction (MBSR) programme to either GAD or panic disorder (Kabat-Zinn et al., 1992). Kabat-Zinn and his colleagues examined 22 patients and found significant improvements in measures of anxiety and depression following treatment and at a three-month follow-up. Miller, Fletcher and Kabat-Zinn (1995) reported a three-year follow-up of the same participants and found these improvements were maintained. The mean ES for post-treatment was 0.88 and at the three-month follow-up was 1.35. These ES are in the medium to large range (Cohen, 1988, 1992) indicating a significant effect of treatment, which increased at follow-up.

Kabat-Zinn et al's. (1992) study used rigorous assessment procedures, including selection according to DSM-III-R criteria and validated measures. However, their study lacked a control group and over half of the participants had received concurrent pharmacological treatment during treatment and, since completing

MBSR, over half had received additional treatment making it difficult to determine the effect of the intervention. Furthermore, this study did not measure mindfulness as a variable, so it is impossible to determine whether mindfulness is an active mechanism of change.

Using the Medical Research Council guidelines (2000) for good developing complex interventions, this is a phase I study (the 'modelling phase'). This involves "standardising the content and delivery of the intervention by determining its critical components and how they relate to, and impact on, each other," (pp. 7). Therefore a mixed methods study was undertaken to explore both perspectives through a mixed design thus providing an in-depth understanding of patients' experiences and the outcome of treatment.

The selection of the most suitable qualitative method to use is achieved through consideration of the project's characteristics, the research questions to be addressed and the procedures and principles of the different methods available (Turpin et al., 1997). Based on this criterion, this study selected IPA as the most appropriate method of collecting and analysing data.

IPA is theoretically rooted in critical realism and the social cognition paradigm. Critical realism suggests that we will only be able to understand and change the social world if we identify the structures at work that contribute to those events and discourses (Bhaskar, 1978). The social cognition paradigm is concerned with the ways in which mental representations of social events, societal and cultural

norms and personal characteristics influence behaviour, reasoning, emotion and motivation (Fiske & Taylor, 1991). As such IPA is an analytical tool that aims to provide an in-depth understanding of experiences and is concerned with how participants make sense of it (e.g. Smith, 1996; Smith, Flowers & Osborn, 1997; Smith, Jarman & Osborne, 1999). This approach uses semi-structured interviews allowing flexibility to adapt the questions and probe any issues, producing richer data than structured interviews (Smith, 1995).

IPA has been defined as: "the approach is phenomenological in that it is concerned with an individual's personal perception or account of an object or event as opposed to an attempt to produce an objective statement of the object or event itself. Access [to the participant's personal world] depends on, and is complicated by, the researcher's own conceptions and indeed these are required in order to make sense of that other personal world through a process of interpretative activity. Hence the term interpretative phenomenological analysis is used to signal these two facets of the approach." (Smith et al., 1999, pp. 218-219).

The aim of the research was to help standardise the content and delivery of a mindfulness-based intervention for anxiety by exploring its critical components and how they relate to, and impact on, each other.

The research hypotheses for the quantitative component were that there would be:

1) a reduction in symptoms of anxiety and stress
2) a reduction in symptoms as measured by the Clinical Outcomes in Routine Evaluation (CORE-OM; Mental Health Foundation & Core System Group, 1998)
3) an increase in mindfulness

Additionally it was hypothesised that change in anxiety will be correlated with change in mindfulness.

The research questions for the qualitative component (see Appendix 5) were designed to examine the experiences of a group of patients with persistent anxiety, completing the mindfulness-based intervention; paying particular attention to the participants' use of the exercises taught, concepts conveyed and their perception of the impact of the programme on their anxiety and daily living.

2. Method

2.1. Design

To follow the Medical Research Council guidelines (2000) and address both research questions, two facets to this study (quantitative and qualitative) were conducted. Participants for both were recruited from the same centre. A within participants design was used.

Quantitative component

A repeated measures design was used (pre, mid and post treatment) to assess patients with persistent anxiety, using anxiety, stress, depression, mindfulness and changes in scores on the CORE-OM as outcome variables. The independent variable was the different time points at which the questionnaires were administered and the dependent variables were the outcome measures (questionnaires). The group facilitators administered the questionnaires during the introductory session (prior to session 1) and at the end of week five and eight. The data from these questionnaires was entered into a database by the group facilitators.

Qualitative component

Semi-structured interviews were conducted and analysed according to the principles of IPA (Smith, 1995).

2.2. The sample

a) Criteria for inclusion in the Psychological Therapies Service

Patients are originally referred to the service by their general practitioner (GP) for problems of anxiety and/or depression. The criteria for inclusion in the service are that the person must:

- present low or nil levels of risk to self or others
- not currently be in receipt of services from the Adult Mental Health teams
- have mild to moderate level of anxiety or depression. This level of anxiety is based on the Hospital Anxiety and Depression Scale (HADS; Snaith & Zigmond, 1994) score of 8 or over for both anxiety and depression
- a score on the 'All Items' section of the CORE-OM which places people above the cut-off, as this signifies clinical disorder (see Table 1, page 100)

b) Criteria for inclusion to the 'Managing Anxiety Mindfully' (MAM) programme

Participants for both components of this study have attended the MAM programme. This uses mindfulness-based training to tackle anxiety and is run by the service as a second-line intervention to those patients that have:

- undertaken cognitive-behavioural therapy (CBT) provided by the service (see Appendix 2 for descriptions) and who demonstrate persistent anxiety, i.e. still reporting clinically significant symptoms of anxiety at the end of this intervention
- a score of 11 or over for anxiety and a score under 8 for depression on the HADS makes them suitable for the programme as this score is

indicative of the presence of an anxiety disorder, but not depression (Snaith & Zigmond, 1994). As this service is not a diagnostically based service the participants could have a mixture of anxiety disorders

- Post Traumatic Stress Disorder is an excluded diagnosis from the service; therefore the MAM programme does not include this presentation
- individuals unable to understand verbal or written English were excluded from this study, as resources for translation support were unavailable

2.2.1. Participant characteristics

Participants for both components attended one of four MAM programmes that were offered by the service during 2006.

Quantitative component

The questionnaire data routinely gathered by the service was used to evaluate the MAM programme*. The participant group consisted of 33 people (26 women and seven men), aged between 24 and 60. Two of the participants were attending the programme for the second time and so there were 31 different participants (see Table 3).

*The participants' names and any other identifying information were removed from all data before it was given to the researcher.

Qualitative component

All 31 people that attended the MAM programmes were written to and invited to participate in an interview. 10 indicated that they were willing to participate and took part in semi-structured interviews. These 10 participants were therefore a subset of the participants in the quantitative component. Seven women and three men, aged between 27 and 56 took part. Seven people attended either group three or four, which ran at the same time, the interim between treatment and interview was six to eight weeks. Three people attended group two; the interim between treatment and interview was 14 to 16 weeks (see Table 8 for further details). All of the participant names have been changed to preserve anonymity and maintain confidentiality.

2.3. Measures

Quantitative measures

The following outcome measures are routinely administered by the service to patients undertaking the MAM programme:

1. The Clinical Outcomes in Routine Evaluation - outcome measure (CORE-OM; Mental Health Foundation & Core System Group, 1998)

This is a standardised, 34-item self-report instrument. It measures the following four dimensions:

(1) subjective well-being (e.g. 'I have felt O.K. about myself')

(2) perceived problems (e.g. 'I have felt tense, anxious or nervous')

(3) life functioning - (e.g. 'I have felt able to cope when things go wrong')

(4) risk (e.g. 'I have thought of hurting myself')

A five point Likert scale is used regarding the frequency of the occurrence of each question over the last week the ranges are: (1) 'not at all', (2) 'only occasionally', (3) 'sometimes', (4) 'often' and (5) 'most or all of the time'. The clinical cut-offs scores for men and women are shown in Table 1.

Table 1:

Clinical cut-off scores for the CORE-OM

Dimension	Cut-off scores *	
	Male	Female
Subjective well-being	1.37	1.77
Problems/symptoms	1.44	1.62
Life functioning	1.29	1.30
Risk	0.43	0.31
All items	1.36	1.50
All non-risk items	1.19	1.29

*Scores above this are indicative of a clinical population

Internal and test-retest reliability was found to be good (0.75-0.95), as was convergent validity with seven other instruments, with large differences between clinical and non-clinical samples and good sensitivity to change (Evans et al., 2002).

2. The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995)

This is a 42-item self -report instrument designed to measure the three related negative emotional states of depression, anxiety and stress. Only the anxiety and stress scales (ASS) were used (see Appendix 3) and were examined as separate components in the analyses. Seven questions are related to stress and seven are related to anxiety. A maximum score of three points can be obtained on each question, therefore 21 is the highest score that can be obtained for each component. There are no clinical cut-off scores for the ASS; however, the higher the score, the greater the level of anxiety the individual has. Gamma coefficients that represent the loading of each scale on the overall factor (total score) are .86 for anxiety and .88 for stress. Reliability and test-retest reliability is likewise considered adequate; .79 for anxiety and .81 for stress (Brown, Chorpita, Korotitsch & Barlow, 1997). Exploratory and confirmatory factor analyses have sustained the proposition of the factors ($p < .05$; Brown et al., 1997). The DASS anxiety scale correlates .81 with the Beck Anxiety Inventory.

3. The Hospital Anxiety and Depression Scale (HADS; Snaith & Zigmond, 1994)

This is a standardised, self-report questionnaire, consisting of 14 questions. Seven assess severity of anxiety (e.g. 'worrying thoughts go through my mind') and seven assess severity of depression (e.g. 'I feel cheerful'). A four point Likert scale is used to describe frequency; for example 'all of the time', 'most of the time', 'only a little' and 'not at all.' A score of 0 to 7 for either subscale is regarded as being in the normal range, a score of 8 to 10 being suggestive of the presence of the respective state and a score of 11 or higher indicating probable presence ('caseness') of the mood disorder. Analyses in this study examined both anxiety and depression subscales. Validation studies of the English and of foreign language translations of the HADS have been undertaken in a variety of settings and centres. A recent review of these studies by Bjelland, Dahl, Haug and Neckelmann (2002) examined 747 studies found that the HADS performed well in assessing severity and 'caseness' of anxiety disorders and depression in hospital practice, primary care patients and the general population.

4. Mindfulness questionnaire (MQ; Chadwick, 2002; unpublished) - see Appendix 4

This is a 16 item self-report instrument, which was originally designed to measure the degree to which people respond mindfully to auditory hallucinations and unwanted thought or images. For this study the MQ was used to assess participants responses to anxious thoughts or images. The following components were measured:

- mindful observation
- letting go
- absence of aversion
- non-judgement

These sub-scales are not independent constructs and therefore, the total scores were used in the analyses. Items are scored on a seven point Likert scale, worded from 'strongly agree' to 'strongly disagree'. Eight items are framed positively and eight negatively. For each question the scoring ranges between one to five points; a total of 80 points is available. The higher the score, the less mindful the individual is. The reliability and validity of the thoughts/images from this questionnaire has been examined with a community sample of people who practised mindfulness meditation (n = 83) and those who did not (n = 51; Hember, 2003). The questionnaire has good internal reliability: Cronbach's alpha - .90. It discriminated between meditating and non-meditating subgroups, showing good criterion validity (t = 3.40, df = 132, p = .000). This questionnaire also correlated significantly (r = .57, p = .000) with the Mindful Awareness Scale (MAAS; Brown & Ryan, 2003) suggesting concurrent validity.

Qualitative measures

1. The interview schedule (see Appendix 5)

The interview schedule was constructed by following the procedure described by Smith (1995) who suggested that researchers consult the existing literature base in order to identify areas of interest and relevance. The schedule acts as a guideline for the interview, but does not dictate the exact course.

2.4. Therapists

The same two therapists ran all four programmes (both therapists have undertaken a seven-day professional training programme in mindfulness with Jon Kabat-Zinn and Saki Santorelli, Director of the Centre for Mindfulness (UMASS Medical School). One therapist was a Chartered Clinical Psychologist, with extensive experience in CBT for anxiety disorders, and the second was a Chartered Health Psychologist, with extensive experience in mindfulness meditation and group self management education.

2.5. Researcher

Prior to the study the researcher whose main therapeutic orientation was CBT, attended an eight-week mindfulness based group as a participant. This group was an independent group run by the local university consisting of eight two-hourly sessions and a one-day retreat. As the researcher had no previous knowledge of mindfulness-based programmes, this experience was used to provide some understanding. The only time the researcher had contact with participants was to introduce the study, obtain consent and conduct interviews.

All participants returned their reply slips directly to the researcher who was therefore independent of the groups and the service offered.

2.6. Treatment

The intervention was based on the structure and format of the mindfulness-based stress reduction (MBSR) original programme (Kabat-Zinn, 1982, 1990); like MBSR the MAM intervention ran over eight weekly sessions and one all day session. Patients were invited to attend an introductory session prior to starting. The meditation practices were introduced in the same order across the eight sessions as the MBSR programme, however there were some differences in the content. MBSR includes sessions on the relationship between diet, exercise and stress, which do not appear as relevant to the MAM programme that focuses on anxiety. This time was used to discuss the impact of the practices on anxiety (see Appendix 6 for facilitator's guide).

2.7. Procedure

Ethics

Ethical approval was obtained from the relevant Ethics Committees (see Appendix 7 and 8). Participants were recruited through a Primary Care Trust and their Research and Development procedures were followed (see Appendix 9).

Quantitative component

Service data

With consent from the Trust (see Appendix 10) scores obtained via questionnaires administered to patients attending the programme were provided, with all identifying information removed.

Qualitative component

Administration of the interviews

Invitations for interviews (see Appendix 11) and information sheets (see Appendix 12) were sent to all participants after the MAM programmes had ended, asking interested participants to return the reply slip. The interview was initially piloted with a student undertaking a placement with the Psychological Therapies Service who had attended the programme out of interest. Subsequent interviews were conducted at a time and place at the participant's convenience, either at the offices of the Psychological Therapies Service or the patient's home. Following consent (Appendix 13), the recorded interviews lasted between 35 minutes and one hour and were then transcribed. The verbatim transcripts were used as the raw data, which were then analysed using Interpretative Phenomenological Analysis (IPA; Smith, 1995, see Appendix 14).

2.8. Data analysis

2.8.1. Quantitative data analysis

All data analyses were conducted using the Statistical Package for the Social Sciences (SPSS), version 14.0 for the personal computer (PC) in Windows NT.

2.8.2. Qualitative data analysis

Smith (2003) outlined a procedure for conducting IPA; the analytic process proceeded in accordance with these guidelines.

Validity and reliability of qualitative analysis

A project carried out by Elliot, Fischer and Rennie (1999) reviewed the standards for qualitative research outlined in the existing literature. From existing standards these authors developed seven principles for evaluating research, which this study has followed. These are: -

1. Owning one's perspective

The researcher embarked on this study with some knowledge of both mindfulness and CBT. It is recognised that this prior knowledge will play a role in how the interview is conducted and the subsequent analysis.

2. Situating the sample

Basic information about the research participants is provided to help the reader in judging the range of persons and situations to which the findings might be relevant.

3. Grounding in examples

The analysis has been grounded in examples, where raw data has been used to illustrate themes and to show how the understanding of the phenomena developed over time.

4. Providing credibility checks

A trainee clinical psychologist with knowledge of qualitative methods read two transcripts and followed the guidelines for IPA (Smith, 2003). Following this a discussion of the themes identified took place. Different themes were taken into consideration through the remainder of the analysis.

5. Coherence

The study is presented in a logical, structured and coherent manner.

6. Accomplishing general vs. specific research tasks

The aim of this study was to provide information regarding the experience of this particular group of people. It is acknowledged that the findings of this study are limited to a small sample of adults with persistent anxiety, who have received both CBT and a mindfulness-based intervention. Therefore, it is not generalisable to other groups of people or those who have received similar therapies.

7. Resonating with readers

The researcher has presented the material in the study in a way that accurately represents the participants' experiences and helps the reader clarify or expand their knowledge and understanding of this area.

3. Results

3.1. Quantitative Results

The participant group consisted of 33 people (26 women and seven men), aged between 24 and 60. The pre (introductory session), mid (week five) and post (week eight) treatment means (M), standard deviations (SD) and ranges of the outcome measures for all participants were calculated and are presented in Table 2.

Table 2:

Means, standard deviations and ranges of the outcome measures for all 33 participants

Source	Treatment time	*M*	*SD*	*Ranges*
HADS ANXIETY	Pre	12.61	3.418	5-18
	Mid	10.96	4.4	1-18
	Post	8.82	3.875	3-17
HADS DEPRESSION	Pre	7.61	3.220	1-15
	Mid	5.54	3.679	1-16
	Post	4.09	3.370	0-13
CORE-OM OVERALL	Pre	1.47	.563	0-3
	Post	.90	.591	0-3
CORE-OM SUBJECTIVE WELL-BEING	Pre	1.92	.811	.25-3.75
	Post	1.04	.808	0-3.50
CORE -OM PROBLEMS/SYMPTOMS	Pre	2.32	.782	.50-3.33
	Post	1.26	.848	.33-3.42
CORE-OM LIFE FUNCTIONING	Pre	1.39	.643	0-2.75
	Post	.877	.646	.08-2.42
CORE-OM RISK	Pre	.202	.287	0-.83
	Post	.134	.214	0-.67
DASS STRESS	Pre	10.84	4.025	0-19
	Post	6.41	3.473	2-15
DASS ANXIETY	Pre	8.06	5.465	0-19
	Post	4.14	3.968	0-14
MINDFULNESS	Pre	59.48	12.452	21-79
	Mid	51.88	12.441	31-74
	Post	42.09	13.115	19-72

To test for normal distribution data from the main outcome, measures were analysed using Kolmogorov-Smirnov (see Appendix 15 for SPSS output), with no measure showing evidence of being significantly different from a normal distribution. In combination with the sound psychometric properties of the measures used, all analyses were undertaken assuming the data to be parametric.

- Effect size

The effect size (ES) was calculated using the HADS pre and post mean anxiety scores. Patients showed improvements in anxiety with an ES of 1.10; this indicates a large ES (Cohen, 1988, 1992).

- Clinically significant change/ treatment responders

To examine clinically significant change in HADS (anxiety) scores the data was analysed according to the work of Jacobson, Follette & Revenstorf (1984) who offer three different criterions for working this out:

A) has the person moved more than two standard deviations (SD's) from the mean for the "problem" group?

B) has the person moved to within two SD's of the mean for the 'normal' population?

C) has the person moved to the "normal" side of the point halfway between the above?

The results were:

- Criterion A = 5.790*

68% of participants showed clinically significant change according criterion A.

- Criterion B = 13.660*

86% of participants showed clinically significant change according to criterion B.

- Criterion C = 9.533*

68% of participants showed clinically significant change according to criterion C.

Additional information regarding each participant was collated and is presented in Table 3:

Table 3:

Summary data regarding all 33 participants

Key
DNC = Did not complete
N/A = Not applicable
NC = Non-completer
DO = Dropout
C = Completer

Participant number	MAM Group 1,2,3,4	Pre treatment HADS Anxiety score	Post Treatment HADS anxiety score	Difference Between two scores	Number of sessions attended 1-8	One-day retreat attended YES or NO	Attendance of treatment NC/DO/C*
1	2	12	DNC	N/A	2	NO	DO
2	2	11	DNC	N/A	2	NO	DO
3	2	18	DNC	N/A	8	YES	DO
4	1	17	9	8	8	YES	C
5	1	17	17	0	8	NO	NC
6	1	11	11	0	8	YES	C
7	1	6	5	1	7	YES	C
8	2	15	DNC	N/A	4	NO	DO
9	1	10	3	7	6	YES	C
10a* 11a*	1 2	17 9	9 5	8 4	7 4	YES YES	C NC
12	1	15	DNC	N/A	1	NO	DO
13	3	13	3	10	8	NO	NC
14	3	15	DNC	N/A	2	NO	DO
15	1	12	DNC	N/A	7	YES	DO
16	1	14	13	1	8	YES	C
17	3	15	DNC	N/A	0	NO	DO
18	1	9	4	5	7	YES	C
19	4	5	6	-1	8	YES	C
20	2	9	7	2	6	NO	NC
21	4	13	12	1	8	YES	C
22	2	13	8	5	8	YES	C
23	3	10	DNC	N/A	7	NO	DO
24	2	6	6	0	6	YES	C
25	4	16	7	9	8	NO	NC
26	4	14	14	0	8	YES	C
27b* 28b*	1 4	14 15	15 9	-1 6	8 6	YES YES	C C
29	1	12	7	5	7	NO	NC
30	3	12	DNC	N/A	5	YES	DO
31	4	16	13	3	8	YES	C
32	3	9	DNC	N/A	8	YES	DO
33	4	16	8	8	7	YES	C

10a and 11a* are the same patient. 27b* and 28b* are the same patient

* Non-completers were defined according to Kabat-Zinn (1990) who specifies that participants need to attend 6 sessions or more, plus the retreat to gain benefit. Therefore, patients completing less than this were classed as non-completers. Dropouts are defined as those participants that did not complete the post group measures.

- Non-completers and dropout rates

All analyses were carried out to include data from participants that did not complete the programme.

- 11 participants dropped out of the programme (33.4%)
- 6 participants were non-completers (18.1%)
- 16 participants completed the programme (48.5%

A last observation analysis was carried out on the HADS (anxiety) data from all of the participants that did not complete the programme and a paired t test was used to examine the differences in HADS (anxiety) scores over time, the results were the results were as follows:

- HADS (anxiety) M = 10.1212; n =33; SD = 4.13
- HADS (anxiety) (t = 4.23; df =32. p <.001)

This indicated that for those who did not complete the programme there was still a significant reduction in scores on HADS (anxiety).

- Attendance

The change in HADs (anxiety) scores and overall CORE-OM scores of treatment completers and non-completers was compared and is presented in Table 4:

Table 4:

The means and standard deviations of change in HADS (anxiety) and CORE-OM scores for treatment completers and non-completers

	HADS (anxiety)			Overall CORE-OM		
	Number of participants	*M*	*SD*	Number of participants	*M*	*SD*
Non-completers	6	5.66	4.03	6	.69	.45
Completers	16	2.75	3.23	17	.28	.59

A one-tailed t-test was used to examine the difference in change between non-completers and completers in HADS (anxiety) scores and overall CORE-OM scores; the results were as follows:

- HADS anxiety ($t = 1.77$; $df = 20$; $p < .044$)
- CORE ($t = 1.54$; $df = 20$; $p = 0.069$)

This indicated that those individuals who attended 6 sessions, and a retreat have greater reductions in scores on HADS (anxiety) and on the overall CORE-OM score, than those who did not manage this.

- Change scores

The pre and post treatment change scores were calculated for HADS (anxiety). The results were as follows:

- (n= 22, mean =3.54, SD = 6.62, ranges = -1--10).
- 9% of people showed a change of less than one point
- 18% scored the same pre and post treatment

- 41% obtained scores that were between one and five points lower post treatment
- 32% obtained scores that were over five points lower post treatment

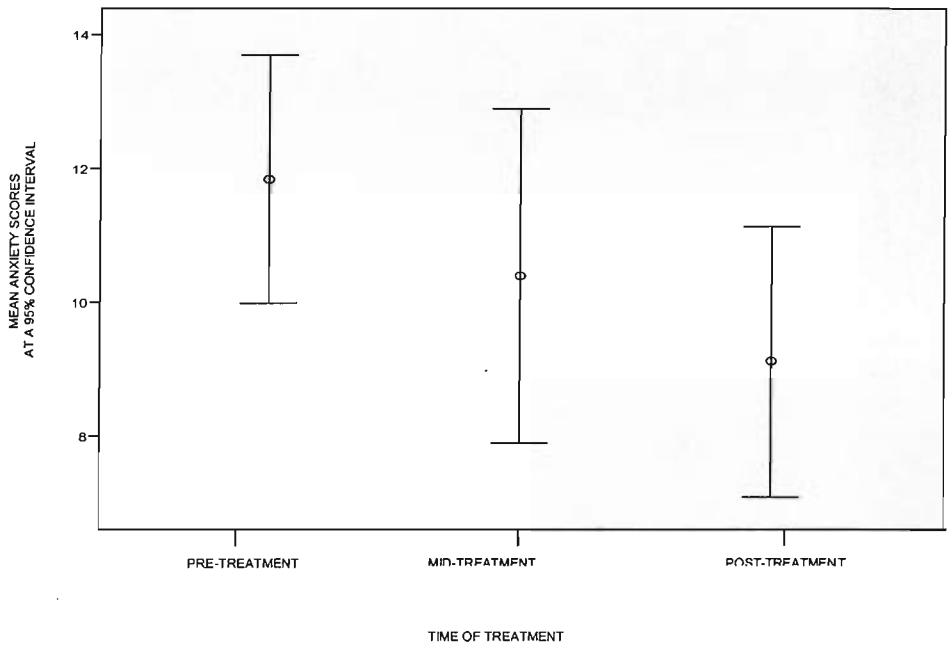
A Kendall tau rank correlation coefficient was carried out on the change scores on HADs (anxiety) and showed that change score were not correlated with baseline scores. The following results were obtained: ($r = 0.3$, $p > .05$).

A repeated measures ANOVA showed a significant effect of time on both anxiety and depression as measured by the HADS. The following results were obtained:

- HADS anxiety ($F = 5.51$, $df = 2$, $p < .008$)
- HADS depression ($F = 9.30$, $df = 2$, $p < .001$)

This indicates that over time, anxiety and depression were reduced significantly, as represented in Figure 1.

(a)



(b)

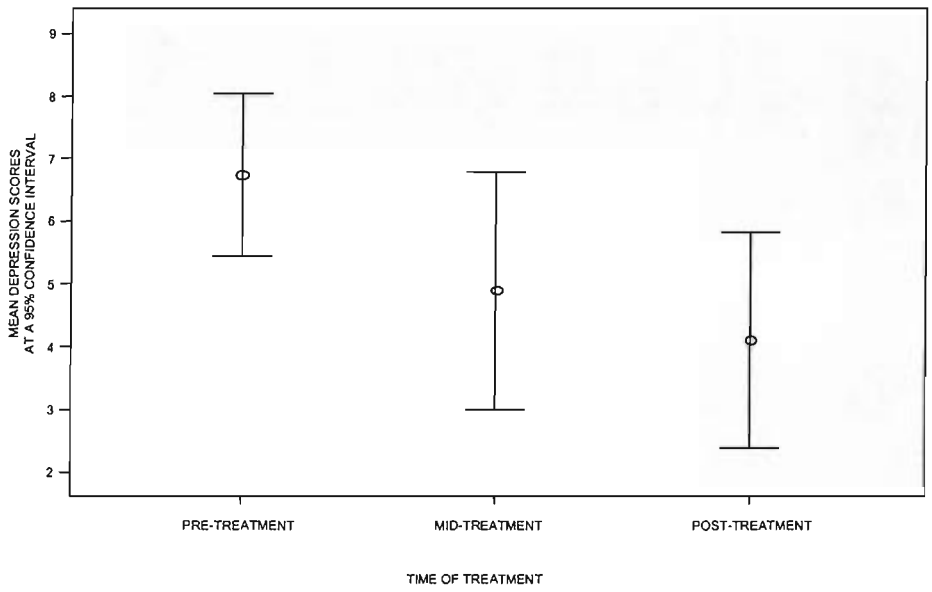


Figure 1: The effect of intervention over time on (a) HADS anxiety and (b) HADS depression.

Post hoc analysis to establish when significant change took place was carried out. This analysis indicates that for both depression and anxiety, change occurred from pre to mid treatment and from mid to post treatment, see Table 5.

Table 5:

Post hoc analysis of the HADS

Pair	*t*	*df*	Sig. (2-tailed)
PRE-MID HADS ANXIETY	1.696	23	.103
PRE-POST HADS ANXIETY	1.696	17	.108
MID-POST HADS ANXIETY	4.592	21	.100
PRE-MID DEPRESSION	2.694	23	.013
PRE-POST HADS DEPRESSION	4.669	22	.000
MID-POST HADS DEPRESSION	2.041	18	.056

As three of the questionnaires were administered at two time points a paired sample t test was used to examine the results of the CORE-OM, DASS (stress) and the DASS (anxiety) pre and post treatment. The results were as follows:

- Overall CORE-OM (t =3.211, df =22, p <.004)

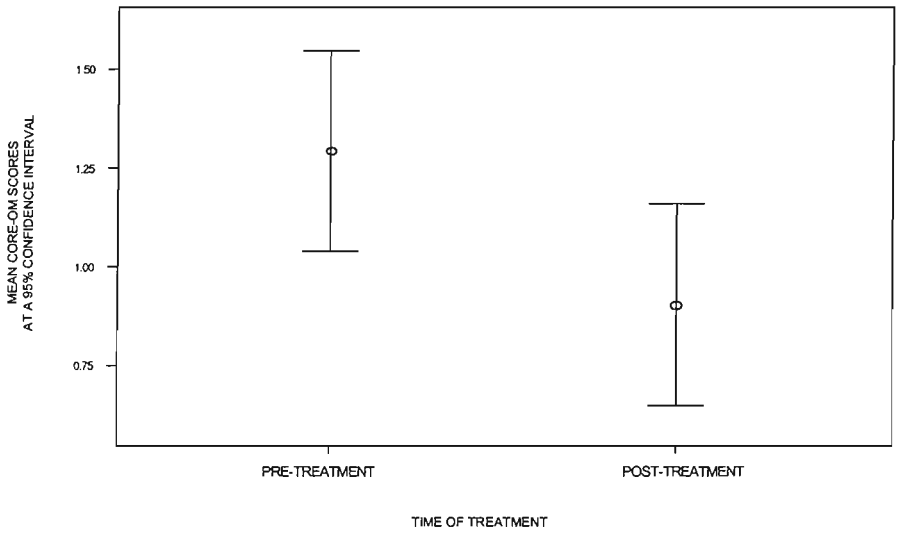
CORE-OM subsections:

1) Subjective well-being (t=3.127, df = 19, p <.006)
2) Problems/symptoms (t=2.201, df = 17, p <.042)
3) Life functioning (t=1.492, df = 18, p <.153)
4) Risk (t= -.257, df = 20, p <.800)

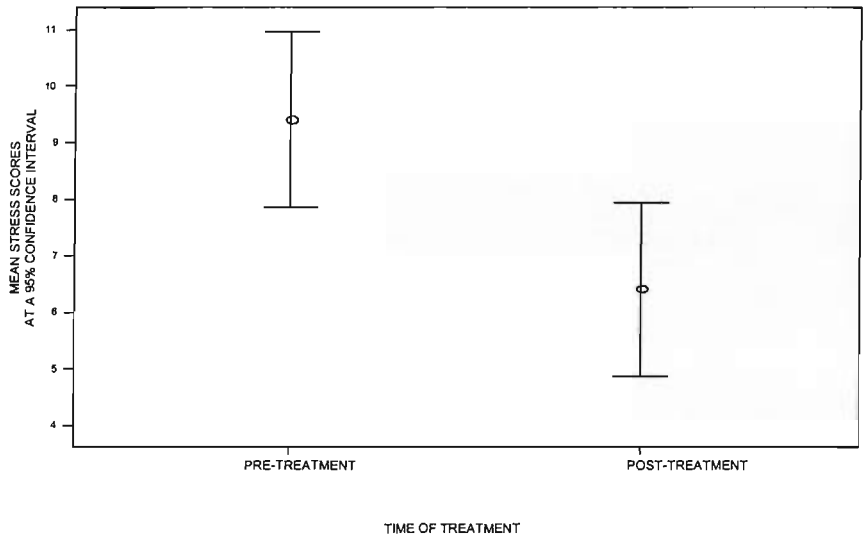
- DASS (stress) (t =3.939, df =21, p <.001)
- DASS (anxiety) (t =2.259, df =21, p =.035)

These results indicate a significant effect of time on the decrease of symptoms on the overall CORE-OM score, DASS (stress) and DASS (anxiety); this is illustrated in Figure 2. There was also a significant effect of time on the decrease of scores on the CORE-OM subsections of subjective well-being and problems/symptoms.

(a)



(b)



(c)

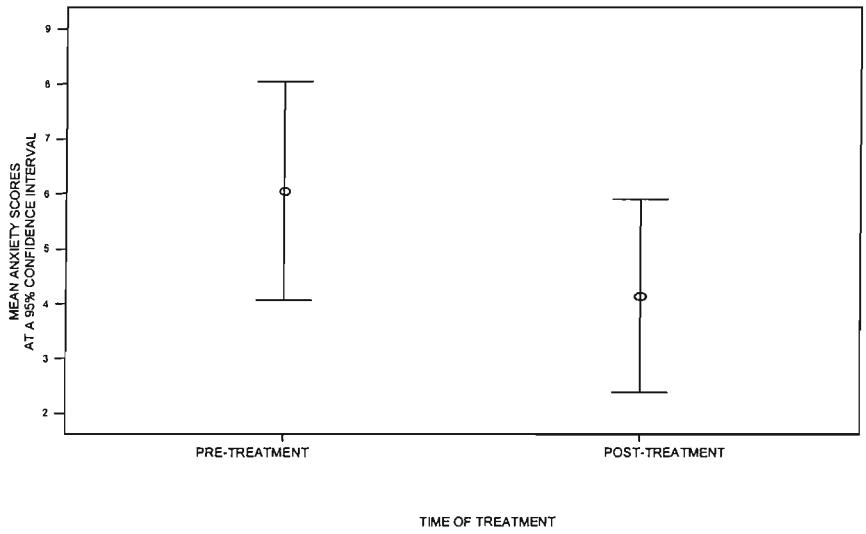


Figure 2: The effect of intervention over time on (a) overall CORE-OM, (b) DASS anxiety and (c) DASS stress.

To examine the effects of time on mindfulness a repeated measures ANOVA was used. This showed a significant effect of time on an increase in mindfulness* as measured by the Mindfulness Questionnaire (MQ) ($F=25.304$, $df=2$, $p<.001$). This is represented in Figure 3.

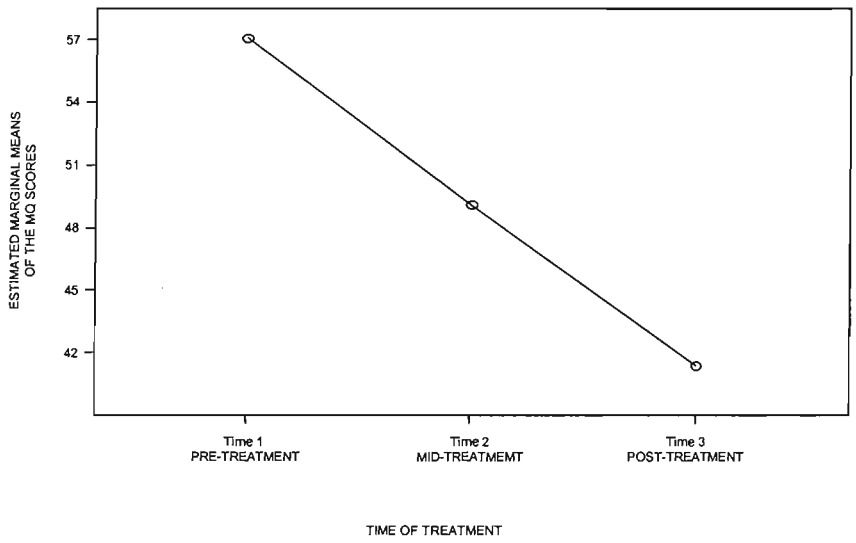


Figure 3: The effect of intervention over time on mindfulness

* Please note that with the MQ an increase in mindfulness is indicated by a decrease in score

A Post hoc analysis was carried out to establish when significant change took place. This analysis indicated that mindfulness increased significantly from pre to mid, and from mid to post programme and is presented in Table 6.

Table 6:

Post hoc analysis of the MQ

Pair	*t*	*df**	Sig. (2-tailed)
PRE-MID MINDFULNESS	2.819	22	.010
PRE-POST MINDFULNESS	5.827	21	.000
MID- POST MINDFULNESS	2.819	22	.010

To examine whether a change in mindfulness was correlated with a change in any of the outcome measures, Pearson's correlation coefficient was used. The results showed that change in mindfulness was positively correlated with changes in anxiety and depression (HADS), anxiety and stress (DASS) and changes in symptoms on the overall CORE-OM and CORE-OM subsections of subjective well-being and problems/symptoms. This indicates that as scores on these outcome measures decrease, participants' mindfulness scores increase. These correlations are presented in Table 7.

* All participants were assessed at the same time points. However, some participants missed the session, did not complete the measures when they were administered, or dropped out of programme.

Table 7:

Pearson's correlation between mindfulness and outcomes measures

Source	Change HADS anxiety	Change HADS depression	Change CORE	Change CORE Subjective Well-being	Change CORE Problems/ Symptoms	Change DASS stress	Change DASS anxiety
Change mindfulness	.672(**)	.405	.693(**)	.616(**)	.607(**)	.634(**)	.531(*)
Sig. (2-tailed)	.001	.062	.000	.005	.008	.002	.011
*N**	21	22	22	19	18	22	22

(*) Correlation is significant at the 0.05 level (2-tailed).
(**) Correlation is significant at the 0.01 level (2-tailed

* All participants were assessed at the same time points. However, some participants missed the session, did not complete the measures when they were administered, or dropped out of programme.

3.2. Qualitative results

The participant group consisted of 10 people (Seven women and three men), aged between 27 and 56, all of which had completed the MAM group. For all participants this was the first time that they had attended a mindfulness group. They had previously received cognitive-behavioural therapy from the service (as outlined in Appendix 2). All 10 participants* had attended the introductory session. Summary data regarding these participants and their pre and post treatment HADS anxiety scores are presented in Table 8.

Table 8:

Summary of data for interview participants

Gender	Participant Names	Age	MAM Group number	HADS Pre-treatment anxiety score	HADS post-treatment anxiety score	Difference between two scores	Number of sessions attended 1-8	One-day retreat attended YES or NO
Male	Colin	56	3	9	8	1	8	YES
	John	45	4	16	13	3	8	YES
	Simon	39	4	16	8	8	7	YES
Female	Gem	37	2	9	7	2	6	NO
	Hilary	46	4	16	7	8	8	NO
	Jane	38	4	13	12	1	8	YES
	Jill	37	4	14	14	0	8	YES
	Katie	37	2	6	6	0	6	YES
	Lisa	27	3	10	DNC	N/A	7	NO
	Sarah	48	2	13	8	5	8	YES

* All of the participant names have been changed to preserve anonymity and maintain confidentiality.

The pre (introductory session), mid (week five) and post (week eight) treatment means, standard deviations (SD) and ranges of the outcome measures for all 10 participants were calculated and are presented in Table 9.

Table 9:

Means, standard deviations and range scores of the outcome measures for interview participants

Source	Treatment time	*M*	*SD*	*Ranges*
HADS ANXIETY	Pre	12.20	3.521	6-16
	Post	9.22	2.949	6-14
HADS DEPRESSION	Pre	6.30	2.452	2-9
	Post	2.44	1.878	0-6
CORE-OM OVERALL	Pre	1.33	.428	0-2
	Post	.78	.367	0-1
MINDFULNESS	Pre	63.70	6.881	49-71
	Post	44.00	9.823	28-58

Summary of themes

Analysis proceeded in accordance with Smith (2003) guidelines. Five superordinate themes emerged through the analysis (see Appendix 14 and 16 for further information) these were:

- Getting to grips with mindfulness
- Timing
- Integration
- Sense of change
- Shared experience.

This section presents these themes.

(1) Getting to grips with mindfulness

Participants were asked to describe their experiences of the mindfulness-based intervention. This first theme encapsulated the journey that participants undertook in developing their understanding of the concepts and components of mindfulness.

*Each extract is identified by the participants' pseudonym and the area within the transcript where it is located in terms of the line numbers. For example, Jane (lines 12-18).

1.1. How does mindfulness fit with me?

Several of the participants indicated areas in the programme that caused them to initially struggle with understanding and sorting out in their own minds where mindfulness sits in relation to their lives. However, it is possible that during or following the intervention some of these issues had been resolved. These descriptions seemed to imply that reading or talking about mindfulness was not sufficient in developing an understanding.

Early in his interview Colin said he found it hard to understand the concept of mindfulness. When he elaborated, it appeared that greater clarity developed half way through the programme, following increased opportunity to practise and explore the concept of mindfulness:

Colin	(lines 214 - 220) ...then we had this one day retreat. The irony of it being that it is to get you to be more mindful and I don't think I quite understood the simplicity of that at the beginning. But following the retreat it became clear, just how simple that is....
Researcher:	*What helped you to get that clarity?*
Colin:	Staying with the course and learning these techniques and having CD's and following those through.

Jane's struggle and initial frustration came from her desire to get things right. She indicated early in the interview that she disliked failure and this desire not to fail fuelled her anxiety during the intervention. Jane's descriptions suggested that she liked concrete structure, with step-by-step instructions and was uncomfortable sitting with the uncertainty of the early sessions. Both the MAM and MBSR programme on which it is based, encourage participants to explore and get to know their own reactions to events and do not try to impose structure or definition. Jane appeared to have some difficulty with this uncertainty initially:

Jane (lines 248 - 252)
Jane: I mean initially I was full of questions, well how should I be feeling? Am I doing it right? What should be happening? Which made me feel really uncomfortable because for me I deal in black and white and I need to know, if I have a questions I need an answer to it.

Other participants revealed a struggle in adopting some of concepts of mindfulness. For example, Jill displayed difficulty in sitting with the uncomfortable thoughts that she was experiencing:

Jill (lines 347 - 348)
Jill: there were some uncomfortable thoughts that actually sitting with them just didn't help because they were too big...

Earlier in his interview Colin described difficulty in visualising some of the images described within one of the practices. It may be that this imagining/visualisation task did not make sense to him:

Colin (lines 373 - 376)
Colin: I think the particular one that I couldn't quite get my head around was saying imagine you breathe in and then imagine the breath going through your body and I couldn't get that. My brain was telling me that that doesn't happen.

Katie spoke of her awareness of the Buddhist origins of mindfulness and the conflict that she felt between following this approach and her other important beliefs and values in her own practice of Christianity. She also revealed the openness that she was adopting in exploring something she believed to be at odds with her own beliefs:

Katie (lines 375 - 379)
Katie: ...sometimes for me it touched into may be that Buddhist route a little bit and I kind of I couldn't quite marry that up. We are all going on a bit of a journey and as a Christian that's quite interesting because some of it would be very, very relevant, but Buddhism and Christianity are very different.

Other participants demonstrated that they had developed an individual understanding of how mindfulness applied directly to them. Katie had spent time during the programme considering how mindfulness fitted with Christianity and now saw it as an individual journey. She had drawn together everything she learnt during the intervention and was in the process of deciding if mindfulness was something that she wanted to continue with:

> Katie (lines 446 - 450)
> Katie: ...the process for me afterwards, was about me drawing my own conclusions, so these two people that had led me through this course, had probably had their own journeys and now it's about me making that decision for myself.

(2) Timing

When describing the mindfulness-based intervention, the theme of time was identified by a number of participants. Attending the group programme was demanding and participants managed this in different ways.

2.1. The homework challenge

For Katie doing the mindfulness-based intervention involved a big time commitment. She felt a sense of guilt regarding the amount of time that she had allocated to carrying out the recommended practices at home, and struggled to deal with the guilt and find a balance between carrying out the homework and the other demands of daily living:

> Katie (lines 221 - 222)
> Katie: For the purposes of the tape, I always did 6 days. I did what I could in relation to the other commitments that I had...

Earlier in her interview Gem indicated that she struggled with doing the practices outside of sessions and scheduling her time for these practices. For her, mindfulness was not a priority, but more of a chore and so was not at the top of her list of things to do:

Gem (lines 134 -135)

Gem: Making the time to do it. To put in high enough up on the list of things to do. The only way I will do it is if I actively wrote down, diaried it....

Gem preferred to carry out the practices during the sessions and found it more difficult to carry out the practices alone:

Gem (lines 137 - 140)
Gem: It was a struggle, a serious struggle to do that and yet the actual sessions were really good. I actually enjoyed that I would almost rather have not had the homework aspect and had like 3 sessions a week.

2.2. Practice duration

A number of participants revealed the duration of some of the mindfulness practices was a barrier that prevented the use of them. When discussing the body scan exercise the duration of this practice did not fit in with John's busy pace of life at home. For John the number of distractions at home meant that the shorter exercises fitted better into his routine of daily life:

John (lines 89 - 91)
John: the body scan was too long; I don't tend to do it. I've got a house full and it's very difficult to get 45 minutes where you can just sort of switch of, something is always going on, there's always distractions. The shorter ones are better.

For other participants the difficulty of doing the body scan was related to its duration and consequent problems with maintaining concentration. Sarah found that she had problems staying awake during this exercise:

Sarah (lines 215 - 217)
Sarah: when I tried it at home I was lying there breathing through my toes and the next second I'd be nudged it's dinner time and I'd be oh is it!

2.3. Right time - right place

The theme of timing was also related to by some of the other participants in a different context. The time of life that the intervention is undertaken was highlighted as an important factor.

Hilary described the importance of being ready to face her anxiety and stated that maybe she had not been ready for change prior to undertaking the programme. She made the observation that some of the others were repeating the programme and attributed this to the belief that they may not have been ready when they first completed the intervention. This observation then appeared to reinforce Hilary's belief about the essential nature of timing:

Hilary (lines 483 - 488)
Hilary: ...actually their experience second time round was quite different and I sensed that for some of them that was about the place that they were in when they were doing it. I would say for me it was absolutely right for me at the right time. I think had I attempted to do it a year ago, I would not have got out of it what I got out of it. I think I was ready for it. It's about your own personal readiness to hear it.

Lisa also suggested that the time the programme is undertaken is an important factor. As it involved exploring overwhelming things, there was a need to have stability and support in her life when undertaking the programme. This suggests that the practice of not analysing experiences rather conversely brings experiences to the surface:

Lisa (lines 349 - 351)
Lisa: I think you need to be quite, settled at work or home, you need quite a lot of stability otherwise you are exploring stuff and you can get too caught up in that and that can feel quite overwhelming in itself as well as the initial problems...

2.4. Time for me

For some of the participants mindfulness was also associated with having an individual experience, which gave them time for themselves when no demands were placed on them.

The importance of having permission to focus on herself and relief in not having to talk to other people was liberating for Sarah:

Sarah (lines 203 - 206)
Sarah: it was liberating not to have to talk to any one, not to have to reply, if the facilitators said something, I didn't have to reply to it. I didn't have to think now how did that effect me...

This guilt-free individual space was also revealed when Katie was discussing the one-day retreat. She felt relief that she did not have to talk to the other group members and could focus on herself:

Katie (lines 286 - 288)
Katie: what was nice was being with a whole load of people on a days workshop and having permission not to talk to them and having quite an individual experience.

Simon described enjoying the peace and quiet that he felt when he carried out the practices, giving him an allocated break from his busy life:

> Simon (lines 131 - 132)
> Simon: ...Where you are lying there and you know that no one is going to interrupt you, ask you for something, your phone is not going to ring, it was your time really.

(3) Integration

When describing the MAM programme, the theme of integration was evident in the transcripts. Attendance of the programme provided the participants with different strategies to choose from and participants were able to make decisions regarding how these strategies applied to them.

3.1. Finding your own level

In terms of the exercises that are designed to promote mindfulness, several of the participants learned that they could adapt these exercises. For example, Katie had back problems, which initially increased her anxiety, as she was worried about her ability to participate. However, her journey through the intervention had helped her to find her own level and realise that the group was not about competing with others:

> Katie (lines 265 - 267)
> Katie: I was a bit anxious about it because of my back, but it was fine and I just worked at my own level. I mean one thing interesting is about finding the level that you work at physically and when to decide to hold a position or not.

Some participants described active use of some of the mindfulness exercises in their lives following the intervention. For Simon the programme requirement to do exercises at home gave him a legitimate reason to have an interruption-free time for himself that he didn't have previously. His enjoyment of this time may have

motivated him to continue using the exercises after the intervention had finished as presented earlier page 120 (lines 131-132).

For some of the other participants, mindfulness had not been assimilated into their lives. Katie, who had struggled to find the time to practice the exercises at home, initially reported that she had tried to find ways of incorporating the mindfulness exercises since the programme finished. However, she then contradicted this by saying that she found the longer practices more difficult in the programme, so it 'might be' the shorter ones that she tries. This seemed to imply that she had not had the chance yet to try the practices since the programme had finished. The contradiction in Katie's transcript may indicate that she feels some a sense of guilt, however, it may be that she does not see mindfulness as an important element in her life:

Katie (lines 193-197)
Katie: Since the group finished I have tried to find ways of realistically using it in every day life. I would say that some of the longer meditation practices seemed difficult during the group, so it might be shorter bits that I try out at home when I find the time...

3.2. Tool kit

For some participants the mindfulness intervention provided them with a set of tools that they could use. Colin, who initially took a while to develop his understanding of mindfulness, now describes the comfort he feels in having tools that he can access when different problems arise:

Colin (lines 93 - 95)
Colin: ...it's a comforting tool because you realise that it is some thing that can help you.

Earlier in his interview Colin described his experience of CBT as having learnt something that was now an automatic part of him. In contrast the mindfulness strategies are something that he will continue to have to work on and develop:

Colin (lines 488 - 490)
Colin: The mindfulness is giving you an insight and giving you the tools and techniques, you haven't suddenly had a chip inserted in you head that controls every thing perfectly from now on; you've got to work at it.

Similarly when discussing the use of mindfulness, John mentioned dipping in and out of the mindfulness practices when he felt he needed to:

John (lines 291 - 293)
John: I tend to use it when I feel I that I need it, rather than making it part of a normal working day or part of a normal day.

3.3. Comparing mindfulness to CBT

There was evidence in a number of transcripts that participants were trying to develop their understanding of the compatibility of mindfulness and CBT. Participants found different ways of dealing with the discrepancy between CBT that involves modifying thoughts, and the principles of mindfulness in which non-judgemental acceptance and letting go of thoughts are dominant. Hilary revealed that she did not believe that these two interventions could be presented as compatible and had raised this with the facilitator:

Hilary (lines 200-203)
Hilary: I just felt what he was saying that doesn't fit. Where does the 'thoughts going off into nothingness' fit as that is really contrary to the whole thing about CBT.

Earlier in her interview Katie revealed that she felt some initial confusion regarding the discrepancies between CBT and mindfulness. However, she indicated that she had been unable to cope with this confusion and had resolved it through discussions with the facilitators following the end of the intervention.

She now felt that mindfulness and CBT are complementary and she could choose between them:

> Katie (lines 432 - 434)
> Katie: And that's for me where the mindfulness fits, because with just CBT you are a bit stranded if you are stuck with the negativity, but with the mindfulness just thinking ok I am feeling all of this and that's alright...

Some participants' descriptions demonstrated a sense of hope related to undertaking the MAM programme. When describing how she felt Sarah associated CBT with a sense of past failure and mindfulness with the expectation of change:

> Sarah (lines 94 - 96)
> Sarah: I was thrilled. Initially when I had to go back to CBT, I thought 20 years have gone by and here I am again. But the MAM information, I was thrilled; I was ready for more therapy.

3.4. Integrating mindfulness and CBT

A number of participants illustrated that undertaking both CBT and mindfulness had enabled them to integrate elements from both into their daily lives. Jane initially struggled with mindfulness as she wanted answers and disliked failure, however, she now describes having internalised strategies from both. This has provided her with a different range of strategies to choose from:

> Jane (lines 540 - 544)
> Jane: I think when you do it and you practice it, it becomes part of everyday life. You don't even realise oh that I am doing mindfulness now or I am doing CBT now. I think it is two different things in a way. It just depends what suits you best at the time.

Jane then proceeds to give an example, which demonstrates how she is able to apply them. Firstly, she applies CBT to help understand a situation and then uses mindfulness to let go of her anxiety:

Jane (lines 545 - 550)
Jane: I think its just a matter of if you are getting anxious about something you could say right if somebody spoke to you in a certain way you could step back and think oh well they have just had a bad day and think well actually that hasn't helped me I need to actually step back to get out and breathe.

Lisa also describes the application of both mindfulness and CBT. She indicates that she prefers not to get caught up in thinking about her thoughts and accept them and let go of them. Lisa appears to use mindfulness first and CBT later when the anxiety has subsided:

Lisa (lines 336 - 340)
Lisa: It's about facing, and accepting and letting time pass, so I don't get caught up in thinking oh god I am feeling this or panicking. So that really takes the edge off that and that is the main thing and then you can look at the thoughts that aren't that helpful.

Colin provided an example of a situation at work where he used the tools that he has learnt from mindfulness and CBT to help him deal with the same situation. His example began when he realised that he had forgotten to do something at work. His response indicated that he used CBT as a tool for reflection and his mindfulness tools have helped him to accept his anxious thoughts:

Colin (lines 257 - 260)
Colin: so you get that wave of all these different thoughts and they worked together as the mindfulness enabled me to accept it, it doesn't matter now, that's just the situation and the CBT then says what's the point of worrying about that and beating yourself up about that it's not helpful at all.

Some participants revealed that they had some preference in which intervention they would choose to use depending on the situation that they were in. When exploring how Hilary would decide between the two, she described that she would use CBT to help her deal with more difficult experiences. For Hilary mindfulness did not feel adequate in helping her cope with complex situations:

Hilary (lines 432 - 435)
Hilary: ...it depends on how strong the emotion is really. Because I think if it is not registering very high or loud, then you can let you don't need to worry about it. But I guess the stronger the emotion the more difficult the situation and the more likely I am to then start really processing the thought.

When discussing the application of mindfulness and CBT, Jill struggles to let go of negative thoughts as presented on page 115 (lines 347-348) has meant that she feels comfortable with some of the strategies of CBT and prefers to use this approach first:

Jill (lines 406 - 410)
Jill: ...where the CBT is about taking hold of the thoughts and challenging them... I think for me that tension between thoughts that just won't go away and not just letting them go away that was a bit of a struggle. I suppose I would see the mindfulness as serving the CBT.

(4) Sense of change

This theme relates to change that the participants described in themselves or that were evident in their descriptions during or following the programme.

Change was apparent in terms of how participants' attitudes and responses to themselves, situations and others had changed. For example, when discussing change, Simon displayed an increase in self-confidence and ability to observe his cognitions. He now observes that he still gets anxious, but handles it with acceptance rather than getting caught up in his worrying thoughts:

Simon (lines 111 -112)
Simon: I still worry, but you learn how to not worry about, but I just sort of put it back. It use to be a great problem, but tomorrow is another day you can't do any thing about it.

Colin's descriptions suggested that the mindfulness programme had also helped him to develop his awareness and become an observer of his cognitions; he is now able to stand back, reflect and self-monitor:

Colin (lines 232 - 235)
Colin: I think what it does and I am still mulling this over in my head, I have this trait of going to the past, and by concentrating on the present, those things are reduced. I don't do it so much and I am aware that I am doing it and I can say hang on that's not getting you any where, that's wasting time, get back to where you are.

Although Collin was still 'mulling things over,' he goes on to reveal that he experienced a sense of achievement through attending the intervention. The increased focus in the present has effected change through enabling him to be more engaged with his family:

Colin (lines 279 - 282)
Colin: and the other thing that mindfulness is working very well is in family situations. I think I'm much more engaged with things than I have been. Sometimes I felt almost on the peripheral of what's going on, where as now mainly thorough the mindfulness I am much more aware.

Lisa who earlier described the overwhelming thoughts that she experienced, demonstrated that change had occurred for her as she was now able to turn towards her difficulties and face them, without feeing overwhelmed:

Lisa (lines 335 - 338)
Lisa: Just instead of getting caught up in just one particular thought or feelings, I just I don't know, I sort of relax towards it. It's like it's quite a subtle thing.

Earlier in her interview Gem describes the high expectations that she had of herself. Gem had now developed an increased level of self-acceptance and an understanding of her boundaries and limitations together with more realistic expectations:

Gem (lines 341 – 342)
Gem: I have a much stronger awareness of where I can leave myself, which I hadn't before.

Jill's account reveals an altering view of self, associated with mindfulness, which enabled her to be more fully present and non-judgemental. This change in approach has also led to increased confidence and compassion:

Jill (lines 89 - 92)
Jill: ...one of the things that I have realised about the mindfulness is that if your mind wanders you just bring it back; it's not about a breakdown of the activity. Where as previously I had kind of felt that it was a bit of a failure really, not being able to focus for the amount of time.

Hilary identified an increased awareness and focus in the present which enabled her to slow down her pace of life:

Hilary (lines 377 - 382)
Hilary: my mind was always constantly on what have I got to do next, jumping a head, jump, jump, jump, a head, all of the time, it was very difficult to be in the present and I think generally my ability to be present is, well I am much more able to be present...

5) Shared experience

Attending the programme provided the participants with the opportunity to be in contact with others who had anxiety and this 'shared experience' is highlighted as the final theme. This theme was therefore related to the opportunity to be in a group and not directly related to the mindfulness-based intervention.

5.1. 'Maybe I am normal too!'

The MAM intervention provided participants with the chance to meet and talk with people with similar experiences. For Simon this meeting was welcomed, but revealed a dilemma between his increased anxiety when meeting new people and his desire to meet people that share an understanding of his difficulties:

Simon (lines 44 - 48)
Simon: I felt nervous, because it was going to mean meeting new people. But on the other hand because you know that the people who are there have the same problems as you and basically it will as be quite nice to meet people who have got the same problem as you. Because people sometimes, people don't understand.

The opportunity to meet people with similar problems and draw comparisons provided comfort and reassurance, and helped increase self-esteem for some participants. For example, Lisa's comparisons to others helped her to 'normalise' her experiences and realise that she was not alone or different from others; this recognition seemed to result in an increase in her self-esteem:

Lisa (lines 205 - 208)
Lisa: I could relate to some of what she was saying about situations, it made me sort of think well actually other people do they have similar reactions and realising that actually they are quite normal, may be I am quite normal too!

In the past Lisa has not been comforted by the support from her friends. However, the opportunity to meet people with similar experiences provided Lisa with the reassurance that she needed suggesting that similarity was a key factor:

Lisa (lines 212 - 215)
Lisa: I felt before when I've really spoken to friends about things and they've gone oh yeah I sometimes feel like that. I think the difference is whether it stops you from getting on with your life and living a full life. It's always nice to meet some one else who some times doesn't do things because of the anxiety.

For others, comparisons made in the group also provided them with reassurance and increased self-esteem. John's experience of the group was confirmation that that he was not the only one suffering from anxiety. It seemed that his anxiety was a source of shame for him. However, his self-esteem was raised by the realisation that people with anxiety disorders were 'normal' people and he was not alone:

John (lines 222 - 224)
John: It was comforting to know that there were other people and not just yourself. You've never seen someone it's hard to spot someone that suffers from anxiety.

Jill's comparison with others revealed a sense of relief that there were other people less fortunate than herself, and this could be considered as a strategy for enhancing her self-esteem. This experience may also have provided her with a new way to view her own problems:

> Jill (lines 392 - 396)
> Jill: ...some times I was feeling a little bit fraudulent, there I am sitting in the group where there were clearly some difficult things going on and why I am making such a fuss about me, so it was really helpful as well to go back and think well yes actually there are things that I need to be careful with myself for and kind to myself about.

Experiencing a group increased the sense of hope in some participants. Early in her interview Katie seemed unsure of how mindfulness had helped to change her, however, she saw hope in the belief that if she could see change in others then perhaps she had or could change:

> Katie (lines 152 -155)
> Katie: I think what was really encouraging was at the end was to kind of look at each other people and to think blimey you have really changed and therefore that reflects back, well maybe I've really changed as well.

5.2. Increased exposure

Some participants acknowledged some of the difficulties of being in a group; Simon previously illustrated this point when he spoke of this own social phobia (page 129, lines 44 - 49). Being in a group was associated with feeling less protected and feeling more self-conscious.

This was also a dilemma for Katie who did not feel safe in sharing her experiences in the group and this may therefore have held her back. However, she was also aware there were benefits from being in a group, but would have felt more comfortable with individual therapy:

Katie (lines 323 - 326)
Katie: I mean some times I wouldn't share with the group, but I would have shared them on a one to one. But then that was the benefit of the group, was that you had the benefits of other people's experience and that often helps.

Earlier in his interview John revealed that he struggled with being in the group, as he felt self-conscious and was worried about looking 'stupid.' John's descriptions suggested that exposure in a group caused him considerable anxiety, which he overcame by pretending that he was in individual therapy:

John (lines 252 - 253)
John: I just, I didn't look at the group, I focused on one of the facilitators as if it was a one to one.

4. Discussion

This study investigated the impact of a mindfulness-based intervention on adults with persistent anxiety.

4.1. Research findings

The results of this study indicated that this mindfulness-based programme was effective in decreasing symptoms of anxiety, depression and stress. Scores on the overall CORE-OM and subsections of subjective well-being and problems/symptoms also dropped. This result is consistent with the findings of other studies, which have also found reductions in symptoms of anxiety and depression (e.g. Kabat-Zinn et al., 1992; Finucane & Mercer, 2006). Patients showed improvements in anxiety (as measured by the HADS) with large treatment effect size (ES; 1.10), large ES were also found by Kabat-Zinn et al. (1992). An MBSR study by Carlson, Speca, Kamala, Patel and Goodney (2003) also found decreases in symptoms of stress. The stress symptoms they were measuring were the physical, psychological and behavioural responses to stressful situations, which are the same symptoms measured by the DASS. 68% of patients showed clinically significant change (according to criterion A, Jacobson et al., 1984). Results indicated that for patients that who did not complete the programme there was still a significant reduction in scores on HADS (anxiety). However, it is possible that non-responders were those individuals that did not manage to complete six sessions or more and a one-day retreat, which Kabat-Zinn (1990) specifies is necessary to gain benefit from a mindfulness-based programme. There was also a significant effect of time on an

increase in mindfulness (this increase was inferred by a decrease in score on the Mindfulness Questionnaire). Additionally, as mindfulness increased, scores on symptoms of anxiety, depression, stress, the overall CORE-OM and subsections of subjective well-being and problems/symptoms as measured by the CORE-OM decreased. Although an increase in mindfulness is only inferred from a decrease in mindfulness scores, this suggests that mindfulness cannot be ruled out as a mechanism of change.

Examination of patients' experiences of the mindfulness-based intervention using the process of IPA led to the emergence of five superordinate themes:

- Getting to grips with mindfulness
- Timing
- Integration
- Sense of change
- Shared experience.

Although these themes are specific to these individuals, they will also be discussed within the context of other research.

1) Getting to grips with mindfulness

Attending the programme gave the patients the opportunity to explore the concept of mindfulness. Participants described a journey involving working out what mindfulness was and how it fitted their lives. Their descriptions seemed to imply that reading or talking about mindfulness was not sufficient to develop an understanding, however, participating in the programme helped with this process.

Mason and Hargreaves (2001) carried out a qualitative study, using mindfulness-based cognitive therapy (MBCT) for depression. Several of their participants also referred to a period early in the intervention where they found the concept of mindfulness challenging. They too described concern with 'driving to get it right' (pp. 203). This was also acknowledged by participants, suggesting that some people find the structure of the programme an early obstacle. This was resolved through some aspect of attending the programme.

2) Timing

There were a number of subordinate themes to the timing theme. Attending the group programme was demanding of participants and how much participants invested in the programme was influenced by other things including life-style, time pressures and how valuable they felt mindfulness would be to them in the future. The intervention had given some participants freedom to have 'time' to themselves. A study by Finucane and Mercer (2006) examined the treatment of patients with active depression and anxiety with MBCT, also identified 'learning to take time out' (pp. 8) as a benefit of the programme. The perception of there being a 'right time' in life to undertake the intervention was also evident.

3) Integration

The intervention gave the patients the opportunity to see if mindfulness or its associated practices could be of value to them. This experience helped patients to realise that they could also adapt the practices to suit themselves. There was variation in the amount and type of homework done, which was also reflected in

Finucane and Mercer's (2006) MBCT study, where patients also described adopting a flexible approach towards practice. As all the participants had also undertaken cognitive-behavioural therapy (CBT), the programme provided them with the chance to compare the two. For some, the discrepancies between them caused some initial confusion; however, this was resolved in the group sessions or with the facilitators following the programme. A number of participants had gained strategies through undertaking CBT and also saw mindfulness as providing them with tools to use. Some participants used both approaches together when in anxiety provoking situations, suggesting that there is some compatibility between these two approaches, which has also been highlighted in the literature (Hayes, Strosahl & Wilson, 1999; Linehan, 1993a, 1993b; Kabat-Zinn, 1982, 1990; Teasdale, Segal & Williams, 2002).

4) Sense of change

Change was apparent in terms of how participants' attitudes and responses to themselves, situations and others had changed. The sense of change that participants experienced has also been reported in the literature, for example Bonadonna (2003) suggested that meditation may be a practice facilitating personal growth thereby enhancing health. Mason and Hargreaves (2001) study of MBCT highlighted change in attitude towards acceptance, which was also reflected in the present study. A recent model of hypothesized mindfulness mechanisms by Shapiro, Carlson, Astin and Freedman (2006) describes the central shift that occurs in meditation practice as one of 'reperceiving,' being able to see things in a completely different way for the first time. The participants'

descriptions of change suggest that some of them have become observers of their cognitions and behaviours and seeing things from this different perspective has similarities to the idea of reperceiving.

5) Shared experience

The final theme emphasises some of the difficulties and benefits participants experienced in being with others. The value of the opportunity to normalize and validate their experiences was acknowledged. Previous research indicated that sharing a similar diagnosis creates a sense of community, alleviating the sense of isolation that people experience (Spiegel, Bloom & Yalom, 1981). The effects of social support on physical and psychological well-being has been identified in the literature (e.g. Cobb, 1976; Dean & Lin, 1977; Heitzmann & Kaplan, 1988; Turner, 1981). Mason and Hargreaves (2001) MBCT also highlighted 'group support and identification' as a category of importance to their participants. It may therefore be that the social support is a mechanism of change and not mindfulness per se.

4.2. Methodological issues

Strengths

One of the strengths of the study was that it was conducted in a routine primary care setting, involving clinical populations, which indicates high ecological validity. Most of the participants had not practised mindfulness meditation before, and therefore did not have any fixed expectations. A further strength was the use of a mixed methodology enabling a more complete and in-depth understanding of

patients' experiences. In contrast to other studies mindfulness was included as an outcome variable. The researcher was independent of the groups and the service offered to them, this was seen as a strength of the study, as it may have allowed participants with a greater opportunity to be honest and open when exploring their experiences of the mindfulness programme and help to reduce the affect of demand characteristics.

In this context qualitative methods also provide detailed information upon which future qualitative and quantitative studies may be based. Given that the present study was an exploratory inquiry into the patients' experiences of mindfulness, an area where there is limited research, this design was considered to have been the most appropriate. The semi-structured interview was considered an asset as it allowed flexibility to adapt the questions and probe any issues, producing richer data than structured interviews (Smith, 1995). An additional strength is that information regarding the therapists and the intervention is included in this study.

Weaknesses

There are a number of methodological weaknesses associated with this study, which must be taken into consideration when considering the results. This was a study with no control or comparison groups, and it was unclear as to whether patients were taking medication. Therefore, reductions in the different symptoms cannot be directly attributed to the intervention. Patients who attend the programme do not have a formal diagnosis, which adds further limitations to the results. However, this is a reflection of patients in primary care and the

populations that are profiled by the measures (e.g. the HADS). As no follow-up data was available so it is unclear whether this intervention produced long-term changes. Additionally, inherent in the qualitative methodology, findings cannot be generalised beyond this group of participants.

4.3. Clinical Implications

The findings of this study help to inform clinical practice of the effectiveness of using mindfulness in the treatment of persistent anxiety. This will contribute to the research base and provide some indication of the mechanisms of change. Exploring patients' lived experiences of this intervention and how they have integrated the practices into their lives could inform the use of mindfulness-based interventions. For example, this might help clinicians in selecting people for the programme and addressing particular areas of challenge.

4.4. Future research

The application of mindfulness to the understanding and treatment of anxiety is in the very early stages. Although initial research looks promising (Kabat-Zinn et al., 1992; Miller et al., 1995), more is needed to establish the effectiveness of this approach. Larger sample sizes are needed, where individuals are diagnosed with specific anxiety disorders. This would enable researchers to establish the anxiety disorders that mindfulness is most beneficial for, and achieve greater generalisability of results. Follow-up studies are needed to examine the effects of time on outcome. Studies based on the use of control groups are needed to clarify whether the effects are due to mindfulness training or confounding

variables such as medication, placebo effects or the passage of time (Chambless & Hollon, 1998). Further work is needed to determine the value of integrating mindfulness with CBT or in using these interventions alone. The richness of the qualitative data provides a source from which questions and theories can emerge concerning the experiences of adults with persistent anxiety; this information can be used to inform future studies.

4.5. Summary and Conclusion

The results of this exploratory mixed methods study suggest that mindfulness based therapy may have a role to play in treating anxiety. This programme was accompanied by a reduction in anxiety and was accompanied by increased mindfulness, indicating that mindfulness cannot be ruled out as a mechanism of change. However, as the study was correlational, no causal relationship between anxiety and treatment can be established.

Overall, attending the programme gave patients the opportunity to explore the concept of mindfulness and decide whether they would continue to practise it on a regular basis or adopt some of the exercises. As all of the participants had undertaken CBT, so the intervention provided them with the opportunity to compare the two. Some participants used both approaches together when in anxiety provoking situations, suggesting that there is some compatibility between these two approaches and that they can be integrated. The importance of being in a group with others was also acknowledged; therefore the effect of shared experiences cannot be ruled out as a mechanism of change.

Further work is needed, as discussed, to develop a more comprehensive understanding of the efficacy of mindfulness-based interventions and the mechanisms of change.

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6. Appendices

Appendix 1

Instructions to authors: The Journal of Cognitive Psychotherapy

Instructions to Contributors

The Journal of Cognitive Psychotherapy: An International Quarterly is devoted to the advancement of the clinical practice and theory of cognitive psychotherapy in its widest sense. This scholarly journal seeks to merge theory, research, and practice and to develop new techniques by an examination of the clinical implications of theoretical development and research findings. To this end the journal will publish empirical research studies, case studies, theoretical articles, literature reviews on clinical topics, and articles specifying the clinical implications of topical research.

Manuscripts are solicited in the following areas:

1. Empirical Research. Such studies should have direct clinical relevance to theory and practice that is well described in the article.
2. Theoretical articles. Articles that outline or propose new theoretical developments relevant to cognitive therapy are welcomed if they have clear implications for cognitive accounts of psychology or clinical practice.
3. Literature reviews. Such reviews can focus on empirical studies of cognitive models, or research demonstrating the efficacy of specific techniques, the practice of cognitive psychotherapy with specific populations, different therapeutic modalities (e.g., group therapy, family therapy), or reviews of assessment methodologies useful in cognitive psychotherapy.
4. Treatment manuals, including the descriptions of new treatment methods or descriptions of their applications to populations of interest (e.g., treatment resistant). Such manuals should clearly illustrate the specific sequential clinical interventions. In particular, authors should clearly indicate variations in interventions and their rationales, as well as empirical evidence for the manual. .
5. Case studies. Authors should describe therapeutic procedures in sufficient detail to permit replication by other clinicians and should include measures of outcome and, whenever possible, followup. The development and investigation of innovative procedures are especially welcomed.

The journal publishes reviews and abstracts of books, tapes, films, and other clinical resources, as well. Publishers should send two copies of such materials to the Editor.

Finally, the journal seeks to publish special issues devoted to topics of particular interest, suggestions for which are welcomed by the editors.

The original and three copies of each manuscript and a diskette with an electronic document should be submitted in English to Dr. John H. Riskind, Journal of Cognitive Psychotherapy: An International Quarterly, George Mason university, Department of Psychology, MSN 3F3, Fairfax, VA 22030-4444. Manuscripts must be prepared according to the Publications Manual of

the American Psychological Association, 5th edition, and must be typed double-spaced through including abstract, text quotation, and references, and tables. Use one side only of 8.5 x 11" or 8.25 x 11.75"white bond paper, with a minimum 1.5" margin on all four sides. Articles should include an abstract of no more than 150 words. Manuscripts are submitted for unidentified review; therefore the author's name, degree, and affiliation (department and institution) should appear on the cover sheet only, which should also include the article title; authors' names, degrees, and affiliations; and the complete mailing address, email address, and telephone number of the author designated to review proofs.

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Journal of Cognitive Psychotherapy: An International Quarterly

Appendix 2 CBT interventions offered by the service

(1) Six sessions of a group-based, cognitive behavioural anxiety management programme

(2) One to one supported self-help, (a CBT written programme for anxiety consisting of 16 sessions)

(3) CBT for anxiety with a trainee or qualified Clinical Psychologist.

Appendix 3 The Depression Anxiety Stress Scales – the ASS component

ASS21

Name: *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
4	I tended to over-react to situations	0	1	2	3
5	I experienced trembling (eg, in the hands)	0	1	2	3
6	I felt that I was using a lot of nervous energy	0	1	2	3
7	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
8	I found myself getting agitated	0	1	2	3
9	I found it difficult to relax	0	1	2	3
10	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
11	I felt I was close to panic	0	1	2	3
12	I felt that I was rather touchy	0	1	2	3
13	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
14	I felt scared without any good reason	0	1	2	3

Appendix 4 The Mindfulness Questionnaire - MQ

Mindfulness Questionnaire

Name: ..... Date: .....

Usually, when I have anxious thoughts or images...	Agree Strongly	Agree Slightly	Unsure	Disagree Slightly	Disagree Strongly
1. I am able just to notice them without reacting					
2. They take over my mind for quite a while after					
3. I judge the thought/image as good or bad					
4. Once they have stopped I can let them go					
5. I am able to accept the experience					
6. I try to get rid of them					
7. I notice how brief thoughts and images really are					
8. I judge myself as good or bad, depending what the thought/image is about					
9. I 'step back' and am aware of the thought or image without getting taken over by it					
10.I just notice them and let them go					
11. I accept myself the same whatever the thought/image is about					
12. In my mind I try and push them away					
13. I keep thinking about the thought or image after it's gone					
14. I have to distract myself & not notice them					
15. I try just to experience the thoughts or images without judging them					
16. I lose myself in the thought/images					

Appendix 5 Interview schedule

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INTERVIEW SCHEDULE

REC ref No: 06/Q1701/101

Exploring the use of Mindfulness Interventions for Anxiety

Introduction:

- Introduce myself
- Explain about confidentiality and how information will be stored and that participants' identity will be protected.
- Access to data not files

Aim:

The interview to last no longer than 5-60 minutes.

- I want to understand in your words your experience of the mindfulness training that you received.
- Understand how it compares to any previous therapy
- How mindfulness and previous therapy have helped you to understand your anxiety
- Explain the definitions that will be used throughout.
- Mindfulness training/ techniques used = training in yoga, mindful walking, sitting

Practical Issues:

- The interview will be recorded onto Dictaphone
- It will take the shape of a semi-structured interview with prompts
- Explain that the direction of conversation and how that experience takes shape will be determined by what the participant would like to express and what they perceive as important and relevant. Therefore the interview will not be divided into categories or areas.

Prompts:

The prompts will act as a very loose frame-work to facilitate the discussion. All of the prompts are open-ended questions and the answers will service as the next prompt, allowing the interview to evolve. I must be aware as to what the participant is really saying and allow them to shape this interview by responding to what they say.

Specific prompts:

I want to explore the experience of mindfulness from the perspective of the participants. So specific prompts will be:

I want to start the interview by

How did your previous experience of therapy help you make sense of your anxiety?
How did your previous experience of therapy help you to change your anxiety?
How did your experience of mindfulness help you make sense of your anxiety?
How did your experience of mindfulness help you to change your anxiety?
What is your experience of change following mindfulness group?
How do participants feel about their experience of a mindfulness group?
Do people perceive a change in their own mindfulness? If so how do they make sense of that change?
What techniques did people find more helpful?
What aspects did people not find helpful?
How do people plan to integrate the mindfulness techniques into their every day life?

General prompts:
Tell me more about……

How did you feel about……

What did you think about……..

Outcome:

A summary at the end of the project outlining the main findings participants' experiences of the mindfulness training will be offered to each participant.

Appendix 6 MAM Facilitator's guide

Managing Anxiety Mindfully

Mobilize your mind and body to take charge of your life and cope more effectively with anxiety and stress...

Facilitator's Guide

Portsmouth City NHS
Teaching Primary Care Trust

Contents

Managing Anxiety Mindfully

Session 1 – 'What brings us here?'

Session theme

Belief held that there is more right with you than wrong with you, no matter what your problems are. All problems can be worked with and this course is an opportunity to do this in a supportive environment. Introduction of the fundamental task of cultivating awareness of the here and now - the present moment is the only time anyone ever has to perceive, learn, grow or change.

1. Welcome
2. Review guidelines for participation
   - ❋ confidentiality
   - ❋ attendance including letting us know of absences
   - ❋ homework undertaking

3. Brief introduction to the programme

4. Activities

i. People are asked to introduce themselves and to say what they are here for, their expectations of the programme and to say one or more positive things about themselves (ie. What you are like when you are your most relaxed and non-anxious self). Instructors to respond with comments, observations and welcoming remarks.

ii. Raisin eating exercise – first introduction to mindfulness meditation. Discussion of the experience. Key feature: identifying the raisin's inter-connectedness to something larger through observation of its 'belly button'. Can the sunlight, the cloud, the rain, the earth, the farmer, the trucker also be 'seen' in the raisin?

iii. Link moment-to-moment awareness of eating exercise (seeing, chewing, tasting swallowing) to experiencing the breath in the same way.

iv. Lying on the floor – focus on the feeling of the abdomen rising and falling with the inbreath and the outbreath, 'tasting the breath in the same way that we tasted the raisin – mindfully. 'Riding the waves of one's own breathing from moment to moment… non-judgementally; bringing attention back to the breath and to the present moment when it wanders.

v. Begin the guided body scan whilst people are still lying on the floor. Give instructions for homework practice during the following week.

6. Homework Assignment

i. Body Scan exercise on 6 days out of 7 - choose the day to be omitted in advance.
ii. Eat one meal mindfully this week.
iii. Workbook: 9 dots exercise
Read upstream/downstream fable
Formal and Informal practice record diary

Things to bring

Attendance register
Zafus and Mats
Raisins and bowls
Body Scan CDs
Workbooks

Managing Anxiety Mindfully

Session 2 - 'Do you see what I see?'

Session theme

How you see things will largely determine how you will respond to them. This ties in with participation in the programme; how the participants see their anxiety, the stress and pressure in their lives, the level of commitment brought to the programme and to the personal discipline it requires.

Make connection to anxiety and stress reactivity - 'it's not the stressors per se but how you handle them'.

Activities

1. Guided body scan

2. Small/large group discussion of this body scan experience and the practice carried out during the week. How did they find setting aside time, what problems and obstacles were encountered - how were these overcome or not? Individual experiences and what is being learned about themselves, if anything?

   Key features:
   - Establish the universality of the 'wandering mind' and the notion of working with it with acceptance and repeated re-focusing of attention:
   - The coming back is as much a part of the meditation as the staying on the object of attention - noting where the mind goes and what is 'on' one's mind.
   - Emphasize the importance of desisting from the urge to repress or suppress thoughts or feelings or forcing things to be a certain way. Make analogy with sleep - it can't be forced, best way to get somewhere is not to try to get anywhere ... letting go.

3. Discuss homework tasks
   i. 9 dots - need to 'think outside the box' - expanding one's field of awareness in problem identification and problem solving. Use 'old woman/young woman' picture to illustrate point of different ways of seeing or not seeing.
   ii. Upstream/downstream story
   iii. Review needs assessment

4. Sitting meditation
   Awareness of the breath - primary object of attention. Short 10-15 minute guided sitting. Include this in the homework assignment in addition to the 45 minute daily body scan.

5. Homework Assignment

i. Body Scan - 6 out of 7 days, decide on day to be omitted in advance
ii. Sitting meditation - 10-15 minutes per day
iii. Workbook: Complete pleasant events diary for the week - one entry per day
iv. Mindfulness of routine activities: brushing teeth, washing dishes, taking shower, taking out the rubbish, shopping, reading/playing with children, eating.

Things to bring

Attendance register
Zafus and mats
Young woman/old woman picture

Managing Anxiety Mindfully

Session 3 - 'Don't miss a moment'

Session theme

There is pleasure and power in being present. Make like you have only moments to live. Observe that we miss many of our pleasant moments, perhaps focusing only on the unpleasant ones.

- Theme of connection/belonging/contact being an important element of pleasant moments.
- Just appreciating what you already have - not wanting anything
- Having pleasant moments in spite of being in a crisis or in pain.

Tie into the body scan and the experience of working with mind and body in the yoga.

Activities

1. 1 hour of mindful yoga - guide class slowly through sequence of postures. Remind all to take care, not to push self but to approach one's limits with gentleness. Listen to our bodies.
   i. Emphasize pressing the back into the floor as one does the initial stretch up and over head with the arms whilst lying on one's back.
   ii. Be clear with instructions so that verbal guidance is sufficient.

2. Discuss the yoga experience. Assign for homework with second CD. Emphasize importance of getting down on the floor and working mindfully with body every day, even if only for a few minutes.

3. Do guided sitting meditation with focus on breathing (15-20 minutes) and again assign for homework.

4. Review pleasant events diary - emphasis on mind/body connections, patterns, what people observed/learned about themselves. Identify any pleasant experiences arising from practice of body scan during the week.

5. Finish with 2-3 minute sitting meditation

6. Homework Assignment

i. Alternate Body Scan with Mindful Yoga on 6 out of 7 days of the week.
ii. Sitting meditation with awareness of breath for 20 minutes each day
iii. Workbook: Complete Unpleasant Events Diary for the week, one entry per day
iv. Everyday mindfulness: Observe your 'automatic pilot' and under what circumstance it takes over.
v. What pulls you off centre? What do you most not want to look at?

Things to bring

Zafus and mats
Attendance register
Yoga CDs

Managing Anxiety Mindfully

Session 4 – 'Looking into the shadows'

Session theme

Do we ever really look closely at our anxieties? What do we do to escape from our feelings and thoughts? Escape often brings short-term relief but leaves us fearing further anxious feelings. We avoid things we think might lead to anxiety and discomfort. We adopt routines and strategies aimed at preventing us from feeling distressed or to reduce the anxiety quickly if it starts. We fear our own feelings.

What would happen if we turned toward these feelings – viewing them without fear, without judgement? What would this do to our perception of the discomfort? Mindfulness enables us to be with ourselves no matter what we are thinking and feeling.

Activities

1. Sitting meditation with focus on breath, body sensations, body as a whole (20 mins)

2. Discussion of sitting exercise – noticing sensations and body as well as breath

3. Homework discussion – how did the yoga go? What is the effect of doing the yoga on the body scan and doing the body scan on the yoga. What are people seeing, feeling, learning?

4. Walking meditation practice – instruction and practice (10 mins)

5. Discussion of walking meditation

6. Homework discussion – Unpleasant events diary – what did the participants discover about their own experiences?

7. Continue with the main theme linked to the experiences identified in discussion of unpleasant events experienced over the week. What does mindfulness offer us to cope with discomfort and distress?

8. Breathing space (5 mins)

Homework assignment

i. Alternate Body Scan with Yoga (or Mindful Walking for 20 mins) 6 days out of 7
ii. Sitting meditation for 20 minutes per day with Awareness of Breath
iii. Be aware of your own anxious reactions during the week – try not to change them in any way.
iv. Become aware of blocking, numbing or shutting off to the moment when it happens this week.

Things to bring

Zafus and mats
Attendance register

Managing Anxiety Mindfully

Session 5 - 'Honouring our feelings, be they good, bad or ugly'

Session theme

Reactions versus responses to anxiety. Creating choice through awareness. Learning to honour, to welcome our feelings - anger, sadness, fear, hurt, grief and to express them effectively to achieve one's purpose. How do we find effective solutions to problems? Problem focused coping and emotion focused coping strategies.

Activities

1. Sitting meditation with particular attention to the observing and recognition of thoughts as events in consciousness, distinguishing the event from the content (25 mins).

2. Homework discussion - sitting meditation and yoga

3. Homework discussion - observation of own anxious reactions during the week

4. Session discussion - follow on from discussion of anxious reactions to idea of responding with choice, to being with the feelings without need to escape or avoid.

5. Leave time to discuss silent retreat on Saturday. What concerns do people have about the silence? Availability of Chas and I to talk if needed but first ask yourself what it is that you need from talking and then review whether you actually need it right at that moment.

6. Homework Assignment

   i. Guided sitting meditation CD alternate with either body scan or yoga. More silence in this guided sitting than in other practices.
   ii. Bringing awareness to moments of reacting and explore options for responding with greater mindfulness and creativity. Practice opening up space for responding in the present moment. Use the breath to slow things down.
   iii. Remind everyone of the all day silent meditation retreat on Saturday. Need to bring your own lunch and any extra cushions or blankets. Also we will probably use the grounds of SJH so bring a warm coat in case its cold.

Things to bring

Attendance register
HADS and Chadwick mindfulness measure
Zafus and Mats

Managing Anxiety Mindfully

Session - All day silent retreat

Plan

9.15-9.30 Arrival

9.30-9.50 Housekeeping and Questions

9.50-10.20 Mindful Walking - outside in the grounds of SJH

10.30-11.15 Mindful Movement - standing

11.15-12.0 Body Scan

12.10-12.30 Sitting meditation

12.30-1.00 Lunch - mindfully

1.00-1.20 Mindful Walking - outside in the grounds of SJH

1.20-1.45 Slow, fast and crazy walking in the Hall

1.50-2.20 Sitting meditation

2.30-3.15 Mindful Movement - lying down

3.15-3.25 Whispering in pairs about the day

3.25-3.45 Whole group discussion - thoughts on the day

3.45-3.55 Mindfully eating chocolate

4.00 End

Managing Anxiety Mindfully

Session 7 - 'Stand firm in that which you are'

Session theme

Acceptance does not mean passivity or resignation. On the contrary, by fully accepting what each moment offers, you open yourself to experiencing life much more completely, making it more likely that you will be able to respond to any situation that presents itself. This does not mean you have to like everything or take a passive attitude, abandoning your principles and values. Rather it means coming around to a willingness to see things as they are, trying not to impose our ideas about what we should be feeling or thinking or seeing. Acceptance offers us a way to navigate life's ups and downs.

Activities

1. Sitting meditation 30 mins. Use mountain mediation and/or lake meditation. Aim to use these images to help people understand the practice on deeper level, not to take them out of the present moment to some other place or time.

2. Homework discussion - the sitting meditation CD.

3. Discuss the all day retreat - reactions and responses, likes and dislikes. Feelings afterwards, What you saw, what you learned about yourself. Impact upon homework meditation, informal and formal. Emphasis on importance of making the practice one's own.

4. Discuss main theme of acceptance - what makes this difficult?

5. Homework assignment

   i. You decide - Take 45 minutes and decide how you want to use it - yoga, body scan, sitting or walking meditation but try to do it without the CDs.

Things to bring

Zafus and mats
Attendance register

Managing Anxiety Mindfully

Session 8 - 'Where am I in my life – in this moment?'

Session theme

Attitudes you may develop through mindfulness practice:

1. Non-judging
Unbiased, attentive witness to your own experience.

2. Patience
Connection with your calm inner core.

3. Beginner's mind
Being open to experiencing each moment as if for the first time.

4. Trust
To trust that you can see clearly what is happening.

5. Non-striving
To practice being rather than doing.

6. Acceptance
Allowing yourself to experience what is present.

7. Letting go
An open-handed approach to life.

Each of these attitudes are underpinned by the skill of awareness of the present moment

How do you experience anxiety now? How does mindfulness practice relate to your experience of anxiety?

Activities

1. Choiceless Awareness - 15-20 mins
2. Sitting where you are
    a. What do you see?
    b. What is it like sitting in this seat in this room now?
    c. How did you come to sit in this place?
    d. Now move seats – choose another place to sit
    e. What do you see?
    f. How does it feel sitting in this new place?
3. Discussion of homework practice
4. Exploration of attitudes of mindfulness and relationship between mindfulness and anxiety
5. Choiceless awareness

Homework Assignment

ii. You decide - Take 45 minutes and decide how you want to use it - yoga, body scan, sitting or walking meditation but try to do it without the CDs. 6 days out of 7 as before.

iii. Everyday mindfulness practice - undertake two everyday activities or tasks mindfully each day, trying to do different activities from day to day. Note what things get in the way of your experience.

iv. Prepare a list of the things that may stop you continuing mindful practice after the course has finished. Bring this list to the last session on 2nd May 2006 to discuss with the group.

Managing Anxiety Mindfully

Session 9 - 'The rest of our lives is right here.'

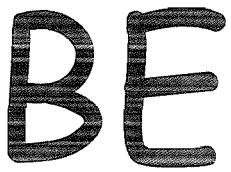
Session theme

This course does not end today. The last part of the course is there for you to access every moment of every day. Here, now, is every class you could ever need

Activities

1. Yoga
2. Discussion
    - Homework
        - Everyday activities
        - Practice without tapes
        - Obstacles to continued practice
    - Problem Solving
3. Sitting Meditation
4. Close

Lifework Assignment



Appendix 7 Local Research Ethics Committee letter

ISLE OF WIGHT, PORTSMOUTH & SOUTH EAST HAMPSHIRE
RESEARCH ETHICS COMMITTEE
1ST Floor, Regents Park Surgery
Park Street, Shirley
Southampton
Hampshire
SO16 4RJ

Tel: 023 8036 2863
Fax: 023 8036 4110

Email: GM.E.hio-au.SEHREC@nhs.net

HPH

26 November 2006

Mrs K Ozcelik
Trainee Clinical Psychologist
72 Palm Road
Coxford
Southampton
S016 5HF

Dear Mrs Ozcelik,

Study title: **The application of mindfulness to anxiety: An exploration of the effectiveness of using mindfulness based interventions in treating clients with anxiety and the mechanisms of change.**

REC reference: **06/Q1701/101**

Amendment number: **1**
Amendment date: **06 November 2006**

The above amendment was reviewed at the meeting of the Sub-Committee of the REC held on 20 November 2006.

Ethical opinion

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

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Protocol	Summary of Changes to the Protocol	
Participant Information Sheet	3	06 November 2006
Notice of Substantial Amendment (non-CTIMPs)	1	06 November 2006
Letter of invitation to participant	Letter inviting group members to participant in an interview 2	06 November 2006
Interview Schedules/Topic Guides	3	06 November 2006
Covering Letter		06 November 2006

Membership of the Committee

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

Research governance approval

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

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.

06/Q1701/101:	**Please quote this number on all correspondence**

Yours sincerely

Mrs Hope Howard
Temporary Committee Co-ordinator

Email: GM.E.hio-au.SEHREC@nhs.net

Copy to: Dr Martina Dorward
Research Support Unit
University of Southampton

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

Appendix 8 University Ethics

Date: Fri, 16 Jun 2006 14:09:03 +0100
From: "Smith K.M." <K.M.Smith@soton.ac.uk>
To: kh304@soton.ac.uk
Subject: Ethics Application

Dear Kerry

Re: The mechanisms of change in a mindfulness group for anxiety

The above titled application was approved by the School of Psychology Ethics Committee on 16 June 2006.

Should you require any further information, please do not hesitate in contacting me. Please quote reference CLIN/04/16.

Best wishes,

Kathryn

Miss Kathryn Smith
Secretary to the Ethics Committee
School of Psychology
University of Southampton
Highfield
Southampton SO17 1BJ
Tel: 023 8059 3995 Fax: 023 8059 2606

University of Southampton | Finance Department

Memorandum

From:	Ruth McFadyen	**To:**	Kerry Ozcelik
Ext:	22417	**Dept:**	Clinical Psychology
E-mail:	hrm@soton.ac.uk	**Date:**	23 May 2006

Reference: HRM/GFT/4506

Professional Indemnity Insurance

Project No: 4506

The Mechanisms of Change in a Mindfulness Group for Anxiety

Thank you for forwarding the completed questionnaire and attached papers.

Having taken note of the information provided, I can confirm that this project will be covered under the terms and conditions of the above policy, subject to written consent being obtained from the participating volunteers.

Ruth McFadyen
Insurance Services Manager

Appendix 9 Trust's Research and Development approval

Portsmouth City NHS
Primary Care Trust

Portsmouth NHS R&D Consortium
R&D Office
1st Floor Gloucester House
Queen Alexandra Hospital
Southwick Hill Road
Cosham, PO6 3LY
Tel: 023 9228 6236
Fax: 023 9228 6037

WWW.port.ac.uk/research/nhs

Mrs K Ozcelik
Trainee Clinical Psychologist
Southampton University
72 Palm Road
Coxford
Southampton
SO16 5HF

9th October 2006

Dear Mrs Ozcelik

Re: The application of mindfulness to anxiety: An exploration of the effectiveness of using mindfulness based interventions in treating clients with anxiety and the mechanisms of change.

MREC No: N/A LREC No: 06/Q1701/101 R&D No: PCPCT/2006/09ST

I have received confirmation that the above study has been processed through the Portsmouth NHS R&D Office. The Office has checked that the study has been subject to a peer review, a cost and funding review, and has received full ethical approval. On behalf of Portsmouth NHS R&D Consortium I have therefore signed off the study under the remit of 'SSA exempt' and the above named project may now commence, in accordance with the agreed protocol.

As Chief Investigator for the study, you should ensure that you and your team are fully aware of your responsibilities under the National Research Governance Framework for Health & Social Care (Dept Health, March 2005) and other professional codes of good conduct. You can access the Framework from the following web address, http://www.doh.gov.uk/research, but should you find yourself unsure of its requirements please do not hesitate to contact the R&D Office for support.

As this study is ongoing after April 2004, the University of Southampton will act as your official Research Sponsor.

I wish you well with your project

Yours sincerely

Dr Paul Edmondson-Jones,
Director Improving Health & Quality/Lead Research & Development Officer, PCPCT

Appendix 10 Trust's permission to have service data

Portsmouth
CITY COUNCIL

Social Services Department

Portsmouth City NHS
Teaching Primary Care Trust

Psychological Therapies Service
Eastney Health Centre
Highland Road
Southsea
Hants
PO4 9HU

Tel: 023 9283 3111
Fax: 023 9281 6954

21 May 2007

To whom it may concern:

I am writing to confirm that I have given Kerry Ozcelik, Trainee Clinical Psychologist from the University of Southampton, permission to analyse the routine outcome data collected from patients attending the Managing Anxiety Mindfully 2006 group programmes (4 programmes in total). The analysis will be presented as part of her doctoral research. It is understood that this data will be anonymised prior to it being handed over to Kerry Ozcelik and no further information is required from the group members or the Trust.

John Parke

JOHN PARKE
Head of AMH Psychological Therapies Service
Portsmouth City Teaching PCT

Date: Mon, 23 Apr 2007 11:23:29 +0100
From: Martine Cross <Martine.Cross@port.ac.uk>
To: kh304@soton.ac.uk
Subject: Data Protection

Dear Kerry

PCPCT/2006/09ST

The Application of Mindfulness to Anxiety: An exploration of the effectiveness of using mindfulness based interventions in treating clients with anxiety and the mechanisms of change.

Further to our telephone conversation today I write to confirm that you
have permission to access anonymised patient data under Assessment 9 of
our guidance for pre-engagement checks and that this does not require an
honorary contract or CRB check although I know from you file that both
of these are in place with Hampshire Partnership NHS Trust.

Kind regards

Martine

Appendix 11 Invitation for interviews

University of Southampton

School of Psychology
Doctoral Programme in Clinical Psychology

University of Southampton
Highfield
Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 5321
Fax +44 (0)23 8059 2588
Email

Dear

'Managing Anxiety Mindfully' - A new approach to coping with anxiety and stress.

I am writing to all those who have undertaken the 'Managing Anxiety Mindfully' group, and would like to invite you to take part in an interview regarding your experiences of being in the group.

The interview will take approximately 40-60 minutes and will be carried out by Kerry Ozcelik (the project lead researcher) at Portsmouth City Primary Care Trust, Psychological Therapies Service, Campion Place, 44-46 Elm Grove, Southsea, Hampshire or in your own home depending on which location best suits you.

Could you please complete the slip at the bottom of this letter and indicate if you are willing to take part and return it in the enclosed envelope. I look forward to hearing from you shortly.

.....

Please cut on the above line and tick which box applies to you.

☐ I am willing to take part in an interview

☐ I am not willing to take part in an interview

Name.....

Address.....

Contact telephone number.....

Appendix 12 Participant information sheet

University of Southampton

School of Psychology
Doctoral Programme in Clinical Psychology

University of Southampton
Highfield
Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 5321
Fax +44 (0)23 8059 2588
Email

Participant Information sheet
REC ref No: 06/Q1701/101

Exploring the use of Mindfulness Interventions for Anxiety

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to carefully read the following information, which is provided in the form of frequently asked questions, and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like any further information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

1. What is the purpose of the study?

I am Kerry Ozcelik, a Trainee Clinical Psychologist at the University of Southampton. The piece of research you are being invited to participate in will form the basis of my final year thesis on the Doctoral programme in Clinical Psychology. This study aims to examine the benefits for individuals who attend the mindfulness groups run by Portsmouth Primary Care Psychological Therapies Service based at Campion Place.

The use of mindfulness in therapy is becoming increasingly popular. This study aims to examine the use of mindfulness with patients whose primary problem is anxiety. One of the most widely used treatments for anxiety has been cognitive behavioural therapy (CBT). However, for people that have undertaken a CBT course that has not helped there has been little alternative. Studies from the USA suggest a mindfulness-based approach may help with persistent anxiety. Furthermore a recent pilot programme indicated that people who attend the course reported significantly less anxiety as a result of the course. The aim of this study is to, confirm whether the 'Managing Anxiety Mindfully' (MAM) course is beneficial and understand how the course helps, so we can improve the course in the future.

2. Why have I been chosen?

You have been asked to help us with this project, as have attended the MAM group.

3. Do I have to take part?

No. It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

4. **What will happen to me if I take part?**

If you wish to participate in the research you will also be asked to take part in an interview and will be contacted about this at the end of the group. If you are happy to take part, I will then conduct interviews with group members to explore their experience of the mindfulness groups in relation to their anxiety. These interviews will last approximately 40-60 minutes and will take place some time after the groups have finished. If this is the case the interviews can be arranged to take place either at Campion Place or in your own home depending on which location best suits you. These interviews will be recorded on audiotape.

If you participate in the study, the data that is routinely collected by the Portsmouth Primary Care Psychological Therapies Service for therapeutic purposes will also be used for research purposes.

The interviews will be subsequently analysed and following this you will have the opportunity to have a copy of the results.

5. **What do I have to do?**

If you are happy to participate please complete the enclosed form and return it to me using the stamped addressed envelope. Following the group, if you agree to take part in the interview I will contact you and arrange a suitable time and location for the interview to take place. You will not need to do anything else.

6. **What is being studied?**

We want to understand peoples' experience of the mindfulness groups and to see what benefits they may have had for people who have attended.

7. **What are the possible disadvantages and risks of taking part?**

It is hoped you find the group and talking about your experiences an easy, straightforward and positive experience. However, there is a possibility that you may at some point become distressed. If this happens, the researcher will terminate the interview immediately and provide you with whatever support you need and you will be under no obligation whatsoever to continue.

8. **What are the possible benefits of taking part?**

It is hoped that you will find taking part a positive experience. In addition, the feedback you provide will help to examine the benefits of mindfulness groups for individuals who are experiencing anxiety and guide the development of useful interventions for other people in the future.

9. **What if something goes wrong?**

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, Portsmouth City Primary Care Trust and University of Southampton complaints mechanisms will be available to you.

Portsmouth City Primary Care Trust and University of Southampton complaints mechanisms will be available to you.

10. Will my taking part in the study be kept confidential?

All information collected about you during the course of the study will be kept confidential. No one other than the research team will know if you did or did not participate in the study. Any information about which leaves the Portsmouth City Primary Care Trust will have your name removed so that you cannot be recognised from it.

11. What will happen to my audio taped conversation?

Your conversation with the researcher will be transcribed with all the personal details removed or changed so that you cannot be identified from it. The tapes will then be destroyed and the paper record held in a secure cabinet at the University of Southampton.

12. Who is organising the study?

The study is a collaborative project between the Portsmouth City Primary Care NHS Trust and the University of Southampton.

13. Who has reviewed the study?

The Isle of Wight, Portsmouth, and South East Hampshire Research Ethics Committee, the School of Psychology at the University of Southampton and the National Health Service have reviewed and approved the study.

14. Contact for further Information:

If you have any further questions, please do not hesitate to contact one us on using the information below.

Kerry Ozcelik (Researcher)
Email: kh304@soton.ac.uk
Telephone: 07795574659

Chas Skinner
(Group Facilitator & Supervisor)
E-mail: T.C.Skinner@soton.ac.uk
Telephone: 023 80594588
Postal Address:
Doctoral Programme in Clinical Psychology
(34 Bassett Crescent East)
School of Psychology
University of Southampton
Hants SO17 1BJ

Lisa Butler
(Group Facilitator and Supervisor)
E-mail: Lisa.Butler@portsmouthcc.gov.uk
Telephone: 023 92737106

This sheet is for you to keep

Thank you for taking the time to consider helping with this project

Appendix 13 Participant consent form

University of Southampton

School of Psychology
Doctoral Programme in Clinical Psychology

University of Southampton
Highfield
Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 5321
Fax +44 (0)23 8059 2588
Email

INTERVIEW - CONSENT FORM FOR PARTICIPANTS

Exploring the use of Mindfulness Interventions for Anxiety

Name of researcher: Kerry Ozcelik

Please initial box

1. I confirm that I have read and understand the information sheet dated 6th of November 2006 (version 3) 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, without my medical care or legal rights being affected. ☐

3. I agree to take part in this interview ☐

4. I agree to the interview being audio-taped. ☐

.....	.....	.....
Name of participant	Date	Signature
.....	.....	.....
Name of person taking consent (if different from researcher)	Date	Signature
.....	.....	.....
Researcher	Date	Signature

Appendix 14 IPA interview procedures

IPA interview procedures

There are four stages to the analysis:

1. The transcript is read several times. Comments, insights, possible interpretations are documented down the left hand margin. The right hand margin is used to document emerging themes and key words that may capture the essence of the paragraph. They can be directly from the discourse or from theoretical concepts.

2. Review of the emerging themes for connections, creating some order. Some may be sub-ordinate, others core themes. Their place within the text must be documented.

3. A table of themes is developed accompanied by quotes from the text.

4. This analysis is continued with the other interview texts. Previous analysis can inform on the next, but themes will not be dropped. Any new themes will be taken to the previous text to ascertain their relevance.

Appendix 15 Results from Kolmogorov-Smirnov test

Kolmogorov-Smirnov Z output data

	Kolmogorov-Smirnov Z (Asymp. sig- 2-tailed)		
	Time		
	Pre	Mid	Post
Source			
HADS – anxiety	.730	.602	.602
HADS – depression	.487	.692	.543
CORE	.680	N/A*	.571
DASS – stress	933	N/A	.451
DASS – anxiety	.530	N/A	.705
Mindfulness	.367	.967	1.000

*N/A = not applicable

Appendix 16 Tables of themes identified during IPA

Tables of themes identified for IPA

Experiences of MAM programme

Theme	Participant response	Participant number										
		1	2	3	4	4	6	7	8	9	10	Total
Sense of change	Increased self-confidence*	X			X							2
	Increased acceptance	X	X	X	X	X	X		X	X		8
	Increased awareness	X		X	X	X		X			X	6
	Increased compassion			X				X	X			3
	Increased attention		X	X						X		3
	Increased sense of letting go of thoughts		X		X		X				X	4
	Increased patience with others and self		X					X	X			3
	Increased focusing present	X	X		X			X				4
	Increased sense of well-being					X						1
	Liked concrete instruction		X			X		X				3
	Mood improved					X					X	2
	Slowed pace of life down							X	X	X		3
	Helped to manage emotions								X			1
	Increased sense of calmness			X	X							2
Shared experience	Less pressure in group*	X										1
	Common ground with others	X			X		X					3
	Felt safe in group		X	X							X	3
	Comparing self to others in group helpful	X		X	X	X	X	X	X		X	8
	Group provided reassurance		X	X				X				3
	More engaged with family	X			X							2
	Change noticed by others	X		X	X	X						4
	Change in group members gave hope				X			X	X	X		4
	Increased anxiety due to group factors			X	X			X	X		X	5
	Difficulty sustaining motivation after group			X		X		X				3
	Some group discussions difficult							X				1
	More exposed in group			X				X	X			3
	Distracted by desire to help others*			X								1
	Need additional sessions after group					X					X	2
	Worried about being judged by others		X	X	X							3
	Fear of failure reduced input			X								1
	Size of group important (small = better)							X		X		2
Getting to grips with mindfulness	Good relationship with therapist prior to group was important factor	X				X		X	X			4
	Good group facilitation	X	X				X	X		X	X	6
	Entered with open-mind	X	X							X	X	4
	Leaves you having to draw own conclusions	X	X					X	X			4
	Felt safer doing indoor practices		X	X								2
	Need s commitment		X	X								2
	Reading isn't enough to facilitate practice, you need the group			X								1
	How does it fit with my religion?							X				1
Timing	A time to focus on me	X	X	X		X		X	X			6
	Becomes automatic with time		X									1
	Body scan hard to do as too long - concentration wanders or falling asleep			X	X	X			X			4
	Felt guilt about regarding amount of homework carried out between sessions		X	X								2
	Need to be undertaken at the right time		X	X			X	X	X			5
Integration	Shorter exercises more manageable	X	X		X	X		X	X			6
	Can use strategies together	X	X					X	X			4
	CBT = main therapy & mindfulness is an extra			X				X				2
	Should try both				X							1
	First use mindfulness & then CBT*					X						1
	Struggled with contradictions between the two							X	X			2
	Would prefer just mindfulness & not CBT										X	1
	Choice of another tool	X	X					X			X	4
	Can adapt strategies to fit life style	X	X	X			X	X		X		6
	Is currently using some of practices	X	X				X	X	X		X	6

* Additional themes identified by 2nd trainee