Professionals’ and Community Members’ Understandings and Use of Mindfulness, and the Effect of Different Understandings on Treatment Outcomes and Future Use

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Declaration

I declare that, except where properly acknowledged, this dissertation represents my own work developed during my Doctor of Psychology (Clinical) candidature at the Department of Psychology at the Australian National University. This dissertation has not been submitted for a higher degree at any other institution.

Debra Harris
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Abstract

Enthusiasm for and interest in mindfulness has grown exponentially over recent decades in the field of psychology. Although a great deal of empirical work continues to provide support for the efficacy of mindfulness-based interventions for a range of issues and population groups, there is ongoing debate within the academic literature regarding what mindfulness is. Additionally, the paradoxical and experiential nature of mindfulness, its many forms and potential mechanisms of action, and resemblance to other practices, may result in professionals and community members having different conceptualisations of mindfulness and using it in distinct ways. Importantly, these diverse perceptions and applications of mindfulness may translate into different therapeutic outcomes. This dissertation presents a series of three empirical studies examining these issues. The first survey-based study of mental health and related professionals found that mindfulness is understood and used in many ways by this group. It emerged that some professionals perceive mindfulness as a direct change-based strategy and use it as such, while others conceptualise it as fostering change through a process of acceptance of what is. Study 2, a survey of community members familiar with mindfulness, demonstrated that a similar distinction in conceptualisations of mindfulness exists in this group. A third experimental study with individuals predominantly new to meditation examined the effect of providing two rationales reflecting the conceptualisations of mindfulness identified in Study 1 and 2 prior to a brief mindfulness practice, with one rationale describing the potential benefits of mindfulness and the other describing the process of simply observing whatever experiences arise during the practice of mindfulness. Results showed that although the rationale itself did not directly affect self-reported mood, defusion, state mindfulness, or physiology, participants’ expectations about how they might benefit from the mindfulness
exercise were related to lower negative affect and anxiety, a greater willingness to
experience negative thoughts about the self, and state mindfulness. Additionally, having
higher expectations of direct benefit from the practice, experiencing larger decreases in
anxiety and believability of negative thoughts, and higher state mindfulness, was
associated with participants indicating they would consider using mindfulness in the future.
The findings are discussed in the context of existing and potential future research as well
as clinical implications, and the limitations of the research are acknowledged. Overall, the
research confirms that there is much more work to be done in clarifying what mindfulness
is and the factors that may influence the experiences and outcomes of those who practice it.
This is especially important as the presence of mindfulness continues to extend in both
clinical and popular arenas.
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CHAPTER 1: Introduction and Overview

Mindfulness is frequently defined as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). The past three decades, particularly the most recent ten years, have seen an explosion of empirical, clinical and general interest in mindfulness (Brown & Ryan, 2003). Although the popularity of mindfulness brings opportunities, this dissertation examines an important challenge posed by the rapidly increasing enthusiasm for mindfulness. Specifically, the many complexities of understanding mindfulness may mean professionals and community members hold diverse ideas about mindfulness, and these in turn may have significant implications for therapeutic outcomes. Despite these implications, this issue has not been fully explored to date.

Popularity of Mindfulness

Mindfulness, having a long history within many ancient cultural and philosophical traditions including Buddhism (Mason & Hargreaves, 2001), has become increasingly popular in psychological research and clinical practice over recent decades, as evidenced in many ways. The number of peer-reviewed research publications on mindfulness has risen exponentially (Vago, 2012; see Figure 1), and this pattern is mirrored by steep increases in mindfulness research funding over the last decade (Vago, 2012).
Figure 1. Mindfulness publications by year, 1980-2012.


The establishment of the dedicated *Mindfulness* journal in 2010 for the dissemination of mindfulness research also attests to the burgeoning interest in mindfulness. A mindfulness subject search of Amazon online indicated new books released regarding mindfulness, including therapy manuals, clinical workbooks, and general self-help books, numbered less than 100 before 1980, approximately 1600 in 2010, and over 4000 in mid-2013. There are now more university-based mindfulness research centres and training courses for professionals and community members than ever (Baer, 2003; Cullen, 2011). This trend is also apparent in the general media, with an internet search for “mindfulness therapy” returning over 12 million results.
Mindfulness may be incorporated into psychotherapeutic practice either indirectly via the personal practice of the therapist outside of therapy, or more directly via inclusion of concepts informed by mindfulness or use of specific mindfulness practices and mindfulness-based approaches explicitly with clients during therapy (Fulton, 2009). Professionals using these varying approaches have been termed mindfulness-practicing psychotherapist, mindfulness-informed psychotherapist, and mindfulness-based psychotherapist respectively (Germer, 2005a). The focus of this dissertation is the direct use and teaching of mindfulness practices and approaches by mental health professionals, either in individual or group-based contexts.

There are four major mindfulness-based interventions in the psychology field. Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2003) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002) are both manualised, eight week group-based programs, while Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) is not manualised and is used in group, couples and individual settings. Dialectical Behavior Therapy (DBT; Linehan, 1993) generally runs for a year, with weekly group skills training and individual therapy, as well as individual telephone consultation as needed. The specific issues for which mindfulness-based interventions have shown benefit in terms of physical and/or psychological health are numerous and include, but are not limited to, depression, anxiety, alcohol abuse, smoking, chronic pain, binge eating, weight loss, cancer patients and survivors, and heart disease (Brewer et al., 2011; Carlson & Garland, 2005; Curiati et al., 2005; Forman, Butryn, Hoffman, & Herbert, 2009; Hofmann, Sawyer, Witt, & Oh, 2010; Leahey, Crowther, & Irwin, 2008; Matchim, Armer, & Stewart, 2010; McCracken, Gauntlett-Gilbert, & Vowles, 2007; O'Connell, 2009). Moreover, interest in mindfulness is not restricted to psychology and health, but extends to
business, sport, education, the military, and the wider community (Brown & Ryan, 2004; Cullen, 2011).

**The Promise of Mindfulness**

This recent surge of interest in mindfulness might be explained by a current fascination with the East by the Western world (Lau & McMain, 2005), an increasing recognition of shared motivations for personal growth and social evolution between Buddhism and humanist and existential schools of psychology (Kumar, 2002), or a means to reduce health care costs by capitalising on what is a relatively low-tech, inexpensive prevention-based intervention (Ruff & Mackenzie, 2009). Whatever the reasons for its popularity, extensive research has been conducted over the last decade aimed at establishing the efficacy of mindfulness-based interventions for a range of presenting issues and populations.

MBSR, rooted in Buddhist philosophy, is the most widely referenced mindfulness-based intervention in the research literature. It is used primarily with those experiencing “stress, emotional and physical pain, or illness and disease” (Kabat-Zinn, 2003, p. 149), in contexts such as hospitals, schools, workplaces, and health centres, and in some instances the name has been modified to reflect the target problem or population of the program (e.g., Mindfulness-Based Childbirth and Parenting; Cullen, 2011). There is support for MBSR having significant benefits for psychological well-being and stress in healthy populations as well as medical and psychiatric clinical populations, and Fjorback and Walach (2012) assert that it has recently reached the “well-established” designation for empirically supported treatments.

Chiesa and Serretti (2009) found a significant medium to large pre-post effect of MBSR ($d = 0.74$) for reducing symptoms of stress amongst healthy individuals compared
to waitlist controls. In a meta-analysis by Grossman, Niemann, Schmidt and Walach (2004) which included groups with pain, cancer, heart disease, depression, anxiety and non-clinical stress, medium effect sizes were found for psychological well-being, depression, anxiety and sleep, as well as for physical health variables including medical symptoms, physical pain and impairment, and quality of life. More recently, mindfulness-based therapies showed a medium effect size in reducing depression and anxiety symptoms when these were the primary presenting issues, and also amongst those with pain, cancer, attention deficit hyperactivity disorder and medical problems (Hofmann, et al., 2010).

MBCT, an integration of MBSR and cognitive therapy, was originally designed for depressive relapse prevention, via increasing awareness of negative thinking when it arises and reducing cognitive fusion with and reactivity to thoughts associated with sadness. In turn, this is proposed to interrupt the ruminative cycle and reduce the likelihood of subsequent escalation to depression (Lau & McMain, 2005). The emphasis is not on changing the content of one’s thoughts per se, but rather cultivating a changed relationship with depressive thoughts so they have less impact on wellbeing. Several reviews support MBCT as a beneficial intervention for this purpose (Chiesa & Serretti, 2011; Coelho, Canter, & Ernst, 2007; Piet & Hougaard, 2011). For adults with three or more prior episodes of depression, Piet and Hougaard (2011) reported a significantly lower 14-18 month relapse risk for MBCT (36%) compared to wait-list controls or placebo (63%), with MBCT also comparable to maintenance anti-depressant medication for relapse risk reduction. However, for those with only two previous episodes of depression, relapse rates were 54% for MBCT and 27% for treatment-as-usual, although this difference was not significant. Results of a meta-analysis by Chiesa and Serretti (2011) correspond with these findings.
The use of MBCT has also been expanded beyond prevention of depression relapse, demonstrating benefits in reducing depressive symptoms in patients with current depression compared to treatment-as-usual (Barnhofer et al., 2009) and reducing residual anxiety symptoms at program completion amongst patients in remission from bi-polar disorder compared to a waitlist control group (Williams et al., 2008). Hoffman and colleagues’ (2010) meta-analysis of MBCT amongst diverse patient groups (i.e., currently depressed, in remission from depression, generalised anxiety disorder, panic disorder, elevated anxiety, and medical populations) indicated an overall pre-post MBCT effect size of Hedge’s $g = 0.79$ for anxiety symptoms and Hedge’s $g = 0.85$ for depressive symptoms. MBCT has been deemed as approaching the designation of a well-established intervention (Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011).

ACT is grounded in Relational Frame Theory, which posits the basis of human suffering emerges from everyday language processes (Hayes, 2004). ACT approach draws on mindfulness as a means of maintaining direct, non-elaborative contact with the present moment, reducing the dominance of verbal processes and increasing willingness to experience all private events including thoughts, feelings and sensations (Kang & Whittingham, 2010). The overall aim of ACT is to let go of any agenda to control private experiences and increase psychological flexibility, the ability to effectively engage in valued actions and live a “rich, full and meaningful life” (p. 8) despite the presence of distressing or painful private experiences (Harris, 2006).

With regard to the efficacy of ACT, Hayes, Luoma, Bond, Masuda and Lillis (2006) conducted a meta-analysis of ACT studies including a range of presenting clinical and non-clinical issues, including anxiety disorders, depression, work stress, substance abuse, diabetes, smoking, psychosis, chronic pain, borderline personality disorder and epilepsy.
Results of studies comparing ACT with a structured treatment intervention such as CBT, cognitive therapy, relevant education, or medical treatment showed an average weighted effect size of $d = 0.66$ at both post-treatment and follow-up (8-52 weeks after post-assessment).

DBT, founded on Zen philosophy and cognitive behavioural therapy, has most often been researched amongst individuals diagnosed with borderline personality disorder (BPD). The program rests on the key dialectic between acceptance and change (Kang & Whittingham, 2010), with mindfulness taught to encourage a radical acceptance of the present moment whilst taking action and doing what works via mechanisms such as “behavioural exposure, emotion regulation, attentional control, and reducing the patient’s literal belief in rules” (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006, p. 463). For those diagnosed with BPD, DBT has been shown to be superior relative to both passive (wait-list and treatment-as-usual) and active (e.g., cognitive therapy, antidepressants) control groups on improving global adjustment and functioning, as well as reducing suicidal ideation, anger, parasuicidal behaviour frequency and severity, inpatient stays and treatment dropout (Keng, Smoski, & Robins, 2011).

Mindfulness meditation has also been investigated as a stand-alone intervention outside of any formal mindfulness-based intervention allowing examination of mindfulness training independent of factors often present in multi-component mindfulness-based interventions. Regarding regular long-term mindfulness practice, meditators with an average of seven and a half years of regular, at least weekly Buddhist meditation, report higher levels of self-compassion and sense of well-being, and lower levels of psychopathology symptoms, rumination, and difficulties in emotion regulation compared to non-meditators (Lykins & Baer, 2009). Several laboratory-based mindfulness induction
studies have shown that even very limited training in mindfulness (i.e., 60 mins or less) can produce positive outcomes. Specifically, such inductions have been compared to worry, relaxation, rumination, distraction, unfocused attention, and guided imagery conditions, and those undertaking mindfulness training have demonstrated the following: reduced emotional volatility to stimuli overall and a greater willingness to view negative stimuli (Arch & Craske, 2006); improved pain tolerance during a cold pressor task (Kingston, Chadwick, Meron, & Skinner, 2007); reduced pain ratings and self-reported anxiety in response to electrical stimulation (Zeidan, Gordon, Merchant, & Goolkasian, 2010); and less intense moods and reactivity following a negative mood induction (Broderick, 2005; Singer & Dobson, 2007). Notably however, in contrast with the above, Sharpe et al. (2013) failed to find a difference between relaxation and mindfulness conditions on a cold pressor task with respect to pain threshold, tolerance, or subjectively rated pain intensity.

Finally, correlational research suggests higher levels of trait mindfulness are associated with greater life satisfaction, conscientiousness, vitality, self-esteem, empathy, competence, optimism, and pleasant affect. In contrast, lower dispositional mindfulness is linked to higher levels of depression, neuroticism, dissociation, rumination, social anxiety, experiential avoidance, as well as poor emotional regulation (Keng, et al., 2011).

The outcome research is not without methodological limitations however. One major critique is that mindfulness efficacy studies generally lack structurally equivalent control groups (Chiesa & Malinowski, 2011; Chiesa & Serretti, 2010), and do not allow for conclusions about the specific effects of mindfulness-based interventions. Also, mindfulness-based interventions typically comprise a mixture of cognitive, behavioural and mindfulness strategies (Ivanovski & Malhi, 2007), and in some studies participant levels of mindfulness have not been measured (Christopher, Charoensuk, Gilbert, Neary, &
Thus, although beneficial effects of these programs are usually attributed to mindfulness training (Christopher, et al., 2008; Lau & Yu, 2009), there is insufficient empirical evidence to support such conclusions (Vettese, Toneatto, Stea, Nguyen, & Wang, 2009). Additional limitations of research on the effects of mindfulness-based intervention programs include “small sample size, lack of randomization details and the impossibility to conduct meditation studies using a double blind condition” (Chiesa & Serretti, 2011, p. 451). The dearth of long-term follow-up data from mindfulness-based interventions also makes it unclear how long any beneficial effects of such programs might persist (Chiesa & Serretti, 2009). A final point of note regarding the reported effectiveness of mindfulness-based interventions in the research literature is that such findings have come predominantly from a relatively restricted range of authors, and this has the potential to introduce bias into the evidence base for mindfulness.

Despite this, research on mindfulness is growing and beginning to address these issues. Overall, it appears mindfulness does have therapeutic merit, and it certainly does not appear as though interest in this approach is waning. Thus, it is important to expand the focus of research beyond efficacy studies with different populations to deeper questions about the nature of mindfulness itself.

The Potential Perils of Immense Enthusiasm for and Popularity of Mindfulness

Mindfulness is now incredibly popular and brings with it the potential for significant benefits, but there are considerable challenges. Several authors have referred to the “perils and promise” regarding the growing interest in and use of mindfulness-based interventions (Brown & Ryan, 2004; Cullen, 2011). The explosion in interest and concomitant proliferation of information has produced challenges for professionals and the
general public in understanding and using mindfulness, and has potential therapeutic implications.

The widely used definition of mindfulness provided in the opening paragraph suggests mindfulness is a relatively straightforward concept; however it is anything but simple. Specifically, challenges include the following: the term mindfulness itself has multiple meanings; conceptualisations of mindfulness in the psychological literature remain contested and its boundaries imprecise; its specific mechanisms of action are unclear; and its purpose is paradoxical in that it may bring benefits but these are ideally not sought after. Additionally, each mindfulness-based intervention incorporates mindfulness in a unique way and targets different issues, and finally individuals arrive at mindfulness from unique backgrounds with varying personal experience of practicing mindfulness.

In light of these challenges, the task of understanding the construct of mindfulness, and when and how to use such interventions, becomes increasingly complex for professionals and community members alike. To prevent harm and ensure clients benefit from mindfulness interventions (Stauffer, 2007), the growing enthusiasm for mindfulness must be supported by adequate understandings of what it is and is not, how it might work, and under what circumstances mindfulness can be expected to show benefits or result in harm. While there is good reason to believe that varied understandings of mindfulness may exist amongst both professionals using it in their work, and the general public who have come into contact with mindfulness in some way, empirical investigation of this issue has been absent to date. Moreover, diverse understandings of mindfulness may hold important implications for therapeutic outcomes. As such, this dissertation explores the following questions:
Chapter 1: Introduction and Overview

1. What sources of information and training are being accessed by professionals and community members about mindfulness?

2. How is mindfulness understood by professionals and community members in regard to its nature, aims and mechanisms of action?

3. How is mindfulness used by professionals and community members?

4. What effect do initial portrayals of mindfulness have on self-reported and physiological outcomes of the practice, and do these influence whether individuals will consider using mindfulness again in the future?

The first three questions are explored via two survey-based studies, one with professionals and one with community members. The final research question is addressed experimentally via a brief laboratory-based mindfulness induction.

Overview of the Dissertation

The dissertation is divided into six chapters. Chapter 2 provides an overview of the specific challenges inherent in understanding mindfulness, examining conceptualisations of mindfulness and its likeness to other practices, the paradoxical and experiential nature of mindfulness, the many proposed mechanisms of action, diversity amongst those using mindfulness, and differences between the various mindfulness-based interventions. This review highlights that there is good reason to believe professionals and community members alike hold diverse understandings of mindfulness. The possible impact of differing understandings of mindfulness on therapeutic outcomes is then discussed, before the rationale for the current research is outlined. Chapter 3 presents the first of the empirical studies, a survey-based exploration of professionals' understandings of mindfulness, while Chapter 4 describes the second study, an investigation of mindfulness understandings amongst community members. Taken together, the findings from these two
studies support the hypothesis that mindfulness is understood in varying ways, and in particular that some individuals use mindfulness as a direct change-based technique while others use it in developing acceptance. Building on this, the third study presented in Chapter 5 assesses the potential implications of different conceptualisations of mindfulness for therapeutic outcomes and future mindfulness use via an experimental design, by manipulating the rationale provided to participants about mindfulness before undertaking a brief mindfulness practice. Results indicated that expectations more so than the rationale given were important for outcomes and future use of mindfulness. Finally, Chapter 6 provides a general discussion of the research findings across the three research studies, and contextualises these with regard to future research, professional practice and community awareness regarding mindfulness.
CHAPTER 2: Current Challenges of Mindfulness

Despite the potential benefits of mindfulness, concerns have been raised regarding the increased enthusiasm for mindfulness within empirical and clinical contexts in psychology (e.g., Cullen, 2011; Dimidjian & Linehan, 2003; Khong, 2009). This chapter reviews several aspects of mindfulness and the information available on the topic that pose a challenge to both professionals and the general public interested in understanding and using mindfulness. The complexities involved in understanding the nature of mindfulness are discussed, including the term mindfulness, psychological conceptualisations of mindfulness and its differentiation from other constructs, hypotheses regarding mechanisms of action, and the contradiction inherent in the stated purpose of mindfulness. In addition, the experiential nature of mindfulness is explored, as are the various pathways from which professionals and community members may arrive at mindfulness and the diversity between the different mindfulness-based interventions. Varied understandings of mindfulness amongst both professional and community members may have significant implications for outcomes, and these are subsequently considered in detail. The chapter concludes with an introduction to the series of empirical studies that constitute the dissertation.

Diversity in Defining Mindfulness

Mindfulness is difficult to define, as the term refers to both a process and an outcome (Chiesa & Malinowski, 2011; Kerrigan et al., 2011; Shapiro, 2009). As a process, mindfulness can denote either formal meditation-based methods of setting aside a specific time to systematically direct attention to a particular stimuli in formal practices such as the lying body scan and sitting practices including mindfulness of the breath, emotions,
sounds, and thoughts, or more informal moment to moment attendance to one’s internal and external experiences during routine activities such as walking, eating, and domestic tasks (Dimidjian & Linehan, 2003; Germer, 2005a). As an outcome, the term refers to how mindful (i.e., aware without judgment) an individual is, and may indicate a temporary and fluctuating state within an individual, or alternatively a more long-standing dispositional tendency that varies between individuals (Germer, 2005a).

Correspondingly, precisely defining mindfulness has proven difficult within the psychological literature. Mindfulness has been described as a “slippery” concept (Moss, Waugh, & Barnes, 2008, p. 141) that is difficult to capture in words (Bruce, 2007), and this is clearly illustrated by the lack of agreement within the psychological community on what mindfulness is despite numerous efforts to define it (Dimidjian & Linehan, 2003; Kostanski & Hassed, 2008). As Grossman (2008) notes, while each attempt at defining mindfulness “characterizes some aspect of attention to experience in the present moment... there are also numerous nontrivial differences” (p. 405), with each operational definition varying according to philosophical and academic background, as well as the context of use (Chiesa & Malinowski, 2011). At present, there is no one normative mindfulness definition (Bergomi, Tschacher, & Kupper, 2013).

For example, in MBSR, mindfulness is defined as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145), and MBCT uses a similar conceptualisation (Kang & Whittingham, 2010). In ACT, mindfulness is described as “defused, accepting, open contact with the present moment and the private events it contains as a conscious human being, experientially distinct from the content being noticed” (Fletcher & Hayes, 2005, p. 322). From a DBT perspective, mindfulness
refers to both “a skill to be developed and an underlying set of principles” (Lau & McMain, 2005, p. 866) with the objective of increasing an individual’s ability to “participate in, and become ‘one with’ experience” (Lynch, et al., 2006, p. 463).

Numerous definitions independent of particular mindfulness-based interventions have also been proposed. Bishop et al. (2004) characterise mindfulness as “a process of regulating attention in order to bring a quality of non-elaborative awareness of current experience and a quality of relating to one’s experiences within an orientation of curiosity, experiential openness, and acceptance” (p.234). However, Brown and Ryan (2004) argue this definition is flawed as it conflates attention and awareness when, although intimately connected, they are distinct processes – attention being the “focusing of awareness to highlight selected aspects of...reality” (p. 243) and awareness the “pure apperception and perception of the field of events that encompass our reality at any given moment” (p. 242-243). As an alternative, they describe mindfulness as a state of consciousness that involves “a receptive attention to and awareness of present events and experience... wherein attention is kept to a bare registering of the facts observed” (Brown & Ryan, 2004, p. 245).

Notably, unlike other common definitions, this operationalisation makes no specific reference to acceptance, as the authors argue the attention/awareness aspect of mindfulness subsumes acceptance because acceptance must be intrinsically present for careful attention to occur. Along similar lines, Mikulas (2011) disputes the association of mindfulness with acceptance, stating that “mindfulness has nothing to do with accepting or rejecting; mindfulness is simply observing any accepting or rejecting that is done by some other part of the mind” (p. 3). Similar to secular accounts, Buddhist notions of mindfulness involve non-engagement with specific content, and mindfulness is described as allowing one to see things as they really are “before or beyond conceptual and emotional classifications”
(Chiesa & Malinowski, 2011, p. 3). However, unlike current psychological conceptualisations, classical mindfulness exists within a wider framework of teachings that seek to alleviate human suffering on a broad level by generating an understanding of the true nature of the self and world including concepts such as impermanence, interrelatedness, the not-self, nonattachment (Khong, 2009), wisdom and wholesome emotions (Chiesa & Malinowski, 2011).

Clearly, there is debate within the psychological literature regarding how best to understand and measure mindfulness. This is also reflected by the many self-report measures which all purport to assess mindfulness (Bergomi, et al., 2013), with each based on a different conceptualisation of mindfulness (Grossman, 2011) and measuring different aspects of the construct (Bergomi, et al., 2013). Although Shapiro (2009) is optimistic that “the process of scholarly brainstorming has challenged and deepened understanding of how to conceptualize mindfulness” (p. 559), there can be little doubt that such variety within the literature contributes to diversity in understanding amongst professionals.

For the general public there is also likely to be variation in their ideas about what mindfulness is, with their understandings potentially coming from sources such as health professionals, friends and family, books and the internet, that may portray mindfulness differently. Indeed, a general internet search for “mindfulness definition” produces innumerable results, some which reference definitions from the field of psychology, others which seem loosely based on psychological operationalisations, and others which refer to a different construct altogether: “the trait of staying aware of (paying close attention to) your responsibilities” (The Free Dictionary, 2013).
Mindfulness’ Association with Meditation and Other Psychological Interventions

Mindfulness may be understood in diverse ways by both professionals and the general public because of its resemblance to other psychological interventions, such as relaxation, visualisation and hypnosis. In a similar manner to formal mindfulness meditation, many relaxation strategies involve sitting with eyes closed, and directing attention to such foci as the breath, bodily sensations or mental images under the guidance of an instructor. This also bears a great deal of structural similarity to hypnotic induction (Farb, 2012). Informal mindfulness too shares likeness with techniques such as grounding for the management of post-traumatic intrusions, wherein one brings their “awareness solidly back to the present, centred in the here and now” (p. 137) often by paying attention to bodily sensations or one’s surroundings through various sense channels (Schiraldi, 2009). Understandably, criticisms have been raised that current definitions lack clear boundaries and are too broad to be of value (Cullen, 2011; Hayes & Shenk, 2004), and subsequently it could be expected that mindfulness might be confused with other interventions. Indeed, both Moss and colleagues (2008) and Germer (2005a) note that mindfulness is often misinterpreted as a relaxation technique by clients, and the academic literature contains illustrations of researchers describing mindfulness as “meditation of the breath and relaxation practices” (O’Haver Day & Horton-Deutsch, 2004, p. 167).

The Paradoxical Nature of Mindfulness

Both professional and community member understandings of mindfulness may differ depending upon their appreciation of the complexities innate to mindfulness. Mindfulness-based interventions have definable aims. Specifically, MBSR and MBCT focus on relieving unwanted negative physical and psychological symptoms by increasing one’s ability to cope with these when they arise, ACT is concerned with reducing
experiential avoidance and enhancing one’s capacity to act in ways to create a meaningful life, and DBT aims to eliminate risky behaviours and improve functioning (Chiesa & Malinowski, 2011). In contrast, the actual practice of mindfulness meditation is typically described as having no goals. Rather, it is said to be a “state of non-striving without any specific objective” (Rapgay & Bystrisky, 2009, p. 158), with the emphasis on observing rather than achieving anything in particular. The beneficial outcomes that may arise from practicing mindfulness are deemed fortuitous but secondary, with the primary purpose “bringing non-judgemental awareness to the state of body and mind...without any expectation of results, no matter how desirable those results might be” (Melbourne Academic Mindfulness Interest Group, 2006, p. 286). Thus, one lets go of any pre-conceived attachment to a specific outcome; in fact, the more one struggles to reach a certain endpoint, the more elusive it becomes (Kostanski & Hassed, 2008). Accordingly, mindfulness is often described as paradoxical in nature (Moss & O’Neill, 2003; Sauer, Lynch, Walach, & Kohls, 2011), and this contradiction may leave professionals and community members with various notions about the aims and uses of mindfulness practice.

**Different Pathways to Mindfulness**

The popular interest generated by mindfulness means that clinicians “may be connecting with it from a wide range of theoretical and personal contexts” (Moss & O’Neill, 2003, p. 29), with mindfulness-based interventions increasingly likely to be provided by therapists with a minimal background themselves in using mindfulness (Dimidjian & Linehan, 2003). Professional and community member understandings and use of mindfulness, including what it is and the paradoxes inherent in it, are most likely strongly influenced by an individual’s own experience in practicing mindfulness, or absence of it. It is argued that mindfulness is best, and can only truly be understood
experientially (Kabat-Zinn, 2003; Khong, 2009; Woods, 2009), and that theoretical knowledge without experience perpetuates a reliance on the conceptual mind, contradicting the aim of mindfulness practice itself (Kabat-Zinn, 2003; Khong, 2009). Without personal practice of a concept such as mindfulness, one cannot comprehend the phenomena on a deeper level (Shapiro, Walsh, & Britton, 2003), nor appreciate the subtleties of mindfulness (Khong, 2009). Moreover, according to the Melbourne Academic Mindfulness Interest Group (2006), “a person is unlikely to properly understand or teach the practice without having substantially experienced it themselves” (p. 291). Thus, personal practice of mindfulness, and the extent of that practice, may shape understandings and patterns of mindfulness use.

Some professionals may come to mindfulness through a personal practice that is secular or philosophically-based, however others may instead arrive at mindfulness through a mind/body practice such as yoga, some via the psychological research literature, and others through a conference presentation, a book, or word of mouth. Community members also arrive at mindfulness from various sources. An individual’s particular background and personal route to mindfulness will influence the ways in which mindfulness is understood and practiced.

Multiple Potential Mechanisms of Action of Mindfulness

The mechanisms by which mindfulness may produce its beneficial effects remain poorly understood (Alberts & Thewissen, 2011; Brown, Ryan, & Creswell, 2007; Coffey, Hartman, & Fredrickson, 2010), with multiple ideas offered in the psychological literature and in the wider popular media. Specific mindfulness-based interventions provide varying accounts for their reported benefits. For instance, in MBSR, mindfulness training is said to enhance one’s ability to respond more adaptively to stress symptoms, in turn preventing
over-activation of the autonomic nervous system and subsequent dysfunctional physiological reactions and behaviours (Salmon et al., 2004). In MBCT, mindfulness training is argued to play a crucial role in interrupting ruminative thinking patterns induced by negative mood and subsequent depressive relapse by reducing believability of and reactivity to negative cognitions (Lau & McMain, 2005). Lynch et al. (2006) propose that in DBT, mindfulness functions by enhancing emotional regulation, reducing literal beliefs in rules, improving attentional control, and developing more adaptive responses via exposure to distressing private experiences. Finally, from an ACT perspective, mindfulness undermines the domination of literal language, in turn reducing experiential avoidance and enhancing psychological flexibility and an individual’s ability to take action in valued life directions (Hayes & Wilson, 2003).

Other proposed mechanisms of mindfulness which do not fall within the framework of any particular mindfulness-based interventions include increased metacognitive awareness (also known as decentering or defusion) whereby cognitions come to be viewed more objectively and not necessarily as true reflections of reality (Kocovski, Segal, Battista, & Didonna, 2009), increased acceptance as an alternative to avoidance or suppression of symptoms, and values clarification and reduced state and trait anxiety (Kocovski, et al., 2009). Additional potential mechanisms are non-attachment to objects, outcomes or states of being and enhanced mind-body functioning (Brown, et al., 2007), reduced mind wandering from direct experiences and inhibition of unnecessary elaborative processing as well as reduced sensitivity toward distressing internal experiences (Melbourne Academic Mindfulness Interest Group, 2006), enhanced compassion for self and others (Siegel, 2009), and cultivation of non-reactivity and decreased unhelpful habitual responses (Greeson, 2009).
In addition to the above individual mechanisms, several broader theories of how mindfulness works have been developed, each emphasising different combinations of mechanisms already mentioned. For example, Coffey, Hartman and Fredrickson (2010) highlight mindfulness’ role in providing clarity about one’s internal experience, reducing rumination, and increasing non-attachment and ability to regulate negative affect. Shapiro and colleagues (Shapiro, Carlson, Astin, & Freedman, 2006) propose that the simultaneously occurring aspects of intention, attention, and attitude promote the meta-mechanism of reperceiving, which is associated with self-regulation, values clarification, cognitive, behavioural, and emotional flexibility, and exposure. Finally, Grabovac and colleagues (2011) have proposed a Buddhist Psychological Model of mindfulness, which posits that “suffering, including clinical symptoms, is a direct result of the habitual attachment/aversion reaction to transient feelings and their concomitant mental proliferation” (“Part I: Description of BPM,” para. 8), and the practice of mindfulness interrupts this process and its consequences.

Popular media sources such as the internet and self-help books describe a range of mechanisms by which mindfulness has its benefits. These often align in some way with those specified in the psychological literature, but typically lack reference to the particular sources of this information and are less rigorous and detailed in their descriptions of mechanisms (e.g., Home of yoga: Acceptance is transcendence, 2013). In some instances such sources emphasise the role of physical relaxation associated with mindfulness, giving an impression that a change in one’s physical state toward greater calmness is the purpose of the practice.

Clearly, there are innumerable ways in which mindfulness may work. In part this may be due to the primary focus of mindfulness research on collecting evidence of
promising outcomes rather than identifying the processes that might account for such favourable outcomes (Hayes & Wilson, 2003). The conceptual ambiguity surrounding mindfulness and its complex and multi-faceted nature further contribute to difficulties in identifying mechanisms (Carmody, 2009; Chiesa & Malinowski, 2011; Hayes & Wilson, 2003; Roemer & Orsillo, 2003). Finally, the various formal and informal mindfulness practices, while all housed under the same term, may each be associated with different mechanisms of action. It is likely then that professionals and community members will hold diverse ideas about the mechanisms underlying mindfulness, influenced both by the academic literature, popular media, and potentially their own personal practice.

**Diversity of Mindfulness Interventions**

In addition to drawing upon separate operational definitions of mindfulness and having diverse goals targeting different populations and presenting problems (Brown, et al., 2007), each of the various mindfulness-based interventions place different emphases on the relative importance of specific formal and informal methods of mindfulness (Dimidjian & Linehan, 2003). MBSR predominantly involves formal meditation practice with related discussion and little formal instruction, while sessions in the MBCT program incorporate both formal mindfulness practice and didactic instruction on cognitive therapy concepts (McCown, Reibel, & Micozzi, 2010). In ACT, formal meditation is minimised and the focus is on informal mindfulness and acceptance-based strategies to facilitate acceptance, defusion, contact with the present moment and an observing self stance, and in turn committed action in line with personal values (Harris, 2009). In DBT, mindfulness skills are broken into what skills (observing, describing, participating) and how skills (nonjudgement, focusing on one thing, and being effective; Kang & Whittingham, 2010), with the emphasis on using these skills during everyday circumstances. The use of
mindfulness in the four major mindfulness-based therapies clearly differs, albeit in a formalised manner.

Moreover, it is less clear how mindfulness might be used outside of these frameworks, either in groups (Cullen, 2011) or in individual therapy (Fulton, 2009). As Cullen (2011) points out, there is no guarantee for any mindfulness intervention outside of recognised programs regarding the “quality and integrity of the program…[and] whether or not the content has anything to do with mindfulness, let alone which definition of mindfulness is operationally applied in and philosophically guiding the curriculum” (Introduction section, para. 1). The nature and quality of mindfulness interventions used in individual psychotherapy is even less certain (Stauffer, 2007).

Implications of Diverse Understandings of Mindfulness

It has so far been argued that there are likely diverse understandings of mindfulness amongst both professionals and community members, due to varied definitions and proposed mechanisms of action, its likeness to other psychological interventions, and its paradoxical and experiential nature. As well, the unique backgrounds of those using mindfulness and the variety of mindfulness-based interventions available likely contribute. Importantly, there may be significant consequences of professionals and the general public having diverse understandings of mindfulness.

Variability in professionals’ and community members’ perceptions about what mindfulness is, its aims and expected benefits, and the ways in which it produces such benefits may contribute to differences in therapeutic outcomes of mindfulness-based interventions. Indeed, convergent findings from qualitative studies of group-based mindfulness training programs suggest this to be the case. Specifically, Malpass and colleagues (2012) conducted a meta-ethnography of fourteen qualitative studies of MBSR
and MBCT groups (including those mentioned above), and their synthesis of results confirmed that participant expectations, particularly in the early stages of beginning mindfulness practice, are very relevant to an individual’s experience of mindfulness. In particular, the ability to let go of expectations of instantaneous cure and stop striving for set goals whilst concurrently opening up to the possibility of change were found to be important preconditions in being able to progress toward further skill development and greater steadiness and persistence with mindfulness practice. This in turn permitted subsequent benefits of mindfulness including increased self-regulation, self-compassion, coping with difficult physical sensations, and sense of agency, culminating in a changed experience of the self. Conversely, participants of both MBSR and MBCT programs who clung tightly to goals and expectations tended to either devalue themselves or the practice when unable to attain expected outcomes such as relaxation or thought control, and were less likely to progress toward a beneficial shift in relationship to illness and the self.

Clearly, there are indications that participant expectations play a notable role in mindfulness intervention outcomes. However, this possibility has not yet been tested in a controlled way, giving rise to the current program of research.

**Current Research**

There is strong reason to believe that professionals and community members hold diverse understandings of mindfulness, in terms of what it is, its aims, and its mechanisms of action. Moreover, these differences in perceptions and expectations about mindfulness may translate into different therapeutic outcomes. Despite this, there is a dearth of information regarding professional and community member understandings and uses of mindfulness, and to date there has not been a direct examination of how particular understandings of mindfulness may relate to various psychological and physical outcomes.
This dissertation presents a series of three research studies addressing these issues. Study 1 explores professionals’ ideas about mindfulness as well as how they incorporate and teach it in their work, and their pathway to and personal experience with mindfulness. Study 2 presents findings from community members with regard to their understandings and use of mindfulness. Finally, Study 3 experimentally examines the role of different rationales presented prior to a brief mindfulness intervention and client expectations on psychological and physical outcomes and inclination toward future use of mindfulness practices.
CHAPTER 3: Study 1 – Professionals’ Use and Understandings of Mindfulness

Mindfulness is likely understood and in turn conveyed to clients in different ways by professionals. This variation may arise from the lack of clarity regarding what mindfulness is in the literature and other popular media, its inherent paradoxes, professionals’ varied backgrounds and pathways to mindfulness, and the many possible mechanisms by which mindfulness might work. Diversity in understandings may also stem from the multiple ways mindfulness can be used both within and outside more formalised mindfulness-based approaches. A preliminary aim of the current study was to gather information from professionals in mental health and related fields who use mindfulness in their work, with regard to their sources of information and training about mindfulness and the manner in which they use mindfulness in work and personal contexts. This knowledge is useful in providing insight into the personal and professional backgrounds that may be influencing professionals’ understandings of mindfulness, as well as demonstrating the ways in which mindfulness is incorporated in clinical contexts. The second aim of the research was to examine professionals’ understandings of mindfulness through their ideas about mechanisms of action, explanations of mindfulness to clients, and specific practices used. An additional objective was to capture professionals’ beliefs regarding the capacity of clients to understanding and use mindfulness.

Despite the flood of mindfulness research, most work has focused on establishing the efficacy of various mindfulness-based interventions for different issues and populations, while little attention has been dedicated to examining the understandings and perceptions of professionals about mindfulness who are teaching it in their work. One study was located which included an exploration of therapist experiences using mindfulness in individual sessions (Horst, Newsom, & Stith, 2013). It was found that
therapists predominantly had positive experiences of using mindfulness in therapy, and that at times mindfulness was used as a transitional tool rather than a therapeutic intervention. However, this study was limited by the small sample of five therapist participants with minimal experience using mindfulness, and it did not directly address how professionals understand and convey mindfulness to clients. A second study by McKenzie, Hassed and Gear (2012) examined self-reported knowledge about and attitudes toward mindfulness amongst medical and psychology students, but was restricted to examining students’ knowledge about the efficacy of mindfulness with specific presenting issues.

The growing uptake of mindfulness amongst clinicians has not been paralleled by knowledge of how those teaching mindfulness in their work learn about it, understand and use it, and how mindfulness is described to clients. Although these aspects may be relatively apparent within manualised interventions such as MBSR and MBCT, there is very little known about how mindfulness is incorporated into group or individual therapy outside of these frameworks (Cullen, 2011; Fulton, 2009). Thus, it is not clear how clinicians are describing mindfulness to clients in the context of individual therapy or groups that do not necessarily adhere strictly to a specific mindfulness-based intervention. Additionally, the specific mindfulness practices employed by professionals remain largely unknown, as do professionals’ beliefs about how well their clients understand and use mindfulness.

Given the potential for varied understandings and uses of mindfulness and subsequent clinical implications, the current study sought to address the relative dearth of available evidence regarding these issues by gathering relevant information from mental health professionals across Australia. There have been growing calls for qualitative methods to be more widely used in exploring the experience of clients using mindfulness
(Grossman, 2008; Kerrigan, et al., 2011; Marti & Barrachina, 2009; Moss, et al., 2008); it is also valuable to explore professionals’ experiences with mindfulness using a mixed methodology. Thus, Study 1 addressed the following research questions utilising quantitative and qualitative response formats to gather concise information guided by pre-specified options as well as rich descriptions via open-ended items:

- What sources of information and training on mindfulness do professionals access?
- In what ways is mindfulness included in professional work?
- How is mindfulness understood by professionals, and conveyed to clients?
- What are professionals’ observations of clients’ capacities to understanding and use mindfulness?

It was expected, given the variability throughout the literature and wider media, that there would be differences amongst professionals with regard to their personal and professional experience of and familiarity with mindfulness, their work-based patterns of mindfulness use, their understandings of mindfulness, and in how they explain mindfulness to clients.

Method

Participants.

Participants were mental health professionals whose work may involve the teaching of mindfulness to clients in an individual therapy or group context, such as counsellors, psychologists, mindfulness group facilitators, or professionals working in related areas. Participants were recruited using a range of strategies. Invitations (see Appendix A) with research information and the link to the online survey were mailed or emailed to
psychologists and psychology organisations in the ACT and NSW, and distributed to mental health services and university psychology clinics and counselling centres within the ACT. A research notice was placed in the Australian Psychological Society monthly member newsletter (Appendix B), and research invitations and flyers (see Appendix C) were displayed at a number of mindfulness-based workshops for professionals conducted in NSW and the ACT. A research notice was also submitted to an online community of ACT therapists from Australia and New Zealand.

In total, 92 participants completed the online survey; however four cases were deleted from the data set due to extensive missing data, and four excluded as they did not use mindfulness in their professional work. The final sample comprised 84 professionals, each reporting use of mindfulness in their professional work. There were 65 females, 15 males, and four individuals of unspecified gender. The modal age group 25-29 years, with all pre-specified age groups between 20-24 and 60+ represented. The greatest proportion of respondents were based in New South Wales (33%), approximately twenty per cent each responded from the Australian Capital Territory and Queensland, and 12% were from Victoria. There was one participant each from the Northern Territory, South Australia, Tasmania, Western Australia and outside of Australia. A large majority of participants reported having attained or being currently enrolled in a postgraduate qualification (Masters, professional doctorate, or PhD; 72%), and approximately one quarter held a Bachelor degree, Graduate Diploma or Certificate. Most respondents (86%) indicated a qualification in the area of psychology (either clinical, counselling, education or other), with remaining individuals qualified in counselling, psychotherapy, behavioural science, social work, and occupational therapy. Correspondingly, participants reported working predominantly in the mental health area, including professional psychology (28 clinical; 45
generalist; 10 intern), academic psychology and counselling (4 each), mindfulness group facilitator/trainer for community members or professionals (10), and other (5), with some individuals working in more than one role. Over half of participants (58%) were working fulltime, 26% were in part-time employment, and 16% were students, with almost half of those studying also working. Remaining respondents were either retired or not working at the time of participation.

Measures.

A questionnaire was developed comprising a combination of Likert-type, multiple choice, and open-ended response items (see Appendix D). Where possible, items were based on questions used in previous research, and where appropriate closed-response choices were derived from the psychological literature, as indicated. However, for most items there were no precursors to draw upon given the limited research on this topic. Questionnaire items pertained to demographics (age, gender, state, professional qualifications, field of work, and employment status), as well as:

- Reasons for beginning to use mindfulness in professional work;
- Sources of information and training about mindfulness;
- Predominant therapeutic approaches used;
- Mindfulness use in professional work, including duration and frequency of teaching mindfulness (Brown & Ryan, 2003);
- Mindfulness use in personal life (Brown & Ryan, 2003);
- Ideas and beliefs about mechanisms of mindfulness (Baer, 2003; Shapiro, et al., 2006);
- Specific mindfulness practices used;
- Rationale used when introducing mindfulness to clients;
• Impressions of clients' understandings and experiences of mindfulness; and
• Additional comments about mindfulness.

Procedure.

Prior to commencing data collection, ethics approval was obtained from the Australian National University (ANU) Human Research Ethics Committee (HREC). Data were gathered over a two-month period via a secure, anonymous online survey that took approximately 50 minutes to complete. Before starting the questionnaire, participants were given details about the study to ensure informed consent (see Appendix E). Debriefing information was provided on the final screen of the questionnaire (see Appendix F).

Results

Participant data were downloaded from the online survey platform and screened to identify missing data and any irregularities. Quantitative data were then transferred to SPSS Version 20.0 for analysis, while open-ended qualitative data were uploaded to NVivo Version 8.0 (QSR International Pty Ltd, 2008) software to facilitate coding and analysis.

Data analysis.

Quantitative data were summarised using descriptive statistics. For open-ended responses, the process of analysis involved familiarisation with the data through multiple re-readings, systematically coding interesting features of the data according to the research questions of interest, gathering these into potential themes, moving back and forth between potential categories and the data to refine themes, before producing the findings of the analysis. This was based on Braun and Clarke's (2006) guidelines for thematic analysis; however a point of departure from these guidelines was that rather than generating
overarching themes across the whole data set, responses were used to explore the main research questions.

Results are presented according to the primary research questions, with quantitative and qualitative results reported together. First, results regarding professionals’ backgrounds are presented, followed by responses pertaining to patterns of mindfulness use in professional work. Findings relating to how professionals understand and convey mindfulness are then provided, and professionals’ perspectives on client experiences with mindfulness are shown. Finally, additional comments made about mindfulness are presented.

Reasons for initially using mindfulness in work and sources of ongoing information and training on mindfulness.

As shown in Figure 2, professionals endorsed several pre-specified reasons for initially incorporating mindfulness in their work, most commonly attending a training course or hearing about mindfulness from colleagues. Reasons given in addition to those pre-specified included having a personal mindfulness meditation practice (10%), studying Buddhism (5%), moving to a workplace where mindfulness was used, and being influenced by another therapeutic approach with similarities to mindfulness.
Figure 2. Reasons for initially incorporating mindfulness in professional work and sources of information and training on mindfulness. Percentages total greater than 100 as respondents could select multiple options. Audio CDs and on-the-job training only applicable to question regarding sources of information and training in mindfulness.

Figure 2 also displays professionals' sources of ongoing information and training in mindfulness according to pre-specified options. Professional books and training courses were the most frequently cited sources. Other sources mentioned outside of pre-specified options included an ongoing personal practice of mindfulness (8.3%), Buddhist texts and lectures, and web-based resources such as videos and online professional discussion forums.

In regards to hours of training and education on mindfulness, there were vast differences across individuals and type, as displayed in Table 1. Overall, the most time was
reportedly spent reviewing professional books and manuals and undertaking professional training courses.

Table 1

Descriptive statistics for hours of training and education on mindfulness undertaken by professionals by type

<table>
<thead>
<tr>
<th>Type of training/education</th>
<th>n</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional training courses</td>
<td>46</td>
<td>2-700</td>
<td>72.5</td>
<td>143.3</td>
<td>26.5</td>
</tr>
<tr>
<td>Professional books/manuals</td>
<td>46</td>
<td>2-1500</td>
<td>85.0</td>
<td>262.2</td>
<td>20.0</td>
</tr>
<tr>
<td>Peer-reviewed journal articles</td>
<td>23</td>
<td>1-100</td>
<td>27.2</td>
<td>44.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Audio CDs</td>
<td>23</td>
<td>1-100</td>
<td>21.9</td>
<td>33.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Colleagues</td>
<td>22</td>
<td>1-300</td>
<td>22.1</td>
<td>63.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Clinical supervision</td>
<td>18</td>
<td>2-400</td>
<td>35.5</td>
<td>92.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Tertiary study</td>
<td>16</td>
<td>2-50</td>
<td>14.2</td>
<td>16.6</td>
<td>7.0</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>8</td>
<td>5-60</td>
<td>24.8</td>
<td>23.9</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Personal use of mindfulness.

All 84 respondents reported using mindfulness in their personal lives either formally via mindfulness meditation or informally. Ninety two per cent did so in an informal sense, while half reported a formal mindfulness practice. The majority of respondents indicated they had been practicing mindfulness personally for at least five years. Between one and eleven hours were spent per week undertaking formal mindfulness ($M = 4.0$, $SD = 2.6$).
Patterns of mindfulness use in professional work.

Therapeutic approaches used.

Respondents reported using a broad range of pre-specified psychological approaches, with Figure 3 displaying the two most commonly employed.

Figure 3. The top two most commonly used therapeutic approaches of professionals. CBT = Cognitive Behavioural Therapy; SFBT = Solution-Focused Behaviour Therapy; CT = Cognitive Therapy; IPT = Interpersonal Therapy; BT = Behaviour Therapy; NT = Narrative Therapy.

Across all professionals, the approach used most often was CBT. Just over forty per cent of respondents reported using one of the four major mindfulness-based interventions as their first or second most common therapeutic approach. In addition to the pre-specified therapeutic approaches, other approaches used were hypnotherapy (4), art/play therapy (4), motivational interviewing (2), existential therapy (2), and transactional analysis (2).
**Duration of mindfulness use in professional work.**

Respondents had used mindfulness in their professional work for varying lengths of time, with approximately one quarter having used it for five years or more, as per Figure 4.

![Figure 4. Duration of mindfulness use in professional work.](image)

**Proportion of work involving mindfulness.**

Overall, professionals reported using mindfulness to widely varying degrees in their work as illustrated in Figure 5, with the greatest proportion using it in less than twenty per cent of their therapeutic interventions. Proportion of work involving mindfulness was then re-examined including only those fifty respondents not reporting use of one of the four major mindfulness interventions as their first or second most frequent therapeutic approach, and Figure 5 shows these professionals use mindfulness somewhat frequently.
Chapter 3: Study 1 – Professionals’ Use and Understandings of Mindfulness

**Figure 5.** Proportion of work involving the use of mindfulness for all respondents versus respondents not reporting predominant use of one of the major mindfulness-based interventions.

*Use of mindfulness with specific client issues.*

As illustrated in Figure 6, mindfulness was rated by professionals as most useful when the presenting issue is stress or anxiety.

**Figure 6.** Client issues professionals believe mindfulness is most helpful for.
Understandings of mindfulness.

Mindfulness mechanisms.

Sixteen pre-specified potential mechanisms of action underlying mindfulness were presented to respondents, and their endorsement of each is illustrated in Figure 7. Each professional nominated between three and sixteen mechanisms, with eleven selected on average and no two respondents selecting the same combination of mechanisms. The most frequently selected mechanism was “attention to experience itself rather than interpretation” followed by “giving up the struggle with painful thoughts, feelings, and sensations”.

![Figure 7. Pre-specified mechanisms of action underlying mindfulness endorsed by professionals.](image-url)
Rationale given to clients regarding mindfulness.

Professionals were asked to describe the rationale they use when introducing mindfulness to clients. There was great diversity in responses, although several common themes were evident. Almost half (35) the respondents made reference to mindfulness facilitating increased “awareness” of “present moment” experiences including thoughts, emotions, bodily sensations, and the external world. Some used attention and focusing synonymously with awareness (7).

Half the professionals' rationales (42) included a description of mindfulness as a process of observing and being aware, as well as noting the potential benefits of engaging in mindfulness. About one quarter (22) spoke of possible benefits without giving a description of mindfulness, while three did not refer to any specific benefits in their rationale and focused exclusively on what mindfulness is. Overall, the benefits mentioned fell into two broad categories: those that highlighted mindfulness as a means to directly change one’s experience (25) and those that emphasised mindfulness as helping to develop a changed relationship to experience through acceptance and non-striving (33).

Specifically, rationales referring to direct change mentioned such benefits and positive outcomes of mindfulness as leading one to be “calm”, “peaceful” or “relaxed” (12), reducing feelings of anxiety, stress and distress (7), a way of “slowing down” (1) or “taking time out” (1), “controlling unhelpful emotions” (1), and providing “physiological benefits” (2). In many instances, these changes in one’s state were described as important goals of mindfulness. In contrast, professionals referring to mindfulness in their rationale as helping develop a changed relationship to experience spoke of benefits in terms of “staying with”, “tolerating” and “accepting” one’s current experiences including unpleasant and unhelpful thoughts, emotions and sensations so as “not be as bothered by...
them”, to “reduce the impact and power” of thoughts, to not be “dictated to” or “overwhelmed” by thoughts, to create “space” and to “handle” or “cope with” thoughts and feelings more effectively. Professionals also mentioned benefits of being less reactive based on automatic thoughts, reducing denial and avoidance behaviours, increasing choice and flexibility, increasing effective behaviours, increasing self-compassion, and reducing struggle and attempts at changing thoughts and emotions when this isn’t possible or useful. Only three professionals made explicit the “paradoxical phenomenon” that “being willing to investigate what is here can change our relationship to these unwanted thoughts and feelings” and drew attention to the fact that “as a side benefit we may experience greater relaxation and calm, and less anxiety and depression [but] this is not the goal of mindfulness”.

A number of rationales (7) referred to mindfulness as both a process that requires one to “just observe what is going on without judging or being critical…deep seeing of one’s thoughts and feelings without being scared, rejecting them” whilst concurrently being a way to “obtain a certain level of relaxation, peace, clarity of one’s mind”.

Another feature common to professionals’ rationales was discussion of what currently isn’t working for the client, with mindfulness offered as an alternative approach (22). Unhelpful strategies included: behaviour being “driven by avoidance of uncomfortable emotions and negative thoughts”, “struggling” with feelings and thoughts as if they are a problem to be solved, being “caught up in and worrying about the past or future”, trying to “directly control” or keep at bay unwanted thoughts or feelings, “living in one’s head”, “denial”, and cognitive fusion.

Some respondents indicated they do not necessarily use the term mindfulness, with one calling it the “eyes closed technique” and others choosing not to use a label and instead
speaking of developing a deeper connection with oneself. Two professionals noted that speaking of *mindfulness* with clients can be problematic as it “may carry connotations that some clients think is religious”, or it may be confusing, especially if clients have previously been given a number of different explanations. A small number of professionals (6) reported that the rationale they use varies depending on factors such as the particular client, presenting problem, and mindfulness practice being used. One respondent noted that it is “difficult to express it myself, and hang onto all it entails”, while another professional pointed out there are “many different explanations of mindfulness around”.

**Specific mindfulness practices used.**

Participants described teaching a wide range of mindfulness practices in their work. Both formal and informal approaches were cited, with a large majority of respondents using both. The most commonly referenced formal mindfulness practices had the breath, body, emotions, thoughts, and sounds as the focus of attention. Informal mindfulness strategies included paying mindful attention whilst eating, walking, and during physical activity and routine activities such as showering and cleaning, defusing from unhelpful thoughts, grounding oneself in the present via the five senses, mindful awareness during interactions with others, and being aware of and non-reactive to or caught up in thoughts and emotions as they occur in daily life.

Some professionals (11) referred to teaching relaxation exercises such as “progressive muscle relaxation” and controlled breathing exercises (2) as mindfulness practices in their work, while others spoke of cognitive strategies such as “success imagery” during hypnotic trance, “thought stopping”, and using mindfulness as a “cognitive strategy to draw attention away from negative thinking”. Another respondent referred to using a gratitude list, while several referenced processes of ACT as examples of
mindfulness techniques used in their work, such as “identifying what a valued life looks like”.

Mindfulness practices employed in professionals’ personal lives were similar to those used with clients. Mindful awareness of breath (25) and body (12) were mentioned frequently. Several (6) respondents made reference to using relaxation or change-based strategies such as progressive relaxation, cognitive restructuring, controlled breathing, calming thoughts, with one respondent stating they “go into past and redo it my way until it is changed - nonjudgmental and done in basic trance state [and] go into future and watch self having a good time of it – not trying to change anything”. A range of informal mindfulness strategies were also mentioned, such as being fully present when eating, walking, and in therapeutic sessions. Several respondents spoke of aiming to take a consistently mindful approach to all experiences and activities throughout the day.

**Impressions of client understandings and experiences of mindfulness.**

As shown in Figure 8, the majority of professionals believe clients find mindfulness relatively easy to understand ($M = 4.58$, $SD = 1.20$) and use ($M = 4.48$, $SD = 1.21$).

![Figure 8. Professionals’ perceptions of how easily clients understand and use mindfulness.](image-url)
Professionals described several perceived client misunderstandings of mindfulness. These included a perception that the goal of mindfulness is relaxation (2), confusion between defusion and distraction, and difficulties grasping the “non-symptom reduction aspect of mindfulness” with “the concept of letting go of judgment and striving the hardest thing to grasp, it often takes people quite a while to get it”. Professionals emphasised the importance of providing a jargon-free rationale, and the need for ongoing clarification as well as the use of experiential exercises to facilitate clients’ understandings of mindfulness.

Observed client difficulties in using mindfulness included maintaining discipline and committed practice in using mindfulness (8) due to time constraints or an expectation of instant results and “looking for a quick fix”. Professionals also noted self-judgement by clients in practicing mindfulness as a challenge (6), especially concerns about not “doing it right”. Professionals reported drawing on several strategies to encourage clients’ mindfulness practice, such as providing a formulation as to how mindfulness practice can be of use in their specific case and individually tailoring mindfulness exercises.

Thirty seven per cent of professionals noted negative reactions or effects in clients in relation to mindfulness. Negative responses fell into two broad categories: those involving client reluctance to use mindfulness, and those relating to increased client distress in response to practicing mindfulness. Reasons given by clients for their reluctance to practice mindfulness included that it is boring, ineffective, and too difficult, “wishy-washy” or “lightweight”. In terms of negative reactions resulting from practicing mindfulness, professionals described this occurring in highly anxious, agitated or dysregulated clients, those with a history of trauma or abuse, suicidal and psychotic patients, patients diagnosed with borderline personality disorder, and those with poor concentration. Specific reactions included increases in anxiety, distress and agitation,
flashbacks and nightmares, dissociation, decompensation and abreaction, as well as “getting upset with self for not being able to do it right.” A small number of professionals made reference to a specific mindfulness practice associated with negative client reactions, including breathing practices, focusing on the body, bringing awareness to painful memories, awareness of internal experience, and mindfulness of emotions.

**Additional comments about mindfulness.**

In professionals’ general comments regarding mindfulness, a number of concerns and issues were raised. One respondent reported that “some relaxation strategies I use (progressive muscle relaxation, calming self statements and imagery)... I feel are sometimes at odds with mindfulness”. Two drew attention to the fact that “the concept of ‘mindfulness’ as it is being used in psychology is muddy and confusing” and varies from course to course. One participant suggested a name change from mindfulness to assist with clarification, although was doubtful this would happen. Five were concerned about the danger of mindfulness being used “simply as another technique”, and “being taught and applied very superficially” as a “quick fix” or “product that can be bought or consumed”. Two respondents were very strong in their opinion that mindfulness “must not be divorced from its embeddedness in Buddhist and transpersonal thought and practice” and that it should not be disassembled into “fragments with limited benefit”. In contrast, one respondent viewed the separation of mindfulness from its Buddhist roots as a positive, stating “the secular philosophy underpinning mindfulness...can be refreshing”, while another feared mindfulness would become “just another ‘religion’ practiced zealously and rigidly”. Finally, one respondent warned against using mindfulness as a “panacea”, acknowledging “there are limits to its efficacy and possible contraindications [and]...
mindfulness should not necessarily be the normative default, as there are plenty of good reasons for mindless behaviours at times too”.

Discussion

Mindfulness is increasingly incorporated into therapeutic contexts by a wide range of professionals. However, very little has been known until now about how this is done or the backgrounds of those using it professionally, nor how mindfulness is understood and conveyed to clients by professionals. Additionally, while a growing body of work has directly explored clients’ experiences of mindfulness-based interventions, professionals’ own perspectives on this have been little considered to date. The objectives of the current research were to shed light on these issues, particularly given that the way in which professionals understand, and in turn incorporate and teach mindfulness in their work, may have implications for therapeutic outcomes.

The current study has confirmed that professionals do come to mindfulness via diverse avenues, and their subsequent and ongoing sources of information about and hours of training in mindfulness are equally varied. Interestingly, although Moss and O’Neill (2003) assert that “mindfulness has entered the domain of psychological practice at least as much out of psychologists’ intimate subjective committed experience” (p. 29) as from evidence-based science, only about one tenth of respondents in the current study indicated that their own practice of mindfulness was a significant catalyst for their use of it professionally. Rather, a majority noted professional training courses, books, peer-reviewed literature and colleagues were primary factors in their uptake of mindfulness. Despite personal practice not being a reason for many beginning to use it, almost all respondents reported practicing mindfulness in their personal life since starting to teach it in their work. For approximately half the professionals, this entailed a mindfulness
meditation practice. This is an important finding, given that experts in the field advocate counsellors and psychotherapists who intend to train clients in mindfulness methods practice mindfulness meditation weekly at a minimum, with two thirds of experts recommending daily practice (Stauffer, 2007). Similarly, a fundamental guideline for instructors of the MBSR program is that they “need to have their own personal meditation practice” (Kabat-Zinn & Santorelli, 2012, para. 3), and this also applies to MBCT (Segal, et al., 2002). DBT also encourages practitioners to develop a regular practice of mindfulness meditation and to use informal methods (Lau & McMain, 2005; Linehan, 1993). Although the majority of commentators are strongly in favour of practitioners having a personal practice of mindfulness for the reasons described above, the research evidence regarding therapeutic benefits for clients of a professionals’ personal practice are mixed (Dunn, Callahan, Swift, & Ivanovic, 2013; Grepmair et al., 2007; Ryan, Safran, Doran, & Muran, 2012), and the issue is not without debate. ACT de-emphasises formal mindfulness practice (Hayes & Strosahl, 2004), and others such as Germer (2005b) also adopt a more flexible approach on the issue, proposing that the need for a personal mindfulness practice depends on how much mindfulness a practitioner plans to bring into therapy. Until now there has been very little evidence regarding how mindfulness is in fact used by professionals in their work. The current study found that more than half of professionals sampled use mindfulness outside of specific mindfulness-based interventions. Clearly, guidelines are needed for those wishing to use mindfulness outside of standard, manualised mindfulness interventions regarding requirements for personal practice, as well as how best to use it in the context of other models. Irrespective, presently it is agreed that each mindfulness practice should first be experienced by the practitioner and practiced sufficiently prior to using with clients (Germer, 2005b; Hayes & Strosahl, 2004; Stauffer, 2007).
Beyond investigating how and by whom mindfulness is being used professionally, a further aim of the current study was to explore professionals' understandings of mindfulness by examining their ideas about mechanisms of action, practices endorsed as mindfulness, and the rationale used when describing mindfulness to clients. A striking finding was the broad nature of practices considered to fall under the umbrella of mindfulness. Although many formal and informal mindfulness practices referred to by professionals align with those described in the mindfulness literature and formal mindfulness-based intervention manuals (e.g., body scan, mindfulness of the breath, paying mindful attention during daily activities), others such as thought stopping and progressive muscle relaxation do not. While potentially demonstrating benefit in their own right, strategies such as these fall beyond the bounds of what is typically considered mindfulness, due to their emphasis on attempting to directly change one's experience in the moment, such as the content of one's thoughts or the tension within one's muscles. In contrast, definitions of mindfulness in the psychological literature, although diverse themselves, typically emphasise the non-striving nature of paying attention to all experiences in order to facilitate a changed relationship with those experiences.

There was also a contrast in professionals' rationales between those emphasising direct change benefits of mindfulness such as calmness, relaxation, and decreased anxiety, and those which focused on mindfulness as a useful way of fostering a changed relationship with one's experiences, especially if uncomfortable or challenging. McKenzie et al. (2012) found that medical and psychology students also emphasised the calming benefits of mindfulness in describing how it may be helpful for depression and anxiety, and also believed mindfulness would be helpful for treating depression because it "promotes positive thoughts and reduces negative thoughts" (p. 365). This highlights
several points. Firstly, many professionals may be overlooking the non-striving nature of mindfulness and instead using it as a change-based strategy geared toward symptom reduction, ignoring the unique and transformational benefits offered by mindfulness (Dimidjian & Linehan, 2003; Kabat-Zinn, 2003; Rosenbaum, 2009; Salmon, et al., 2004). Secondly, these findings highlight a major challenge facing professionals when initially explaining mindfulness, given its inherent paradox of a practice with many desirable benefits over time, but which has no specific objectives other than to notice what is already present without any aim of achieving anything in particular (Rapgay & Bystrisky, 2009). That is, does one focus on the just noticing, non-striving nature of the practice of mindfulness at the risk of alienating clients who have come to therapy seeking change? Alternatively, is it more useful to focus on the potential benefits of having a regular mindfulness practice in order to elicit and capitalise on positive expectations for therapy and increase the likelihood of ongoing practice at the risk of having clients believe that in practicing mindfulness they should be trying to achieve something in particular and setting up unrealistic expectations? To date, a direct comparison of these two different conceptualisations and their effect on therapeutic outcomes has not been conducted. It may be that those professionals describing mindfulness in terms of direct change do understand mindfulness in this way, or they may indeed see mindfulness practice as non-goal oriented but choose to present the potential overall benefits to clients so they do not perceive it as a pointless activity and fail to engage, rendering benefit impossible. Certainly, some respondents noted that clients can have difficulty in grasping the concept of mindfulness, particularly the non-direct change based nature of the practice.
Kabat-Zinn (1990) contends that the most helpful approach to mindfulness is to suspend judgement and not search for benefits. Indeed, there is some suggestion in the research literature that unrealistic expectations of group-based mindfulness interventions such as MBSR and MBCT can negatively influence mindfulness-based intervention outcomes (Finucane & Mercer, 2006; Mason & Hargreaves, 2001). Horst and colleagues (2013) also reported that for one participant being introduced to mindfulness in individual therapy, “it was helpful that her therapist presented the mindfulness exercise without expectations” (p. 9), as this minimised the client’s sense that they were not practicing mindfulness correctly. Given this, it would seem important that therapists and mindfulness group facilitators are able to communicate to those they are teaching the non-striving nature of change associated with mindfulness-based interventions, in order to avoid client disappointment if distressing thoughts or feelings continue, to reduce frustration with the apparent non-change based therapy offered, and to minimise early drop out, whilst also facilitating positive expectations for therapy.

Common amongst approximately half the professionals’ rationales was reference to awareness of or attention to the present. There were no explicit distinctions made by professionals between these two terms, a distinction Brown and Ryan (2004) would argue is significant. Similarly, although several authors argue that acceptance has no place in conceptualisations of mindfulness (Brown & Ryan, 2004; Mikulas, 2011), this concept appeared in many professionals’ explanations of mindfulness, sometimes under a different label such as non-judgement or tolerance. There is an obvious need for further work to be dedicated toward the task of clarifying these components of the definition.

All professionals in the study believed mindfulness to have multiple mechanisms of action, and the particular mechanisms endorsed differed for each individual. This variation
reflects the existence of different accounts within the literature of how mindfulness works (Hayes & Wilson, 2003), and perhaps also the influence of a practitioner’s own personal experience with mindfulness. Despite numerous mechanisms having been proposed, many remain largely untested (Kocovski, et al., 2009), and from an empirical stance there is still much unknown about the specific ways in which mindfulness interventions work (Dimidjian & Kleiber, 2013). Irrespective of whether such questions remain because of the relative infancy of mindfulness in the psychological literature, the predominant focus thus far on establishing its efficacy (Hayes & Wilson, 2003), or because of the complex and contentious nature of the construct itself (Carmody, 2009; Chiesa & Malinowski, 2011; Hayes & Wilson, 2003; Roemer & Orsillo, 2003), it is without doubt an ongoing challenge for the field.

Finally, professionals’ comments regarding mindfulness parallel previously described concerns from a number of authors regarding the lack of clarity in defining mindfulness, as well as more general reservations about the ways mindfulness may be understood and applied in the broader community, such as a quick fix technique divorced from its Buddhist roots. Although Bishop et al. (2004) argue that the separation of qualities such as compassion and wisdom from mindfulness enhances the empirical usefulness of the construct, and Carmody (2009) suggests Buddhist elements of mindfulness may be unnecessary or inappropriate for Western clients, a number of commentators argue that the separation of mindfulness from its original Buddhist context may weaken therapeutic benefits (Cullen, 2011; Kabat-Zinn, 2003; Mikulas, 2011; Rosenbaum, 2009). Further, Rapgay and Bystrisky (2009) note concerns raised by several Buddhist authors regarding the “potential misinterpretations of the nature and function of mindfulness in psychology and other disciplines” (p. 149) that may arise due to a lack of understanding of the
Buddhist theory on which mindfulness is based. That the original understandings of mindfulness within the Buddhist tradition are unknown to many clinicians (Kumar, 2002) was supported in the current study. Very few respondents indicated Buddhist training or texts as sources of information regarding mindfulness, and important Buddhist concepts fundamental to the practice of mindfulness such as morality and wisdom (Christopher, et al., 2008) were absent from typical explanations to clients about mindfulness.

Limitations.

Although to the author's knowledge this is the first study examining the important issue of professionals' understandings and use of mindfulness, it was not without limitations. Data were collected from a self-selecting survey, and as such respondents were potentially professionals who are particularly enthusiastic about mindfulness and perhaps likely to use it more frequently both professionally and personally. Although the study specifically invited the participation of those aware of mindfulness but opting not to use it, there were only four such individuals who completed the survey, and due to the small number their responses were not included. Thus, the current findings must be considered valuable initial insights to guide further research exploring how mindfulness is used and understood by mental health and related professionals, rather than firm conclusions generalisable to all those teaching mindfulness in their work.

The emphasis of the current study was on how professionals' understandings of mindfulness translate into explanations and uses with clients. It was assumed that the rationales provided to clients would correspond closely to professionals' understandings of mindfulness, and in order to reduce repetitiveness and burden on participants, the latter were not directly assessed. However, it is possible that the way professionals choose to present mindfulness to clients may indeed be different from their own beliefs. As
mentioned, some professionals may presume that clients will not understand or be receptive to the paradoxical nature of mindfulness and therefore adapt their rationale accordingly. This should be confirmed in future studies, although there was clear indication from the current findings regarding particular practices employed that many professionals adhere to broad definitions of what constitutes mindfulness.

The current study did not ask respondents about knowledge or use of specific mindfulness-based interventions or practices, because the research was a broad exploration of mindfulness use and understandings, including the use of mindfulness as a stand-alone intervention which has received much less attention than formalised approaches such as MBSR or MBCT. This breadth is both a strength and limitation of the research, as it gives a snapshot of mindfulness use but cannot answer more specific questions about the use of individual mindfulness-based interventions or practices.

**Implications and future research.**

This study has illustrated that professionals understand mindfulness in myriad ways, both in terms of what it is, how it works, and how they explain it to clients. Having a clear and coherent rationale for using mindfulness is essential (Teasdale, Segal, & Williams, 2003), with Horst et al. (2013) noting that the conversations between therapist and client prior to practicing mindfulness in individual therapy “were critical to the successful integration of mindfulness in session” (p. 9). One of the most important contributions of this study is the finding that some professionals understand and teach mindfulness as a change-based strategy, while others emphasise the non-striving, non-judging observational nature of the practice. Having confirmed the presence of different conceptualisations of mindfulness amongst professionals, an important area for further study is whether this diversity is mirrored among community members. This possibility
seems likely, given that professionals and community members may share some sources of information on mindfulness, and community members may learn about mindfulness from professionals in some instances. Moreover, community members might have greater difficulty transcending the direct change emphasis of Western culture to embrace the non-striving core of mindfulness. Community member understandings and uses of mindfulness were the focus of Study 2 in this dissertation.

An important issue raised by the current findings is the reliability of results from mindfulness efficacy studies, given the potential for those delivering such interventions to have varied understandings of the mindfulness practices and interventions they are delivering. Greater transparency should be considered by researchers in presenting the specific conceptualisation or understanding of mindfulness proffered in studies investigating the effectiveness of mindfulness, as well as research aiming to enhance understanding of the mechanisms and processes which underlie mindfulness interventions. Cullen (2011) has previously raised this notion in regard to ensuring the quality and integrity of mindfulness-based programs.

While no professionals in the current study made note that the rationale they described is used only with particular clinical issues or presentations, a small number indicated that the rationale they use will vary according to the individual case. Further research is warranted to investigate whether this is common practice, especially given assertions that an individualised approach to the inclusion of mindfulness in therapeutic contexts is necessary (Teasdale, et al., 2003). Moreover, while it was beyond the scope of the current study to explore specifically how the rationale for using mindfulness might be tailored for different individuals, clinical presentations or mindfulness practices, this too should gain further research attention.
Although this study contributes much by showing that many professionals practice mindfulness personally, there is more work to be done exploring how much personal practice, and of what type, is enough, for those teaching mindfulness in various contexts. Although Stauffer’s (2007)’s work with experts regarding guidelines for practitioner competencies and personal practice in this area has provided valuable insights, “clearly, the general questions about therapist training and adherence/competence, as well as the specific questions regarding formal practice requirements, cannot be resolved in the absence of empirical data” (Dimidjian & Linehan, 2003, p. 170). Thus, future research should be directed here.

Conclusion

Mindfulness has emerged as an incredibly popular intervention in the field of psychology and counselling over the past decade. Despite this, relatively little has been known until now about how professionals understand and teach it in their work. Additionally, although a personal mindfulness practice is frequently recommended for those teaching it and some evidence does suggest this is beneficial, whether professionals have a regular mindfulness practice has been uncertain up to now. The findings have demonstrated that each professional makes their own meaning about mindfulness regarding what it is, its goals, and how it works, and this study has delineated the nature of different conceptualisations of mindfulness. Results also show that the particular sources professionals have accessed on mindfulness, and their route to and personal experiences with mindfulness, vary. While there is much more work to be done, this study has opened up an important area of investigation, going beyond questions of whether or not mindfulness-based interventions work, and examining understandings and applications of mindfulness methods amongst professionals.
CHAPTER 4: Study 2 – Community Members’ Use and Understandings of Mindfulness

As with professionals, community members are likely to possess diverse understandings of mindfulness because of general variability in ideas about mindfulness, similarities with relaxation-type practices, the apparent contradiction that mindfulness is at once both an intervention with demonstrated benefits as well as a practice without specific aims, differences in experience with and avenues to mindfulness, and the many mindfulness-based interventions available. Indeed, as will be outlined, the relatively few qualitative studies exploring mindfulness intervention participants’ conceptualisations and experiences of the construct suggest there are important differences. Moreover, these appear to have influenced the outcome of the intervention for some participants. This study sought to add to the limited knowledge about community members’ understandings and perceptions of mindfulness, as well as explore the ways in which they utilise it. Additionally, to provide context for understandings and use, information about community members’ sources of knowledge about and training in mindfulness was also gathered.

Two studies were located that directly explored what Moss et al. (2008) have termed “local definitions” (p. 138) of mindfulness given by participants of group-based mindfulness interventions (Kerrigan, et al., 2011; Moss, et al., 2008). Findings from both studies highlight the variation in participants’ descriptions and the challenging for them of defining what mindfulness entails. Specifically, Kerrigan and colleagues (2011) explored perceptions and experiences of mindfulness amongst ten disadvantaged youths participating in an MBSR course. The results indicated that each participant’s description of mindfulness was unique, despite all referring in some way to attention and awareness. Other concepts spoken of by different youths related to the present moment, connecting
with physical experience, openness, and "un-judging" (p. 98). The authors also drew attention to several participants' use of mindfulness as a self-control strategy, and note the challenge of comprehending the nuances between "mindfulness as a potential means for behavioral change and mindfulness-awareness as a quality and our natural state of being which needs no ‘fixing’ or ‘controlling’" (p. 98). In qualitative research undertaken by Moss and others (2008), the experiences of eight adults participating in a 20 week mindfulness-based self-help group were examined. The authors noted many participants' struggle with verbalising their definitions of mindfulness, in part due to the challenge of comprehending the concept itself, as demonstrated by one participant's reflection, "I thought most of the time I thought ... Have I got this idea? Have I not got it? ... Am I am I totally ... missing the point?" (p. 137). Participant definitions included reference to allowing, being with what is there, awareness in the now, accepting what is here now and acknowledging it may not be there later, and mindfulness as a "tool without being a tool" (p. 139).

In addition to the above studies, which have explicitly investigated participant definitions of mindfulness, conceptualisations also come out via participants' descriptions of the effects of mindfulness (Moss, et al., 2008). For instance, Finucane and Mercer (2006) reported on differences in the way participants of an MBCT course applied mindfulness, with some tending to use a brief mindful breathing practice to manage anxiety by noticing and defusing from worries, while other participants employed the same practice to reduce physiological symptoms of anxiety, an important but subtle distinction the authors note is "easily open to misinterpretation" ("Interpreting the Findings," para. 4). Amongst another group of MBCT participants reflecting on their experiences of the course (Marti & Barrachina, 2009), less than half reported understanding the meaning of the
treatment within the first two weeks, an additional one third understood by around the fourth week, ten per cent were unclear until the final weeks, and six per cent remained unsure of the purpose after having completed the program, illustrating the considerable individual differences in comprehending mindfulness. Furthermore, the findings also showed that while more than one third of participants referred to having learned skills of mindfulness such as being in the present, identifying emotions, and acceptance throughout the course, one quarter reported having learned to relax and almost another quarter said they had learned to stop thoughts. Similarly, York (2007) reports that several of the eight attendees of an acute inpatient mental health facility drop-in mindfulness group, who had attended on average five sessions, expressed confusion about the concept of controlling versus observing thoughts.

It is evident from these studies that participants of mindfulness interventions understand and utilise it in different ways. However, the existing research has primarily relied upon small samples of respondents, and has been limited to input from participants of group-based, mostly formalised mindfulness interventions. These perceptions and experiences of mindfulness may not necessarily parallel those of community members who may have come into contact with mindfulness in the context of individual therapy, a point previously raised by Horst and colleagues (2013). Indeed, the results of Study 1 have demonstrated that each professional explains mindfulness in their own way, and despite some points of commonality there are also distinct differences. In turn, this could be expected to influence how clients understand mindfulness. Moreover, community members may receive information about mindfulness from other sources, such as the internet and self-help books, which have less quality control, no doubt shape their understandings of the concept.
Chapter 4: Study 2 – Community Members’ Use and Understandings

The current study was thus designed to expand on the existing literature regarding the experiences and perceptions of mindfulness intervention participants by examining understandings and utilisation of mindfulness amongst community members who have learned about it in a wide variety of contexts. The following research questions were explored in Study 2 using a mixed qualitative-quantitative method:

- What sources of information about and training in mindfulness do community members access?
- In what ways do community members use mindfulness?
- How do community members understand and experience mindfulness?

Based on previously outlined reasons including variability in defining mindfulness in the academic and wider literature, its paradoxical nature, the many forms it takes, and the distinct avenues from which one may arrive at mindfulness, in addition to research previously outlined, it was predicted that there would be a large degree of variability across participant responses with regard to understandings, experiences and uses of mindfulness.

Method

Participants.

Participants were community members who had previously or were currently using mindfulness, such as part of their personal counselling or therapy, through attending a group involving mindfulness, or in personal development or spiritual enlightenment. Participants for the study were recruited via flyers (see Appendix G) on community notice boards, and notices placed in The Canberra Times newspaper and ANU website and circulated on mindfulness-based public forum email lists (Appendix H). Participant
invitations (see Appendix I) were also displayed at the offices of psychologists and mental health services in the ACT.

The final sample comprised 69 females, 22 males and one participant of non-specified gender (N = 92). The most frequently nominated age groups were 25-29 and 40-44 years, and all age groups between 15-19 and 60 years and older were represented. Approximately half of respondents (54%) resided in the ACT, about one quarter were in NSW (27%), and the remaining respondents were from Victoria, overseas, Western Australia and Queensland. The greatest proportion of participants reported having completed postgraduate study (38%), followed by graduation from a Bachelor’s degree (25%), completion of Year 12 (17%) or a graduate diploma or certificate (12%), with remaining respondents having completed a diploma, Certificate III/IV or Year 10. The most commonly reported areas of study included psychology, science, education, nursing, economics and business, law, literature, and design. With regard to employment and study, 43% of respondents were employed full time and 23% on a part-time basis, while 7% of the sample reported not having employment and 6% were retired. 25% of the sample also reported being engaged in study, with several working and studying concurrently (7%). (Note the total per cent is greater than 100 as participants were able to select more than one option for this item).

**Measures.**

To explore community members’ understandings and use of mindfulness, a questionnaire (shown in full in Appendix J) containing Likert-type, multiple choice and open-ended response was used. Items were modelled on previous research and the psychological literature when possible, such as intentions for engaging in mindfulness,
mechanisms and patterns of use; however most questions were developed specifically for this study. Items pertained to:

- Demographics;
- Awareness and current understandings of mindfulness;
- Sources of information and training about mindfulness;
- Patterns and experiences of mindfulness use, including duration and frequency of practice (Brown & Ryan, 2003), specific practices used, and difficulties mindfulness most useful for;
- Ideas about mindfulness mechanisms (Baer, 2003; Shapiro, et al., 2006);
- Initial and current perceptions of mindfulness; and
- Additional comments about mindfulness.

**Procedure.**

Ethics approval was obtained from the ANU HREC prior to commencing data collection. Data were gathered from August to September 2009 using an anonymous, 40 minute secure online survey. Participants were given study details on the first page of the survey (see Appendix K) to permit informed consent and debriefing information was provided upon completion of the survey (see Appendix L).

**Results**

Following download from the online survey platform, data were screened for errors and missing data. Three cases of 95 were removed due to extensive missing data, resulting in the final sample of 92. Quantitative data were analysed using SPSS Version 20.0 (IBM Corporation, 2011) and open-ended responses were imported into NVivo Version 8.0 (QSR International Pty Ltd, 2008) to assist with coding and analysis.
Data analysis.

Descriptive statistics were used to summarise quantitative data, while inferential statistics such as t-tests were used to compare the responses of community members to professionals on equivalent items. For open-ended responses, thematic analysis was employed similarly as described in Study 1.

Quantitative and qualitative results are integrated, with results presented by research question. Initially, findings relating to community members' sources of information about mindfulness are presented, followed by responses pertaining to how mindfulness is used amongst this group. Details regarding how community members understand and experience mindfulness are then given, before additional comments about mindfulness are presented.

Sources of initial and ongoing information and training on mindfulness.

The results displayed in Figure 9 are suggestive of the diverse nature of community members' sources on mindfulness.

*Figure 9. Sources of initial and ongoing information and training about mindfulness.*
As shown, the most common ways in which participants became aware of mindfulness were via self-help books, followed by the internet, a psychologist, or a friend. Other initial points of contact with mindfulness included yoga classes, meditation groups, Buddhism, work, health magazines, birthing classes, and a health promotion community information session. The pattern was similar in terms of gaining further training and information about mindfulness, with the most frequently cited source self-help books, followed by mindfulness groups, audio recordings, the internet, and a psychologist. Other noted avenues for training and information on mindfulness included yoga, martial arts, Vipassana meditation retreats, and family members. As illustrated in Table 2, the number of hours spent learning about mindfulness from various sources ranged vastly, from one hour for some respondents to hundreds of hours for others.

Table 2

*Descriptive statistics for hours of training and education in mindfulness undertaken by community members by type*

<table>
<thead>
<tr>
<th>Type of training/education</th>
<th>n</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>Median</th>
</tr>
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<tr>
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</table>
Patterns of mindfulness use.

Ninety five per cent of respondents indicated having a current mindfulness practice of some sort, with just less than half (45%) engaging in formal mindfulness meditation and almost double that (83%) using mindfulness informally. As shown in Figure 10, for both formal and informal practice, the greatest proportion of respondents had been using mindfulness for less than 12 months.

![Figure 10. Duration of using formal and informal mindfulness.](image)

Respondents with a current formal mindfulness meditation practice indicated meditating for between less than one and eight hours per week, with a mean of 3.7 hours ($SD = 2.36$). One (20%) and three (18%) hours of weekly meditation practice was most frequently reported.
Use of mindfulness with specific issues.

As illustrated in Figure 11, community members reported mindfulness to be useful for a range of issues, with stress and anxiety most frequently mentioned. Compared to responses given by professionals regarding the client issues mindfulness is most helpful with, community members rated mindfulness as somewhat less helpful for stress and anxiety, but slightly more helpful for low mood and depression, grief, sleep and relationship issues.

![Figure 11. Issues that community members report mindfulness is most helpful for, compared to the issues that professionals perceive mindfulness most helpful for amongst their clients.](image)

Understandings of and experiences with mindfulness.

Mindfulness mechanisms.

With regard to participants' ideas about the mechanisms of mindfulness, all sixteen mechanisms listed were endorsed by at least forty per cent of respondents, as seen in
Figure 12, and between one and sixteen mechanisms were endorsed by each community member.

![Figure 12: Pre-specified mechanisms endorsed by respondents. N = 92 for community members; N = 84 for professionals.]

An independent samples t-test revealed that on average, community members \( (M = 8.92, \ SD = 4.75) \) endorsed significantly fewer mindfulness mechanisms compared to professional respondents \( (M = 10.96, \ SD = 4.02) \), \( t(174) = 3.06, \ p = .003 \). The mechanism most frequently selected by community members was “attention to experience itself rather than interpretation” followed by “physical relaxation”. A series of chi-square tests of association showed that six of the mechanisms (indicated in Figure 12 by an asterisk) were endorsed by a significantly smaller proportion of community members compared to...
professionals, specifically: “Attention to experience itself, rather than interpretation of experience”, $\chi^2 (1) = 6.08, p = .014$; “Significant shift in perspective (reperceiving)”, $\chi^2 (1) = 4.82, p = .028$; “Regulation of emotions”, $\chi^2 (1) = 5.57, p = .018$; “Recognition that thoughts are not facts (defusion from thoughts)”, $\chi^2 (1) = 5.40, p = .020$; “Exposure to difficult thoughts, feelings and sensations”, $\chi^2 (1) = 12.60, p = .000$; and “Giving up the struggle with painful thoughts, feelings, and sensations”, $\chi^2 (1) = 13.81, p = .000$, where $N = 176$ in all comparisons.

**Understandings of mindfulness.**

In describing their understanding of mindfulness, several common concepts were highlighted by respondents. Most participants (78) referred in some way to mindfulness as about being in the moment and aware of (or “connecting with”, “conscious of”, “noticing”) present moment circumstances, such as internal physiological state, thoughts, emotions, and what is being done and happening currently. Terms such as concentration, focus and purposeful attention were used synonymously with awareness.

Re-occurring concepts amongst many participants (39) were non-judgement (also referred to as “accepting”, “allowing”, “not trying”, without wanting to change anything”) and non-reactivity. A number of participants (23) described mindfulness as a way to change or control one’s present experiences. For example, one respondent stated mindfulness “allows a person to escape from the stresses of everyday life and/or to enter a state of complete relaxation. It can sometimes be almost like an out-of-body experience”. Others referred to mindfulness as a way of relaxing, “controlling yourself”, or slowing one’s heart rate. A small group of respondents described mindfulness very differently to
most, for example that mindfulness is “how individuals view others and make use of their perceptions in relation to their own”.

**Ease of understanding mindfulness.**

Overall, community members rated mindfulness as relatively easy to understand, with the largest proportion indicating mindfulness is extremely easy to understand (see Figure 13).

![Ratings of community member ease in understanding mindfulness](image)

*Figure 13. Community members’ ratings of their ease of understanding mindfulness, compared to professionals’ ratings of how easily clients understand mindfulness. N = 92 for community members; N = 84 for professionals.*

Figure 13 compares community members’ ratings of their ease of understanding mindfulness to professionals’ ratings of how easily clients understand mindfulness, illustrating that relative to professionals’ ratings, more community members rated mindfulness as very easy or extremely easy to understand. An independent t-test confirmed that community members ($M = 5.51, SD = 1.36$) rated their ability to understand
mindfulness significantly higher overall than professionals rated clients’ capacity to understand it ($M = 4.58, SD = 1.20$), $t(166) = -4.65$, $p = .000$.

Despite rating mindfulness as relatively easy to understand, some community members’ additional comments regarding this item did suggest some experience challenges in understanding mindfulness. Several noted understanding mindfulness can take time (5) and practice (2), and six admitted still being confused about certain aspects such as the observing mind, informal mindfulness, the concept of non-judgment and acceptance, and how mindfulness differs from other interventions such as CBT. Five respondents raised the idea that there can be varying levels of understanding, depending on how you use mindfulness and your familiarity with it through practice.

**Specific mindfulness practices used.**

A variety of specific formal mindfulness practices were reported by participants, which included a focus on the breath (27), body sensations (14), thoughts (7), emotions (7), and sounds (4). Other formal practices included mindfulness during yoga postures (11), loving kindness/heart meditations (3), and walking meditation (2). When describing formal mindfulness practices used, a number of participants spoke of “relaxation” or controlled breathing (7), and strategies such as “thought clearing techniques”, visualisation and self-hypnosis, (4); prayer (3), and concentration forms of meditation (e.g., candle gazing).

Informal mindfulness practices used by participants included bringing awareness to and observing present moment experience such as thoughts, emotions, sounds, and physical sensations, during a range of activities such as eating, walking, driving, showering, interacting with others, listening to music, domestic tasks, and working at a computer. The breath was mentioned frequently by participants (36), sometimes in the context of simply observing or focusing on it, and at other times in the context of using the
breath to calm down and relax, alleviate uncomfortable emotions (e.g., anxiety), or respond to difficult situations. Several participants (7) spoke of using self-talk as informal mindfulness practice, for example “saying 'calm' to myself”, “actively reminding myself that anxiety goes up and comes down again and that I have to ride out the ups and downs”, and “if I worry about something I try to think objectively to find out why I am worrying and analyse the situation to cover what potentially could go wrong and what could go right”. Other responses related to changing one’s experience in some way (7), such as to “allow self to detach from body”, becoming more relaxed (e.g., “reduce any tensions” or “try to relax”), and changing the quality or quantity of thoughts (“focus on positive thoughts”, “try not to think”, “change sad/bad thoughts...to positive ones”).

**Ease of using mindfulness.**

Community members rated mindfulness as relatively easy to use ($M = 4.85$, $SD = 1.45$), with only as small proportion reporting mindfulness is either extremely, very, or somewhat difficult to use (see Figure 14). Figure 14 shows some differences in the pattern of responses between community members and professionals; however, an independent t-test comparing professional ($M = 4.48$, $SD = 1.21$) and community member ($M = 4.85$, $SD = 1.45$) ratings of ease in clients’ use of mindfulness did not show a significant difference, $t(165) = -1.77, p = .078$. 
A comment amongst several community members was that mindfulness is “easier to understand than practice” (7). Challenges related to using mindfulness included a wandering or busy mind, recognising one is not being mindful, “moving toward difficult stuff”, and attempting to employ mindfulness when in a distressed state. The challenge of being consistent and disciplined in using mindfulness, especially formal mindfulness meditation, was also mentioned by a number of respondents (10). Despite these challenges, especially common in the earlier stages of learning to employ mindfulness, participants reported that being mindful has become easier with practice (10), and for some it is now achieved more naturally and has become a habit, a “new auto-pilot” (6).

**Perceptions of mindfulness before and after use.**

When participants were asked about their perceptions of mindfulness before and after gaining experience with using it, a number of key ideas were apparent. A large
number of respondents reported initial optimism about mindfulness, specifically feeling “positive” (5), being “open”, “curious”, or “interested” to learn more about and practice mindfulness (19), or that the concept of mindfulness immediately “resonated” or “made sense” to them (5). However, others noted that in the first instance they were quite sceptical. For some (12), this was because they didn’t think mindfulness would be effective for them and they regarded it as “pointless”, “rubbish” or “a waste of time”, whereas for another respondent it was because he didn’t feel it was possible for him: “that sort of stuff is for the meditation masters not me, I can’t do that, I do not have the ability or the training.” Another group of respondents (7) were initially put off by the perceived unconventional, alternative nature of mindfulness, with it viewed as “funky”, a “bit Eastern and esoteric”, “strange”, “airy fairy and a bit hard to get a grip on”, “new age-y, not attracted to the philosophical/religious aspect” and “nonsense, practiced by hippies”.

Overwhelmingly (76), participants reported that after having some experience practicing mindfulness, they felt positive toward it and believed it to be very useful, including all those who were initially doubtful. Qualitative comments (14) demonstrated the passion and enthusiasm for mindfulness amongst some participants, such as “it’s the secret to being able to live a valued life”, “my attitude is that everyone should practice mindfulness, I think it is the single most powerful way to mitigate human suffering in a true, deep and natural way” and “it can be totally life changing if you’re up for the journey!”. This positivity was not without caveats, such as reference to difficulties with motivation to and engaging in the formal practice of mindfulness, and that it is only effective if “practiced constantly, correctly and with a lot of understanding and motivation”. Finally, two respondents noted that especially in the early stages of
practicing, trying “too hard” to “do something” interfered with the effectiveness of mindfulness.

In contrast to the mostly favourable attitudes toward mindfulness amongst community members with experience of it, some respondents were less enthusiastic, with one stating they “initially found it so difficult that it was hard not to dislike the entire technique and theory but it grew on me a little. I can see the use but am still not comfortable with it.” Four participants qualified that despite being initially hopeful and open to mindfulness (with one in particular noting “the literature makes huge promises!”), after practicing one became “more realistic about what benefits it does have”, one felt it was “okay...[although] not the total answer”, another noted it “doesn’t solve everything” and a fourth felt mindfulness was “in the format that it was presented - laborious, boring and dull”. Other respondents noted perceived disadvantages of mindfulness including that it is not useful if already in a state of high distress and arousal, and that being mindful means slower responding. One respondent stated that while mindfulness was useful, a psychotherapy course was more helpful in sorting out “a lot of emotional baggage”, and another said any benefits gained from practicing mindfulness were due to taking “time out of a hectic life”.

Six respondents were explicitly disappointed and negative about their experience of mindfulness and found it detrimental to their well-being in some way. Specifically, for three individuals mindfulness led to increased anxiety and stress and for another to feeling “depressed and flat...zoning out”. For all these participants there was an expectation that mindfulness should be associated with becoming or remaining “calm”, “feeling relaxing”, and that one should be able to “control” mindfulness. One respondent said mindfulness was “not a solution or a therapy of choice...give me anti-depressants and a good
psychologist any day.” Another participant noted their difficulties with mindfulness arose due to a lack of “proper training [and] knowledge and understanding of the practice”.

Several participants described that their original notion of mindfulness was mistaken, with clarity arising through practice. For instance, one “thought it was about ‘zoning out’, not thinking at all” and later realised “it is about not attaching to thoughts”, while another originally believed mindfulness was to do with “a feeling of total detachment to self and surroundings” before coming to understand it is instead about being “more aware of self and surroundings.” A third respondent in the beginning stages of practicing mindfulness when negative thoughts and emotions arose “kept saying this is not what meditation is supposed to result in” before “learning it was part of the journey”.

Conversely, another participant reported thinking at the outset mindfulness “was like meditation that clears the mind of all thoughts...[and] a struggle” and being “surprised at how easy it is to do, you just have to make the commitment to doing it and to not judge yourself and your performance”. The concept of non-judgement as crucial to the success of mindfulness practice was raised by another participant, who said “the hope to stay calm is actually a problem in the practice. Desiring for nothing and trying my best is what I think is the key for the practice”.

**Additional comments about mindfulness.**

Two participants referred to the transportability of mindfulness enhancing its usability, while another point highlighted by several respondents was that the practice of mindfulness can involve a departure from cultural norms, with one male participant noting he had to “withdraw a lot from the rules of (my) social influences e.g., be strong, don’t allow too much feeling”, and another noting mindfulness freed him from “want[ing] or need[ing] to be part of the superficial (as I judge it) culture”.

A majority of participants commented that mindfulness is effective in a variety of ways, including improving general well-being, interpersonal interactions, decision making, and ability to relax in stressful situations, as well as increasing confidence, self-awareness, productivity, enjoyment, and sense of peace in life. It was also noted to have reduced anxiety and stress, prevented panic attacks, and assisted with sleep and dealing with long-term emotional issues.

One respondent noted the influence of belief on outcomes: “if someone does not believe in a specific type of method to induce mindfulness (i.e., meditation), then the method will not be effective for them. An individual has to want to achieve a state of mindfulness for it to be effective.” For another, the importance of practice was emphasised: “mindfulness is about doing it, not about learning it, reading about it, or even writing about it”. A single participant noted “there’s a lot of mumbo-jumbo associated with mindfulness and that what goes under the umbrella of mindfulness might actually constitute a number of distinct process: it’s a genus rather than a species”.

Discussion

The experiences of those participating in structured, group-based mindfulness interventions have been increasingly explored using qualitative methods in recent years, contributing much to the wealth of existing quantitative studies examining the efficacy of mindfulness. The present study expanded on previous research work by using a broad cross section of community members with varied experiences and sources of information about mindfulness, rather than being restricted to a small, relatively homogenous sample. This was important as it allowed for an exploration of community member understandings and experiences of mindfulness arising from diverse settings, including groups, individual therapy, and elsewhere.
Results from the current study have confirmed previous findings regarding perceptions of mindfulness amongst group-based mindfulness intervention participants in several ways. Firstly, as has been found previously, mindfulness means a lot of different things to different people (Kerrigan, et al., 2011; Mason & Hargreaves, 2001; Moss, et al., 2008; York, 2007). Nevertheless, similar to the findings of Kerrigan et al. (2011), there was a commonality across respondents with most referring in some way to mindfulness as relating to awareness in the present moment. Secondly, the present findings also parallel earlier studies (Finucane & Mercer, 2006; Kerrigan, et al., 2011; Marti & Barrachina, 2009; Moss, et al., 2008; York, 2007) and results from professionals in Study 1 of this dissertation, which all noted a distinction between respondents who conceptualised and used mindfulness as a way to develop a more accepting relationship with internal experiences versus those who understood and applied it as a way to control internal experiences such as thoughts and physical sensations. This distinction was apparent in the terms used by respondents to describe mindfulness (i.e., non-judgement, acceptance, allowing and non-reactivity versus escaping from everyday stress and slowing one’s heart rate), their ideas about its likely mechanisms of action (e.g., physical relaxation and deep breathing versus non-struggling with experience), as well as through the specific practices regarded as mindfulness (i.e., mindfulness of thoughts versus thought clearing).

It appears that these differences between community members with current or prior experience with mindfulness arise despite explicit teachings that mindfulness is not intended as a strategy to control one’s experience directly, perhaps due to “previous experiences, in which ‘self-control’ was both emphasised and encouraged as desirable” (Kerrigan, et al., 2011, p. 101). Alternatively, it may reflect that some influences on community members’ understandings of mindfulness may portray it as a simple and
effective technique for feeling better, or because of mindfulness' similarities with concentration or transcendental forms of meditation which generally have the objective of generating tranquillity (Brown & Ryan, 2004). Additionally, although mindfulness meditation "can be anything but [relaxing] at times" (Moss, et al., 2008, p. 132), and relaxation is explicitly not the aim, mindfulness and relaxation might be regarded as synonymous, especially because many participants of mindfulness-based interventions report the practice of mindfulness helps them to feel more relaxed (Finucane & Mercer, 2006; Horst, et al., 2013; Marti & Barrachina, 2009; Morone, Lynch, Greco, Tindle, & Weiner, 2008).

A novel contribution of the current study was the quantitative exploration of community members' ratings of their own ease in understanding and using mindfulness. In general, respondents believed mindfulness to be relatively easy to understand, and interestingly, rated mindfulness as significantly easier to understand compared to how well professionals rated clients' level of understanding of mindfulness. However, confusion was acknowledged by some in regard to the observing self, non-judgment and acceptance, and the distinction between mindfulness and other cognitive behavioral interventions. This seems to confirm that for some, the emphasis on self-regulation as opposed to self-control in mindfulness is challenging to grasp. However, perhaps not all community members recognise the limits to their understanding of mindfulness. Unsurprisingly, respondents overall indicated that mindfulness is easier to understand than practice, noting difficulties with maintaining commitment to a regular practice, as well as the wandering nature of the mind and discomfort in approaching difficult internal experiences. These research findings contradict the assertion of McKenzie and colleagues (2012), who in the context of advocating for broader use of mindfulness by medical professionals and psychologists
argue that mindfulness is “relatively easy for patients to understand and also comply with” (p. 360).

Findings from this study also aligned with previous research reports that initial expectations about mindfulness can play a significant role in outcomes, with a meta-ethnography of qualitative studies conducted by Malpass and colleagues (2012) concluding that those who cling to specific goals tend to benefit the least from the practice. In the present study, several participants described a process of helpfully modifying their perceptions of mindfulness over time to become more in line with notions of awareness, acceptance and self-regulation. In contrast, all respondents who expressed continued negativity towards mindfulness due to increased anxiety and depression had an associated belief that mindfulness should result in outcomes such as relaxation and calmness. This highlights several important points. Firstly, it seems important to establish realistic perceptions of the practice, including that it is not a quick fix technique, and that striving to achieve particular states (such as relaxation or an absence of thoughts) is less useful than letting go of expectations of anything in particular. This is especially pertinent for professionals teaching mindfulness in individual or group contexts, as they possess an important opportunity to influence community members' perceptions about mindfulness in beneficial ways. Professionals might also serve a role in addressing initial doubt and hesitation about mindfulness which is experienced by some individuals, as demonstrated by the current findings and previous work (Bermudez et al., 2013; Moss, et al., 2008; O'Connell, 2009).

The negative experiences of some who have practiced mindfulness also underscores that mindfulness is not without risks. Indeed, although mindfulness-related “adverse events are not systematically monitored or reported” (Dobkin, Irving, & Amar,
2012, p. 45), and the ubiquity and sheer volume of literature emerging on the positive effects of mindfulness may conceal potential negative effects, a range of detrimental outcomes from mindfulness practice have been reported. These range from irritation and boredom (Finucane & Mercer, 2006; Germer, 2005b) to initial increases in distress upon confronting challenging or previously avoided internal experiences (Crane & Williams, 2010; Martí & Barrachina, 2009; Moss, et al., 2008), and for individuals with a history of trauma or borderline personality disorder mindfulness practice may result in activation of intense emotions such as anxiety, shame, disgust and dissociative crisis (Didonna, 2009; Finucane & Mercer, 2006). Thus, as Kocovski (2009) notes, a degree of vigilance is necessary in applying mindfulness interventions.

Finally, the findings of the current study importantly highlight that community members are accessing a diverse range of sources regarding mindfulness, beyond mindfulness groups and individual psychotherapy or counselling, reflecting the increasing pervasiveness of mindfulness in society alluded to in the introduction of this dissertation. Of particular note was that self-help books, and to a lesser extent the internet, are prominent means of obtaining information about, and ongoing training in, mindfulness. Even television was selected by some respondents as a resource on mindfulness. This raises concerns with regard to the content and quality of information provided by such sources, as they are typically unregulated. A cursory internet search for “mindfulness relaxation exercise” returns over one hundred thousand results, suggesting the association between the two is very pronounced. A key challenge into the future will be managing information about mindfulness available in the wider community so that it remains accessible, but in such a way as it maintains its integrity as more than just a relaxation technique.
Limitations.

The self-selecting nature of participants may have led to over-sampling of individuals especially positive about mindfulness, and in turn the findings regarding perceptions of and experiences with mindfulness may not necessarily be representative of all community members who currently or have in the past practiced mindfulness. Indeed, professionals’ perspectives on client experiences of mindfulness in Study 1 of this dissertation indicate that over one quarter have observed negative responses toward or effects resulting from mindfulness practices amongst their clients. Moreover, many community member respondents themselves acknowledge that their initial reactions to mindfulness were less than enthusiastic. Together, this suggests the current results be understood as representing those who in general have had a positive experience of practicing mindfulness, with further enquiry necessary to gain greater knowledge about the perceptions and experiences of those individuals who have found mindfulness less helpful or perhaps harmful.

Implications and future research.

A significant contribution of the present research has been in demonstrating that community members gain their information about mindfulness from very diverse sources, and their perceptions of mindfulness vary. Moreover, this study has shown that similarly to professionals, individuals in the general community tend to perceive mindfulness in one of two ways – as a method of directly changing one’s internal experiences, or as a way of developing a more accepting relationship with those experiences. However, what has yet to be established is the impact of different perceptions of mindfulness on the outcomes of interventions (Chiesa & Malinowski, 2011). It may be that different understandings contribute to differences in benefits gained from using mindfulness. This is suggested by
qualitative reports regarding participant experiences of mindfulness group interventions (Malpass, et al., 2012), where those who expect to feel instantly better tend to do poorer than individuals not wedded to any particular outcome. This is clearly an important issue for future research to address; accordingly, Study 3 directly examines the role of the rationale provided prior to a brief mindfulness induction on outcomes.

An advantage of this study was that it explored a broad base of community members' understandings of mindfulness and their perceptions of its usefulness, and was not necessarily restricted to participants of a structured mindfulness group as in previous studies. Information gathered in the current study regarding community understandings of mindfulness and typical sources of information and training about mindfulness could be used as a starting point for future exploration. Specifically, it would be interesting to explore in detail using a methodology such as personal interviews or focus groups, whether understandings of mindfulness differ according to dimensions such as frequency and type of mindfulness practice, sources of information and training about mindfulness, or specific issues or concerns mindfulness is used for, and in turn whether such differences may contribute to varied outcomes of mindfulness-based interventions. However, it must be recognised that attempts to ascertain the precise impact on community members of specific types of information and training on mindfulness outcomes may be difficult to operationalise, given the likely exposure to mindfulness in multiple ways via the abundance of information available on the topic.

Conclusion

Mindfulness offers a great many benefits for a range of issues and population groups, as attested to by the ever expanding efficacy literature. However, there is a lot of variability across individuals in the outcomes experienced from mindfulness interventions
and practices; one of the contributing factors may be individuals’ perceptions of the aims and purposes of the practice. More is known following the current study about community members’ understandings and utilisation of mindfulness, and the sources of influence on this. The findings support previous findings suggesting a distinction between individuals who employ mindfulness as a strategy aimed toward direct change and relaxation and those who take an attitude of just noticing with acceptance all current internal experiences. Moreover, less helpful outcomes were reported for those in particular who maintained strong conceptualisations of mindfulness as a strategy to attain a sense of relaxation or be rid of unwanted feelings. Although the impact of different perceptions of mindfulness on outcomes has important clinical implications, this has yet to be studied in a controlled manner.
CHAPTER 5: The Role of Expectations on Mindfulness Practice Outcomes and Intended Future Use

Results from the preceding two studies have paralleled existing qualitative research illustrating that mindfulness can be a difficult concept to grasp and that it is understood in diverse ways amongst both professionals and community members. In part, what makes it so difficult is the paradox that non-striving is considered central to meaningful change, as well as the clash between the practice of mindfulness and the general ethos of current society in which there are “high expectations of finding remedies for all our ills and many industries offering potential solutions” (p. 31) via direct change-based approaches (Moss & O’Neill, 2003).

In both Study 1 and 2 of this dissertation, and previous research already described, a distinction was observed between those who understand mindfulness as a direct change orientated technique and those who perceive and use it as an approach to observe with non-judgmental awareness their internal experiences. Importantly, it appears that this difference in understandings and expectations of what mindfulness is, its aims and the results it will provide, make a difference to the outcomes experienced by those using mindfulness.

Preconceptions about what one will experience during meditation may lead to subsequent feelings of disappointment (Kostanski & Hassed, 2008; Rosenbaum, 2009), and may affect an individual’s experiences and outcomes of using mindfulness. For instance, one qualitative study explored participant experiences of an MBCT program and determined “initial expectations of therapy to be highly important influences of subsequent therapeutic change” (Mason & Hargreaves, 2001, p. 210). Specifically, those participants entering the program with an open mind achieved the best results and those maintaining an expectation of a cure showed little improvement. Finucane and Mercer (2006) also
interviewed participants of an MBCT program and described one participant with an almost life-long history of depression having an initial expectation that mindfulness would provide a miracle cure, and who was subsequently disappointed when this was not the case. Importantly, she tended to conceptualise mindfulness practice exclusively in terms of relaxation and so found herself judging her practice as successful if it induced relaxation and unsuccessful if she was tense or distracted. In their work exploring the perceived benefits and doubts of novice meditators about mindfulness, Sears and colleagues (2011) found that common doubts included those relating to violations of previously held expectations of what would occur with mindfulness practice, such as “why doesn’t it instantly transform me?” and reflections that it didn’t always make one “happy” or “whole” (p. 172). Similar observations were made by York (2007) regarding new attendees of an acute mental health inpatient mindfulness drop-in group, for whom a common hope was a quick fix or to have time out from thinking about the past or problems, as well as Allen and colleagues (2009) who reported several participants of an MBCT program struggled to accept that “MBCT was not a cure; that it was not a ‘magic fix’” (p. 422).

Perceptions of what constitutes “proper” mindfulness practice can also play a role in an individual’s experience of mindfulness. For instance, many participants in an MBCT program evaluated by Marti and Barrachina (2009) continued to believe an inability to stop thoughts during meditation indicated “bad practice” (p. 12) and subsequently experienced distress, despite being provided consistent messages that concentration difficulties were normal and the aim wasn’t to control thoughts. Perceptions of mindfulness as “thought control” amongst mental health inpatients were also noted by (York, 2007). Allen et al. (2009) as well found that a sense of personal failure about not doing it right was prevalent
amongst MBCT participants when the practice of mindfulness did not alleviate depression symptoms.

As already noted, findings from a recent study by Malpass and colleagues (2012) showed that individuals taking part in an MBSR or MBCT program who continued to conceptualise and apply mindfulness as a direct change in striving for specific goals tended to gain the least from mindfulness interventions, and often reported disappointment and frustration. In contrast, those adopting a view of mindfulness as a non-striving approach without expecting a quick fix showed the most benefit.

Reports of detrimental effects from using mindfulness amongst participants in Study 2 of this dissertation also attest to the importance of expectations. In particular, those few who reported negative effects resulting from mindfulness practice held initial expectations that it would result in feelings of calm and experienced distress and disappointment when this did not occur. Thus, a mismatch between initial expectations and what is experienced during and following the practice of mindfulness appears very relevant to outcomes, with those individuals maintaining high expectations that mindfulness will provide quick relief from uncomfortable internal experiences seeming to gain the least benefit from the practice.

As has been outlined in the introduction to the dissertation, ongoing practice is argued to be paramount to fully comprehending mindfulness (Grossman, 2008; Kabat-Zinn, 2003; Khong, 2009; Shapiro, et al., 2003; Woods, 2009). As Sauer et al. (2011) put it, “in some ways, mindfulness is like swimming – it is best learned by doing” (p. 5). There is currently mixed evidence regarding the association between amount of mindfulness practice and reported benefits (Carmody & Baer, 2008; Toneatto & Nguyen, 2007), although certainly many individuals learning mindfulness in group and individual contexts
report that continued practice is important (Finucane & Mercer, 2006; Horst, et al., 2013; Mackenzie, Carlson, Munoz, & Speca, 2007; York, 2007). Moreover, a central component of programs such as MBSR and MBCT is home mindfulness practice.

Whether one perseveres with mindfulness after initial instruction and experience may be influenced by an individual’s perceptions of mindfulness, as well as their initial experience with it and the state induced during practice and whether this parallels expectations. On the one hand, participants may continue to practice if their initial experiences are positive, such as producing a sense of calm and peacefulness. For instance, Walker and colleagues (2010) report on one participant of a modified MBCT program who said of the body scan: “it’s rather relaxing, and I can find time to do that” (p.241). However, such positive experiences may pose a barrier later on if these initial states cannot be replicated. Specifically, Finucane and Mercer (2006) note one female participant of an MBCT program who “became frustrated and demoralised because she could not achieve the degree of relaxation she initially experienced while doing the exercises in the group” (p. 10). Conversely, those in the group who were able to engage in the mindfulness practices in a relatively non-striving manner more often persisted with the practices after the course ended. As observed by Kostanski and Hassed (2008), “many people, when they do not experience some exalted meditate state that they think they should experience, will often try harder, fail, get discouraged and consequently stop” (p. 17).

The above research findings suggest that initial perceptions of mindfulness are important to both the outcomes of mindfulness interventions, as well as the likelihood of individuals continuing to practice mindfulness regularly. More generally, perceptions and expectations in psychotherapy are deemed to play a role in intervention outcomes (Greenberg, Constantino, & Bruce, 2006; Kirsch, 1990; Weinberger & Eig, 1999). In
particular, the induction of a positive expectancy set for change is a dimension purported to play an important role in outcomes across all psychotherapy models (Frank & Frank, 1991; Sprenkle & Blow, 2004). This refers to enhancing a patient’s belief “that therapy will lead to improvement” (Greenberg, et al., 2006, p. 659). Indeed, treatment is more effective when patients believe the treatment both can be, and actually is, effective (Kirsch, 1997).

However, the relationship between expectations and outcomes for mindfulness interventions is not necessarily straightforward. As has been detailed earlier in this dissertation, mindfulness is somewhat contradictory, at once both a practice with no aims of direct change while concurrently being associated with many beneficial outcomes with regular practice. The notion of having no goals when engaging in mindfulness practice “in principle clashes with most formalised approaches to therapy” (Kostanski & Hassed, 2008, p. 16). While the majority of individuals attend psychotherapy or seek out interventions such as mindfulness with specific goals such as feeling better or more relaxed (Roemer & Orsillo, 2003), they are typically encouraged to “put on hold” expectations about outcomes during practice. Subsequently, such individuals may not benefit from a positive expectancy effect. As has been illustrated however, associating the practice of mindfulness with potential outcomes or experiences, such as relief from physical ailments or emotional difficulties, or offering it as curative, may lead to unrealistic expectations and in turn “misunderstanding and disappointment” (Rosenbaum, 2009, p. 209) and self-evaluation of one’s practice rather than curious attention to it (Farb, 2012).

This raises an important question of how best to foster a positive expectancy for mindfulness interventions whilst underscoring the importance of non-striving and letting go of expectations. Roemer and Orsillo (2003) have previously outlined the approaches of the various mindfulness-based clinical interventions to this issue: MBCT encourages
patients to believe mindfulness can be useful while giving up expectations for change; ACT challenges previously unhelpful change agendas and focusing on valued actions; and DBT encouraging patients to find a “synthesis” between acceptance and change. More generally, Farb (2012) suggests to distinguish between intentions and expectations of mindfulness, whereby “mindfulness training may still contain explicit suggestions in terms of the intended contents of awareness [i.e., intentions], without dwelling on the outcomes of these intentions as successful or failed goal states [i.e., expectations]” (p. 36). The importance of addressing unrealistic expectations about mindfulness is highlighted by several authors. Specifically, Sears et al. (2011) stress that those teaching mindfulness clarify that “the goal (or non-goal) is awareness rather than a pleasant metaphysical experience, and that while transformation may occur, it is a long rather than instantaneous process” (p. 172), and suggest that this might reduce drop-out from mindfulness training. Similarly, Crane and Williams (2010) point out that establishing realistic expectations early about the challenging and potentially difficult nature of mindfulness can play a role in enhancing motivation and increasing persistence, and Sauer et al. (2011) advise that those learning mindfulness be informed it “is not a remedy such as anesthesia or analgesia… it will help an individual ‘only’ to live with the reality of a present moment, it should correspondingly be understood as a change in one’s point of view, rather than a direct attempt to diminish a symptom” (p. 5). Individuals undertaking mindfulness training themselves identify that the introduction of mindfulness without associated expectations is useful (Horst, et al., 2013).

Clearly, the rationale or explanation provided in the beginning stages of mindfulness training, including about the aims, goals and potential benefits of mindfulness practice is deemed crucial in influencing client understandings and expectations of
mindfulness, and in turn their experience of the practice. As noted by Dorjee (2010) and clearly demonstrated in Study 1 of this dissertation, the explanations professionals use in describing mindfulness can differ immensely, and potentially more so if mindfulness is being used outside of formalised mindfulness-based intervention frameworks. This is important because, as Chiesa et al. (2011) note, “even subtle differences in meditation instructions could be related to significantly different neuropsychological findings” (p. 14).

A small number of laboratory-based studies support the notion that the instructions or explanation given prior to mindfulness practices can play an important role in outcomes. For instance, Zeidan and colleagues (2010a) compared the impact of three different sets of instructions given to participants with no experience with meditation. For 20 minutes each day over three consecutive days, a mindfulness meditation group were directed to sit quietly in a chair with eyes closed and just notice and let go of any arising thoughts and return attention back to the breath when it wandered. In contrast, those in a sham group were instructed to sit quietly in a chair with eyes closed and “take deep breaths as we sit in meditation” (p. 868), while those in a third control group were given no specific instructions except to sit for 20 minutes each session and interact with one another if desired. The results demonstrated that those in the sham condition showed decreases in tension and anxiety levels equivalent to those in the mindfulness meditation condition, however did not gain as much benefit for mood variables and heart rate. This highlights a potential role for the belief in meditation’s palliative effects in mindfulness interventions, but also demonstrates the importance to outcomes of explaining how and what one does cognitively when practicing mindfulness.

Another study undertaken by Hayes et al. (1999) provided subjects with one of three 90 minute rationales prior to a laboratory-based cold pressor task, and examined
participants' subsequent pain tolerance, pain ratings and subjective anxiety. Participants in an acceptance-based rationale group were given information about concepts such as the ability to have thoughts and feelings and not act upon them, the ineffectiveness of attempting to control unwanted thoughts and feelings and the distinction between thoughts and feelings and "who we are", with the aim that participants may be able to engage in behaviour (i.e., keep one's hand in ice water) irrespective of thoughts and feelings about the task. A control-based rationale group received information about various coping techniques to assist in modifying pain, such as positive self-talk, controlled breathing and positive imagery, while a third attention/placebo rationale group were given general education about pain and discussed their previous experiences and coping with pain. The results indicated that those in the acceptance-based group kept their hands underwater for significantly longer showing greater pain tolerance, while there was no difference between the three conditions on pain ratings or anxiety. The authors interpreted these findings as demonstrating that "a rationale that undermines private events as fundamental determinants of behaviour can have a greater impact on overt forms of pain behaviour than a rationale that attempts to change the form and frequency of thoughts and feelings as precursors to behavioural change" (Hayes, Bissett, et al., 1999, p. 43). This study provides some indication that differences in outcomes, in this case pain tolerance, may result according to the information initially provided, specifically when one rationale emphasises direct change of experience while another emphasises acceptance and awareness of thoughts and feelings without being fused with and behaviourally driven by these. Along similar lines, a more recent study by Masuda and colleagues (2004) showed that even a very brief five minute initial rationale and training in defusion from negative self-referent thoughts led to
lower thought-related discomfort and believability compared to a rationale promoting the suppression of negative thoughts and providing practice in thought control strategies.

While offering a useful starting point, the above studies do not directly address the question of whether attempts to manage unrealistic expectations about mindfulness by emphasising the non-striving nature of the practice result in different expectations and overall outcomes relative to initial descriptions of mindfulness that emphasise potential benefits. Although a number of authors have called for exploration of the role of expectancy effects in mindfulness research (e.g., Eberth & Sedlmeier, 2012; Farb, 2012; Kerrigan, et al., 2011; Mason & Hargreaves, 2001; Zeidan, Johnson, Gordon, & Goolkasian, 2010b), and in particular the role of the trainer’s suggestions in inducing intentions for mindfulness practice, there remains a significant gap in the research on this issue (Farb, 2012).

**The Current Study**

In light of strong assertions in the literature and previous research suggesting expectancy plays an important role in outcomes of mindfulness interventions, and with the rationale or instructions provided to individuals about mindfulness a vital factor in influencing expectancies (Eberth & Sedlmeier, 2012), the current study compared the effect of two different rationales given prior to a brief laboratory-based mindfulness induction and a control condition which did not receive a rationale. The rationales were developed in line with the broad distinctions in understandings of mindfulness amongst participants of Study 1 and 2 and earlier peer-reviewed literature, with one rationale emphasising the benefits of mindfulness (from here on referred to as the benefits rationale), and the other rationale highlighting non-striving and non-judgmental observation of all
internal experiences and preparing individuals for the potential to experience discomfort (hereon in referred to as the non-striving rationale).

Outcome measures included mood variables (i.e., positive and negative affect in the moment, state anxiety), defusion from a negative self-relevant thought, state mindfulness, self-reported likelihood of future use of mindfulness, and physiological markers including blood pressure, pulse, and heart rate variability, which have previously been included as variables in laboratory-based mindfulness inductions. The study had several primary aims — to examine the effect of providing two different rationales or no rationale on expectations and self-report and physiological outcomes of a brief mindfulness intervention, and to explore the factors that might influence reported likelihood of future mindfulness use following the induction. The specific research questions and hypotheses are set out below.

1. Are there observable changes in self-report and physiological variables and evidence of a state of mindfulness following a brief 15 minute mindfulness induction? Specifically, it was predicted that:
   a) negative affect, state anxiety and defusion would decrease from pre to post, while positive affect would increase;
   b) blood pressure and pulse would decrease from immediately pre to post;
   c) indices of heart rate variability would change during the mindfulness induction compared to pre and post, with high frequency increasing and low frequency and low to high frequency ratio decreasing; and
   d) a state of mindfulness (reflected by curiosity and decentering) would be induced following the mindfulness induction.

2. Does the rationale provided to participants prior to a brief mindfulness induction affect self-report or physiological outcomes? It was predicted that:
a) participants given the benefits rationale would report poorer outcomes (contrary to the above predicted directions of change) relative to those in the non-striving rationale group. This prediction was made in line with previous research findings that the impact of expectations of immediate positive benefits can be worse outcomes, distress, frustration, disappointment and a sense of failure, in contrast to more realistic expectations which tend to minimise such effects; and

b) participants provided no rationale would display better outcomes than those given the benefits rationale but poorer than those in the non-striving rationale condition.

3. Do expectations of immediate benefit differ as a result of providing no rationale, a rationale that emphasises overall benefits of mindfulness, or a rationale that emphasises letting go of striving during the practice, prior to a brief mindfulness practice? It was predicted that participants in the benefits rationale group would endorse higher expectations of benefit following the rationale manipulation compared to those in the non-striving and no rationale conditions.

4. Are expectations related to self-reported or physiological outcomes? It was predicted that, irrespective of rationale condition, those with higher expectations of benefit would report poorer outcomes compared to those with lower expectations of immediate benefit.

5. Does rationale condition, expectations of immediate benefit, changes in self-report variables or state mindfulness associated with the mindfulness induction relate to expressed future use of mindfulness? It was predicted that:

   a) participants in the non-striving rationale condition and those reporting lower
expectations of benefit would be more likely to indicate future use of mindfulness compared to those in the benefits or no rationale conditions or those with higher expectations of benefit, based on prior research suggesting that perseverance with mindfulness practice and lower drop-out rates are associated with more realistic expectations of mindfulness; and

b) participants who experienced the greatest change toward a more pleasant state in terms of self-report outcomes following the mindfulness induction (i.e., improved mood, less anxiety, more defusion from negative thoughts) would be more likely to consider using mindfulness in the future, with research findings indicating initial enjoyable experiences with mindfulness to be predictive of later practice.

Method

Participants.

Participants were 203 adults, with the majority (approximately 90%) undergraduate psychology students and the remainder general community members. A priori power calculations were performed using G-Power 3.1.0 (Faul, Erdfelder, Lang, & Buchner, 2007). Results suggested this sample size would be sufficient to detect medium effect sizes (as per reported effect sizes for brief, laboratory-based mindfulness inductions for mood and physiological activity; Zeidan, Johnson, et al., 2010a) for the statistical analyses employed, with the power level set at .85. Participants were recruited via advertising flyers (see Appendix M) placed on university and community notice boards, and electronic notices (see Appendix N) displayed on the ANU website. Individuals with little or no experience with mindfulness or meditation were specifically targeted in recruitment
materials to minimise interference of pre-existing knowledge about or experience with mindfulness on the impact of the rationale induction. The use of a naïve sample is also in accord with other laboratory-based mindfulness studies (e.g., Ditto, Eclache, & Goldman, 2006; Kingston, et al., 2007; Takahashi et al., 2005; Zeidan, Johnson, et al., 2010a). In keeping with protocols from previous studies (e.g., (Arch & Craske, 2006; Takahashi, et al., 2005; Tang et al., 2009), individuals with a heart condition or pacemaker, defibrillator or other implanted device, respiratory or autonomic nervous system conditions, or pregnant were ineligible to take part in the study to reduce interference with the physiological measurements. No other exclusion criteria were applied.

The final sample comprised 200 participants (68% female), ranging in age from 17 to 73 years, with a mean age of 20 years ($SD = 6$ years). Just over one quarter of the sample reported having a prior awareness of the term mindfulness, while only 15% reported having had their own meditation practice of any kind. Seventy one per cent of participants reported that English was their first language. For the main analyses, there were 68 participants each in the benefits and non-striving rationale groups, and 64 participants in the no rationale group.

Materials.

Participants completed a number of measures, as described below and shown in full at Appendix O.

Demographics.

Demographic information was collected from participants pertaining to gender, age and whether English was their first language.
Familiarity with mindfulness and experience with meditation.

Participants’ familiarity with mindfulness and mindfulness-based meditation more generally was assessed prior to testing to take account of any pre-existing understandings when exploring the impact of the rationale manipulation. Participants were asked “Do you have an awareness of what is referred to by the term mindfulness (as used in psychological therapy, or associated with personal development)?” and “Have you ever had a regular mindfulness-based meditation practice?”.

Depression Anxiety Stress Scale-21 item version (DASS-21).

The 21-item Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995) is a self-report measure with three subscales designed to assess the presence and severity of the negative emotional states of depression, anxiety and stress. Each subscale consists of 7 items, such as “I couldn’t seem to experience any positive feeling at all” (depression subscale), “I felt scared without any good reason” (anxiety subscale), and “I found it hard to wind down” (stress subscale). For each item, respondents indicate how much the statement applied to them over the past week on a 4-point scale, from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). Separate subscale scores ranging from 0 to 42 are calculated by summing the relevant subscale item scores and multiplying by two (allowing comparison with the original 42-item Depression Anxiety Stress Scale normative data), with higher scores indicating higher levels of depression, anxiety and stress respectively.

The 21-item version retains adequate reliability and validity, demonstrating Cronbach’s alphas of .94, .87, and .91 for the depression, anxiety and stress subscales respectively (Antony, Bieling, Cox, Enns, & Swinson, 1998), evidence of convergent and discriminant validity when compared with other validated measures of depression and
anxiety (Henry & Crawford, 2005), as well as showing concurrent validity (Antony, et al., 1998). For the present study, Cronbach’s alphas were acceptable, specifically .80 for the depression subscale, .67 for the anxiety subscale, and .77 for the stress scale.

**Rationale manipulation check (pre-expectations).**

A set of five items was created for this study to measure participants’ expectations regarding the anticipated effects of the mindfulness exercise they would be completing immediately after receiving either one of the two active rationales or no rationale. Expectations were not measured prior to the provision of rationales to avoid priming effects, and it was deemed that the process of allocation to rationale conditions would balance out any pre-existing differences in expectations. Participants were asked to rate their level of agreement with five statements each beginning with “I expect today’s mindfulness exercise will help me to...” from 1 (strongly disagree) to 5 (strongly agree), with items referring to changes in internal experiences such as feeling more relaxed or less anxious. Item scores were summed to create a scale total ranging from 5-25, with higher scores indicating greater expectations of direct benefit of the mindfulness induction.

Factor analysis of these items supported inclusion of all proposed items in one unifying factor “expectations of benefit”. (Full details of the factor analysis are available in Appendix P). Reliability analyses of the items comprising the pre-expectations variable indicated high internal reliability for the scale, with a Cronbach’s alpha of .81.

**Positive and Negative Affect Schedule (PANAS).**

The PANAS (Watson, Clark, & Tellegen, 1988) is a 20-item self-report measure comprised of two subscales, Positive Affect (PA) and Negative Affect (NA). It is reported to be sensitive enough to capture transitory shifts in mood (Thompson & Waltz, 2007) and
has been used previously to evaluate mood changes of brief mindfulness inductions (e.g., Brown & Ryan, 2003; Chambers, Lo, & Allen, 2007; Kuehner, Huffziger, & Liebsch, 2009; Thompson & Waltz, 2007). Participants rate items on a 5-point scale from 1 (very slightly or not at all) to 5 (extremely) according to how well each affect word describes how they are feeling for a given timeframe, which in the present study was “right now, at this very moment”. PA items include “excited” and “content” and NA items include “scared” and “hostile”. Subscale scores are computed by summing the respective PA and NA items. Possible scores for each subscale range from 10 to 50, with higher scores on PA reflecting greater levels of enthusiasm, activity and alertness, and higher scores on NA indicating greater subjective distress and unpleasurable engagement (Watson, et al., 1988).

The PANAS demonstrates high reliability, with Watson and colleagues (1988) reporting Cronbach’s alpha coefficients of .89 and .85 for the PA and NA scales respectively in a student sample, and Crawford and Henry (2004) reporting internal consistencies of the subscales as .89 and .85 respectively in a general adult population. Evidence of validity is also demonstrated, with measures of general distress and dysfunction, depression, and state anxiety more highly correlated with NA (positive correlations) than PA (negative correlations) (Watson, et al., 1988). For the present study, internal reliability was high, with Cronbach’s alphas for the PA subscale .87 and .89 respectively pre and post the mindfulness exercise, and for the NA scale .86 and .84.

**State-Trait Anxiety Inventory-Form Y (STAI-Y) – Short-form of the State scale**

Marteau and Bekker’s (1992) short-form of the 20-item State scale of the STAI-Y (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a self-report measure of subjective anxious arousal. It has been used previously as an outcome measure following a brief, laboratory based mindfulness induction (Zeidan, Johnson, et al., 2010a). Participants
rate how well each of six statements describe how they feel “right now, at this moment”, from 1 (not at all) to 4 (very much so). Items include “I feel calm” and “I am worried”. Relevant items are reverse scored and all item scores summed to compute a total scale score ranging from 6 to 24, with higher scores indicating greater anxiety. The short-form measure demonstrates acceptable internal reliability with alphas of .82 (Marteau & Bekker, 1992) and .79 (Tluczek, Henriques, & Brown, 2009) reported, and shows evidence of concurrent validity when correlated with the original 20-item State scale (Marteau & Bekker, 1992; Tluczek, et al., 2009). For the present study, Cronbach’s alphas for the STAI short form were .80 pre-test and .82 post-test.

**Defusion items**

Participants’ degree of defusion, or ability to distance or disconnect from the meaning of thoughts and feelings and instead experience them directly as they are as segments of language that do not have to be treated seriously or bought into, was assessed using a set of items based upon previous studies by Masuda et al. (2004) and Keogh (2008). These items were included as an indicator of the degree of participants’ changed relationship to their thoughts and feelings to become more accepting and tolerant of unpleasant internal experiences, a key premise of mindfulness (Alberts & Thewissen, 2011). The inclusion of such a measure in studies exploring the effects of mindfulness has been recommended (Roemer & Orsillo, 2003).

Participants were asked to generate two negative self-relevant statements and rate current levels of discomfort, believability and willingness with regard to each on a scale from 0 to 100. Self-statements were handwritten using pen and paper (see Appendix Q) to assist with recall for post-test measurement; written self-statements were known only to the individual participant and destroyed securely at the conclusion of the session, with only
information about ratings collected for analysis. Scores for each of the two discomfort, believability and willingness items were averaged and transformed to a value ranging between 0 – 1 for each subscale. Subsequently, for the discomfort subscale higher scores indicate higher levels of discomfort associated with being in contact with the negative self-statements; for believability higher scores indicate more self-statement believability; and for willingness higher scores suggest more willingness to be in contact with the self-statements respectively. As such, higher scores on the discomfort and believability subscales and lower scores on the willingness subscale reflect a greater degree of cognitive fusion.

Factor analysis of these items at pre and post-test supported inclusion of all six proposed items loading onto three distinct factors, discomfort, believability, and willingness. Although restricted given each subscale contained only two factors, subsequent reliability analyses of the three subscales demonstrated Cronbach’s alphas of .76, .65 and .70 respectively for discomfort, believability and willingness at pre-test, and .85, .74 and .82 at post-test. Full details of the factor and reliability analyses are available in Appendix R.

**Toronto Mindfulness Scale (TMS).**

The Toronto Mindfulness Scale (Lau et al., 2006) is a 13-item self-report questionnaire constructed to retrospectively measure individuals’ subjective experience of a mindfulness state following mindfulness meditation. At the time of the present study, it was the sole state-based mindfulness measure, and has been used in previous studies to verify whether a mindfulness meditation induced a mindful state (e.g., Sharpe et al., 2010; Thompson & Waltz, 2007).
The measure is proposed to have two factors, curiosity and decentering. The curiosity subscale contains 6 items that reflect "an attitude of wanting to learn more about one's experiences" (Lau, et al., 2006, p. 1460) such as "I was curious to see what my mind was up to from moment to moment". The 7 items of the decentering subscale "emphasise awareness of one's experience with some distance and disidentification rather than being carried away by one's thoughts and feelings" (Lau, et al., 2006, p. 1452), for example, "I was receptive to observing unpleasant thoughts and feelings without interfering with them". Participants are asked to reflect on an immediately preceding mindfulness meditation session and indicate the extent they agree with each of the items using a 5-point scale from 0 (not at all) to 4 (very much). Total subscale scores are derived by summing the relevant items and range from 0 to 24 for curiosity and 0 to 28 for decentering, with higher scores indicating greater curiosity and decentering respectively.

The authors of the TMS report sound psychometric properties, including high internal consistency (α = .93 for curiosity and α = .91 for decentering), and evidence of convergent, divergent, and criterion validity (Lau, et al., 2006). Sharpe et al. (2010) also report good internal consistency for curiosity (α = .91) and decentering (α = .72). For the present study, Cronbach's alphas were .88 for the curiosity subscale and .67 for the decentering subscale.

**Mindfulness induction engagement.**

A single item was adapted from Arch and Craske (2006) to assess the degree participants reported engaging in the mindfulness exercise. Directly following the mindfulness induction, participants rated how true the following statement was for them: "I did my best to follow the guided instructions during the mindfulness exercise", using a 7-point scale, from 1 (very untrue) to 7 (very true).
Future use of mindfulness.

To assess participants’ reported likelihood of using mindfulness in the future following their participation in the mindfulness induction, a dichotomous yes/no response item was devised for the purposes of this study, “Would you consider using mindfulness exercises, such as the one you did today, in the future?”.

Blood pressure.

Blood pressure (BP) was assessed as an indicator of autonomic arousal, in line with previous laboratory-based mindfulness research studies (Ditto, et al., 2006; Kingston, et al., 2007; Zeidan, Johnson, et al., 2010a). Systolic blood pressure (SBP) measures the pressure in the arteries when the heart beats, and diastolic blood pressure (DBP) measures the pressure in the arteries between heartbeats. Blood pressure was measured using automatic personal wrist blood pressure monitors (Omron Healthcare) Devices have an accuracy range of within +/- 3mmHg. Measurements were taken at four time points – once at the time of fitting prior to completion of Questionnaire Part 1, both immediately before and after the mindfulness induction, and again at the conclusion of the study following completion of Questionnaire Part 3.

Pulse.

Pulse rate data were collected concurrently with blood pressure at four time points using wrist monitors (Omron Healthcare). Previous mindfulness induction research has collected pulse of heart rate information as an indicator of physiological arousal (Kingston, et al., 2007; Tang, et al., 2009; Zeidan, Johnson, et al., 2010a).
Heart rate variability.

Heart rate variability (HRV) refers to the duration of inter beat intervals of the heartbeat, with research suggesting that higher variability in this time interval is a marker of health and adaptability (Thayer, Ahs, Fredrickson, Sollers, & Wager, 2012), and associated with greater emotional regulation as it allows greater responsiveness to situational demands (Appelhans & Luecken, 2006). This physiological measure has previously been used to assess change in autonomic activity related to relaxation and mindfulness tasks (e.g., Mankus, Aldao, Kerns, Mayville, & Mennin, 2013; Sarang & Telles, 2006).

Heart rate variability data were continuously recorded using Suunto Memory Belts (Suunto, 2007) positioned around the chest for recording heart rate variability information. The monitors began recording automatically upon detecting a heart rate, at a sampling rate of 1000 Hz. Participant data were downloaded following each participation session using Training Manager software (Suunto, 2005) and were edited and analysed offline using Kubios HRV analysis software (MathWorks, 2012). Data were segmented into three time periods – from the time of fitting the HRV monitoring belt through to immediately prior to the mindfulness exercise (pre-induction), during the mindfulness exercise (during induction), and from the conclusion of the mindfulness exercise to the time of removal of the HRV monitors at the completion of the experiment (post-induction), with each segment recording approximately 15 minutes in length. 30-second segments were trimmed from the start and end of each section to account for error (caused by putting the belts on, off, and any movements before and after the mindfulness exercise). Automatic artefact correction was applied at the lowest level necessary for each participant’s data. The HRV power spectrum was obtained using Fast Fourier Transformation analysis. For the present study,
frequency domain methods were used as indices of heart rate variability, with high frequency (HF; 0.15-0.40 Hz) and low frequency (LF; 0.04-0.15 Hz) bands of power spectrum ranges used, as well as the ratio of LF to HF (LF/HF). HF is primarily a measure of cardiac parasympathetic activity, LF is often used as an index of sympathetic modulation, while LF/HF is deemed to reflect overall balance between the sympathetic and parasympathetic systems (Appelhans & Luecken, 2006; Malliani, Pagani, Lombardi, & Carutti, 1992). Heart rate variability data were available for 183 participants, due to recording faults for some participants.

**Rationale manipulations.**

The study utilised three rationale conditions. In the no rationale condition, participants received no rationale prior to engaging in the mindfulness exercise. In the benefits and non-striving conditions, which were equivalent in length, distinct brief introductions to mindfulness were provided verbally by the researcher to participants immediately prior to the mindfulness exercise. In the benefits condition, participants received a brief definition of mindfulness emphasising having an open, non-judgemental, and non-evaluative stance toward internal and external experiences, whether pleasant or unpleasant. A number of benefits (such as reduced rumination and distress, and improved mood and coping) that may occur with regular practice of mindfulness over time were then described, including reference to research evidence of such benefits. In the non-striving condition, participants received the same introductory definition of mindfulness emphasising openness and non-judgment, however no specific benefits of practicing mindfulness were mentioned. Instead, it was highlighted that the goal of the mindfulness exercise was simply developing an awareness of the present moment. It was stressed that there was no specific aim to relax or achieve any particular state, and that participants may
have experiences such as anxiety, discomfort, and boredom, and if so these were to simply
be observed non-judgementally. Full scripts of the benefits and non-striving rationales are
provided in Appendix S. The active rationales incorporated common descriptions of and
findings regarding mindfulness interventions from the clinical and academic literature.

**Procedure.**

Prior to commencing data collection, ethics approval was obtained from the ANU
HREC. Participants were offered either 1 hour of research participation credit (for ANU
first year psychology students) or $10 as incentive for taking part in the study.

A total of 100 sessions were scheduled over several months, with each session pre-
designated as using the benefits rationale, the non-striving rationale or no rationale in
sequence beginning from the first session. Participants were assigned to a rationale group
based on their stated availability to attend scheduled sessions, with the pre-determined
rationale of each session unknown to participants.

Data were collected in one hour sessions with between one and four participants, at
one of five time slots across the day (9am, 10.30am, 1pm, 2.30pm and 4pm). The testing
room was equipped with four personal computers on individual desks with office chairs
and two large screens to provide privacy to participants whilst fitting and removing HRV
monitors. To minimise interference with physiological measurements, participants were
requested to avoid consuming caffeine or engaging in vigorous physical activity for at least
two hours prior to their scheduled participation session, as per Ditto and others (2006).

The procedure of testing sessions is illustrated in Figure 15. Upon arriving,
participants were welcomed and seated at one of the four computer workstations. Both
written and verbal briefing of the study was provided (see Appendices T and U) in which
participants were told the experiment aimed to find out more about how a brief
mindfulness exercise might affect people differently, with the true purpose of exploring the effect of different rationales concealed to reduce response bias. Consent forms were then signed and collected (see Appendix V). Participants fitted HRV chest straps which began continuous monitoring immediately behind privacy screens, then secured wrist monitors for blood pressure and pulse and took a first reading. Participants completed the pre-induction self-report measures on individual PCs using a secure electronic survey platform. Those in the two active rationale conditions completed Part 1 of the questionnaire (including demographics and pre-test measures of mood and defusion; see Appendix O), before receiving the relevant rationale and then completing the pre-expectation items in Part 2 of the questionnaire (see Appendix O). Participants in the no rationale group completed Part 1 of the questionnaire immediately followed by Part 2. Together, Part 1 and Part 2 of the questionnaire took approximately 20 minutes to complete. All participants then took a second blood pressure and pulse reading.

The mindfulness induction followed immediately after this, with brief instructions introducing the mindfulness exercise provided to participants following the procedure of Thompson and Waltz (2007) to assist participants with no previous exposure to mindfulness meditation to engage in the exercise. The induction was adapted from breath and body mindfulness practice scripts described by Segal and colleagues (Segal, et al., 2002, p. 150 & p. 164). These scripts were combined to create a single, fifteen minute mindfulness exercise which was read live by the researcher. The full script including the introductory instructions is in Appendix W.

Following the mindfulness induction participants were asked to take a third blood pressure and pulse reading. All participants then completed Part 3 of the questionnaire (comprising post-test measures of mood and defusion, a mindfulness induction
engagement item, state mindfulness measure, and future use item; see Appendix O) which took between 10 to 15 minutes to complete, before taking a fourth blood pressure and pulse reading and removing their wrist monitors and chest straps. Participants were provided with a verbal and written debriefing regarding the true aims of the study (shown at Appendices X and Y), and reminded they were free to withdraw their information without penalty. A commonly referenced definition of mindfulness in the psychological literature was also provided to participants, along with information regarding services and supports, mindfulness resources, and contact details for the researcher and the ANU HREC.
Chapter 5: Study 3 – The Role of Expectations on Mindfulness Practice

All participants
N = 203

Introduction and Briefing (~5mins):
- Information sheet provided
- Oral briefing
- Written consent gained
- Wrist BP and pulse monitors fitted
- HRV chest straps fitted; continuous HRV monitoring begun

Pre-testing Phase 1 (~15mins):
- BP & pulse Time 1
- HRV Period 1
- Questionnaire Part 1

Experimental session allocated to one of three rationale conditions

No rationale condition
n = 66

Benefits rationale condition
n = 68

Non-striving rationale condition
n = 69

Benefits rationale provided

Pre-testing Phase 2 (~5mins):
- Questionnaire Part 2
- BP & pulse measurement Time 2

Mindfulness Induction Phase (15mins):
- HRV Period 2
- Mindfulness induction

Post-testing Phase (~20mins):
- HRV Period 3
- BP & pulse measurement Time 3
- Questionnaire Part 3
- BP & pulse measurement Time 4

Debriefing and Closure (~5mins):
- HRV chest straps removed
- Wrist BP & pulse monitors removed
- Debriefing sheet provided
- Oral debriefing
- Self-statements shredded

Benefits rationale provided

Pre-testing Phase 2 (~5mins):
- Questionnaire Part 2
- BP & pulse measurement Time 2

Mindfulness Induction Phase (15mins):
- HRV Period 2
- Mindfulness induction

Post-testing Phase (~20mins):
- HRV Period 3
- BP & pulse measurement Time 3
- Questionnaire Part 3
- BP & pulse measurement Time 4

Debriefing and Closure (~5mins):
- HRV chest straps removed
- Wrist BP & pulse monitors removed
- Debriefing sheet provided
- Oral debriefing
- Self-statements shredded

Non-striving rationale provided

Pre-testing Phase 2 (~5mins):
- Questionnaire Part 2
- BP & pulse measurement Time 2

Mindfulness Induction Phase (15mins):
- HRV Period 2
- Mindfulness induction

Post-testing Phase (~20mins):
- HRV Period 3
- BP & pulse measurement Time 3
- Questionnaire Part 3
- BP & pulse measurement Time 4

Debriefing and Closure (~5mins):
- HRV chest straps removed
- Wrist BP & pulse monitors removed
- Debriefing sheet provided
- Oral debriefing
- Self-statements shredded

Figure 15. Flowchart of Study 3 procedure.
Results

All quantitative data were analysed using SPSS Version 20.0 (IBM Corporation, 2011) with an alpha level of .05. Prior to analyses of the primary research questions, independent variables were examined for accuracy of data entry, missing values, and distribution patterns. As subsequent analyses were performed with both ungrouped data for regression and factor analysis, and grouped data for analyses of variance (ANOVAs) and logistic regression, variables were examined with all cases at once as well as separately for the three rationale groups (Tabachnick & Fidell, 2001). Three cases were deleted from the original data set due to extensive missing data. Remaining missing values made up less than 5% of data, and Little MCAR’s test indicated values were missing completely at random, therefore an Expectation Maximisation procedure was undertaken in SPSS to impute missing values as per Tabachnick and Fidell (2001). A check for outliers within categorical variables showed satisfactory splits. For continuous variables, univariate outliers were identified on a number of variables by extreme z-scores beyond 3.29 (Tabachnick & Fidell, 2001). Several variables also demonstrated non-normal distributions, checked via kurtosis and skewness values, normality tests, normality plots, and histograms in accordance with Tabachnick and Fidell (2001). Trial transformations were performed on non-normally distributed variables; however in many cases this did not improve approximation to a normal distribution. Consequently, all primary analyses were undertaken using both transformed and original variables, and as there were no differences in results, non-transformed variables were retained and all results reported for the original variables. A windsorising procedure was applied to univariate outliers to achieve normality, changing outlying values to one unit above or below the next most outlying score (Tabachnick & Fidell, 2001). Preliminary checks on assumptions for ANOVA
Chapter 5: Study 3 – The Role of Expectations on Mindfulness Practice

indicated no violation of the assumptions of homogeneity of variances, multi-collinearity and sphericity. Multivariate outliers were screened for during the main analyses using Mahalanobis distance, however none were identified.

**Personal characteristics, baseline and time of day differences by rationale condition.**

To identify any pre-existing differences between rationale groups at pre-induction, a series of separate one-way ANOVAs for continuous variables and chi-square tests of independence for categorical variables were conducted (Table 3).

Table 3

*Descriptive statistics and results of significance tests for personal characteristics by rationale group*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Rationale condition</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No rationale&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Benefits&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Non-striving&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Total&lt;sup&gt;d&lt;/sup&gt;</td>
<td>( \chi^2 )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (%)</td>
<td>79.7</td>
<td>57.4</td>
<td>67.6</td>
<td>68</td>
<td>7.56*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English as first language (%)</td>
<td>79.7</td>
<td>69.1</td>
<td>64.7</td>
<td>71</td>
<td>3.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness of mindfulness (%)</td>
<td>18.8</td>
<td>30.9</td>
<td>30.9</td>
<td>27</td>
<td>3.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of meditation (%)</td>
<td>14.1</td>
<td>13.2</td>
<td>19.1</td>
<td>15.5</td>
<td>1.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>( M )</th>
<th>( SD )</th>
<th>( M )</th>
<th>( SD )</th>
<th>( M )</th>
<th>( SD )</th>
<th>( M )</th>
<th>( SD )</th>
<th>( F )</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>17-73</td>
<td>20.13</td>
<td>7.19</td>
<td>20.41</td>
<td>4.22</td>
<td>20.85</td>
<td>6.22</td>
<td>20.47</td>
<td>5.96</td>
<td>.25</td>
</tr>
<tr>
<td>Depression</td>
<td>0-34</td>
<td>10.38</td>
<td>7.68</td>
<td>10.21</td>
<td>7.38</td>
<td>9.68</td>
<td>7.46</td>
<td>10.08</td>
<td>7.47</td>
<td>.16</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0-32</td>
<td>8.25</td>
<td>6.16</td>
<td>8.53</td>
<td>5.28</td>
<td>10.18</td>
<td>6.95</td>
<td>9.00</td>
<td>6.20</td>
<td>1.91</td>
</tr>
</tbody>
</table>

*Notes.* Potential range for Depression, Anxiety and Stress variables = 0-42. \( df \) for chi-square = 2; \( df \) for ANOVAs = 2, 197.

\( ^a N = 64; \ ^b N = 68; \ ^c N = 68; \ ^d N = 200. \)

\( * p < .05; \ ** p < .01; \ *** p < .001. \)
Results revealed no significant differences across the three rationale groups except for gender, for which there were significantly more females (79.7%) than males in the no rationale group than expected and significantly less females (57.4%) than males in the benefits rationale group than expected. Consideration was given to including gender as a covariate in subsequent analyses. However, although gender was linearly related to outcomes on several physiological variables, the correlations were relatively weak (≤ .3) and thus unlikely to have an impact on the analysis (Pocock, Assmann, Enos, & Kasten, 2002).

Although no differences were observed for familiarity with mindfulness or history of meditation by rationale condition, all analyses were run with and without these participants to ensure prior knowledge of and experience with mindfulness or meditation did not influence results. No differences in results were found, so results of analyses including the complete sample are reported.

Results of ANOVAs and chi square tests of independence for pre-test scores on self-report and physiological dependent variables by rationale group are displayed in Table 4, along with descriptive statistics.
Table 4

Descriptive statistics and results of significance tests for pre-test variables by rationale group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>Rationale condition</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No rationale&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Benefits&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Non-striving&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Pre PA</td>
<td>12-50</td>
<td>24.14</td>
<td>6.86</td>
<td>25.79</td>
<td>7.28</td>
<td>28.06</td>
<td>6.93</td>
<td>5.18**</td>
</tr>
<tr>
<td>Pre NA</td>
<td>10-34</td>
<td>14.48</td>
<td>5.02</td>
<td>14.10</td>
<td>5.00</td>
<td>14.74</td>
<td>5.10</td>
<td>0.27</td>
</tr>
<tr>
<td>Pre STAI</td>
<td>6-23</td>
<td>12.44</td>
<td>3.69</td>
<td>11.44</td>
<td>3.25</td>
<td>12.31</td>
<td>3.42</td>
<td>1.65</td>
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<tr>
<td>Pre-Believability</td>
<td>0-1</td>
<td>.705</td>
<td>.02</td>
<td>.70</td>
<td>.19</td>
<td>.69</td>
<td>.23</td>
<td>.15</td>
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<tr>
<td>Pre-Discomfort</td>
<td>0-1</td>
<td>.64</td>
<td>.23</td>
<td>.62</td>
<td>.23</td>
<td>.62</td>
<td>.26</td>
<td>.21</td>
</tr>
<tr>
<td>Pre-Willingness</td>
<td>.01-1</td>
<td>.51</td>
<td>.24</td>
<td>.55</td>
<td>.25</td>
<td>.53</td>
<td>.25</td>
<td>.41</td>
</tr>
<tr>
<td>Time 1 Pulse</td>
<td>44-123</td>
<td>81.56</td>
<td>13.48</td>
<td>79.03</td>
<td>13.45</td>
<td>80.13</td>
<td>14.17</td>
<td>.57</td>
</tr>
<tr>
<td>Time 2 Pulse</td>
<td>47-111</td>
<td>80.30</td>
<td>13.33</td>
<td>76.06</td>
<td>10.82</td>
<td>76.37</td>
<td>12.68</td>
<td>2.41</td>
</tr>
<tr>
<td>Time 1 SBP</td>
<td>85-135</td>
<td>105.27</td>
<td>8.57</td>
<td>107.26</td>
<td>10.13</td>
<td>106.85</td>
<td>9.78</td>
<td>0.80</td>
</tr>
<tr>
<td>Time 2 SBP</td>
<td>86-125</td>
<td>101.86</td>
<td>7.42</td>
<td>104.15</td>
<td>8.22</td>
<td>104.01</td>
<td>8.96</td>
<td>1.59</td>
</tr>
<tr>
<td>Time 1 DBP</td>
<td>48-86</td>
<td>65.61</td>
<td>7.55</td>
<td>67.06</td>
<td>7.95</td>
<td>66.31</td>
<td>7.54</td>
<td>0.59</td>
</tr>
<tr>
<td>Time 2 DBP</td>
<td>47-111</td>
<td>64.39</td>
<td>6.31</td>
<td>65.44</td>
<td>7.23</td>
<td>64.24</td>
<td>6.82</td>
<td>0.63</td>
</tr>
<tr>
<td>Period 1 LF</td>
<td>18.96-79.99</td>
<td>57.80</td>
<td>12.57</td>
<td>56.81</td>
<td>10.03</td>
<td>54.61</td>
<td>13.22</td>
<td>1.12</td>
</tr>
<tr>
<td>Period 1 HF</td>
<td>3.07-77.45</td>
<td>29.25</td>
<td>15.65</td>
<td>30.68</td>
<td>11.81</td>
<td>33.08</td>
<td>15.67</td>
<td>1.08</td>
</tr>
<tr>
<td>Period 1 LF/HF</td>
<td>0.24-19.52</td>
<td>3.06</td>
<td>2.92</td>
<td>2.28</td>
<td>1.25</td>
<td>2.54</td>
<td>2.57</td>
<td>1.76</td>
</tr>
</tbody>
</table>

Notes. PA = Positive Affect; NA = Negative Affect; STAI = State-Trait Anxiety Inventory.


<sup>a</sup>N = 64; <sup>b</sup>N = 68; <sup>c</sup>N = 68; <sup>d</sup>N = 200. 1 = Potential, 2 = Actual.

**p < .01.

Except for PA, results revealed no significant differences across the three rationale groups on pre-test variables. For pre-PA, the non-striving rationale group reported significantly higher pre-test scores than the no rationale group. To address this, pre-PA was
included as a covariate when examining the effects of the mindfulness induction and rationale condition.

A one-way ANOVA was also conducted to identify any differences between the groups according to the time of day that testing sessions occurred, an issue particularly relevant for physiological measures. Results showed no significant differences, $F(2, 197) = 1.63, p = .200$, with each rationale condition just as likely to occur at any of the five scheduled testing times.

**Engagement in mindfulness induction by rationale condition.**

A one-way ANOVA was performed to examine level of engagement with the mindfulness induction, and identify any potential differences across the three different rationale groups. There was a high level of engagement across the sample ($M = 6.21, SD = .94$), and no group differences were found, $F(2, 197) = 1.58, p = .209$.

**Main effects of mindfulness induction and rationale condition on self-report and physiological outcome measures.**

Pre and post scores on self-report variables are displayed in Table 5.
To establish if there were significant changes associated with the mindfulness induction, and to determine whether the rationale provided to participants prior to the mindfulness induction affected outcomes, a series of separate mixed between-within ANOVAs with rationale condition as the grouping variable were conducted for all self-report and physiological outcome variables except the two state mindfulness factors, for which only post-data was gathered. For these, two separate one-way ANOVAs were carried out. No interaction effects were found for the mixed between-within ANOVAs, so main effects were interpreted.

As displayed in Table 6, all self-report variables except PA showed a significant main effect of time. Changes were in the expected direction, with scores on NA, STAI,
believability and discomfort decreasing while willingness scores increased. For PA, the mixed between-within ANOVA indicated no significant difference overall from pre to post.

Table 6

Results of two-way mixed ANOVAs testing for effects of time, rationale condition, and interaction between time and rationale condition on self-report variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
<th>$F$</th>
<th>df</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>Time</td>
<td>3.64</td>
<td>1,197</td>
<td>.018</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>4.00*</td>
<td>2,197</td>
<td>.039</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>2.72</td>
<td>2,197</td>
<td>.027</td>
</tr>
<tr>
<td>NA</td>
<td>Time</td>
<td>88.68***</td>
<td>1,197</td>
<td>.310</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>0.32</td>
<td>2,197</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>0.63</td>
<td>2,197</td>
<td>.006</td>
</tr>
<tr>
<td>STAI</td>
<td>Time</td>
<td>127.35***</td>
<td>1,197</td>
<td>.393</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>1.60</td>
<td>2,197</td>
<td>.016</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>0.51</td>
<td>2,197</td>
<td>.005</td>
</tr>
<tr>
<td>Believability</td>
<td>Time</td>
<td>54.40***</td>
<td>1,197</td>
<td>.216</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>0.26</td>
<td>2,197</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>0.17</td>
<td>2,197</td>
<td>.002</td>
</tr>
<tr>
<td>Discomfort</td>
<td>Time</td>
<td>113.93***</td>
<td>1,197</td>
<td>.366</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>.30</td>
<td>2,197</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>1.74</td>
<td>2,197</td>
<td>.017</td>
</tr>
<tr>
<td>Willingness</td>
<td>Time</td>
<td>60.01***</td>
<td>1,197</td>
<td>.233</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>.64</td>
<td>2,197</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>.17</td>
<td>2,197</td>
<td>.002</td>
</tr>
</tbody>
</table>

$^aN = 64; ^bN = 68; ^cN = 68; ^dN = 200$

*$p < .05; **p < .01; ***p < .001.$

Results regarding main effects of rationale condition are also shown in Table 6. No main effects of rationale group were observed for any self-report variables except PA, for which the non-striving rationale group scoring significantly higher compared to the no rationale group. However, when pre-induction differences on PA between the non-striving
and no rationale groups were accounted for by including pre-PA scores as a covariate in an analysis of covariance (ANCOVA), rationale was no longer significant, $F(2, 196) = 2.04, p = .133$.

Regarding the effect of rationale group on self-reported state mindfulness subscales following the mindfulness induction, results from the two separate one-way ANOVAs showed no effect of rationale on TMS-Curiosity, $F(2, 197) = 0.06, p = .945$, or TMS-Decentering, $F(2, 197) = 0.061, p = .545$.

For measures of HR, DBP and SBP, descriptive statistics for the four measurement time points are shown in Table 7.

Table 7

| Variable | Range | SBP | | | | DBP | | | | Pulse | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | No rationale | Benefits | Non-striving | Total | | | | | | | | | |
| | | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ |
| SBP | Time 1 | 85-135 | 105.27 | 8.57 | 107.26 | 10.13 | 106.85 | 9.78 | 106.49 | 9.52 |
| | Time 2 | 86-125 | 101.86 | 7.42 | 104.15 | 8.22 | 104.01 | 8.96 | 103.37 | 8.27 |
| | Time 3 | 83-127 | 101.25 | 7.31 | 102.76 | 8.37 | 103.09 | 8.60 | 102.39 | 8.13 |
| | Time 4 | 84-129 | 103.30 | 6.37 | 105.01 | 7.77 | 104.25 | 9.05 | 104.21 | 7.82 |
| DBP | Time 1 | 48-86 | 65.61 | 7.55 | 67.06 | 7.95 | 66.31 | 7.52 | 66.34 | 7.66 |
| | Time 2 | 47-85 | 64.39 | 6.31 | 65.44 | 7.24 | 64.24 | 6.82 | 64.70 | 6.80 |
| | Time 3 | 45-80 | 62.36 | 7.14 | 63.87 | 7.33 | 63.99 | 6.59 | 63.43 | 7.03 |
| | Time 4 | 46-83 | 65.00 | 6.51 | 66.31 | 7.36 | 64.97 | 7.19 | 65.44 | 7.03 |
| Pulse | Time 1 | 44-123 | 81.56 | 13.48 | 79.03 | 13.45 | 80.13 | 14.17 | 80.22 | 13.68 |
| | Time 2 | 47-111 | 80.30 | 13.33 | 76.06 | 10.82 | 76.37 | 12.68 | 77.52 | 12.39 |
| | Time 3 | 49-116 | 79.73 | 12.52 | 76.09 | 12.12 | 76.68 | 12.53 | 77.46 | 12.43 |
| | Time 4 | 42-116 | 78.83 | 11.35 | 75.46 | 11.52 | 76.22 | 13.38 | 76.80 | 12.16 |

$^aN = 64; ^bN = 68; ^cN = 68; ^dN = 200$
Results of the mixed between-within ANOVAs for pulse and BP are displayed in Table 8. As no interaction effects were found, main effects were interpreted. There was a significant main effect of time for all variables. With regard to SBP, post-hoc pairwise comparisons showed a significant decrease from Time 1 to Time 2, stable SBP between Time 2 and 3, and an increase from Time 3 to Time 4. Follow-up pairwise comparisons for DBP revealed a decline from Time 1 to Time 2 and from Time 2 to Time 3, and a significant increase from Time 3 to Time 4. For HR, follow-up pairwise comparisons revealed a significant decrease in pulse from Time 1 to Time 2; however, there were no significant changes in pulse after Time 2 (taken immediately prior to the mindfulness exercise). In regards to the role of rationale condition on HR, SBP and DBP, no main effects were found (Table 8).

Table 8

Results of mixed between-within ANOVAs testing for effects of time, rationale condition, and interaction between time and rationale condition on pulse and blood pressure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
<th>F</th>
<th>df</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP</td>
<td>Time</td>
<td>39.20***</td>
<td>2.81, 552.90</td>
<td>.166</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>1.14</td>
<td>2, 197</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>.042</td>
<td>5.61, 552.90</td>
<td>.004</td>
</tr>
<tr>
<td>DBP</td>
<td>Time</td>
<td>20.78***</td>
<td>3, 591</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>0.74</td>
<td>2, 197</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>0.87</td>
<td>6, 591</td>
<td>.009</td>
</tr>
<tr>
<td>Pulse</td>
<td>Time</td>
<td>18.26***</td>
<td>2.81, 553.39</td>
<td>.085</td>
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<tr>
<td></td>
<td>Rationale</td>
<td>1.54</td>
<td>2, 197</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>0.75</td>
<td>5.62, 553.39</td>
<td>.008</td>
</tr>
</tbody>
</table>

*Greenhouse-Geisser adjustment applied to degrees of freedom due to violation of sphericity assumption.

*p < .05; **p < .01; ***p < .001.
For HRV indices, descriptive statistics for the three time periods are shown in Table 9.

Table 9

Descriptive statistics for heart rate variability variables during Period 1, 2 and 3 by rationale group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>No Rationale&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Benefits&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Non-striving&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Total&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
<td>M    SD</td>
</tr>
<tr>
<td>LF</td>
<td>Period 1</td>
<td>18.96-79.99</td>
<td>57.80 12.57</td>
<td>56.81 10.03</td>
<td>54.61 13.22</td>
</tr>
<tr>
<td></td>
<td>Period 2</td>
<td>9.91-91.67</td>
<td>55.56 16.71</td>
<td>56.61 14.93</td>
<td>49.16 17.23</td>
</tr>
<tr>
<td>HF</td>
<td>Period 1</td>
<td>3.07-77.45</td>
<td>29.25 15.65</td>
<td>30.68 11.81</td>
<td>33.08 15.67</td>
</tr>
<tr>
<td></td>
<td>Period 2</td>
<td>3.33-88.42</td>
<td>34.74 18.49</td>
<td>35.54 15.83</td>
<td>43.70 19.01</td>
</tr>
<tr>
<td>LF/HF</td>
<td>Period 1</td>
<td>0.24-19.52</td>
<td>3.06 2.92</td>
<td>2.28 1.25</td>
<td>2.54 2.55</td>
</tr>
<tr>
<td></td>
<td>Period 2</td>
<td>0.11-17.04</td>
<td>2.71 2.99</td>
<td>2.38 2.31</td>
<td>1.78 1.83</td>
</tr>
</tbody>
</table>

<sup>a</sup>N = 59; <sup>b</sup>N = 63; <sup>c</sup>N = 61; <sup>d</sup>N = 183

Results of the mixed between-within ANOVAs for HRV indices are displayed in Table 10. No interaction effects were found so main effects were interpreted. There was a significant main effect for time for all HRV indices. For LF and LF/HF, Period 2 measurements were significantly lower than both Period 1 and 3. For HF, the opposite pattern was apparent, with Period 2 significantly higher than Period 1 and 3. There were no main effects for rationale.
Table 10

*Results of two-way mixed ANOVAs testing for effects of time, rationale condition, and interaction between time and rationale condition on heart rate variability*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>df</td>
<td></td>
</tr>
<tr>
<td>LF</td>
<td>Time</td>
<td>10.83***</td>
<td>1.52, 272.95</td>
<td>.057</td>
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<tr>
<td></td>
<td>Rationale</td>
<td>2.80</td>
<td>2, 180</td>
<td>.030</td>
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<tr>
<td></td>
<td>Interaction</td>
<td>2.03</td>
<td>3.03, 272.95</td>
<td>.022</td>
</tr>
<tr>
<td>HF</td>
<td>Time</td>
<td>49.58***</td>
<td>1.65, 297.42</td>
<td>.216</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>3.35</td>
<td>2, 180</td>
<td>.036</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>2.21</td>
<td>3.31, 297.42</td>
<td>.024</td>
</tr>
<tr>
<td>LF/HF</td>
<td>Time</td>
<td>3.63*</td>
<td>1.89, 340.82</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>Rationale</td>
<td>2.10</td>
<td>2, 180</td>
<td>.023</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>1.54</td>
<td>3.79, 340.82</td>
<td>.017</td>
</tr>
</tbody>
</table>

*aGreenhouse-Geisser adjustment applied to degrees of freedom due to violation of sphericity assumption.

*p < .05; ***p < .001.

**Effect of rationale manipulation on expectations.**

A rationale manipulation check was carried out to determine if the rationale manipulation influenced expectations in the predicted way. A one-way between subjects ANOVA was performed, with results indicating a significant difference between the rationale groups in terms of their self-reported expectations of direct change resulting from the mindfulness exercise, $F(2, 197) = 9.16, p < .000$, partial $\eta^2 = .085$. Post-hoc comparisons revealed significantly higher expectations of direct change amongst the benefits rationale group ($M = 3.45, SD = 0.59$) compared to both the non-striving rationale group ($M = 3.03, SD = 0.67; p < .001$) and the no rationale group ($M = 3.10, SD = 0.57; p < .01$). There was no difference in expectations between the non-striving and the no rationale group.
Chapter 5: Study 3 – The Role of Expectations on Mindfulness Practice

Relationship between expectations, self-report and physiological outcome measures.

Relationships between expectations and pre-post self-report and physiological variables were examined via correlations; see Table 11 for self-report variables, Table 12 for BP and pulse variables, and Table 13 for HRV variables. Significant correlations were observed between expectations and post-PA, post-NA, post-STAI, post-willingness, and Time 3 SBP.

Table 11

Intercorrelations between expectations and pre and post self-report variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pre-PA</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Pre-NA</td>
<td>-10</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Pre-STAI</td>
<td>-.17*</td>
<td>-.24**</td>
<td>.68**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Pre-Discomft</td>
<td>.01</td>
<td>-.12</td>
<td>.06</td>
<td>.10</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. Pre-Believable</td>
<td>.04</td>
<td>-.08</td>
<td>.05</td>
<td>.07</td>
<td>-.03</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7. Pre-Willingness</td>
<td>.02</td>
<td>.26**</td>
<td>.04</td>
<td>-.07</td>
<td>-.40**</td>
<td>-.02</td>
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</tr>
<tr>
<td>8. Post-PA</td>
<td>.16*</td>
<td>.73**</td>
<td>-.01</td>
<td>-.26**</td>
<td>-.09</td>
<td>-.08</td>
<td>.23**</td>
<td></td>
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<td>9. Post-NA</td>
<td>-.18*</td>
<td>.05</td>
<td>.74**</td>
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<td>10. Post-STAI</td>
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<td>-.18**</td>
<td>.49**</td>
<td>.55**</td>
<td>.01</td>
<td>.04</td>
<td>.02</td>
<td>-.32**</td>
<td>.61**</td>
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</tr>
<tr>
<td>11. Post-Discomft</td>
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<td>-.19**</td>
<td>.11</td>
<td>.12</td>
<td>.62**</td>
<td>.07</td>
<td>-.34**</td>
<td>-.21**</td>
<td>.07</td>
<td>.13</td>
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<td>12. Post-Believable</td>
<td>-.05</td>
<td>-.14*</td>
<td>.02</td>
<td>.07</td>
<td>-.07</td>
<td>.74**</td>
<td>.02</td>
<td>-.16*</td>
<td>.10</td>
<td>.11</td>
<td>.10</td>
<td></td>
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<tr>
<td>13. Post-Willingness</td>
<td>.15*</td>
<td>.20**</td>
<td>-.08</td>
<td>-.10</td>
<td>-.28**</td>
<td>-.08</td>
<td>.67**</td>
<td>.23**</td>
<td>-.05</td>
<td>-.14</td>
<td>-.50**</td>
<td>-.07</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.
Table 12

*Intercorrelations between expectations and Time 2 and 3 pulse and blood pressure variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>1. Expectations</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Time 2 SBP</td>
<td>.07</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time 2 DBP</td>
<td>.09</td>
<td>.73***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Time 2 Pulse</td>
<td>.14*</td>
<td>-.01</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time 3 SBP</td>
<td>-.15*</td>
<td>.77***</td>
<td>.61***</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Time 3 DBP</td>
<td>.13</td>
<td>.62***</td>
<td>.73***</td>
<td>.09</td>
<td>.67***</td>
<td></td>
</tr>
<tr>
<td>7. Time 3 Pulse</td>
<td>-.12</td>
<td>-.03</td>
<td>.06</td>
<td>.86***</td>
<td>.01</td>
<td>.13</td>
</tr>
</tbody>
</table>

*p < .05; ***p < .001.

Table 13

**Intercorrelations between expectations and Period 1 and 2 heart rate variability variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expectations</td>
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<td></td>
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<tr>
<td>2. Period 1 LF</td>
<td>-.02</td>
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</tr>
<tr>
<td>3. Period 1 HF</td>
<td>.01</td>
<td>-.88***</td>
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</tr>
<tr>
<td>4. Period 1 LF/HF</td>
<td>-.07</td>
<td>.58***</td>
<td>-.73***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Period 2 LF</td>
<td>.01</td>
<td>.66***</td>
<td>-.58***</td>
<td>.37***</td>
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</tr>
<tr>
<td>6. Period 2 HF</td>
<td>-.02</td>
<td>-.67***</td>
<td>.66***</td>
<td>-.49***</td>
<td>-.96***</td>
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</tr>
<tr>
<td>7. Period 2 LF/HF</td>
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<td>.43***</td>
<td>-.45***</td>
<td>.56***</td>
<td>.71***</td>
<td>-.75***</td>
</tr>
</tbody>
</table>

***p < .001.

Although a mediation analyses was planned to examine whether expectations mediated the relationship between rationale and outcomes, this was not performed as the first criteria of establishing a relationship between the rationale condition and outcomes was not satisfied (Baron & Kenny, 1986). To examine the relationship between
expectations and self-report and physiological outcomes of the mindfulness induction after controlling for pre-induction scores, a series of multiple hierarchical regression analyses were conducted for dependent variables showing a significant relationship with expectations. For SBP, Time 2 scores (taken immediately before the mindfulness induction) were used as the pre variable, and Time 3 scores (taken immediately after the mindfulness induction) used as the dependent variable. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Correlations between expectations and pre scores for each regression analysis were weak indicating a very low likelihood of multicollinearity (Tabachnick & Fidell, 2001). Results are displayed in Table 14, and show that expectations predicted NA, STAI, and willingness at post-induction when pre-induction scores were controlled for.
Table 14

Hierarchical regressions for expectations, with pre induction scores entered at Step 1

<table>
<thead>
<tr>
<th>DV</th>
<th>Predictor</th>
<th>Model summary</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$R$</td>
<td>$R^2$</td>
</tr>
<tr>
<td>Post-PA</td>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre PA</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Pre NA</td>
<td></td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td>Post-NA</td>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre NA</td>
<td></td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td></td>
<td>.74</td>
</tr>
<tr>
<td>Post-STAI</td>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre STAI</td>
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<td>.55</td>
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<tr>
<td></td>
<td>Pre STAI</td>
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<td>.60</td>
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<tr>
<td></td>
<td>Expectations</td>
<td></td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre Willing</td>
<td></td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>Pre Willing</td>
<td></td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
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<td>.77</td>
</tr>
<tr>
<td></td>
<td>Time 3 SBP</td>
<td></td>
<td>.78</td>
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<td></td>
<td>Step 2</td>
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</tr>
<tr>
<td></td>
<td>Time 2 SBP</td>
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<td>.78</td>
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<td></td>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre Willing</td>
<td></td>
<td>.77</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001.

For the two state mindfulness variables, expectations were moderately positively correlated with TMS-Curious ($r = .31, p < .01$) and weakly positively correlated with TMS-Decentering ($r = .20, p < .01$). Separate simple linear regressions were then performed. Expectations significantly predicted TMS-Curious scores, $b = .31, t(198) = 4.62 p < .001$, and explained a significant proportion of variance in TMS-Curious scores, $R^2 = .10, F(1,198) = 21.37, p < .001$. Expectations also significantly predicted TMS-Decentering scores, $b = .20, t(198) = 2.80 p < .01$, explaining a significant proportion of variance in this variable, $R^2 = .04, F(1,198) = 7.85, p < .01$. 
Predictors of expressed future use of mindfulness.

Finally, possible predictors of expressed future use of mindfulness were examined, including rationale condition, expectations, degree of change in self-report variables, and curiosity and decentering mindfulness subscales. Ninety one per cent of participants agreed they would consider using mindfulness in the future, demonstrating a very positive response to the mindfulness induction.

For exploring the relationship between rationale group and future use, a chi-square test of association was undertaken. Results indicated no relationship between rationale condition and reported inclination toward using mindfulness in the future, $\chi^2 (2) = 1.41, p = .495$ (where future use was endorsed by 87.5% in the no rationale group, 92.6% in the benefits rationale group, and 92.6% in the non-striving group).

To examine whether expectations, amount of change in self-report variables, or curiosity or decentering predicted expressed future mindfulness use, direct logistic regression was undertaken. Change variables were created for PA, NA, STAI, Discomfort, Believability and Willingness by subtracting pre scores from post scores to be used as predictors, with descriptive statistics shown in Table 15. Histograms for all newly created change score variables were examined and each approximated a normal distribution.
Table 15

Descriptive statistics for self-report change score variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA-Change</td>
<td>-16-17</td>
<td>-0.75</td>
<td>5.60</td>
</tr>
<tr>
<td>NA-Change</td>
<td>-16-5</td>
<td>-2.28</td>
<td>3.41</td>
</tr>
<tr>
<td>STAI-Change</td>
<td>-11-6</td>
<td>-2.50</td>
<td>3.13</td>
</tr>
<tr>
<td>Discomfort-Change</td>
<td>-.76-.86</td>
<td>-.15</td>
<td>.20</td>
</tr>
<tr>
<td>Believability-Change</td>
<td>-.56-.34</td>
<td>-.08</td>
<td>.15</td>
</tr>
<tr>
<td>Willingness-Change</td>
<td>-.64-.91</td>
<td>.10</td>
<td>.19</td>
</tr>
</tbody>
</table>

Note. For change scores, higher negative scores signify a greater decrease in the variable from pre to post.

Nine predictors were included in the original model (see Table 16). With a sample size of 200, the recommended ratio of 10 cases per predictor (Hosmer & Lemeshow, 1989) was satisfied. To check for multicollinearity amongst the predictors, bivariate correlations were examined which showed none above \( r = .5 \), and tolerance and VIF statistics and collinearity diagnostics produced using a linear regression procedure as per Field (2005) indicated no issues. The full model was statistically significant, \( \chi^2 (9, N= 200) = 57.64, p < .000 \), suggesting the model was able to distinguish between respondents who would and would not consider using mindfulness in the future. Further support for the model being well-fitting was also provided by the non-significance of the Hosmer and Lemeshow test, where \( p = .925 \). As shown in Table 16, only three variables contributed significantly to the prediction of expressed future use.
### Table 16

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>SE $\beta$</th>
<th>Wald’s $\chi^2$</th>
<th>Odds Ratio</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-7.69***</td>
<td>2.20</td>
<td>12.23</td>
<td>.000</td>
<td>2.50 - 29.60</td>
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<td>Expectations</td>
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<td>.63</td>
<td>11.67</td>
<td>8.61</td>
<td>2.50 - 29.60</td>
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<td>PA-Change</td>
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<td>.07</td>
<td>.26</td>
<td>1.04</td>
<td>.90 - 1.20</td>
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<td>.10</td>
<td>.30</td>
<td>1.06</td>
<td>.87 - 1.28</td>
</tr>
<tr>
<td>Discomfort-Change</td>
<td>-.27*</td>
<td>.13</td>
<td>4.24</td>
<td>.77</td>
<td>.60 - .99</td>
</tr>
<tr>
<td>Believability-Change</td>
<td>-2.24</td>
<td>1.73</td>
<td>1.68</td>
<td>.11</td>
<td>.01 - 3.16</td>
</tr>
<tr>
<td>Willingness-Change</td>
<td>-7.57*</td>
<td>3.14</td>
<td>5.83</td>
<td>.01</td>
<td>.00 - .24</td>
</tr>
<tr>
<td>TMS-Curious</td>
<td>-1.04</td>
<td>2.22</td>
<td>.22</td>
<td>.35</td>
<td>.01 - 27.61</td>
</tr>
<tr>
<td>TMS-Decentering</td>
<td>.04</td>
<td>.09</td>
<td>.18</td>
<td>1.04</td>
<td>.87 - 1.25</td>
</tr>
</tbody>
</table>

**Notes.** Dependent variable coded 0 = would not consider using mindfulness in the future, 1 = would consider using mindfulness in the future. $df = 1$ for all predictors. CI = Confidence Interval.

*p < .001; **p < .01; ***p < .001.

To check for suppressor effects given that some variables in the model were positively correlated with future use while others were negatively correlated, separate logistic analyses were done, with one including only variables positively correlated with future use (PA, NA, expectations, willing, TMS-Curious and TMS-Decentering) and one including variables negatively correlated with future use (STAI, discomfort, believe). No differences in results were noted, so an absence of suppressor effects was assumed.

The analysis was re-run including only significant predictors. The model overall was statistically significant, $\chi^2 (4, N= 200) = 54.48, p < .000$, suggesting it was able to distinguish between respondents who would and would not consider using mindfulness in
the future. The model was further supported by the non-significance of the Hosmer and Lemeshow test, where \( p = .960 \). The final model as a whole explained between 23.8\% (Cox and Snell \( R^2 \)) and 52.5\% (Nagelkerke \( R^2 \)) of the variance in future use response, correctly classifying 94.5\% of cases. Table 17 shows the unique contribution of each predictor in the final model. For all variables with a significant co-efficient, the odds ratio fell within the lower and upper parameters, and for positive coefficients the parameters are above 1 and for negative coefficients the parameters are below 1, giving confidence that the relationships in the sample between these predictors and future use are true of the population (Field, 2005).

Table 17

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{Predictors} & \beta & SE \beta & \text{Wald}'s \chi^2 & \text{Odds Ratio} \\
\hline
\text{Constant} & -6.74*** & 1.88 & 12.86 & .001 \\
\text{Expectations} & 1.94** & .59 & 10.78 & 6.98 \\
\text{STAI-Change} & -.23* & .11 & 4.23 & .80 \\
\text{Believe-Change} & -6.67* & 2.73 & 6.01 & .01 \\
\text{TMS-Curious} & .25** & .07 & 11.22 & 1.28 \\
\hline
\end{array}
\]

\[
\begin{array}{|c|c|c|}
\hline
\text{95\% CI for Odds Ratio} & \text{Lower} & \text{Upper} \\
\hline
\text{Constant} & \text{.001} & \text{2.19} \\
\text{Expectations} & \text{2.19} & \text{22.25} \\
\text{STAI-Change} & \text{.65} & \text{.99} \\
\text{Believe-Change} & \text{.00} & \text{.26} \\
\text{TMS-Curious} & \text{1.11} & \text{1.47} \\
\hline
\end{array}
\]

\text{Note. Negative coefficient signs for change scores represent greater reductions, and are interpreted as for a positive sign.}

\textbf{Discussion}

Mindfulness is understood in diverse ways by those practicing it, and previous research has provided useful observations indicating that outcomes can differ between individuals who regard mindfulness as a technique to help achieve a more pleasant state, and those who practice mindfulness in a non-striving manner, non-judgementally
observing both pleasant and unpleasant internal experiences. However, such findings have typically come from qualitative studies and relied on retrospective participant self-report or general observations by those teaching mindfulness. The current study extended existing knowledge by experimentally manipulating conceptualisations of mindfulness in line with previously identified differences prior to leading participants through a brief mindfulness practice, and measuring differences on self-report and physiological variables between these groups. While rationale condition did not induce different effects in outcomes, there were differences in participant expectations between the groups, and these expectations in turn related to the outcomes observed. Importantly, there was a high level of reported engagement with the mindfulness induction exercise across the sample, helping to establish confidence in the results. The results are now discussed in full in light of previous findings and theory and limitations of the study, and useful directions for future research in this important but under-researched area are offered.

**Effect of the mindfulness induction.**

In relation to the first research question regarding changes in self-report and physiological variables following the mindfulness induction, most but not all hypotheses were supported. The mindfulness induction significantly reduced negative affect and state anxiety, and produced improvements in all three defusion variables. The results confirmed previous findings that even a relatively brief laboratory-based mindfulness practice can generate changes in a range of mood variables, such as reduced emotional volatility (Arch & Craske, 2006), reduced intensity of negative moods (Broderick, 2005; Singer & Dobson, 2007), and less anxiety (Zeidan, Johnson, et al., 2010a). This implies one-off training could show benefits in clinical contexts, although how long-lasting such effects would be is unknown. The current findings are also in accord with existing research showing that a
brief mindfulness practice can increase tolerance of difficult thoughts and feelings (Masuda, et al., 2004; Singer & Dobson, 2007). There was no change in positive affect overall, perhaps supporting the notion that mindfulness practice is less likely to influence positive affect and more likely to produce decreases in negative affect (Brown & Ryan, 2003), although Thompson and Waltz (2007) have reported decreases in positive affect amongst novice meditators.

Two of the physiological measures, systolic blood pressure and pulse, did not show expected changes associated with the mindfulness induction, while diastolic blood pressure and indices of heart rate variability did vary as expected. Ditto et al. (2006) also failed to observe changes in systolic blood pressure associated with a twenty minute mindful body scan, however along with Zeidan and Johnson et al. (2010a) did report variations in heart rate due to the brief practice of mindfulness meditation. This divergence in findings may be due to low sensitivity of the measurement apparatus, or because participants were predominantly young, healthy students with minimal hypertension or chronic stress at baseline and so showed little change on these measures associated with the mindfulness induction. The patterns in heart rate variability in the current study are consistent with previous findings that meditation practice is associated with changes reflecting greater emotional regulation (Ditto, et al., 2006; Takahashi, et al., 2005), with low frequency and ratio of low to high frequency bands showing decreases during the mindfulness induction reflecting inhibition of sympathetic tone, and the high frequency band showing increases throughout the mindfulness induction representing parasympathetic modulation.
Effect of the rationale manipulation on self-report and physiological outcomes and future use.

Previous qualitative research suggests initial perceptions of mindfulness as a direct cure for distress and discomfort are associated with poorer outcomes (Malpass, et al., 2012), and it was anticipated that participants provided with a rationale emphasising immediate benefits of mindfulness would demonstrate poorer outcomes than those in the non-striving and no rationale conditions. It was also hypothesised that those receiving the non-striving rationale would be more likely to indicate potential future use of mindfulness. However, these predictions were not borne out. In fact, there were no differences between the three rationale conditions on self-report outcomes, physiological variables, or indicated future use. This differs from previous qualitative observations, and is in contrast to previous experimental studies which, although not direct equivalents of the current experiment, have found that altering the instructions provided to participants prior to brief laboratory tasks involving exposure to negative self-referent thoughts (Masuda, et al., 2004) or imitating the behavioural aspects of mindfulness practice (Zeidan, Johnson, et al., 2010a) can influence variables such as defusion, mood and heart rate. The current findings may have occurred for several reasons. A possibility is that when considered under controlled conditions, the explanation given regarding mindfulness the first time it is practiced actually makes no difference to outcomes or future use. The implication of this conclusion is that those teaching mindfulness in clinical contexts need not worry about how they introduce it, as this will have little effect on how clients or group participants experience mindfulness practices, what they get out of them, and whether they will maintain a regular practice.
However, in considering this absence of a rationale effect, it is important to recognise that the application of mindfulness practice in the current study wasn’t designed to address specific problems or issues reported by individual participants, as in clinical practice. Individualised conceptualisations for the use of mindfulness were not provided to participants, as a primary aim was to explore the effects of explaining mindfulness in two particular ways. Importantly in psychotherapy, an effective treatment rationale generally includes the therapist’s conceptualisation or explanation of the individual’s presenting symptoms or issues, as well as a proposed means for addressing these symptoms. As Teasdale et al. (2003) assert, mindfulness practice is most effective when “it is linked to coherent alternative views of client’s problems” (p. 158) and used within the context of an individualised formulation rather than as a stand-alone coping mechanism. Clients have also identified the importance of linking the use of mindfulness clearly to a rationale for why it can be helpful (Walker, et al., 2010). Unlike the current study, previous observations suggesting the importance of perceptions of mindfulness have been in the context of interventions such as MBSR and MBCT which have broadly defined aims such as managing stress or depression, or individual therapy in which interventions are uniquely tailored to the individual. This key point of difference may help to reconcile this study’s finding of no differences in outcomes across rationale groups.

Relationship between expectations, and self-report and physiological outcomes.

In line with predictions, the benefits rationale was associated with greater expectations of benefit for the subsequent mindfulness exercise compared to both the non-striving and no rationale conditions; however those in the non-striving condition did not show lower expectations relative to the no rationale condition. As Farb (2012) points out,
“just because instructors preach a lack of short term expectation does not mean that participants will abide by this request” (p. 32). With regard to the effect of expectations on mindfulness induction outcomes, higher expectations of immediate benefit were associated with lower negative affect and state anxiety, and greater willingness, curiosity, and decentering. Expectations were not associated with any other self-report or physiological variables.

Thus, overall the results showed that although the rationale did not affect outcomes, there were differences between the rationale conditions in subsequent expectations, and expectations were related to self-report outcomes. Surprisingly, in contrast with assertion and findings that it is more useful to discourage specific goals amongst those new to the practice of mindfulness (Kabat-Zinn, 1990; Malpass, et al., 2012), the present findings suggest that believing the practice can have direct and immediate benefits is associated with self-reported reductions in anxiety and negative affect, providing evidence of a positive expectancy effect. Of course, “whether such expectations [of immediate benefit] are ultimately unsatisfying when compared to a participant who eschews such expectations is an empirical question” (p. 32-33) that requires longitudinal exploration (Farb, 2012).

Indeed, the target of mindfulness practices is not a reduction in immediate symptoms such as anxiety and low mood per se, but rather long term improvements in functioning, quality of life and personal growth despite the presence of such symptoms (Fjorback & Walach, 2012; Roemer & Orsillo, 2003; Salmon, et al., 2004).

Notably, the current study showed that greater expectations of benefit were also associated with a greater willingness to be in contact with negative self-referent thoughts, representative of reduced experiential avoidance and more in line with the typical stated aims of mindfulness of fostering a changed relationship with one’s experiences. This
suggests that, at least for those new to mindfulness practice, expecting direct symptom reductions may extend beyond attaining these benefits to broader effects such as defusion. Importantly, the current study examined expectations of immediate benefit; research evidence is required to determine whether differences in outcomes arise depending on whether a rationale emphasises benefits to be gained during and immediately following mindfulness practices or whether it is stressed that the benefits of practicing mindfulness come about through ongoing practice, and reductions in stress and anxiety and such may not occur as a direct result of a particular mindfulness practice session.

**Relationship between future use, and expectations, self-report and physiological outcomes.**

As noted by Mascaro et al. (2013), identifying individuals who are most likely to continue with mindfulness practice is useful because they are the most likely to benefit from mindfulness-based interventions. Conversely, those who drop out of mindfulness-based interventions tend to do so early on (Dobkin, et al., 2012); identifying those most at risk of dropping out of mindfulness interventions might allow for early intervening and the provision of additional support and guidance to encourage continued practice if suitable. Expectations and an individual’s initial experience of a mindfulness practice were hypothesised to influence participants’ indication of whether or not they would consider using mindfulness in the future. In accord with predictions, greater expectations of benefit were associated with reports that participants would consider using mindfulness again, giving support to Farb’s (2012) position that “strong expectations for success or benefits from meditation are likely to be accompanied by intentions to practice” (p. 28). This finding suggests clinicians might aim to foster a general sense of hopefulness about the potential benefits of the practice, perhaps by referring to other clients who have benefitted.
from the practice or to the broad research evidence base, while encouraging an open curiosity and emphasising that each individual’s experience with mindfulness is different.

Showing some support for the hypothesis that greater changes toward a more pleasant state would be related to indications of future use, larger decreases in state anxiety and believability of negative self-referent thoughts were associated with considering using mindfulness in the future, as was higher post induction curiosity towards one’s experience. These findings align with existing research and observations that for some individuals, having a pleasurable experience with mindfulness practice will encourage further use, whilst not attaining an outcome such as a sense of relaxation may put some people off (Finucane & Mercer, 2006; Kostanski & Hassed, 2008; Walker, et al., 2010). Previous research has also found that following an MBSR program, adolescents reported their future mindfulness practice would occur in times of stress, implying previous success in alleviating stress through mindfulness practice was the driver for using it again. This seems to imply that for practitioners teaching mindfulness, it is useful to provide an initial experience that where possible is not overly confronting or challenging, by at first easing into mindfulness practice and “working around the edges” of difficult internal experience within the context of a safe and caring therapeutic relationship. Importantly though, a declaration of intent does not necessarily always translate into behaviour. Without follow-up data, it is impossible to know whether those participants in the current study who did indicate that they would consider using mindfulness in the future have or will actually do so, and this is an area for empirical investigation.

Additional factors might affect the ongoing use of mindfulness. For example, continued participation in a group-based mindfulness intervention may depend on the other people in the group, as observed by Hopkins and Kuyken (2012), or the quality of the
teacher. Dobkin et al. (2012) found that individuals most likely to persevere with an MBSR course were those with obsessive compulsive disorder, while individuals most likely to drop out were male, classified as emotionally reactive, or experiencing chronic pain. Personality characteristics such as conscientiousness may be relevant, although the exact nature of this relationship remains uncertain. Several correlational studies have found positive associations between trait mindfulness and conscientiousness (Hurk et al., 2011; Thompson & Waltz, 2007), while another study reported that years of mindfulness meditation experience was negatively related to conscientiousness, with the authors proposing that those who are low in conscientiousness might be drawn to mindfulness because of its non-goal oriented nature (Hurk, et al., 2011). Clearly, further prospective research is required to determine the nature of this observed relationship. An individuals' receptivity toward meditative practices might also be influential to future use, with findings from Study 2 of this dissertation demonstrating that at least for some, mindfulness might appear strange or weird and dissuade them from further practice.

**Limitations.**

There are inherent limitations in using a brief, laboratory-based mindfulness induction in that mindfulness is a nuanced process, and as previously discussed must be practiced in an ongoing manner for true understanding to occur. Roemer and Orsillo (2003) have previously noted the challenges of “trying to reproduce mindfulness or nonjudgmental acceptance in the laboratory” (p. 175). Although changes were observed from pre to post on self-report measures, the findings of this and other lab-based mindfulness induction studies are not considered to wholly reflect the beneficial outcomes of repeated mindfulness practice (Kuehner, et al., 2009; Zeidan, Gordon, et al., 2010). Such studies are however a necessary initial phase in the process of assessing different
components of mindfulness practices and their various effects, to then be examined further in contexts more analogous to the clinical use of mindfulness (Zeidan, Gordon, et al., 2010). The importance of using a lab-based design for the current study is clear when considering the aims. Specifically, the one-off nature of the mindfulness induction, in conjunction with the use of a sample population predominantly naïve to meditation and mindfulness, was purposeful to minimise interference with participants’ knowledge of mindfulness and meditation from outside sources. If multiple mindfulness induction sessions were held, participants may have sought out additional information about meditation and mindfulness between sessions, contaminating any impact of the pre-induction rationales. Moreover, there is also ethical risk in leaving an incomplete rationale for too long without debriefing.

Aspects of the testing environment and mindfulness induction itself may have influenced the findings of the study. Although testing groups were relatively small (i.e., maximum four participants), undertaking the study in an artificial group situation may have led some participants to feel socially anxious and self-conscious about having eyes closed and meditating with others in the room, especially when participants had little or no prior experience with such practices. The literature is unclear on differences in outcomes when meditation is done alone or in a group (Tang et al., 2007).

An additional limitation of the current study is that responding to self-report items about mindfulness is dependent on having a degree of familiarity and understanding of mindfulness through practice (Grossman, 2008). Similarly, the measurement of defusion can be particularly difficult because “the meaning of the construct is not readily apparent to respondents” (Forman et al., 2012, p. 55), especially in the absence of previous experience with mindfulness or related concepts and practices.
**Future research.**

Although the rationale was not found to have a relationship with outcomes or future use, future research might translate the aims of the current study to a naturalistic setting. Specifically, expectations about and perceptions of mindfulness held by those in group-based mindfulness interventions or individual therapy could be monitored from the beginning and throughout the intervention using an open response format, with any impact of these on outcomes and ongoing practice examined. Importantly, it would be most helpful if the rationale for treatment was individually tailored, first determining the specific presenting issues of participants and offering an appropriate conceptualisation, before providing a rationale for the use of mindfulness within this context. It may be useful to retain the distinction used in this study between non-striving intentions regarding what one does during the practice of mindfulness and “more conventional, expectation-laden strategies” (Farb, 2012, p. 37).

The associations found between expectations and self-reported changes were not paralleled by a correlation between expectations and changes in physiology. This raises the possibility that self-reported outcomes did not reflect expectations but rather participants’ attempts to demonstrate that the mindfulness induction “worked” for them. However, the physiological variables may be tapping into different constructs to the self-report variables – pulse, blood pressure and heart rate variability are not necessarily direct manifestations of positive and negative emotional state, curiosity, decentering, and defusion. Regardless, the results reaffirm the importance of not relying solely on self-report when assessing the impacts of mindfulness interventions, as previously advised (Brown, et al., 2007; Mascaro, et al., 2013; Salmon, et al., 2004; Shapiro, 2009). As well as physiological data, additional forms of objective assessment might be used to gain a more comprehensive understanding.
of mindfulness and its impacts, such as “behavioral observations, proxy reports, narrative data, experience sampling, and neurological data” (Shapiro, 2009, p. 559).

**Conclusion**

Carmody (2009) has asked: “What might be the simplest and most parsimonious definition of mindfulness for clinical purposes?” (p. 270). It is equally important to consider what might be the most clinically effective way of describing mindfulness. The current study has been important in demonstrating that without an individualised formulation, the explanation one provides about mindfulness when introducing it, whether emphasising the benefits to be gained, highlighting the process of the practice, or saying nothing at all, does not appear to have direct consequences for the outcomes experienced immediately following, or future practice of mindfulness. Rather, it was found that irrespective of the initial description of mindfulness, the expectations held about the practice, its aims and what they might experience during the practice, do matter. These expectations may be influenced by a great many sources, and as such ongoing monitoring from the beginning stages of a mindfulness-based intervention of an individual’s expectations about and particular conceptualisation of mindfulness would be useful. Of greatest interest was the finding that expecting a brief mindfulness practice to result in immediately feeling more relaxed, less worried and in a better mood was associated with exactly that – lower negative affect and anxiety. Moreover, expecting direct benefits, as well as experiencing these, meant participants reported that they would consider using mindfulness again in the future. While this finding remains to be replicated, it is interesting nonetheless as it diverges from widely held beliefs that holding expectations of immediate mood improvements and cessation of worries and stress is counterproductive (Crane & Williams, 2010; Kabat-Zinn, 1990). However, it does pose the question of whether it is in
fact mindfulness being practiced at all or simply a relaxation technique, if intentions of simply observing without judgement whatever is present are not adhered to. Furthermore, the current findings cannot speak to the impact of expecting direct benefit from each mindfulness practice undertaken over a longer period of time, which may not prove useful at all especially, if an initial positive experience cannot be duplicated. It may be that the most important distinction to be made is that of letting go of expectations of achieving a more desirable state from particular mindfulness practices but believing that important changes can arise in the long term (Roemer & Orsillo, 2003; Segal, et al., 2002). The best way to go about this, however, remains to be investigated.
CHAPTER 6: General Discussion and Conclusions

Although the mindfulness literature has rapidly grown with efficacy studies for different populations and various presenting issues, little work to date has focused on understanding the ways mental health and related professionals conceptualise and use mindfulness in their work. Additionally, while the experiences of participants in manualised group-based mindfulness interventions have begun to receive attention, knowledge about how mindfulness is understood amongst those undertaking less formalised programs, or learning about mindfulness in individual therapy or via other channels, has been lacking. Many factors suggest mindfulness would be understood in varying ways amongst professionals teaching it and community members learning about it: multiple definitions in the literature and wider media; the paradoxical nature of change typically associated with mindfulness; its similarities to other practices such as relaxation techniques; the multitude of possible mechanisms of action; the various interventions which share mindfulness as a major component but differ in important ways; and the diverse avenues from which individuals may arrive at mindfulness. However, the potential for multiple conceptualisations of mindfulness amongst professionals and community members has largely been ignored.

The current series of studies was unique in seeking to better understand professionals' and community members' perceptions of what mindfulness is, how it works, and the manner in which these two groups use mindfulness, as well as examining the impact of different explanations of mindfulness on practice outcomes and future use. The research was not simply another investigation of how well, or for whom or what issues, a particular mindfulness intervention works. Instead, it asked the question “what do people think mindfulness is all about?” rather than assuming there is a common understanding.
across those who are familiar with it, either through teaching it as a professional, or practicing it personally. The research then asked “does it matter what people think mindfulness is about?” In exploring the different perceptions and expectations of mindfulness, and the effects these might have on outcomes, the research also expanded on current knowledge regarding mindfulness mechanisms of action beyond specific factors. Collectively, the results from the three studies herein suggest that while mindfulness may be understood and explained in diverse ways, beneficial outcomes can be gained from mindfulness practice irrespective of the explanation given, at least in the short-term.

How is Mindfulness Understood by Professionals and Community Members?

Results from the first two studies demonstrated that, as predicted, there is variability amongst both professionals and community members in their understandings of, and the types of practices that are considered, mindfulness. Both groups showed a division between individuals who perceive, teach and apply mindfulness as a direct, changed-based strategy to gain relief from or escape uncomfortable experiences such as negative thoughts, unpleasant emotions, and painful physical sensations, and those who use it to help facilitate increased allowing of such discomfort. It has previously been noted that even when much attention goes toward explaining the non-striving nature of mindfulness and that the intention is self-regulation rather than self-control, the distinction between these two can be missed by those participating in mindfulness-based interventions (Kerrigan, et al., 2011). This was echoed in the present research, with several professionals reporting on the difficulties of some clients grasping the non-striving, non-symptom reduction aspect of mindfulness, and several community members themselves noting their difficulty in understanding aspects of mindfulness including non-judgment and acceptance.

Nevertheless, community members overall reported that mindfulness is very easy for them
to understand. Examples in the academic literature also assert that mindfulness “if well taught is relatively easy for patients to understand and also comply with” (McKenzie, et al., 2012, p. 360). However, the nature of understanding this refers to could range from mindfulness as a technique to help with relaxation, a way to directly gain relief from clinical symptoms, a practice to facilitate a changed relationship with one’s internal experiences, or a transformational process.

Perhaps surprising was that some professionals also appear to understand, teach and practice mindfulness with the specific aim of relaxation, reducing anxiety, or preventing other emotions or negative thoughts. The sources of information and training professionals rely upon, including personal practice, and the conceptualisations of mindfulness promoted and facilitated by these sources, would obviously heavily influence understandings. The popularity of mindfulness and its application to an increasingly wide variety of issues and populations may also give off the impression that it is a simplistic technique to help one feel better.

Individuals from both the professional and community member sample described strategies such as controlled breathing, progressive muscle relaxation, stopping negative thoughts, success imagery and visualisation when reporting on the mindfulness practices they use. The results suggest that for some individuals, any activity that involves working with the breath or body or sitting with the eyes closed might potentially be deemed a mindfulness practice, even though such activities omit the key intention of just noticing what is arising from moment to moment without reactivity or striving for anything to be different. A small number of respondents from both sample groups drew particular attention to the breadth of what is captured by the term mindfulness. One implication of the term mindfulness being used so diversely is that it is not exactly clear what people are
doing when they report that they are teaching mindfulness in their work or learning it as a client, especially when outside the bounds of manualised interventions. This problem parallels the issue regarding mindfulness research, captured well by Chiesa and Malinowski (2011):

Although at first glance it appears as if a large body of research converges on understanding the effects of mindfulness practice and the underlying psychological and neurophysiological processes, the closer inspection of the philosophical background, aims, and practices of different [mindfulness meditations] and [mindfulness-based interventions] revealed a large diversity that may question the usefulness of using mindfulness as umbrella term for this rich diversity. (p. 17).

In both clinical and research contexts, the various uses of the term mindfulness is confusing and hinders effective communication and application of mindfulness interventions. As noted by Mikulas (2011), “people can define mindfulness as they wish, but they should be very clear about what they are saying” (p. 5).

Definitions of mindfulness held by professionals and community members in the current research tended to align most with the Kabat-Zinn (1994) definition, including the notion of acceptance, even though others argue acceptance has no place in conceptualisations of mindfulness (Brown & Ryan, 2004; Mikulas, 2011). This is not surprising, given that Kabat-Zinn is typically credited with introducing mindfulness to the Western mainstream, and his MBSR is the most heavily researched of the mindfulness-based interventions in the psychological field (Carmody, 2009).
What is the Most Useful Way to Explain Mindfulness in Therapeutic Contexts?

Although this research didn't support the idea that different explanations of mindfulness lead to different outcomes, the results do not necessarily rule out their role, especially if provided alongside ongoing practice and within the context of a coherent individualised formulation. A number of authors have raised the issue of how best to define and explain mindfulness in clinical contexts. Some focus on ensuring mindfulness is presented as simply and accessibly as possible. For example, Carmody (2009) has proposed that an attention-based model “unencumbered by additional dimensions [e.g., compassion, wisdom] that may make mindfulness appear difficult or exotic to some patients” (p. 278) is most useful because of the familiarity people already have with attention. Importantly, the present research has shown that some individuals are put off by mindfulness because of their perception that it is new age, religious, or unconventional.

Professionals are in a position to reduce alienating clients by how they present mindfulness to clients. The responses of some professionals in Study 1 demonstrated their acknowledgement of the impact of how mindfulness is explained by their avoidance of using the term mindfulness due to perceived unhelpful client associations between mindfulness and religion.

Although some argument might be made for reducing complexity and optimising the fit between client and approach by eliminating Buddhist aspects amongst Western clients and reducing it to an attentional technique, the wisdom of withholding potentially useful teachings because they are seen as spiritual or religious is questioned (Dimidjian & Linehan, 2003). Rosenbaum (2009) argues that “separating mindfulness, as a technique, from its spiritual foundation deprives mindfulness of its heart, and in so doing dooms it to a weak palliative rather than a transformative awakening” (p. 209). Similarly, Christopher
et al. (2008) point out that “without morality and wisdom, mindfulness is difficult to cultivate because one may, for example, continue to be driven by sensual pleasures and their afflictions, and as a result moment to moment consciousness is full of objects that perpetuate suffering” (p. 594). The failure to acknowledge the broader philosophical teachings associated with mindfulness has been likened to a case of missing the forest for the trees (Khong, 2009). In the current research, only a few professionals and community members reported a background in Buddhist philosophy and referred to concepts from a Buddhist framework, suggesting most have come to mindfulness from a predominantly secular perspective.

Ultimately, the most useful way to describe mindfulness may depend on a unique interaction between what the client wishes to get out of it and the professional’s own conceptualisation of it. If a client is only interested in symptom reduction at a particular point in time, it may be counterproductive to focus on wider Buddhist concepts of morality and compassion. However, what may be important in such instances is acknowledging that mindfulness is being used outside an existing Buddhist context, or perhaps not using the term mindfulness if it is relaxation techniques that are being practiced. At other times, a clinician may judge that a client does not have the capacity to grasp descriptions of mindfulness beyond attentional training; however, professionals might need to allow clients to discover for themselves what mindfulness means to them through their own ongoing practice. Another related aspect to consider it that the most effective explanation of mindfulness is inherently linked to the particular therapist teaching it. Irrespective of what explanation is given, it is important for professionals to have their own working model of what mindfulness is and how it can be helpful for a particular client so they can
have conviction in the approach, a vital factor in therapeutic outcomes according to common factors theory (Wampold, 2001).

While all of the above points must be taken into account, it is essential to recognise that experiential practice and experience with mindfulness has a fundamental influence on understandings: “participants themselves, through their own experience...discover the purpose of the meditation or the true meaning of the training” (Marti & Barrachina, 2009, p. 12). Several community members in this research expressed that mistakenly, they initially had the impression that mindfulness involved zoning out, detaching from reality, clearing the mind of thoughts, and not having unpleasant emotions. They noted it was ongoing practice and familiarity that helped shift understandings of mindfulness to notions of increased awareness, not attaching to the contents of the mind, experiencing whatever is present whether it is pleasant or not, and “desiring for nothing”. As such, initial explanations about mindfulness in clinical contexts may be less important than ongoing discussions about it alongside experiential practice. Perhaps concepts such as non-striving included in initial explanations of mindfulness may only take on meaning when accompanied by actual personal experience with the practice.

Accordingly, an important question extending from this is how best to encourage the practice of mindfulness so enhanced understanding can be facilitated? While it is recommended that the best approach is to let go of hoping for and expecting specific benefits from mindfulness practice (Kabat-Zinn, 1990), results from Study 3 suggest that those who expect and report relief from stress and anxiety resulting from a brief mindfulness practice are likely to consider using mindfulness again. However, several additional factors may influence whether an individual maintains a regular practice of mindfulness over time. For instance, a significant reported barrier to regular mindfulness
practice is the time and effort required (Mascaro, et al., 2013), which was also identified by a number of community members in this research. Conversely, an aspect that may promote ongoing client use of mindfulness is whether the professional teaching it has their own personal practice. This is argued to enhance the “ability to help patients learn about mindfulness, to provide adequate explanations of the concepts” (Lau & McMain, 2005, p. 867) and to respond adequately to queries beyond knowledge obtained from books or workshops (Kabat-Zinn, 2003). Moreover, having a personal practice allows a teacher to genuinely identify with the personal struggles experienced by trainees or clients (Kabat-Zinn, 2003; Khong & Mruk, 2009) and demonstrate a willingness to commit to regular practice and self-exploration as is asked of trainees (Kabat-Zinn, 2003). A qualitative study exploring the use of mindfulness interventions in individual therapy highlighted that for both therapists and clients alike, the therapist’s own practice helped facilitate discussions about and use of mindfulness, and provided a sense of authenticity and congruence between the therapist and the interventions taught (Horst, et al., 2013). Mindfulness interventions are somewhat unique in this way, in that there is an emphasis on “practicing what one preaches” not so apparent in other therapies (Woods, 2009). Perhaps surprisingly given the above, empirical evidence regarding the relationship between therapists’ practice of mindfulness and therapy outcomes has been mixed (Dunn, et al., 2013; Grepmair, et al., 2007; Ryan, et al., 2012).

**Mindfulness is Not a One-Size-Fits-All Panacea**

Due to the popularity of mindfulness and the wealth of efficacy studies on the topic, professionals and community members may be left with the sense that mindfulness is a panacea that can and should be used in all therapeutic interventions, regardless of sound supporting evidence and a clear theoretical formulation as to why. Some
commentators have even suggested that mindfulness could be “an antidote to the disease of twenty-first century life and its attendant and ever increasing pull toward multi-tasking and 24/7 connectivity” (Cullen, 2011, "Growth and Scope," para. 2). However, the indiscriminate use of mindfulness as a therapeutic cure-all has been warned against, and the importance of a thorough and individualised problem formulation approach when teaching mindfulness is emphasised, so as to enhance the effectiveness of mindfulness training and reduce the potential for harm (Keng, et al., 2011; Kocovski, et al., 2009; Teasdale, et al., 2003). Professionals must understand how and why mindfulness can be helpful with specific presenting issues (Teasdale, et al., 2003), and modify mindfulness interventions appropriately to suit specific issues (Rapgay & Bystrisky, 2009). Findings from the present study support this stance on several levels. Firstly, professionals reported detrimental effects of mindfulness amongst clients, and community members themselves referred to negative experiences with mindfulness, confirming previous work indicating that the practice of mindfulness is not without risk (e.g., Didonna, 2009; Finucane & Mercer, 2006; Marti & Barrachina, 2009; Moss, et al., 2008). Secondly, the results from Study 1 and 2 show that not all individuals are receptive to mindfulness – some see it as odd, others as an inadequate treatment approach, while in Study 3 some participants reported that they would not consider using it again. A clinical example suggests how mindfulness-based interventions can be adapted. Vallejo and Amaro (2009) explored the acceptability of a MBSR-based substance addiction relapse prevention program amongst women, many with a history of trauma. Participants in an initial version of the intervention disliked the program, experienced increased anxiety and agitation over the course, and some refused to practice mindfulness of breath meditation because connecting with their bodies was too distressing and triggered flashbacks. The program was modified in accord
with this feedback, for example by shortening the body scan and altering it to be done sitting up with eyes open (rather than lying down with eyes closed), and it was subsequently more acceptable and less overwhelming for participants. More generally, Germer (2005b) recommends that for individuals with histories of trauma, a moderate and gradual approach to mindfulness training is taken because “when our attention is overwhelmed by traumatic memories and destabilized, mindful exposure loses its usefulness” (p. 127). Overall however, there is limited guidance available regarding how to tailor particular interventions in specific circumstances.

**Issues Regarding Professional Competence**

Mental health professionals are ethically bound to be competent in their areas of practice, with the objective that interventions in the first instance do not cause harm and secondly deliver sufficient benefits to those receiving the intervention (Stauffer, 2007). However, what might constitute benefits in the case of mindfulness interventions is highly variable. Moreover, according to experts in the field, those training others in mindfulness should “have a fundamental knowledge and remain current in both the professional literature and the popular literature related to mindfulness” (Stauffer, 2007, p. 78). This poses several challenges to professionals teaching mindfulness. Firstly, while the necessity of having knowledge of the literature is underscored, “there is unlikely to be one simple answer to the question of what a clinician or researcher needs to know in order to deliver or study mindfulness in a clinical context” (Dimidjian & Kleiber, 2013, p. 58). Which of the many possible conceptualisations of mindfulness meet the criteria of constituting fundamental knowledge of mindfulness – those that take into consideration Buddhist concepts, those that emphasise the non-striving nature of mindfulness, or those that view mindfulness as a direct and simple means to reduce symptoms? In order to recognise the limits of their own
professional competence as advocated (Stauffer, 2007), professionals must first have a clear guide as to what competence resembles. Clearly, this is a question which begs immediate attention. The second challenge is that of remaining current with mindfulness literature, including academic, clinical, and popular sources. The vast body of work on mindfulness, which continues to rapidly expand, may lead to information overload amongst professionals (Black, 2010). In this context, it is not clear what might be considered “enough” knowledge on the topic. Khong and Mruk (2009) question how professionals, researchers and academics can “separate the facts from the fiction” (p. 110) in the ever-expanding wealth of mindfulness information. Recently, Black recognised this challenge and developed the online Mindfulness Research Guide (2009), intending that it would provide a centralised and organised system to enhance accessibility of up to date and relevant scientific information on mindfulness. Furthermore, it was hoped this may increase the competence of researchers and practitioners. Despite the potential utility of such a resource, it remains unclear how well-known the guide is to those interested in advancing their professional knowledge of mindfulness, and whether it is perceived as a trusted and reliable source (Black, 2010).

Limitations

The scope of these studies was limited by necessity in several ways. In gathering information from professionals, the focus of Study 1 was on examining the understandings and uses of mindfulness within mental health and related fields. However, mindfulness is employed much more broadly than this, with anecdotal evidence and research and clinical literature suggesting mindfulness interventions are increasingly being taught by such groups as general practitioners, nurses, and managers in work settings. It remains for future
research to explore how such groups might conceptualise mindfulness, and the sources and level of information and training undertaken prior to teaching mindfulness.

This research, while acknowledging their presence, has not focused on Buddhist conceptualisations of mindfulness. The rationales used in Study 3 were grounded in findings from professionals and community members, which did not include reference to concepts associated with mindfulness in the Buddhist context. Grossman (2011) argues “Western psychologists’ definitions and operationalizations of mindfulness may, in fact, be near-enemies of the original Buddhist construct” (p. 1035). Thus, this dissertation can only make comment from a secular perspective.

**Future Research**

Efficacy studies on mindfulness abound. What seems to be less important now is focusing on whether mindfulness interventions work, but on examining and defining with much more rigour what mindfulness is within the field of psychology, and disseminating this information widely. This includes whether or not this does or should include Buddhist concepts, if acceptance is a meaningful component, and whether as suggested, “recent research in the psychology literature may have done more to elucidate the effectiveness of interventions such as attentional training, acceptance of internal experience, and a present moment focus, rather than mindfulness (and its inherently interconnected factors) per se” (Christopher, et al., 2008, p. 607). Efficacy research cannot be usefully applied in practice if there is not clarity and commonality in conceptualisations of mindfulness.

Similarly, research attention should be geared toward evaluating the mechanisms underpinning the various mindfulness interventions. One risk of prioritising efficacy studies in new areas is that by the time dismantling studies are conducted, they “may have little immediate impact if they show that favored components [already widely introduced
amongst clinicians] are unhelpful, and their results may just be explained away” (Hayes, et al., 2006, p. 13-14).

On a clinical level, it is imperative to dispel the idea that there is one mindfulness. This is unhelpful, as it may lead professionals to conclude that the results of one mindfulness-based intervention or technique are generalisable to another, when one cannot easily and simply compare and interpret mindfulness research findings and their implications across different mindfulness-based interventions and practices (Dorjee, 2010; Grossman, 2008). Further, it hinders clinicians from developing an individualised approach to treatment.

**Conclusion**

Mindfulness is incredibly popular at present, and current trends in research, clinical guides and the wider media suggest this interest is only growing. The popularity of mindfulness is both a blessing, opening up clinical and personal possibilities, and a curse in that enthusiasm may surpass thoughtful clinical and academic conceptualisation and application. The current sequence of research studies has contributed an important foundation toward clarifying the construct of mindfulness as defined by professionals and community members, as well as exploring the manner in which mindfulness is applied at the grassroots level. Both groups identify the awareness aspect of mindfulness, but there is divergence across both samples with regard to whether mindfulness is conceived as a technique to directly change experiences or a way to help deal better with unpleasant experiences being present. When the effect of these two conceptualisations of mindfulness were examined in the laboratory, no differences were found. However, the expectations held by individuals regarding the benefits of the practice were related to mood, anxiety,
and a marker of defusion, and self-reported outcomes along with expectations had a bearing on whether consideration was given to using mindfulness in the future.

Overall, the research has demonstrated that mindfulness is a murky term that covers multiple conceptualisations and practices, and while a positive experience of mindfulness in the laboratory seems to imply it will be used again, it remains to be explored prospectively in naturalistic settings whether different initial explanations of mindfulness affect how it is experienced and the nature of benefits gained or challenges encountered. While no individual or group may be able to lay claim to the “true” understanding of mindfulness (Grossman, 2008), further clarification as to what people are referring to when they speak about mindfulness is clearly helpful. The challenge will be adequately translating a fundamentally experiential practice into language.
References


Barnhofer, T., Crane, C., Hargus, E., Amarasinghe, M., Winder, R., & Williams, J. M. (2009). Mindfulness-based cognitive therapy as a treatment for chronic depression:
References


results of their patients: A randomized, double-blind, controlled study.

_Psychotherapy and Psychosomatics, 76_, 332-338. doi: 10.1159/000107560


References


QSR International Pty Ltd. (2008). NVivo qualitative data analysis software (Version 8.0) [Computer software]. Doncaster, Victoria: QSR International Pty Ltd.


References


References

*Proceedings of the National Academy of Sciences, 106*, 8865-8870. doi: 10.1073/pnas.0904031106


Appendix A – Study 1 Participant Invitation

Professionals’ Use of Mindfulness Study

► Are you a professional whose work may involve the use of mindfulness?
► Regardless of whether you do or don’t use mindfulness in your work, we’d like to hear from you!

In this study, we’re interested in gathering information from professionals whose work may involve the use of mindfulness techniques, such as counsellors, psychologists, or mindfulness group facilitators, or professionals who work in any other area in which mindfulness may be used. We’d like to know more about professionals’ use of mindfulness techniques in their work and their personal life and their reasons for doing so, their training in using mindfulness, and their understandings and beliefs about mindfulness. We’re also interested in learning more about professionals’ decisions not to use mindfulness.

All you need to do to participate is fill out an on-line survey, which should take no more than 40 minutes to complete. Your participation in the study is a valuable contribution to current psychological knowledge about mindfulness.

To participate, or for more information about the study, go to: http://labs.thematic.org/start/professional

After completing the online survey, you may also choose to participate in a personal interview with the primary researcher, of approximately 1 hour. This is an opportunity for you to elaborate on your responses to the online survey, only if you wish to do so.

This study has been approved by The Australian National University Human Research Ethics Committee. There are no known risks of participating in this study. The survey forms part of a larger research project aimed at investigating the use of mindfulness in Australia, and the role of professional and community beliefs on mindfulness use and outcomes.

Your participation in this study is completely voluntary. You may choose not to take part, to not answer any questions you do not wish to answer, and to withdraw from participating at any time, without penalty or explanation. Completing and electronically submitting the survey indicates that you agree to have the information you provide in the survey included in the study.

Data from each participant will be kept and stored securely by the Principal Investigator. All material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If you have any questions about this project, please contact the principal researcher Debra Harris, Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au). If you have any concerns about this research project please contact the Secretary, Human Research Ethics Committee, Research Office, Chancery 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.officer@anu.edu.au).

If you’re a person in the community who has used mindfulness, such as part of your personal counselling or therapy, or in personal development or spiritual enlightenment, we’d like to hear from you too! Go to http://labs.thematic.org/start/mindfulness and complete the online survey.
Appendix B – Study 1 APS Newsletter Notice

Mindfulness: Professionals' and community members' use, understandings and beliefs

Mindfulness is a rapidly growing area of interest in psychology and related health fields. Despite an expanding empirical evidence base for the efficacy of mindfulness-based interventions, a key research question yet to be adequately addressed is the way in which mindfulness interventions work - that is, the active ingredients. Of additional research interest is information regarding the uptake and use of mindfulness by professionals, as well as people in the community, and the understandings and beliefs about mindfulness of each group. This research project seeks to investigate these areas of clinical importance.

We invite professionals whose work may involve the use of mindfulness (e.g., counsellors, psychologists, mindfulness group facilitators) to participate in this research, including professionals who choose not to use mindfulness in their work. Participation involves completing an online questionnaire (approximately 40-50 mins).

To participate, or for more information about this survey for professionals, go to:

http://labs.thematic.org/start/professional

We also invite members of the community who may have previously used or who currently use mindfulness or similar techniques to participate in the research, by completing an online questionnaire (approximately 30 mins). To participate, or for more information about this survey for community members, go to:

http://labs.thematic.org/start/mindfulness

This study has been approved by the Australian National University Human Research Ethics Committee. For more information, please contact:

Debra Harris
Intern Psychologist / Doctor of Psychology (Clinical) candidate
Department of Psychology
Australian National University
Phone: (02) 6125 5585
Email: debra.harris@anu.edu.au

Supervisor: Dr Jay Brinker
Phone: (02) 6125 2067
Email: Jay.Brinker@anu.edu.au

Start date: June 2009. End date: September 2009
Appendix C – Study 1 Advertising Flyer

BODY SCAN

MINDFULNESS OF BREATH

NOTICE 5 THINGS YOU SEE, HEAR, FEEL

MINDFUL EATING

- Are YOU a professional whose work may involve the use of MINDFULNESS (whether or not you use mindfulness)?

If so, we'd like to hear from you!

As part of our Professionals' Use of Mindfulness Study, we’re interested in hearing from any professionals whose work may involve the use of mindfulness techniques, such as counsellors, psychologists, mindfulness group facilitators, or professionals who work in any other area in which mindfulness may be used. We'd like to hear from you both if you do use mindfulness in your work, and also if you choose NOT to use mindfulness.

The study involves simply filling out an on-line survey with questions about your use of, or choice not to use, mindfulness techniques in both your professional work and your personal life, including the amount, pattern and type of mindfulness techniques used, and your reasons for choosing to either use or not use mindfulness. The survey also asks about any training or study you have undertaken in using mindfulness in your professional work, as well as your attitudes and perceptions about mindfulness and your ideas regarding how and why mindfulness techniques may be effective. Completion of the survey should take no more than 40 minutes.

After completing the online survey, you may also choose to participate in a personal interview with the researcher. This is an opportunity for you to elaborate on your responses to the online survey if you wish to.

Your participation in the study would be greatly appreciated, and a valuable contribution to current psychological knowledge about professionals' use of mindfulness.

To participate, or for more information about the study, go to:

http://labs.thematic.org/start/professional

Alternatively, contact the researcher Debra Harris on 02 6125 5585 or debra.harris@anu.edu.au

If you're a person in the community who has used mindfulness, such as part of your personal counselling or therapy, or in personal development or spiritual enlightenment, we'd like to hear from you too! Go to http://labs.thematic.org/start/mindfulness and complete the online survey.
Appendix D – Study 1 Questionnaire

*Note.* Questionnaire completed by participants was in electronic format online.

**DEMOGRAPHICS**

1. Please indicate your gender:
   - Female
   - Male

2. Please indicate your age category:
   - 20-24
   - 25-29
   - 30-34
   - 35-39
   - 40-44
   - 45-49
   - 50-54
   - 54-59
   - 60+

3. Please indicate your highest level of educational attainment:
   - Postgraduate degree
   - Graduate Diploma/Graduate Certificate
   - Bachelor Degree
   - Advanced Diploma/Diploma
   - Certificate III / IV
   - Certificate I / II

4. Please specify the field(s) of study undertaken:

5. Please indicate your employment status [*Please check all those that apply]*:
   - Full time employed
   - Part time employed
   - Not currently working
   - Retired
   - Full time student
   - Part time student
   - Other (please specify)
6. Do you have an awareness of what is referred to by the term *mindfulness* (as used in counselling/personal therapy, or associated with personal development or spiritual enlightenment)?
   - Yes [Please proceed to Q7]
   - No [Please proceed to the end of the survey]

**PROFESSIONAL USE OF MINDFULNESS**

7. Please indicate which below best describe your current role(s) relevant to the possible use of mindfulness [Please check all those that apply].
   - Counsellor
   - Intern Psychologist
   - Registered Psychologist
   - Clinical Psychologist
   - Academic Psychologist
   - Psychiatrist
   - Facilitator of mindfulness training/workshops for professionals
   - Facilitator of a mindfulness practice group
   - Other (please specify) ____________

8. Please indicate the state and postcode in which you are predominantly based to practise your work: State: ____________

9. Below is a list of common therapeutic approaches used by mental health professionals. With regard to your role, please select and rank the approach(es) you use, with most used approaches first and least used approaches last:
   - Cognitive Behavioural Therapy
   - Cognitive Therapy
   - Behavioural Therapy
   - Mindfulness-Based Stress Reduction
   - Mindfulness-Based Cognitive Therapy
   - Dialectical Behaviour Therapy
   - Interpersonal Psychotherapy
   - Acceptance and Commitment Therapy
   - Rational-Emotive Therapy
   - Solution Focused/Brief Therapy
   - Narrative Therapy
   - Family Therapy
10. Do you currently teach mindfulness, formal or informal, in your professional work?

- [ ] Yes [Please proceed to Q 11]
- [ ] No [Please proceed to the End of the Survey]

11. How long have you been including mindfulness in your professional work?

- [ ] 1-6 months
- [ ] 7-12 months
- [ ] 13-18 months
- [ ] 19-24 months
- [ ] 2-3 years
- [ ] 3-4 years
- [ ] 5+ years

12. Please indicate your reason(s) for beginning to incorporate mindfulness in your work [Please check all those that apply]:

- [ ] Attended a training course on mindfulness
- [ ] Learned about mindfulness whilst undertaking tertiary education
- [ ] Accessed a manual or professional book on using mindfulness
- [ ] Learned about mindfulness from colleagues
- [ ] Mindfulness was recommended by supervisor
- [ ] Learned about mindfulness from peer-reviewed literature
- [ ] Other (please specify): ____________________

13. Please name and briefly describe up to 15 specific mindfulness practices (formal and/or informal) you most often employ in your work:
14. On average, approximately what proportion of your work involves the use of mindfulness techniques? [Please mark a point on the line below]

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

15. Please rank the following presenting problems in terms of how helpful you believe mindfulness techniques are for clients/group participants experiencing each problem. Rank the presenting problems for which you believe mindfulness techniques are most helpful first and the problems for which you believe mindfulness techniques are least helpful last: [NOTE – Do not rank presenting problems for which you are unsure of their helpfulness]

- Low mood / depression
- Stress
- Anxiety
- Panic
- Phobia
- Relationship issues with partner
- Interpersonal problems
- Addiction problems (e.g., gambling, smoking, alcohol and substance use)
- Eating problems (e.g., overeating, undereating)
- Mania
- Psychosis
- Pain
- Sleeping difficulties
Grief / loss  
Anger issues  
Poor general well-being  
Attention / memory difficulties  
Trauma  
Low self-esteem  
Other (please specify): __________________________

16. Briefly describe the rationale you use when proposing mindfulness to clients/group participants:

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

17. Overall, please rate the degree to which you believe clients/group participants find the concept of mindfulness easy to understand:

1 2 3 4 5 6 7
Extremely hard to understand  Neutral  Extremely easy to understand

Comments: ________________________________________________________________

___________________________________________________________________________

18. Overall, please rate the degree to which you believe clients/group participants find mindfulness easy to use:

1 2 3 4 5 6 7
Extremely hard to use  Neutral  Extremely easy to use

Comments: ________________________________________________________________

___________________________________________________________________________
19. Have you observed any negative effects or reactions from clients due to the use of mindfulness practices?

- Yes – Please describe the observed negative effects or reactions:
  
  
  
  
  
  
  

- No

20. Please indicate your current source(s) of information about using mindfulness in your professional work. For each type selected, please indicate the total approximate number of hours of training, study or instruction in mindfulness you have undertaken:

- Professional training courses [number of hours undertaken _____ ]
- Tertiary study (e.g., counselling) [number of hours undertaken _____ ]
- Professional Books and Manuals [number of hours undertaken _____ ]
- Peer-reviewed journal articles [number of hours undertaken _____ ]
- Clinical supervision [number of hours undertaken _____ ]
- Audio CDs [number of hours undertaken _____ ]
- Colleagues [number of hours undertaken _____ ]
- On-the-job training [number of hours undertaken _____ ]
- Other(s) [number of hours undertaken _____ ]

21. Briefly describe your current understanding of the evidence for using mindfulness techniques in your role:


22. There may be many ways in which mindfulness works, that is, the specific reasons or mechanisms by which mindfulness may be useful for individuals. Listed below is a variety of ways in which researchers have suggested mindfulness might work. Please indicate any of those ways in which you believe mindfulness works [Please check all those that apply]:

- Increased flexibility in thinking
- Attention to experience itself, rather than interpretation of experience
- Commitment to kindness, compassion, curiosity, and openness to experience
- Significant shift in perspective (reperceiving)
- Clarification of values
Appendices

Regulation of emotions
- Reduced ruminative thinking
- Recognition that thoughts are not facts (defusion from thoughts)
- Recognition that all experiences are impermanent
- Reduced attachment to outcomes
- Increased ability to respond adaptively, rather than automatically
- Exposure to difficult thoughts, feelings and sensations
- Improved ability to solve problems
- Physical relaxation
- Deeper, calmer breathing
- Giving up the struggle with painful thoughts, feelings, and sensations

PERSONAL USE OF MINDFULNESS

23. Do you currently practice mindfulness in any way, formal or informal, in your own personal life?
   - Yes [If yes, please proceed to Q 26 ]
   - No [If no, please complete Qs 24 & 25]

24. Have you ever used mindfulness in your personal life in the past?
   - Yes – Please describe the reason(s) you currently choose not to engage in any mindfulness practice in your personal life:

25. Would you ever consider using mindfulness in the future?
   - Yes – Please outline any reason(s) that may contribute to your uptake of mindfulness practice in your personal life in the future:

   - No – Please describe the reasons you would not consider using mindfulness in the future, before proceeding to the End of the Survey:
26. Do you currently engage in **formal mindfulness meditation** in your personal life?
   - Yes [If yes, please complete Qs 27-29]
   - No [If no, please proceed Q 30]

27. How long have you had a formal mindfulness meditation practice?
   - 1-2 months
   - 3-5 months
   - 6-12 months
   - 13-18 months
   - 19-24 months
   - 2-3 years
   - 3-4 years
   - 5+ years

28. On average, how long (in hours) do you currently spend practicing mindfulness meditation each week?

   _______ hours

29. Please name and briefly describe up to 10 specific formal mindfulness meditation practices you use in your personal life:

   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________

30. Do you engage in **informal mindfulness** in your personal life?
   - Yes [If yes, please complete Qs 31-32]
   - No [If no, please proceed to Q 33]

31. How long have you engaged in informal mindfulness in your personal life?
   - 1-2 months
   - 3-5 months
   - 6-12 months
   - 13-18 months
32. Please name and briefly describe up to 10 specific informal mindfulness practices you use in your personal life:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

33. Please describe any way(s) in which you believe your personal use of mindfulness enhances your professional work:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

34. Please provide any other comments you have about mindfulness:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

---- END OF SURVEY ----
Appendix E – Study 1 Pre-Questionnaire Participant Information

Thankyou for your interest in participating in this online Professional Use of Mindfulness Survey.

The questions in this study relate to your use of, or choice not to use, mindfulness techniques in both your professional work and your personal life, including the amount, pattern and type of mindfulness techniques used, and your reasons for choosing to either use or not use mindfulness in either area. The survey also asks about any training or study you have undertaken in using mindfulness in your professional work, as well as your attitudes and perceptions about mindfulness and your ideas regarding how and why mindfulness techniques may be effective.

IMPORTANT:

- You may save your responses at any stage, and resume the survey at a later time (within 7 days). Simply click on "Continue Survey Later" at the bottom of any page to receive a unique weblink you can return to and complete the survey.
- This survey does not allow you to go back to a previous page once you have hit 'Next'. Ensure you complete each question on a page before proceeding. Do not hit the Back, Forward, or Refresh buttons on your internet browser whilst completing the survey, as the information you have entered will be lost, and you will need to begin the survey again.
- If you wish to complete a hard copy survey, please contact the principal researcher, Debra Harris on 02 6126 5585 or debra.harris@anu.edu.au.

There are no known risks of participating in this research. Your participation in this study is completely voluntary – you may choose not to answer questions you do not wish to, and you may withdraw from participating at any point.

Completion of the survey should take approximately 50 minutes. Submitting your responses at the conclusion of the survey indicates that you agree to have the information you provide in the survey included in the study. The survey will remain open until end of September 2009.

Data from each participant will be kept and stored securely by the Principal Investigator; all material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If you have any questions about participating in this survey, please contact the principal researcher, Debra Harris, at the Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au).
Appendix F – Study 1 Participant Debriefing Information

---THANKYOU FOR YOUR PARTICIPATION---

The objective of this study is to learn more about the amount, pattern and type of mindfulness techniques employed by counsellors, psychologists and other related professionals in practice across Australia. A further objective is to gather information from professionals regarding their training in using mindfulness, and their ideas about the potential mechanisms of change underlying the effectiveness of mindfulness techniques. This study forms part of a larger research project aimed at investigating the use of mindfulness in Australia, and the role of practitioner and client beliefs about mindfulness on treatment outcomes.

Your participation in the study has been a valuable contribution to current knowledge about professionals' use of, or choice not to use, mindfulness techniques in their professional work and private lives and their reasons for doing so. The information you have provided is also important in adding to current understandings about the types of issues for which mindfulness may be most useful, and the ways in which mindfulness might have its beneficial effects.

Your data will be kept and stored securely by the Principal Investigator; all material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If you have any questions about this project, please contact the principal researcher, Debra Harris, at the Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au).

If you have any concerns about the way the research was conducted please contact the Secretary, Human Research Ethics Committee, Research Office, Chancelry 10B, The Australian National University, ACT 0200 (02 6125 7945 or human.ethics.officer@anu.edu.au).

[Please print a copy of this page for your information]
Appendix G – Study 2 Advertising Flyer

IHI- AUSTRALIAN NATIONAL UNIVERSITY

BODY SCAN
MINDFULNESS OF BREATH
NOTICE 5 THINGS YOU SEE, HEAR, FEEL
MINDFUL EATING

- Are you a person in the community who has used MINDFULNESS?
  
  If so, we'd like to hear from you!

As part of our Mindfulness Use, Beliefs, and Personal Characteristics Study, we're interested in hearing from people in the community who have ever used mindfulness techniques, such as part of counselling or personal therapy, or in personal development or spiritual enlightenment. Mindfulness involves paying attention in the present moment, non-judgmentally, with emphasis on seeing and accepting things as they are without trying to change them. It includes both formal mindfulness meditation techniques (such as the body scan), and informal mindfulness techniques (such as being mindful as you eat).

The study involves simply filling out an on-line survey with questions about your use of and beliefs about mindfulness techniques, difficulties you have used mindfulness for, medication use, previous experience with a range of therapy approaches, and your personal characteristics. Completion of the survey should take no more than 40 minutes.

After completing the online survey, you may also choose to participate in a personal interview with the researcher. This is an opportunity for you to elaborate on your responses to the online survey if you wish to.

Your participation in the study would be greatly appreciated, and a valuable contribution to current psychological knowledge about mindfulness.

To participate, or for more information about the study, go to: http://labs.thematic.org/start/mindfulness

Alternatively, contact the researcher Debra Harris on 02 6125 5585 or debra.harris@anu.edu.au

If you’re a professional whose work may involve the use of mindfulness, we’d like to hear from you too! Go to http://labs.thematic.org/start/professional and complete the online survey.
Appendix H – Study 2 Advertising Notice

ANU Research Opportunity. Have you used mindfulness in your personal life? Do you use mindfulness in your work as a counsellor, psychologist or group facilitator? Do you choose not to use mindfulness techniques in your work? Contact Debra Harris on 6125 5585 or debra.harris@anu.edu.au to participate in this important research by completing an anonymous online survey.
Mindfulness Use, Beliefs, and Personal Characteristics Study

If you're a person in the community who has ever used mindfulness, such as part of your personal counselling or therapy, or in personal development or spiritual enlightenment, we'd like to hear from you!

In this study, we're interested in learning more about people's use of mindfulness, which involves paying attention in the present moment to things such as the breath, physical sensations, thoughts and emotions, and observing things as they are without trying to change them. Mindfulness refers to both formal meditation practices (i.e., setting aside regular time to systematically direct attention to the breath, thoughts, emotions, sounds, physical sensations, or other things), as well as more informal techniques, which involve taking a mindful approach to daily life and routines (e.g., mindful walking).

You may know the concept of mindfulness by other terms, such as meditation, self-observation, moment-to-moment awareness, 'being mode', Vipassana, or another term. As with mindfulness, such concepts and practices are generally associated with counselling or personal therapy, or with personal development or spiritual enlightenment. Regardless of what you call your practice, we'd like to hear from you.

All you need to do to participate is fill out an online survey with questions about your use of and beliefs about mindfulness, your reasons for using mindfulness, medications used, previous experience with a range of therapy approaches, and your personal characteristics. Completion of the survey should take no more than 40 minutes. Your participation in the study is a valuable contribution to current psychological knowledge about mindfulness.

To participate, or for more information about the study, go to: http://labs.thematic.org/start/mindfulness

After completing the online survey, you may also choose to participate in a personal interview with the primary researcher, of approximately 1 hour. This is an opportunity for you to elaborate on your responses to the online survey, only if you wish to do so.

This study has been approved by The Australian National University Human Research Ethics Committee. There are no known risks of participating in this research. However, due to the personal nature of some of the questions, some participants may feel uncomfortable answering. The survey forms part of a larger research project aimed at investigating the use of mindfulness in Australia, and the role of professional and community beliefs on mindfulness use and outcomes.

Your participation in this study is completely voluntary. You may choose not to take part, to not answer any questions you do not wish to you, and to withdraw from participating at any time, without penalty or explanation. Completing and electronically submitting the survey indicates that you agree to have the information you provide in the survey included in the study.

Data from each participant will be kept and stored securely by the Principal Investigator. All material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If you have any questions about this project, please contact the principal investigator Debra Harris, Department of Psychology, The Australian National University (02 6125 5685 or debra.harris@anu.edu.au). If you have any concerns about this research project please contact the Secretary, Human Research Ethics Committee, Research Office, Chancelty 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.office@anu.edu.au).

If you're a professional whose work may involve the use of mindfulness, we'd like to hear from you too! Go to http://labs.thematic.org/start/professional and complete the online survey.
Appendices

Appendix J – Study 2 Questionnaire

Note. Questionnaire completed by participants was in electronic format online.

DEMOGRAPHICS

1. Please indicate your gender:
   - Female
   - Male

2. Please indicate your age category:
   - 20-24
   - 25-29
   - 30-34
   - 35-39
   - 40-44
   - 45-49
   - 50-54
   - 55-59
   - 60+

3. Please indicate the state and postcode in which you reside: State: __________

4. Please indicate your highest level of educational attainment:
   - Postgraduate degree
   - Graduate Diploma/Graduate Certificate
   - Bachelor Degree
   - Advanced Diploma/Diploma
   - Certificate III / IV
   - Certificate I / II
   - Year 12
   - Year 10

5. Please specify the field(s) of study undertaken (if tertiary study undertaken):

6. Please indicate your employment status [Please check all those that apply]:
   - Full time employed
   - Part time employed
   - Not currently working
   - Retired
   - Full time student
7. Do you have an awareness of what is referred to by the term mindfulness (as used in counselling/personal therapy, or associated with personal development or spiritual enlightenment)?
   - Yes [Please proceed to Q 8]
   - No [Please proceed to the end of the survey]

8. Please describe your current understanding of what mindfulness is:

9. How did you find out about mindfulness? [Please check all those that apply]:
   - Television
   - Internet/websites
   - Tertiary study
   - Community education course
   - Audio CD
   - Self-help books
   - Psychologist
   - Counsellor
   - GP
   - Mindfulness group
   - Health/fitness centre
   - Friend
   - Advertisement
   - Church
   - Monastery
   - Other (please specify): __________________________
   - Other (please specify): __________________________
10. Please indicate any types of training, instruction or study you have undertaken in mindfulness [*Please check all those that apply.*]. For each type selected, please indicate the total approximate number of hours of mindfulness training, study or instruction undertaken:

- Television program [number of hours undertaken _____ ]
- Internet/websites [number of hours undertaken _____ ]
- Tertiary study [number of hours undertaken _____ ]
- Community education course [number of hours undertaken _____ ]
- Audio CD [number of hours undertaken _____ ]
- Self-help book(s) [number of hours undertaken _____ ]
- Psychologist [number of hours undertaken _____ ]
- Counsellor [number of hours undertaken _____ ]
- GP [number of hours undertaken _____ ]
- Mindfulness group [number of hours undertaken _____ ]
- Health/fitness centre [number of hours undertaken _____ ]
- Friend [number of hours undertaken _____ ]
- Church [number of hours undertaken _____ ]
- Monastery [number of hours undertaken _____ ]
- Other(s) [number of hours undertaken _____ ]

### USE OF MINDFULNESS

11. Do you currently practice mindfulness in any way, formal or informal, in your own personal life?
- Yes [If yes, please proceed to Q 13]
- No [If no, please proceed to Q 12]

12. Have you ever used mindfulness in the past?
- Yes [If yes, please proceed Q 19]
- No [If no, please proceed to Q 22]

13. Do you currently have a formal mindfulness meditation practice?
- Yes [If yes, please complete Qs 14-16]
- No [If no, please proceed Q 17]
14. How long have you had a formal mindfulness meditation practice?

- 1-2 months
- 3-5 months
- 6-12 months
- 13-18 months
- 19-24 months
- 2-3 years
- 3-4 years
- 5+ years

15. On average, how long (in hours) do you currently spend practicing mindfulness meditation each week? __________ hours

16. Please name and briefly describe up to 10 specific formal mindfulness meditation practices you use:

17. Do you engage in informal mindfulness in your personal life?

- Yes [If yes, please complete Qs 18 and 19]
- No [If no, please proceed to Q 20]

18. How long have you engaged in informal mindfulness in your personal life?

- 1-2 months
- 3-5 months
- 6-12 months
- 13-18 months
- 19-24 months
- 2-3 years
- 3-4 years
- 5+ years
19. Please name and briefly describe up to 10 specific informal mindfulness techniques you use/have used in your personal life:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

20. Have you found any mindfulness practices, either formal or informal, detrimental to your well-being?

○ Yes – Please specify the practice(s) you have found detrimental to your well-being, explaining your reason(s) for this:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

○ No

21. For each type of difficulty listed below, please rank the relative degree to which mindfulness has been personally helpful to you, with the difficulty mindfulness has been most helpful for first and the difficulty mindfulness has been least helpful for last. [NOTE – Do not rank difficulties for which you do not use mindfulness techniques]:

○ Low mood / depression
○ Stress
○ Anxiety
○ Panic
○ Phobia
○ Relationship issues with partner
○ Interpersonal problems
○ Addiction problems (e.g., gambling, smoking, alcohol and substance use)
○ Eating problems (e.g., overeating, undereating)
○ Mania
○ Psychosis
○ Pain
Beliefs about Mindfulness

22. Overall, please rate the degree to which you find the concept of mindfulness easy to understand:

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<thead>
<tr>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely hard to understand</td>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely easy to understand</td>
</tr>
</tbody>
</table>

Comments:

23. Overall, please rate the degree to which you find mindfulness easy to use:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely hard to use</td>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extremely easy to use</td>
</tr>
</tbody>
</table>

Comments:

24. There may be many ways in which mindfulness works, that is, the specific reasons or mechanisms by which mindfulness might be useful for individuals. Listed below is a variety of ways in which researchers have suggested mindfulness might work. Please indicate any of those ways in which you believe mindfulness works [Please check all those that apply]:

- Increased flexibility in thinking
- Attention to experience itself, rather than interpretation of experience
- Commitment to kindness, compassion, curiosity, and openness to experience
- Significant shift in perspective (reperceiving)
- Clarification of values
- Regulation of emotions
- Reduced ruminative thinking
Appendices

- Recognition that thoughts are not facts (defusion from thoughts)
- Recognition that all experiences are impermanent
- Reduced attachment to outcomes
- Increased ability to respond adaptively, rather than automatically
- Exposure to difficult thoughts, feelings and sensations
- Improved ability to solve problems
- Physical relaxation
- Deeper, calmer breathing
- Giving up the struggle with painful thoughts, feelings, and sensations

25. Please describe your attitudes toward mindfulness before you began using it:

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

26. Please describe your attitudes toward mindfulness after you began using it:

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

27. Please provide any other comments you have about mindfulness:

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

---- END OF SURVEY ----
Appendix K – Study 2 Pre-Questionnaire Participant Information

Thank you for your interest in participating in this anonymous online Mindfulness Use Survey.

The questions in this study relate to mindfulness, which involves paying attention in the present moment to things such as the breath, physical sensations, thoughts and emotions, and observing and accepting things as they are without trying to change them. Mindfulness refers to both formal meditation practices (i.e., setting aside regular time to systematically direct attention to the breath, thoughts, emotions, sounds, physical sensations, or other things), as well as more informal techniques, which involve taking a mindful approach to daily life and routines (e.g., mindful walking or being mindful or ‘fully aware’ whilst eating).

You may know the concept of mindfulness by other terms, such as meditation, self-observation, moment-to-moment awareness, being in ‘being mode’, Vipassana, or another term. Such concepts and practices are generally associated with counselling or personal therapy, or in personal development or spiritual enlightenment. Regardless of what you call your practice, we’d like to hear from you.

We’re interested in finding out more about your use of and beliefs about mindfulness techniques, the types of issues you use mindfulness for, and psychiatric medications used by you. There are also questions relating to your experience with a range of therapy approaches, and your general personal characteristics.

IMPORTANT:

- You may save your responses at any stage, and resume the survey at a later time (within 7 days). Simply click on “Continue Survey Later” at the bottom of any page to receive a unique weblink you can return to and complete the survey.
- This survey does not allow you to go back to a previous page once you have hit ‘Next’. Ensure you complete each question on a page before proceeding. Do not hit the Back, Forward, or Refresh buttons on your internet browser whilst completing the survey, as the information you have entered will be lost, and you will need to begin the survey again.
- If you wish to complete a hard copy survey, please contact the principal researcher, Debra Harris on 02 6126 5585 or debra.harris@anu.edu.au.

There are no known risks of participating in this research. However, due to the personal nature of some of the questions, some participants may feel uncomfortable answering. Your participation in this study is completely voluntary – you may choose not to answer questions you do not wish to, and you may withdraw from participating at any point.

Completion of the survey should take no more than 40 minutes. Submitting your responses at the conclusion of the survey indicates that you agree to have the information you provide in the survey included in the study. The survey will remain open until end of September 2009.

Data from each participant will be kept and stored securely by the Principal Investigator; all material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If you have any questions about participating in this survey, please contact the principal researcher, Debra Harris, at the Department of Psychology, The Australian National University (02 6126 5585 or debra.harris@anu.edu.au).
Appendix L – Study 2 Participant Debriefing Information

---THANKYOU FOR YOUR PARTICIPATION---

The objective of this study is to learn more about Australians who engage in mindfulness practices. Specifically, we are interested in finding out about people’s use of, and understandings, beliefs and expectations regarding mindfulness, as well as the role that personal characteristics may play in the use of mindfulness techniques. The study forms part of a larger research project aimed at investigating the use of mindfulness in Australia, and the role of practitioner and client characteristics and beliefs about mindfulness on treatment outcomes.

Your participation in the study is a valuable contribution to current knowledge about who does and doesn’t use mindfulness and their reasons for doing so, current community understandings of and perceptions about mindfulness, the types of issues for which mindfulness may be most useful, and the ways in which mindfulness might have its beneficial effects.

Your data will be kept and stored securely by the Principal Investigator; all material will be treated in a strictly confidential manner as far as the law will allow. Data from this study may be used in student theses, presented at professional conferences, and/or published in professional journals. However, no participant information will be identifiable in these presentation formats.

If answering any of the questions in this study has raised any concerns or issues for you, there are supports and services that can assist you:

- Call Lifeline on 13 11 14 – crisis counselling 24 hours a day
- Visit the Mental Health Council of Australia’s website at http://www.mhca.org.au/help for information about a range of counselling services as well as sources of information on mental health issues
- Find a psychologist on the Australian Psychological Society website at www.psychology.org.au/FindaPsychologist/
- If you have received counselling or psychological assistance in the past, you may wish to contact your previous mental health professional

If you are interested in finding out more about mindfulness or taking part in a mindfulness course, you may find the following online sources useful:

- http://mindfulnesscentre.com/

If you have any questions about this project, please contact the principal researcher, Debra Harris, at the Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au). If you have any concerns about the way the research was conducted please contact the Secretary, Human Research Ethics Committee, Research Office, Chancerly 10B, The Australian National University, ACT 0200 (02 6125 7945 or human.ethics.officer@anu.edu.au).

[Please print a copy of this page for your information]
RESEARCH PARTICIPANTS WANTED

WANT TO TAKE PART IN AN INTRODUCTORY MINDFULNESS EXERCISE?

WANT TO EARN $10 FOR 1 HR OF YOUR TIME?

What is mindfulness?
Ψ Mindfulness is a way of paying attention in the present moment and observing and being aware of your experiences as they happen.

What will you be asked to do?
Ψ Attend a session at the ANU Department of Psychology for about 60 mins and:
  o Complete some surveys with questions about yourself and your feedback about mindfulness
  o Take part in a 15 minute mindfulness exercise
  o Wear a blood pressure monitor on your wrist and a heart rate belt on your chest
Ψ The study will run in groups of 1-4 people. You won't be asked to interact with other group members, and none of the information gathered from you will be known to others.

Who can participate?
Ψ Anyone!
Ψ Best suited for people with little or no experience with mindfulness or meditation

When is the study happening?
Ψ Right now! There are participation sessions available until the end of May
Ψ Sessions are available Tues, Wed and Thurs 9-5pm, and after 5pm on request

What's in it for you?
Ψ $10 cash, or 1 hr research participation credit (for ANU 1st year Psych students)
Ψ Opportunity to take part in an introductory mindfulness exercise

How do you participate?
Ψ Email: debra.harris@anu.edu.au
Ψ Phone: Debra on (02) 6125 5585
Appendix N – Study 3 Advertising Notice

Participants wanted for mindfulness research
6 May, 2011 By Debra Harris, DPsych(Clinical) candidate

You are invited to take part in research being conducted by an ANU Psychology Doctoral student, which aims to find out more about how a brief mindfulness exercise might affect people differently, and to gain participants’ feedback about the exercise.

What is mindfulness?
Mindfulness is a way of purposefully paying attention in the present moment and observing and being aware of your experiences as they happen, non-judgmentally.

What will you be asked to do?
- Attend a session at the ANU Department of Psychology for 60 mins and:
- Complete some surveys with questions about yourself and your feedback about mindfulness
- Take part in a 15 minute mindfulness exercise
- Wear a blood pressure monitor on your wrist and a heart rate variability belt on your chest

The study is run in groups of 1-4 people. You won’t be asked to interact with other group members, and none of the information gathered from you will be known to others in the group.

Who can participate?
- Anyone!
- Best suited for people with little or no experience with mindfulness or meditation

When is the study happening?
- Right now! There are participation sessions available until the end of May
- Sessions are available Tuesdays, Wednesdays and Thursdays during business hours, and after business hours Monday-Friday on request
- Session times available upon contacting the researcher

What’s in it for you?
- $10 cash (or 1 hr research participation credit for ANU 1st year Psych students)
- An opportunity to take part in an introductory mindfulness exercise

Interested?
Contact Debra
e debra.harris@anu.edu.au
p (02) 6125 5585
Appendix O – Study 3 Questionnaire

Note. Questionnaire completed by participants was in electronic format online.

Please write your 6 digit ID number: __________

Part 1

1. Please indicate your gender:
   - Male
   - Female

2. Please indicate your age: __________ (years)

3. Is English your first language?
   - Yes
   - No

4. Please read each statement and circle the number which indicates how much the statement applied to you over the past week (that is, the last 7 days), from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). There are no right or wrong answers. Do not spend too much time on any statement.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Did not apply to me at all</td>
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<tr>
<td>Applied to me to some degree, or some of the time</td>
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<tr>
<td>Applied to me to a considerable degree, or a good part of the time</td>
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<tr>
<td>Applied to me very much, or most of the time</td>
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</table>

- I found it hard to wind down
- I was aware of dryness of my mouth
- I couldn't seem to experience any positive feeling at all
- I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
- I found it difficult to work up the initiative to do things
- I tended to over-react to situations
- I experienced trembling (e.g., in the hands)
- I felt that I was using a lot of nervous energy
- I was worried about situations in which I might panic and make a fool of myself
- I felt that I had nothing to look forward to
I found myself getting agitated 0 1 2 3  
I found it difficult to relax 0 1 2 3  
I felt down-hearted and blue 0 1 2 3  
I was intolerant of anything that kept me from getting on with what I was doing 0 1 2 3  
I felt I was close to panic 0 1 2 3  
I was unable to become enthusiastic about anything 0 1 2 3  
I felt I wasn't worth much as a person 0 1 2 3  
I felt that I was rather touchy 0 1 2 3  
I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat) 0 1 2 3  
I felt scared without any good reason 0 1 2 3  
I felt that life was meaningless 0 1 2 3  

5. Do you have an awareness of what is referred to by the term "mindfulness" (as used in psychological therapy, or associated with personal development)?
   - Yes
   - No

6. Have you ever had a regular meditation practice?
   - Yes
   - No

7. Written below are a number of words that describe different feelings and emotions. Read each item and indicate to what extent you feel this way right now, that is, at the present moment. Rate each item from 1 (Very slightly or not at all) to 5 (Extremely).

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<th>5</th>
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<tbody>
<tr>
<td></td>
<td>Very slightly or</td>
<td>A little</td>
<td>Moderately</td>
<td>Quite a bit</td>
<td>Extremely</td>
</tr>
<tr>
<td>Interests</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>
8. A number of statements which people have used to describe themselves are given below. Read each statement and indicate the appropriate answer for each statement to indicate how you feel right now, that is, at this moment. Rate each statement from 1 (Not at all) to 4 (Very much so). There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

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<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>I feel calm</td>
<td></td>
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<tr>
<td>I feel tense</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I am relaxed</td>
<td></td>
<td></td>
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<tr>
<td>I feel content</td>
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<td></td>
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<tr>
<td>I am worried</td>
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<tr>
<td>I feel upset</td>
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</table>

9. You’ll now be asked to think of and write down some self-statements, which are thoughts you have about yourself. The thoughts or self-statements people have about themselves can be positive, negative, or neutral. Negative thoughts or self-statements are those that leave us feeling distressed or bad about ourselves. NOTE: You will be the only person who knows what you write - no one else will see what you write. You will not be asked to place your name on what you write and you will shred it immediately following your participation.
On the paper provided on your desk labelled *Negative Self-Statements*, please now write down two recurring negative thoughts or self-statements you have about yourself, that you find particularly distressing.

The following questions refer to Negative Self-Statement #1, written on the paper in front of you. Thinking about right now, at this present moment, please indicate your response to each question by making a mark at the appropriate position on the line below each statement.

a) Please rate the extent to which you feel comfortable reading and thinking about this statement (from 0 - Extremely comfortable to 100 - Extremely uncomfortable):

<table>
<thead>
<tr>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Extremely comfortable</td>
</tr>
<tr>
<td>100%</td>
</tr>
<tr>
<td>Extremely uncomfortable</td>
</tr>
</tbody>
</table>

b) Please rate the extent to which you find this statement believable (from 0 - Extremely unbelievable to 100 - Extremely believable):

<table>
<thead>
<tr>
<th>Percentage</th>
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<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Extremely unbelievable</td>
</tr>
<tr>
<td>100%</td>
</tr>
<tr>
<td>Extremely believable</td>
</tr>
</tbody>
</table>

c) Please rate the extent to which you are willing to read and think about this statement (from 0 - Extremely unwilling to 100 - Extremely willing):

<table>
<thead>
<tr>
<th>Percentage</th>
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<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Extremely unwilling</td>
</tr>
<tr>
<td>100%</td>
</tr>
<tr>
<td>Extremely willing</td>
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</tbody>
</table>

10. The following questions refer to Negative Self-Statement #2, written on the paper in front of you. Thinking about right now, at this present moment, please indicate your response to each question by making a mark at the appropriate position on the line below each statement.

a) Please rate the extent to which you feel comfortable reading and thinking about this statement (from 0 - Extremely comfortable to 100 - Extremely uncomfortable):

<table>
<thead>
<tr>
<th>Percentage</th>
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<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Extremely comfortable</td>
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<tr>
<td>100%</td>
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<tr>
<td>Extremely uncomfortable</td>
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</tbody>
</table>

b) Please rate the extent to which you find this statement believable (from 0 - Extremely unbelievable to 100 - Extremely believable):

<table>
<thead>
<tr>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>Extremely unbelievable</td>
</tr>
<tr>
<td>100%</td>
</tr>
<tr>
<td>Extremely believable</td>
</tr>
</tbody>
</table>
c) Please rate the extent to which you are willing to read and think about this statement (from 0 - Extremely unwilling to 100 - Extremely willing):

<table>
<thead>
<tr>
<th>Extremely unwilling</th>
<th>0%</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>100% Extremely willing</th>
</tr>
</thead>
</table>

Part 2

11. Please indicate how much you agree with the following statements about the mindfulness exercise you are going to do today (from 1 - Strongly disagree to 5 - Strongly agree). I expect today's mindfulness exercise will help me to:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

...feel more relaxed. 1 2 3 4 5
...feel less anxious. 1 2 3 4 5
...improve my mood. 1 2 3 4 5
...stop worrying. 1 2 3 4 5
...manage my stress. 1 2 3 4 5

Part 3

12. Please rate how true the following statement is for you, from 1 (Very untrue) to 7 (Very true):

I did my best to follow the guided instructions during the mindfulness exercise:

<table>
<thead>
<tr>
<th>Very untrue</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very true</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. We are interested in what you just experienced during the mindfulness exercise. Below is a list of things that people sometimes experience. Please indicate the extent to which you agree with each statement (from 0 - Not at all to 4 - Very much). In other words, how well does each statement describe what you just experienced, just now, during the mindfulness exercise?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
<td>Moderately</td>
<td>Quite a bit</td>
<td>Very much</td>
</tr>
</tbody>
</table>
I experienced myself as separate from my changing thoughts and feelings.

I was more concerned with being open to my experiences than controlling or changing them.

I was curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings or sensations.

I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things "really" are.

I was curious to see what my mind is up to from moment to moment.

I was curious about each of the thoughts and feelings I have.

I was receptive to observing unpleasant thoughts and feelings without interfering with them.

I was more invested in just watching my experiences as they arise, than in figuring out what they could mean.

I approached the experience by trying to accept it, no matter whether it is pleasant or unpleasant.

I remained curious about the nature of each experience as it arises.

I was aware of my thoughts and feelings without overidentifying with them.

I was curious about my reactions to things.

I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to.

14. Written below are a number of words that describe different feelings and emotions. Read each item and indicate to what extent you feel this way right now, that is, at the present moment. Rate each item from 1 (Very slightly or not at all) to 5 (Extremely).

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Distressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Hostile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Proud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Irritable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
15. A number of statements which people have used to describe themselves are given below. Read each statement and indicate the appropriate answer for each statement to indicate how you feel right now, that is, at this moment. Rate each statement from 1 (Not at all) to 4 (Very much so). There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>Somewhat</td>
<td>Moderately</td>
<td>Very much so</td>
</tr>
<tr>
<td>I feel calm</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel tense</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I am relaxed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel content</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I am worried</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I feel upset</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

16. Please now recall the two negative thoughts or self-statements about yourself you wrote down earlier. Please now look at the paper you wrote these negative self-statements on, labelled Negative Self-Statements. When you have recalled these negative self-statements to your mind, continue to the next question.

The following questions refer to Negative Self-Statement #1. Thinking about right now, at this present moment, please indicate your response to each question by making a mark at the appropriate position on the line below each statement.

a) Please rate the extent to which you feel comfortable reading and thinking about this statement (from 0 - Extremely comfortable to 100 - Extremely uncomfortable):

0% Extremely comfortable
100% Extremely uncomfortable
b) Please rate the extent to which you find this statement believable (from 0 - Extremely unbelievable to 100 - Extremely believable):

<table>
<thead>
<tr>
<th>0%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely unbelievable</td>
<td>Extremely believable</td>
</tr>
</tbody>
</table>

c) Please rate the extent to which you are willing to read and think about this statement (from 0 - Extremely unwilling to 100 - Extremely willing):

<table>
<thead>
<tr>
<th>0%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely unwilling</td>
<td>Extremely willing</td>
</tr>
</tbody>
</table>

17. The following questions refer to Negative Self-Statement #2. Thinking about right now, at this present moment, please indicate your response to each question by making a mark at the appropriate position on the line below each statement.

a) Please rate the extent to which you feel comfortable reading and thinking about this statement (from 0 - Extremely comfortable to 100 - Extremely uncomfortable):

<table>
<thead>
<tr>
<th>0%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely comfortable</td>
<td>Extremely uncomfortable</td>
</tr>
</tbody>
</table>

b) Please rate the extent to which you find this statement believable (from 0 - Extremely unbelievable to 100 - Extremely believable):

<table>
<thead>
<tr>
<th>0%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely unbelievable</td>
<td>Extremely believable</td>
</tr>
</tbody>
</table>

c) Please rate the extent to which you are willing to read and think about this statement (from 0 - Extremely unwilling to 100 - Extremely willing):

<table>
<thead>
<tr>
<th>0%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely unwilling</td>
<td>Extremely willing</td>
</tr>
</tbody>
</table>

18. Would you consider using mindfulness exercises, such as the one you did today, in the future?

○ Yes
○ No

---END OF SURVEY---
Appendix P – Factor Analysis of Expectation Items

A factor analysis was conducted on the five items created to assess pre-mindfulness induction expectations. The minimum amount of data for factor analysis was satisfied, with at least 20 cases per item. The factorability of the five pre-expectation items was examined initially. All items correlated at least .3 with other items. Principal components analysis was undertaken using a direct obliman rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy was good at .77, and Bartlett’s test of sphericity was significant ($\chi^2(10) = 327.92, p < .001$). The diagonals of the anti-image were all above .5 and the communalities after extraction were all above .3 confirming that each item shared some common variance with other items and supporting inclusion of all five items in the factor analysis. The initial eigenvalues showed that the first factor explained 57.3% of the variance, the second factor 17.2% and the third 10.9%. Examination of the scree plot showed the curve dropped sharply at the second factor, and only the first factor showed an eigenvalue greater than 1 (Field, 2005). Additionally, when the number of factors to be extracted was not constrained, only one component was extracted. As such, a one factor solution was retained, which represented pre-mindfulness induction expectations of immediate benefit, named Expectations.
Appendix Q – Negative Self-Statement Sheet

Negative Self Statements

Negative Self-Statement #1: ________________________________

Negative Self-Statement #2: ________________________________

Principal analysis of the six post-test disordered items was performed. The correlation matrix showed all items correlated at least 0.3 with another item. Principal components analysis was performed using a direct rotation method, with three factors specified for extraction. The Kaiser-Meyer-Olkin measure of sampling adequacy was acceptable at 0.55, and Bartlett’s test of sphericity was significant, χ²(15) = 48.52, p < .001. The diagonals of the anti-image were above 0.5 and the communalities after extraction were all above 0.3.
Appendices 214

Appendix R – Factor Analysis of Defusion Items

Factor analysis was undertaken on the six pre-test defusion items. The minimum amount of data for factor analysis was satisfied, with at least 20 cases per item. Initially, the factorability of the items was examined, with bivariate correlations showing all items correlated at least 0.3 with another item. Principal components analysis was performed using a direct obliman rotation, with the number of factors to be extracted specified as three. The Kaiser-Meyer-Olkin measure of sampling adequacy was acceptable at 0.55, and Bartlett’s test of sphericity was significant, $\chi^2(15) = 268.71, p < .001$. The diagonals of the anti-image were above 0.5 and the communalities after extraction were all above 0.3 confirming that each item shared some common variance with other items and supporting inclusion of all six items in the factor analysis. The initial eigenvalues showed that the first factor explained 36.8% of the variance, the second factor 24.8% and the third 16.1%.

Examination of the scree plot showed the curve dropped sharply at the fourth factor (Field, 2005). The pattern matrix showed that each pair of related items loaded together onto a unique factor, and a three one factor solution was thus retained, which represented pre-mindfulness induction discomfort, believability and willingness with regard to a negative self-referent thought, labelled respectively Pre-Discomfort, Pre-Believability and Pre-Willingness.

Factor analysis of the six post-test defusion items was performed. Bivariate correlations showed all items correlated at least 0.3 with another item. Principal components analysis was performed using a direct obliman rotation, with three factors specified for extraction. The Kaiser-Meyer-Olkin measure of sampling adequacy was acceptable at 0.55, and Bartlett’s test of sphericity was significant, $\chi^2(15) = 463.52, p < .001$. The diagonals of the anti-image were above 0.5 and the communalities after extraction were all above 0.3
supporting inclusion of all six items in the factor analysis. The initial eigenvalues showed that the first factor explained 43.5% of the variance, the second factor 25.9% and the third 14.3%. Examination of the scree plot showed the curve dropped sharply at the fourth factor (Field, 2005). The pattern matrix showed that each pair of related items loaded together onto a unique factor, and a three one factor solution was thus retained, which represented post-mindfulness induction discomfort, believability and willingness with regard to a negative self-referent thought, labelled respectively Post-Discomfort, Post-Believability and Post-Willingness.
Appendix S – Rationale Manipulations

Rationale 1: Benefits

There are many different ways of understanding mindfulness. For today, mindfulness is described as a way of purposefully paying attention in the present moment and observing and being open to thoughts, feelings, and physical sensations, and our external surroundings, as they are, non-judgementally. Mindfulness is about developing a different relationship with our thoughts, feelings and bodily sensations, opening up our awareness to them whether pleasant or unpleasant - as they are, rather than as we want them to be, without necessarily needing to change or escape them, and without the usual evaluation our minds tend to provide.

Mindfulness can be used as a way of reducing anxiety and stress, and to help people cope more effectively and calmly with problems that arise in their lives. Practicing mindfulness may reduce engagement in unhelpful ruminative thinking, improve mood, reduce distress, and assist people in regulating their emotions. Mindfulness may increase self-awareness, and improve concentration. It can provide a time out, a slowing down of one’s life, and can enhance our ability to enjoy simple pleasures. Mindfulness may bring about a sense of peace and clarity of mind regarding one’s life. There is an increasing evidence base for the use of mindfulness in a wide range of psychological and physical disorders and problems, including managing depression and anxiety, alleviating stress, and assisting with chronic pain.

Today, we’re looking at differences between individuals – some things might change for you, or they may not. There are no right or wrong responses or outcomes.
Rationale 2: Non-striving

There are many different ways of understanding mindfulness. For today, mindfulness is described as a way of purposefully paying attention in the present moment and observing and being open to thoughts, feelings, and physical sensations, and our external surroundings, as they are, non-judgementally. Mindfulness is about developing a different relationship with our thoughts, feelings and bodily sensations, opening up our awareness to them whether pleasant or unpleasant - as they are, rather than as we want them to be, without necessarily needing to change or escape them, and without the usual evaluation our minds tend to provide.

It’s important to keep in mind that the only goal of today’s mindfulness exercise is to develop an awareness of the present moment, whatever is going on, rather than to be relaxed. Sometimes you may find that you settle into a peaceful, relaxed state; sometimes you may not. The one thing to remember is that we’re not doing the exercise with the intention of being relaxed by the end. You may notice anxiety or discomfort arise throughout the exercise – this, as with any feelings of relaxation, can be noticed without judgement, with no effort needed to change this, just an intention to notice it in the moment. You don’t necessarily need to find the exercise enjoyable, nor do the conditions have to be perfect – whatever you experience (noises, discomfort, boredom, annoyance) is an opportunity to just notice and pay attention to what is happening in the moment, including your own responses.

Today we’re looking at differences between individuals – some things might change for you, or they may not. There are no right or wrong responses or outcomes.
Appendix T – Study 3 Participant Verbal Briefing

Thank you for coming in today. I’ll now go through some brief information about the study – this is also outlined on your participant information sheet and consent form, if you’d like to read through at the same time.

The purpose of the study is to introduce you to a brief mindfulness exercise and to find out more about how this might affect people differently, as well as gain your feedback about the exercise.

Today, you’ll be completing some surveys on computer, doing a 15 minute mindfulness exercise, and wearing a blood pressure monitor on your wrist and a heart rate variability monitor around your chest. The session will take an hour.

Although the study’s being run in small groups, you won’t be asked to interact with anyone else, and none of your information will be known to anyone else. You’re not asked to provide your name during the study; any information collected from you won’t be identifiable as yours.

Please look over the consent form, and if you agree to go ahead with the study, sign and date at the bottom.
Appendices

Appendix U – Study 3 Participant Briefing Information Sheet

Research Study: Participant Experiences of a Brief Mindfulness Exercise

Participant Information

Mindfulness is a way of paying attention in the present moment and observing and being aware of your experiences as they happen. We’re interested in finding out more about how mindfulness exercises might affect a range of outcomes, and hearing your feedback about the mindfulness exercise.

Participation will involve:

- Completing some surveys with questions about yourself, any previous experience you may have had with mindfulness or meditation, thoughts and feelings that you might have, how you experience the world, and your feedback about the mindfulness exercise
- Taking part in a 15 minute mindfulness exercise
- Wearing a blood pressure monitor on your wrist and a heart rate monitor belt on your chest.

It is anticipated that participation in the study will take approximately 60 minutes. You will be paid $10 cash for your participation, or receive 1 hour research participation credit if you’re a 1st year ANU psychology student and choose this option. Your participation in the study is a valuable contribution to current knowledge in psychology about mindfulness.

This study has been approved by the Australian National University Human Research Ethics Committee. There are unlikely to be any serious adverse effects from participating in this study. There may be some discomfort associated with wearing the blood pressure monitor, which is a normal result of the wrist cuff tightening during readings. If this occurs, please alert the researcher and these measurements will be discontinued. There may also be some psychological discomfort associated with answering personal questions about your thoughts and feelings.

Your participation in this study is completely voluntary. You may choose not to take part, to not answer any questions you do not wish to, and to withdraw from participating at any time, without penalty or explanation.

The study will be run in small groups of 1-4 people. As such, you will be taking part in the study in the presence of several other people. However, you will not be asked to interact with the other group members at any stage, including during completion of the surveys or the mindfulness exercise, and none of the information gathered about you during the study will be known to other group participants.

You will not be asked to provide your name on any surveys you complete; any information collected from you will not be identifiable as yours following your participation. Data from each participant will be kept and stored securely by the researcher. All material will be treated in a strictly confidential manner as far as the law will allow. Combined results from this study may be used in student theses, presented at professional conferences, and/or published in professional journals.

If you have any questions about this research, please contact the researcher Debra Harris, Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au). If you have any concerns or issues about this study and you do not feel comfortable communicating with the researcher, please contact The Secretary, Human Research Ethics Committee, Research Office, Chancelry 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.officer@anu.edu.au).
Appendix V – Study 3 Participant Consent Form

Research Study:
Participant Experiences of a Brief Mindfulness Exercise

Consent Form

I have read the Participant Information sheet regarding the Participant Experiences of a Brief Mindfulness Exercise study and have been informed of the following points:

1. Approval has been given by the Australian National University Human Research Ethics Committee.

2. The aim of the project is to find out more about how mindfulness exercises might affect a range of outcomes, and to gain feedback about the mindfulness exercise undertaken.

3. The study will take approximately 60 minutes, and will involve:
   - Attending the ANU Psychology Building, and completing some surveys on a computer with questions about myself, any previous experience with mindfulness or meditation, thoughts and feelings I might have, how I experience the world, and feedback about the mindfulness exercise.
   - Taking part in a 15 minute mindfulness exercise.
   - Wearing a blood pressure monitor on my wrist and a heart rate monitor on my chest.

4. There are unlikely to be any serious adverse effects from participating in this study. There may be some discomfort associated with wearing the blood pressure monitor, which is a normal result of the wrist cuff tightening during readings. If this is the case, I am aware I can alert the researcher and discontinue these measurements. There may also be some psychological discomfort associated with answering personal questions about myself and my thoughts and feelings. If this is the case, I am aware I can choose not to answer any questions I do not wish to, or to withdraw from participating at any point during the study without penalty or explanation.

5. For my participation, I will be paid $10 cash or receive 1 hour research participation credit if I am a first-year ANU psychology student and choose this option.

6. My participation in this study is completely voluntary. I may choose not to take part, to not answer any questions I don’t wish to, and to withdraw from participating at any time, without penalty or explanation.

7. The study will be run in small groups of 1-4 people. As such, I will be participating in the study in the presence of several other people. However, I will not be asked to interact with the other group members at any stage, including during completion of the surveys or the mindfulness exercise, and none of the information gathered about me during the study will be known to other group participants.

8. I understand that I will not be asked to provide my name on any surveys I complete; any information collected from me will not be identifiable as mine following my participation. Data will be kept and stored securely by the researcher. All material will be treated in a strictly confidential manner as far as the law will allow. Combined results from this study may be used in student theses, professional conferences, and/or professional journals.

9. Should I have any questions or problems about the way in which the study was conducted, I may contact the researcher Debra Harris, Department of Psychology, The Australian National University (02 6125 5585 or debra.harris@anu.edu.au). If I do not feel comfortable contacting the researcher, I am aware that I may contact The Secretary, Human Research Ethics Committee, Research Office, Chancery 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.officer@anu.edu.au).

I consent to taking part in the study as described above. The objectives and procedures of the project have been explained to me and I understand them.

Name of Participant: __________________ Signature: ______________ Date: ______________
Appendix W – Mindfulness Induction Script

You’ll now do the mindfulness exercise. Please move to one of these chairs against the wall for the exercise.

I’ll be providing you with some spoken directions to focus on different aspects of your experience, such as your breathing and bodily sensations. As I guide you through the exercise, I’d like you to listen and follow along as best you can. There’ll be periods when I’m talking quite a bit, and at other times I won’t be talking at all – in these moments of silence, just try to follow along with the guidelines that have been given. The exercise is intended to be done sitting still, it’s okay if you need to shift your position from time to time. The exercise today is an opportunity to awaken to your experiences, rather than to fall asleep, so if you do become drowsy, open your eyes and continue to focus on following the directions.

Settling now into a comfortable position on your chair, allowing your back to adopt an upright, comfortable posture, with your feet flat on the floor, and your legs uncrossed. Letting your hands rest in your lap. Gently allow your eyes to close, if you feel comfortable to do so, or lower your eyes and soften your gaze. Many people find they’re better able to engage with the exercise with their eyes closed.

Bringing your awareness now to the breath, to the changing patterns of physical sensations in the nostrils as the breath moves in and out of your body. There’s no need to try and control the breathing in any way – simply let the breath breathe itself…[20s]

1 Numbers in brackets indicate seconds of silence between spoken directions.
Focusing your awareness on the sensations of slight coolness in the nostrils as the breath moves into your body on the inbreath, and of slight warmth as the breath leaves your body on the outbreath. As best you can, following with your awareness the changing physical sensations of the breath in the nostrils, perhaps noticing the slight pauses between one inbreath and the following outbreath, and between the outbreath and the following inbreath....[45s]

Just noticing the sensations of the breath at the nostrils... Reminding yourself that the intention is simply to be aware of your experience in each moment, not to change it, and as best you can, using the breath as an anchor to gently reconnect with the here and now. Bringing an attitude of allowing to the rest of your experience also. There’s nothing to be fixed, no particular state to be achieved. As best you can, simply allowing your experience to be your experience, without needing it to be other than it is...[45s]

Sooner or later, your mind will wander away from the focus on the breath at the nostrils. This is perfectly okay – it’s simply what minds do. It is not a mistake or a failure. When you notice that your awareness is no longer on the breath; gently congratulate yourself – you have come back and are once more aware of your experience. You may want to acknowledge briefly where the mind has been – remembering, worrying, thinking about this exercise, caught up in sounds you can hear. Then, gently escort the awareness back to a focus on the changing pattern of physical sensations of the breath, renewing the intention to pay attention to the ongoing movement of the breath at the nostrils... [60s]

However often you notice the mind has wandered (and this will quite likely happen over and over and over again), simply resume following in awareness the changing physical sensations that come with each inbreath and outbreath. Bringing the quality of
kindliness to your awareness, perhaps seeing the repeated wanderings of the mind as opportunities to bring patience and gentle curiosity to your experience...[60s]

And now, intentionally allowing the awareness to expand to include as well, a sense of the physical sensations throughout the whole body. Changing your focus, so that you become aware of the sense of the body as a whole...[45s]

And if you choose, now including awareness of the more specific patterns of physical sensations that arise in your body - the sensations of touch, pressure, or contact of the feet with the floor; the body where it makes contact with the chair, the hands where they rest on the lap, or on each other. As best you can, holding all these sensations, together with the sense of the body as a whole, in a wider space of awareness...[60s]

As you sit, some sensations may be particularly intense, such as pains in the back or knees or shoulders, and you may find that awareness is repeatedly drawn to these sensations. In such moments, rather than shifting your posture (although, of course, you are always free to do so), you may want to use these times to experiment, even briefly, with intentionally bringing the focus of awareness into the region of intensity and, exploring with gentle attention the detailed pattern of sensations there: What, precisely, do the sensations feel like? Where exactly are they? Do they vary over time or from one part of the region of intensity to another? Not so much thinking about it, as just feeling it. You may want to use the breath to carry awareness into such regions of intensity, “breathing into” them...[75s]

In all likelihood, you’ll find the mind wandering repeatedly away from the body sensations – this is natural, to be expected, and in no way a mistake or a sign of failure or “not doing it right”. Just as before, whenever you notice that your awareness has drifted away from the sensations in the body, you might want to congratulate yourself; you have
“woken up” to your experience in this moment. Gently note where your mind was, and kindly refocus your attention back to the sensations throughout your body. As best you can, gently attending to the actual sensations in your body from one moment to the next; experiencing them rather than thinking about them...[60s]

And now as we come toward the end of the exercise, bringing your attention back to your breathing and the physical sensations at the nostrils as the breath moves in and out of your body... Bringing your awareness back to the room now – noticing any sounds you may be able to hear, the position of your body on the chair, your feet on the floor.... In your own time, gently opening your eyes, and noticing whatever you can see around you.... If you feel like, having a gentle stretch, and starting to move again.
Appendices

Appendix X – Study 3 Participant Verbal Debriefing

I’ll now debrief you about the research. This information is included on the debriefing sheet you’ve just received.

You’ve taken part in research looking at some psychological and physical outcomes of a mindfulness exercise. In addition, this study is investigating how different explanations about mindfulness, or no explanation, might affect these outcomes, as well as how peoples’ expectations and beliefs may affect the outcomes. You weren’t informed about these additional aims before taking part to prevent this from influencing the results.

Now you’ve been fully debriefed, you’re reminded you’re free to withdraw your information; you’ll still receive payment or research credit. For your information, a current consensus definition of mindfulness in the psychological literature is given on your debrief sheet.

It’s really important for the integrity of the research and the accuracy of the results that you please don’t discuss the study or its aims with others who may be thinking about participating.

If answering any of the questions has raised concerns for you, there’s supports listed on the debrief sheet, which you’re encouraged to take with you. In order to gain longer-term benefits from mindfulness, regular practice is recommended. If you’re interested in finding out more, there’s some useful resources on the debrief sheet. Finally, you’re reminded if you have any questions or concerns you can speak with me, or contact the Ethics Committee using the details on the debrief sheet.

Thanks again everyone. Please come up to arrange payment or research credit. Also, bring your negative self-statement paper with you, and put it in the shredder on your way out.
Appendices

Appendix Y – Study 3 Participant Debriefing Information Sheet

Research Study:
Participant Experiences of a Brief Mindfulness Exercise

Debriefing Information

Thankyou for your participation today. You've taken part in research looking at some psychological and physical outcomes of a mindfulness exercise. In addition, this study was also investigating how different explanations or no explanation about mindfulness might affect these outcomes, as well as how individuals' expectations and perceptions of mindfulness might also affect these outcomes. As participant expectations were an important focus of the study, you weren't informed about these additional objectives in order to prevent this knowledge from influencing the results of the research.

During the study you were provided with a slightly modified description of mindfulness, or no explanation at all, prior to doing the exercise. For your information, a current consensus definition of mindfulness in the psychological literature states that mindfulness involves 'paying attention in a particular way: on purpose, in the present moment, and non-judgementally'. An emphasis is placed on seeing and accepting things as they are without trying to change them. Mindfulness is contrasted with habitual mental functioning, or 'being on automatic pilot'. Mindfulness is not primarily a goal-directed activity despite the fact that the practice does have its secondary effects. For example, although mindfulness may bring about relaxation, it is not primarily a 'relaxation exercise' in that bringing non-judgemental awareness to the state of body and mind is the practice without any expectation of results, no matter how desirable those results might be. (Melbourne Academic Mindfulness Interest Group, 2005).

Now you've been fully debriefed about the additional objectives of the study, you're reminded that you're free to withdraw the information collected from you during the study, without penalty or explanation - you will still receive payment or participation credit. It's really important for the integrity of the research and the accuracy of the results that you please don't discuss the study or its aims with others who may be thinking about participating.

No information collected from you will be identifiable as yours during analysis and storage. Data will be kept and stored securely by the researcher. All material will be treated in a strictly confidential manner as far as the law will allow. Combined results from this study may be used in student theses, professional conferences, and/or professional journals.

If answering any of the questions in this study has raised any concerns or issues for you, there are supports and services available:
- Call Lifeline on 13 11 14 - crisis counselling 24 hours a day
- Find a psychologist on the Australian Psychological Society website at www.psychology.org.au/FindaPsychologist/
- If you have received counselling or psychological assistance, you may wish to contact your mental health professional

If you're interested in finding out more about mindfulness or taking part in a mindfulness course, you may find the following resources useful:
- http://psychact.com/services/group-programs.html
- For ANU staff and students, contact paul.atkins@anu.edu.au or visit http://training.anu.edu.au/StaffCourseDetails.asp?CATALOGUETYPE=STAFF&COURSE=HRSD36

If you have any questions or concerns about the way in which this study has been carried out, please contact the researcher Debra Harris, Department of Psychology, The Australian National University (02 6125 5665 or debra.harris@anu.edu.au). If you do not feel comfortable communicating with the researcher, please contact The Secretary, Human Research Ethics Committee, Research Office, Chancellory 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.officer@anu.edu.au).
Almost twenty per cent of the Australian population experiences chronic pain at any given point in time (Blyth et al., 2001). Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage, and regarded as chronic when it has persisted for more than three months or beyond the expected tissue healing time (International Association for the Study of Pain Task Force on Taxonomy, 1994). The economic cost of chronic pain is estimated at approximately $34 billion in Australia due to lost work productivity, health care costs, and welfare payments (Access Economics Pty Limited, 2007). As well as the broader financial burden, the impacts of chronic pain on the individual include increased risk of anxiety disorders, depression, suicidal ideation and attempts, impaired sleep, memory problems, and significantly reduced quality of life and functionality (Fine, 2011). Additional difficulties such as withdrawal from normal work and social activities, financial strain, alienation from family and friends, excessive medication use and anger may also develop alongside persistent pain (Turk, 2002). Clearly, improving the management of chronic pain is an important and complex issue that deserves research attention.

With the growing recognition of ongoing pain as a biopsychosocial issue characterised by a complex interaction of physical, sensory, cognitive, behavioural and emotional factors, and the fact that no biomedical treatment has been able to permanently and completely relieve pain for all patients (Turk & Monarch, 2002), psychological interventions are increasingly incorporated into multidisciplinary management approaches to chronic pain (Kerns, Sellinger, & Goodin, 2011). Traditionally, Cognitive Behaviour Therapy (CBT) has been the predominant psychological model used in understanding and managing persistent pain (Woolfolk & Allen, 2012). This approach has focused primarily
on providing education about the biopsychosocial nature of chronic pain and emphasising the active role of patients in managing their pain, teaching and encouraging implementation of coping skills such as relaxation, visualisation, distraction, pacing, activity scheduling, cognitive restructuring of maladaptive thoughts regarding pain and its impacts, problem solving, and flare-up management planning (Kerns, et al., 2011).

Although research evidence suggests CBT shows benefit amongst chronic pain patients for depression symptoms, pain intensity and interference, and pain-related catastrophising (Turk, 2002; Turner, Holtzman, & Mancl, 2007; Turner, Mancl, & Aaron, 2006; Williams, Eccleston, & Morley, 2012), not all patients benefit from such interventions (Williams, et al., 2012).

More recently, Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) has been applied to the management of chronic pain. In contrast to CBT, which focuses on directly reducing pain and related psychological symptoms, the goal of ACT is promoting psychological flexibility, the ability to contact reality as it is and engage in effective actions in accordance with personal values despite the presence of negative internal experiences such as pain sensations, emotional distress, and worrying thoughts (Wicksell, Renöfält, Olsson, Bond, & Melin, 2008). The objective is to let go of unsuccessful attempts to control or avoid pain and other symptoms, which can lead to increased distress and suffering and reduced participation in work, socialising and leisure activities, and instead focus resources toward meaningful and attainable behaviours and activities (Dahl & Lundgren, 2006; Kerns, et al., 2011). In ACT interventions, mindfulness is essential in facilitating direct, non-elaborative contact with the present moment, reducing the dominance of verbal processes and increasing willingness to experience all private events including thoughts, feelings and physical sensations (Kang & Whittingham, 2010).
A growing body of literature demonstrates the efficacy of ACT with chronic pain clients in reducing depression and anxiety symptoms, and with increasing life satisfaction and engagement in meaningful activities (McCracken, Gauntlett-Gilbert, & Vowles, 2007; Wicksell, et al., 2008). A recent randomized controlled trial by Wetherell and others (2011) comparing an ACT versus CBT intervention for pain showed comparable outcomes, except that those in the ACT intervention reported greater satisfaction with the program relative to those in the CBT group. In the current case illustration, a number of variables were measured before and after therapy including psychological inflexibility in pain, psychological well-being and symptoms of depression, anxiety and stress, dispositional levels of mindfulness, and pain severity interference.

One factor that may play an important role in determining engagement with, and outcomes of, non-medical interventions for chronic pain, is patient understandings and beliefs about mindfulness. Findings from Study 1 and 2 of this dissertation, and results from existing research (Finucane & Mercer, 2006; Kerrigan et al., 2011; Moss, Waugh, & Barnes, 2008; York, 2007), suggest there is great variability in how mindfulness is understood, with a broad distinction apparent between those who perceive mindfulness to be a strategy to reduce symptoms or increase relaxation, and those who conceptualise and use it in terms of observing without judgment whatever is present, whether pleasant or unpleasant, liked or disliked. In Study 3 it was found that the expectations individuals hold about mindfulness can affect the outcomes they experience from mindfulness practice as well as their intentions for future use. Patient perceptions of mindfulness may also be relevant in the context of an ACT framework.
Study aims.

The current case study was undertaken to illustrate the clinical application of ACT for chronic pain in adults, with a particular focus on examining understandings and uses of mindfulness in this context, and exploring change on a range of acceptance, symptom, and quality of life-based outcomes. Both quantitative and qualitative data were collected throughout therapy. This mixed-methods single case design allowed in-depth understanding of factors that may influence ACT interventions for chronic pain and subsequent treatment outcomes, process issues and challenges. The single case methodology also informed the therapeutic process, enabling sessions to be tailored in a responsive manner based on patient characteristics and responses. A mixed methods approach has been identified as especially well-suited in the context of pain research given the multidimensional nature of pain (Coyle & Tickoo, 2007).

Case description.

The subject was a 66 year old woman referred for individual psychology services at a tertiary pain management unit following her attendance at a two week multi-disciplinary pain management group intervention based broadly on the principles of ACT. The patient was referred for individual therapy by a senior psychologist for additional psychological support and intervention.

At assessment, the patient reported a fifteen year history of left shoulder pain, and twelve months of right shoulder pain due to a rotator cuff tear. Both pains were associated with bilateral cuff degeneration with possible underlying arthritis. She also reported left knee pain which had been worsening over the preceding 12 month period. She had previously undergone multiple cortisone injections into the left shoulder but these provided minimal or short-term relief only. Although a left shoulder replacement had been
recommended by an orthopaedic surgeon five years previous, she had chosen not to pursue this option. At the time of assessment, the patient was scheduled to undergo a left knee replacement in several months’ time.

She described her left shoulder pain as like an “ache” or “sharp swords”. This pain was intermittent and varied in intensity from 0-7 out of 10, aggravated by forward lifting motions such as when hanging out the washing, and eased by rest and analgesic medication. Her right shoulder pain was also intermittent, having a “squeezing, aching” quality to it, and varying in intensity from 0-8 out of 10. This pain was worse at night especially with right side lying and exacerbated by reaching activities. Rest and medication provided relief. Her left knee pain was described as “crunching” and ranged in intensity from 2-7 out of 10, and worsened with walking and prolonged standing.

The patient was independent in all personal care and activities of daily living, although long periods of walking, sitting and driving aggravated her pain. She reported participating in several leisure activities including learning ancient languages, meditation and swimming, gardening, and cycling occasionally, although the amount of time spent undertaking these was restricted due to pain. The patient was living alone and reported receiving good social support from her daughter and grandchildren. She had retired from her work as a nurse in part due to her ongoing pain. The patient disclosed having experienced abuse as a child, stating that her father was an alcoholic and that she had a rigid religious upbringing. She also reported experiencing a “life-threatening” incident at the age of 19 years. Her son suicided 15 years earlier in his early 20s, and soon after this her father and partner died. Subsequently, she began having panic attacks and received treatment from a counsellor and the panic attacks resolved.
Prior to beginning individual ACT-based psychological intervention, the patient was familiar with meditation and mindfulness, through her own regular Buddhist meditation practice group and daily mindfulness practice during the two week pain management program.

Method

Materials.

Information was gathered from the patient during the course of therapy in a semi-structured manner through verbal discussion and completion of in-session or between-session worksheets and activities. Additionally, pre-therapy, post-therapy and two-month follow-up questionnaires were developed for the purposes of the study (see Appendix AA) comprising items relating to the patient’s understandings and use of mindfulness and experiences of therapy, as well as several validated measures as described below.

**DASS-21.**

The DASS-21 (Lovibond & Lovibond, 1995) measures the related states of depression, anxiety and stress. The items, scoring and psychometric properties of this measure have been described previously in this dissertation (see Method section, Study 3).

**Psychological Inflexibility in Pain Scale (PIPS).**

The Psychological Inflexibility in Pain Scale (Wicksell, et al., 2008) is a 16-item scale used to assess psychological inflexibility (i.e., avoidance, acceptance, fusion, values orientation) in people with chronic pain. Respondents rate items on a 7-point scale from 1 (*never true*) to 7 (*always true*). The measure comprises two subscales – avoidance (10 items, e.g., “I would do almost anything to get rid of my pain”) and cognitive fusion (6
items, e.g., “I need to understand what is wrong in order to move on”). Total subscale scores are derived by summing relevant items, and range from 10-70 for the avoidance subscale and 6-42 for the cognitive fusion subscale, with higher scores indicating greater levels of psychological inflexibility. The PIPS demonstrates good internal consistency and evidence of concurrent validity for both subscales and the total scale, and the moderate correlation between the subscales suggests they are distinct but related (Wicksell, et al., 2008).

**Cognitive and Affective Mindfulness Scale-Revised (CAMS-R).**

The Cognitive and Affective Mindfulness Scale-Revised (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007) is a 12-item self-report measure of dispositional mindfulness with items relating to attention regulation, present moment orientation, awareness of experience, and non-judgement toward experience (e.g., “I am able to focus on the present moment”). It offers advantages over other available mindfulness scales as it covers multiple facets of mindfulness and does not rely upon the respondent having experience in mindfulness meditation (Feldman, et al., 2007). A further advantage is its brevity. Participants rate each item with regard to how often it applies to them, from 1 (rarely/never at all) to 4 (almost always). Several items are reverse scored before all item scores are summed to give a total scale score ranging from 12-48, with higher values reflecting greater trait-based mindful qualities. The measure demonstrates acceptable internal consistency and evidence of convergent and discriminant validity (Feldman, et al., 2007).
**Ryff’s Psychological Well-being Scale (RPWS-42).**

The 42-item version of Ryff’s Psychological Well-being Scale (Ryff, 1989; Ryff & Keyes, 1995) was used as per Abbott et al. (2006) to assess six facets of psychological well-being: self-acceptance, positive relationships, personal autonomy, the ability to manage complex environments to suit personal needs and values, meaning and purpose in life, and ongoing personal growth. For each item, the respondent indicates their level of agreement from 1 (*strongly disagree*) to 6 (*strongly agree*), with items including “I do not fit very well with the people and community around me” and “I think it is important to have new experiences that challenge how I think about myself and the world”. To score, negatively worded items are reverse scored and relevant items for each subscale are summed to create a subscale score ranging from 7-42. For each domain, higher scores indicate greater mastery of that area of life. The scale demonstrates adequate reliability and validity (Ryff & Keyes, 1995).

**Numbered rating scale for pain severity and pain interference.**

For pain severity and pain interference ratings, two items were taken from the Brief Pain Inventory (Cleeland & Ryan, 1994). The respondent is asked to indicate their average level of pain and pain interference over the past week on a numbered rating scale from 0 (*no pain/interference*) to 10 (*pain/interference as bad as it could be*). This is one of the most widely used self-report instruments in the assessment of clinical pain and demonstrates evidence of test-retest reliability (Cleeland, 2009).

**Procedure.**

Prior to commencing data collection and therapy, ethics approval was obtained from relevant human research ethics committees. The patient was contacted via telephone
by the researcher and offered short-term individual psychological therapy. At this time, the patient was informed about the research project, and when indicating an interest in participating was sent an information packet including a participant information sheet (See Appendix AB), consent form (See Appendix AC) and pre-therapy questionnaire. The patient was asked to read through the information and if consenting to participate, complete the questionnaire and bring to her first session. The consent form was completed at the first appointment. Following completion of therapy, the patient was requested to complete a second questionnaire, and another two months later.

**Intervention.**

Therapy involved a total of eight weekly individual sessions with the researcher, a registered psychologist, over a period of two months, and one follow-up session two months later. Sessions were based on ACT, and incorporated a range of concepts, activities and skills practice. The rationale for ACT for chronic pain including the role of mindfulness was provided at the beginning of therapy.

**Values assessment and committed action.**

At the beginning of therapy, a values assessment was undertaken during which the patient considered the ways of living most important to her. She identified a number of values including connection, reliability and commitment, honesty, caring for health, love, learning, and independence. These values supported an ongoing process of activity-based goal setting throughout therapy, with goals including increased socialising with friends and family, more travel and increased time spent driving, engaging more regularly in hobbies such as piano and language study, continuing with regular exercise, and getting in touch with her own emotions, particularly grief. The patient’s identified values also underpinned
discussions and decision-making during therapy with regard to a number of circumstances in the patient’s life.

**Barriers to value-driven action.**

The following barriers to the patient living a meaningful, value-driven life were identified during assessment and throughout therapy:

- Fusion with unhelpful thoughts, rules, stories (e.g., “something always seems to put people back”, “I can’t stop worrying, it might all go wrong”, “knee surgery might all go wrong, how will I manage?”, “If I could have been perfect, my son would have been safe – so I now need to strive for perfection driven by self-criticism”, “medical professionals won’t be able to help with an acute pain problem, because they haven’t been able to fix my chronic pain problem”, “If I have pain it means I can’t be happy”, “I might die soon” in response to physical sensations);
- Attempts to control, get rid of, or solve unwanted thoughts (i.e., rumination and analysing thoughts, accepting thoughts on the condition they will go away, pushing uncomfortable thoughts away, changing thoughts from negative to positive, distraction);
- Fusion with conceptualised self (e.g., “I shouldn’t have come to this dinner because I’m a useless cripple, a downer, a liability”);
- Non or conditional acceptance and avoidance of uncomfortable emotions (e.g., reluctance to bring awareness to emotions, ignoring, staying busy, focusing on pain sensations rather than painful emotions, using guilt “like a protective coat” to avoid feeling the intense loss and grief of her son’s death, avoiding thinking about certain things so as not to experience uncomfortable emotions);
• Non or conditional acceptance and avoidance of painful or uncomfortable physical sensations (e.g., awareness of anxiety in the body and “not liking it”, “it’s too uncomfortable”, “will have to make it go away”, accepting painful sensations temporarily in the hope they will stop); and

• Avoidance of activities that provoked (or were associated with fears of provoking) anxiety or pain (e.g., socialising, driving).

Examining patient understandings of mindfulness.

At the beginning of therapy, the patient defined mindfulness as “being in the present... acting mindfully, paying attention to and being aware of self; physical sensations, thoughts, feelings, the environment and others as we are now”. She also emphasised mindfulness is about “accepting everything, not fighting”, “radical acceptance”, “doing by not doing”, “responding not reacting”, “remembering to remember”, and “doing things perfectly”. Further, her ideas regarding the mechanisms of mindfulness at pre-therapy included “able to relax tense muscles; able to breathe more slowly and deeply thus feeling better and relaxing more; able to observe some feelings; able to tolerate some pain; sometimes some pain disappears (if temporarily); able to feel peace (at times); gives insight into why I keep painful emotions buried (because they are too painful to feel)”.

Applying acceptance and mindfulness-based approaches.

A range of mindfulness and acceptance-based approaches were introduced throughout the course of therapy to address the identified barriers to the patient living a meaningful, value-driven life. The patient recorded formal and informal mindfulness practice outside of sessions. She engaged in almost daily self-directed formal mindfulness
practice of between 10-20 minutes during therapy, predominantly undertaking observing
self, body scan, and mindfulness of breath guided practices. She also reported being
mindful during a number of daily activities such as driving, swimming, cycling, and using
the five senses to connect with the outside environment. Formal mindfulness practice was
also included in some therapy sessions, with a particular focus on connecting with her
emotional experience in the moment. A vast array of non-meditation based skills and
methods relating to the four core mindfulness and acceptance processes of cognitive
defusion, self-as-context, contact with the present moment, and acceptance were also
drawn upon and encouraged in daily life as summarised below:

- Examining strategies tried previously for managing uncomfortable thoughts. The
  patient identified none of these had worked well and involved significant costs (e.g.,
  wasted energy, negative impact on relationships, undermining self, harder to take
  meaningful action). Thus, therapy involved exploring the possibility of an alternative
  approach of accepting the presence of all thoughts but not having to engage with their
  content (i.e., defusion), and the potential benefits of this (e.g., allowing one to better
  live in line with values, connect with life and experiences, be in the present, and focus
  on taking useful and meaningful action);

- Examining strategies tried previously for managing uncomfortable emotions (e.g.,
  anxiety, sadness, shame, embarrassment), including repression, distraction, keeping
  busy, ignoring them, lecturing self about having them, disengaging. The patient
  identified these had not worked and had significant costs such as “making you sick,
  unhappy” and wasting time and energy. As such, therapy involved exploring the
  possibility of allowing these emotions to be there fully without conditions, exploring
  them, and/or expressing them constructively. The patient noted that in the past when
she had been able to engage with her emotions this had been “transformative” and beneficial;

- Exploring relationships among the patient’s thoughts, emotions, bodily sensations, and behaviours;

- Noticing harsh, critical judgement toward self as it occurred, and stepping outside of one’s mind to experience what is by using defusion strategies and present moment awareness skills;

- Drawing on the struggle switch concept, whereby struggle with unavoidable uncomfortable experiences (physical, emotional, cognitive) tends to amplify distress, while accepting, non-attached, curious observation of one’s present moment experience tends to reduce the likelihood of this intensification;

- Grounding in the present moment when highly distressed by worrying thoughts, anxious feelings, or intense pain, by noticing five things you can see, hear and in contact with the body, and “being here now”;

- Defusing from thoughts, especially when very caught up in these and they pose a barrier to value-driven action. Strategies included saying thoughts in silly voices, singing thoughts to familiar tunes, thanking mind for thoughts, naming or labelling thoughts as thoughts without engaging in the content, seeing thoughts like waves, adding the pre-fix “I’m noticing that I’m having the thought that…” to thoughts to acknowledge they are just thoughts and then refocusing back on current activities;

- Not trying to “solve thoughts and worries” through more thinking, particularly when there is no clear solution and when they are unhelpful and persistent thoughts – instead, tuning into one’s lived experience in the moment;
• Accepting the presence of painful experiences during the course of carrying out valued activities – “I’m going to enjoy this social experience despite pain and unhelpful thoughts”, “I will go through with potentially painful knee surgery in order to increase my mobility and functioning, and in turn be able to do more of the things that are important to me”; 

• Awareness of distinction between physical pain and the suffering that can be created on top of this through struggle and lack of acceptance of what is, and fusion with unhelpful thoughts about pain and its impact; 

• Approaching, exploring and opening up to the experiences of strong, uncomfortable emotions when they are a barrier to a rich, full life, rather than trying to avoid them through various strategies; 

• Defusing from well-rehearsed stories of the mind by giving them a name – “ah, there’s that old guilt story”, “that’s just my runaway mind at it again” used with catastrophising thoughts; 

• Accepting and making contact with panic sensations – “that’s interesting”, describing physical sensations in detail; 

• Using a worry period – noting worries as they arise and grounding self back in present moment, and later coming back to noted worries and deciding if important and useful and engaging in structured problem solving, and if not using defusion practices such as observing thoughts like leaves on a stream; and 

• Problem solving for various issues, by listing possible solutions to each problem, noting pros and cons of each possible course of action, and exploring how each option aligned with her personal values.
Results

A summary of scores on the quantitative measures at the beginning, conclusion, and two months after therapy are presented in Table Z1. As illustrated, severity of depression symptoms reported by the patient remained mild across the three time points, while anxiety symptoms were severe from beginning to end of therapy and increased at two-month follow-up. Severity of stress symptoms decreased from moderate to normal throughout therapy, again increasing to moderate levels two months later. For the PIPS, the patient’s scores were relatively unchanged across the three time points on the fusion subscale, and overall slightly lower compared to others with chronic pain ($M = 31.3$, $SD = 6.0$; Wicksell, et al., 2008). For the avoidance subscale, her scores were comparable to a chronic pain cohort sample ($M = 41.7$, $SD = 12.0$; Wicksell, et al., 2008), with a slight increase at the end of therapy before decreasing again at the two month follow-up. The patient’s scores on trait mindfulness as assessed by the CAMS-R were almost identical across the duration of the study, and somewhat lower than reported by undergraduate samples (Feldman, et al., 2007). On the RPWS, the patient remained relatively stable across the three time points in each domain. Her consistently lowest domain score was self-acceptance, with scores at each of the three time points well below a representative general population sample of women, and scores for all other domains generally also somewhat lower relative to other females (Ryff & Keyes, 1995). The patient’s pain intensity increased from the beginning of therapy, while there was a slight decrease in pain interference ratings from pre-therapy to follow-up. (Note. The patient underwent surgery for a left knee replacement between the completion of therapy and the two-month follow-up session).
### Table Z1

**Patient scores on validated outcome measures at pre-therapy, post-therapy and two-month follow-up**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Potential Range</th>
<th>Pre-therapy (2/8/10)</th>
<th>Post-therapy (26/9/10)</th>
<th>2 month follow-up (26/11/10)</th>
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<td><strong>DASS-21</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Depression</td>
<td>0-42</td>
<td>10</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Anxiety</td>
<td>0-42</td>
<td>18</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Stress</td>
<td>0-42</td>
<td>20</td>
<td>14</td>
<td>24</td>
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<td><strong>PIPS</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>10-70</td>
<td>39</td>
<td>49</td>
<td>43</td>
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<tr>
<td>Fusion</td>
<td>6-42</td>
<td>23</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td><strong>CAMS-R</strong></td>
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<td></td>
<td></td>
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<td>Attention</td>
<td>3-12</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Present Focus</td>
<td>3-12</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Awareness</td>
<td>3-12</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Acceptance</td>
<td>3-12</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
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<td>12-48</td>
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<td>28</td>
<td>28</td>
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<tr>
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</tr>
<tr>
<td>Autonomy</td>
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<td>25</td>
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<tr>
<td>Environ. Mastery</td>
<td>7-42</td>
<td>26</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>7-42</td>
<td>37</td>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>Relationships</td>
<td>7-42</td>
<td>32</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Purpose</td>
<td>7-42</td>
<td>28</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Self-acceptance</td>
<td>7-42</td>
<td>15</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Pain Intensity</td>
<td>0-10</td>
<td>5</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Pain Interference</td>
<td>0-10</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

*Note. DASS-21 = Depression Anxiety Stress Scale; PIPS = Psychological Inflexibility in Pain Scale; CAMS-R = Cognitive and Affective Mindfulness Scale-Revised; RPWS-42 = Ryff's Psychological Well-being Scale-42 tie.*

*aClinical cut-offs for severity of DASS-21 symptoms are as follows: for Depression, 10 considered mild; for Anxiety, 18 considered severe, 24 considered extremely severe; for Stress, 20 and 24 considered moderate, 14 considered normal (Lovibond & Lovibond, 1995).*
**Patient reflections of therapy.**

At the conclusion of therapy, the patient reported that overall she found it very helpful. The most useful aspects included meditation, talking to a psychologist, mindfulness of emotions, thoughts, and sensations, and keeping a mindfulness practice diary. She also described as helpful the notion that thoughts are not facts and they “don’t necessarily need to be taken so seriously, you can just notice ‘there’s the catastrophising mind’” without getting too caught up in the content. She noted grounding practices allowed her to be present and appreciate her surroundings.

Specifically with regard to mindfulness, she noted that “though difficult to practice when under stress, I have managed to do it sometimes” and that mindfulness helps her live with anxiety and pain, in accepting painful emotions and handling obsessive thoughts, living in peace, and seeing the beauty of the world. She stated meditation is the “best way to get through difficulties as it is grounding and calming” and allows her to access peace even in the midst of difficult thoughts, feelings and sensations. She went on to report that “if I remember to be mindful life is more peaceful and satisfying. I notice that people who practice mindfulness seem to achieve meaningful actions and lives”. The patient revealed some perceived downsides to mindfulness-based practices such as defusion because looking at thoughts causes her to “talk to herself and sound like a loon”. In addition, she noted at the beginning of therapy the observer self practice being most useful as it provided her a sense of “detachment, safety, comfort, peacefulness and timelessness” and allowed her to recognise “I am not my pain.” However, in the post-therapy questionnaire, she stated “I think that perhaps observing myself may have made me too self-obsessed and involved in myself.”
**Observed progress.**

The patient demonstrated a degree of reduced fusion with thoughts and less struggle with and avoidance of uncomfortable emotions and physical sensations. There were also a number of occurrences of the patient increasing her value-driven behaviour despite the presence of uncomfortable thoughts, feelings and physical sensations. For example, she identified the impact of buying into thoughts such as “I’m useless” when socialising (i.e., feeling isolated, sad, wanting to leave) and on several occasions was able to utilise defusion skills to disengage from unhelpful thoughts, return to being present and continue enjoying her evening. She also used grounding in the present moment via her five senses to good effect in situations of high anxiety and pain, thus preventing a cycle of catastrophising and increased anxiety and pain. Examples of value-driven action included proceeding with her knee replacement despite having many fears because the outcome would allow her to be more mobile and participate in enjoyed activities, and using honesty to guide her decision-making in managing a deceased friend’s estate. In addition, she was able to discuss her son in therapy which previously has been “too bad to talk about,” and move beyond guilt and connect with her sorrow, facilitating a sense of connection, joy and love toward her son. She also had a greater awareness of her tendency toward automatic critical self-judgement, although she did continue to frequently engage with the content of these self-critical thoughts.

The patient continued to struggle against anxiety sensations throughout therapy, for instance noting that her anxiety about her upcoming knee surgery was “too uncomfortable” and she would “have to make it go away”. She also remained fused with a number of unhelpful thoughts including “I can’t stop worrying, it might all go wrong” and “if I have pain it means I can’t be happy”. She also displayed continued avoidance of contacting her
emotional experience in general, by focusing on physical pain sensations, rather than emotional pain, as this was less frightening. It also appeared that in some ways, the patient was relying on mindfulness as a strategy to stop anxiety or uncomfortable emotions and sensations, and was unable to fully accept the present moment in many instances, instead conditionally accepting internal experiences in hopes that they would stop. Finally, despite her relatively regular social contact with friends and extended family she noted an ongoing sense of loneliness in her life.

Discussion

The purpose of the current research was to explore the processes and outcomes of ACT therapy for chronic pain using a clinical case study. Overall, the patient reported benefit from individual therapy using ACT, noting that mindfulness and acceptance practices that allowed her to be in greater contact with the present moment and less engaged with unhelpful cognitions were useful, and she also demonstrated some increases in meaningful activities. Additionally, her self-reported sense of purpose was slightly higher and her pain interference rating slightly lower at follow up, despite her pain having increased to some extent. Objective assessment showed increases in anxiety, stress and pain from pre-therapy to two-month follow-up, which were most likely associated with her knee replacement surgery a month before the follow-up session, about which she was very fearful, particularly regarding her ability to cope with post-operative pain and decreased mobility. Notably, the goal of ACT is not to reduce psychological or physical symptoms directly, but to encourage acceptance of internal experiences and participation in meaningful activities and in turn enhance quality of life despite the presence of any such symptoms (Hayes, et al., 1999). On measures of mindfulness, psychological inflexibility in
pain, and quality of life, the patient showed minimal change with a number of factors potentially influencing this.

The patient's relatively stable scores on trait mindfulness throughout therapy were expected given the patient's ten year history of meditation and recent daily mindfulness practice during the two week pain management course. However, her scores were overall surprisingly low given this regular practice. Upon inspection of the subscales, the patient's scores were highest for the attention subscale, while lower for present focus, awareness and acceptance. Consistent with this, her behavioural responses to certain internal experiences such as anxiety were very non-accepting. Additionally, her verbal expressions of negative self-judgement in therapy sessions and her assessed self-acceptance scores indicated strong dissatisfaction with her personal qualities and life, likely related to guilt about her son. Finally, her omission of the non-evaluative aspect of mindfulness even at follow-up despite this being discussed in detail during therapy is in accord with this pattern. Thus, while on the one hand the patient described mindfulness as being about "accepting everything, not fighting", she struggled to apply this concept in practice with regard to both uncomfortable internal experiences and herself, and in part understood and used mindfulness as means to change her physical and emotional state, such as by bringing about a feeling of calm. Finucane and Mercer (2006) similarly reported that some participants of an MBCT program persisted in using acceptance-based breathing practices as a means of coping with anxiety, showing little shift in their relationship to worry-related cognitions and physical sensations, underscoring the potential for misinterpretation of this subtle process. In the current study, the patient also appeared to interpret the goal of taking an observer stance to self as increasing self-focus rather than decreasing attachment to a conceptualised sense of self.
Additional barriers to the patient’s objective progress in individual therapy may have included her high levels of catastrophising, which has been identified as an important predictor of failure to adapt to pain and tends to be associated with greater pain ratings, disability, and health care and medication usage (Keefe, Rumble, Scipio, Giordano, & Perri, 2004). Further, the long-standing and intense nature of her physical and emotional pain and entrenched patterns of responding may have limited her response to treatment, as psychological interventions are more effective if undertaken earlier (i.e., in the first 2-6 months) rather than 12 months or more after the onset of the pain problem (Marhold, Linton & Melin, 2002). Also of note was that the two-month follow-up questionnaire was completed on the anniversary of her son’s death, which may have affected her responses.

Therapist reflections of therapy.

The current case study demonstrates the intractable, intrinsic human imperative to move away from pain and discomfort. ACT is designed with this specifically in mind, attempting to address this through continual refocusing on meaningful action consistent with one’s chosen set of principles irrespective of outside forces and life circumstances, facilitated by contact with the present moment, defusion from thoughts, and unconditional acceptance of uncomfortable internal experiences. The patient found it incredibly difficult to consistently let go of trying to control or avoid her discomfort relating to both pain, anxiety and grief, which from an ACT perspective likely played a role in amplifying her distress and suffering, and prevented her from living more fully in line with her personal values (Hayes, et al., 1999).

This patient’s experience also illustrates the complex nature of chronic pain and its multiple psychosocial influences. Of significant note in this case is the close temporal association between the death of the patient’s son, father and partner over a very short time
span, and the onset of her initial pain problem, as well as her history of adverse childhood experiences. Research evidence indicates those with chronic pain report a higher incidence of childhood abuse and familial alcoholism (Goldberg, 1999), and also report greater exposure to traumatic life events (e.g., natural disasters, accidents, social or occupational stress, or the sudden death of a loved one) (Casey, Greenberg, Nicassio, Harpin, & Hubbard, 2008; Lampe et al., 2003). It has recently been suggested that integrating relational psychodynamic and behaviourally orientated approaches in the context of psychological treatment for chronic pain may be particularly beneficial. In this model, attention is paid to enhancing functional behaviour change whilst also addressing the nature and quality of interpersonal relationships across a patient’s lifespan, which can impair pain coping and may also be affected by the experience of living with ongoing pain (Basler, Grzesiak, & Dworkin, 2002). Incorporating such an approach with ACT may be useful in clinical cases such as the current patient, especially if relational issues are pertinent.

A significant challenge for patients experiencing chronic pain is knowing when to accept there may not be a fix for their pain and to move away from seeking a biomedical cure when this is not yielding positive results and contributing to lowered quality of life via financial drain, medication side effects, a continuous cycle of hope and frustration, and reduced engagement in other important aspects of life, and instead prioritise self-management. Although evidence points to acceptance and self-management, including psychological approaches, producing better outcomes regarding pain intensity and functioning in those with chronic pain relative to a purely biomedical approach (Keefe, et al., 2004), the present case study demonstrates the importance of distinguishing between acute and chronic pain and their distinctly different treatment approaches. In particular,
new pains, even in those with existing chronic pain, must be investigated and treated using a biomedical approach where possible, although this may not always be the case. In the current study, the patient was resigned to having pain in general and so was very reluctant to undergo knee replacement surgery, and on one occasion during therapy failed to seek appropriate medical care when experiencing acute pain following a fall.

There are several aspects of the therapeutic intervention that may have been enhanced. For instance, there could have been greater emphasis and consistency in bringing the focus of therapy back to moving toward valued actions. While many acceptance and mindfulness-based approaches were employed and encouraged, at times the purpose of utilising such skills to reduce barriers to meaningful action was not made explicit enough. As Harris (2009) emphasises, mindfulness in ACT is a means to an end, helping “clients to overcome the psychological barriers to change [and] engage fully in the ongoing journey of values-based living” (p. 24). Finally, it may have been useful to challenge the patient more in terms of using mindfulness as another control strategy, rather than an effective means to make contact with and allow internal experiences, whether perceived as good or bad.

Limitations.

Clearly, given the nature of the research as a case study design with one individual, the results are not generalisable to other chronic pain patients, who all possess a unique constellation of biological, psychological and social characteristics influencing their pain and life experience. Additionally, the case study cannot be considered a pure application of ACT, as the patient was somewhat familiar with the paradigm from previously participating in the group-based pain management course. However, although the group program provided her with general awareness of ACT, it did not allow for an
individualised plan based on her particular needs in the same manner as the individual Acceptance and Commitment Therapy provided. Finally, patient monitoring and recording of time spent engaged in valued activities may have been a useful additional objective measure.

Conclusion

Chronic pain is a significant problem for both communities and individuals through its impact on health care costs, participation and quality of life. This clinical case study provides insights into the processes, challenges and outcomes of utilising ACT in an individual setting with a chronic pain patient reporting a complex psychosocial history. It illustrates that in ACT there can be meaningful change irrespective of symptom presence, and offers suggestions for modifying ACT-based clinical work in a chronic pain population. The study also demonstrates the difficulty patients may experience in understanding and applying mindfulness as an acceptance-based approach to unpleasant and unwanted private experiences, rather than as a control strategy or symptom reduction technique. This research may guide future psychological interventions for chronic pain, in the hope of improved outcomes across psychological health and physical functioning, and meaningful value-driven participation in life.


Cleeland, C. S. (2009). The Brief Pain Inventory User Guide Retrieved from The University of Texas, MD Anderson Cancer Center website:

http://www.mdanderson.org/education-and-research/departments-programs-and-

Coyle, N., & Tickoo, R. (2007). Qualitative research: What this research paradigm has to offer to the understanding of pain. *Pain Medicine, 8,* 205-206. doi: 10.1111/j.1526-4637.2007.00303.x


York, M. (2007). A qualitative study into the experience of individuals involved in a mindfulness group within an acute inpatient mental health unit. *Journal of*
Mindfulness in the Management of Chronic Pain Questionnaire

Thank you for agreeing to participate in this research study. The questions in this survey are about mindfulness (a way of paying attention to the present moment and observing and accepting things as they are without trying to change them), as well as your understandings and use of mindfulness. The survey also includes questions about some of your personal characteristics.

Please follow the instructions provided throughout the questionnaire, which tell you how to answer each question, and indicate if and when you should skip over questions throughout the survey. Please read the instructions carefully before completing each question, as a range of response types are required throughout.

If you have any questions whilst you are completing the questionnaire, please ask the researcher to assist you. Please return your completed questionnaire to the researcher when you have finished.

NAME: ____________________________

DATE: ____________________________
Appendix AA

Research Appendix Questionnaires

*Item included in pre-therapy questionnaire; †Item included in post-therapy questionnaire; ‡Item included in two-month follow-up questionnaire.

Mindfulness in the Management of Chronic Pain Questionnaire

Thank you for agreeing to participate in this research study. The questions in this survey are about mindfulness (a way of paying attention in the present moment and observing and accepting things as they are without trying to change them), as well as your understandings and use of mindfulness. The survey also includes questions about some of your personal characteristics.

Please follow the instructions provided throughout the questionnaire, which tell you how to answer each question, and indicate if and when you should skip over questions throughout the survey. Please read the instructions carefully before completing each question, as a range of response types are required throughout.

If you have any questions whilst you are completing the questionnaire, please ask the researcher to assist you. Please return your completed questionnaire to the researcher when you have finished.

NAME:________________________
DATE:_____/_____/___________
PREVIOUS EXPERIENCES WITH MINDFULNESS

1. Do you know what mindfulness is, as used in counselling or personal therapy, or in personal development or spiritual enlightenment? [Please tick the appropriate box]

☐ Yes [Please proceed to Question 2]
☐ No [Please skip to Question 11]

2. Please indicate any sources of information about mindfulness you've used, or training in mindfulness you have had: [Please tick all those that apply]

☐ Television program
☐ Internet/websites
☐ Tertiary study
☐ Community education course
☐ Audio CD
☐ Self-help book
☐ Psychologist
☐ Counsellor
☐ GP
☐ Mindfulness group
☐ Health/fitness centre
☐ Friend
☐ Church
☐ Monastery
☐ Other(s) ________________________________

3. Have you ever used mindfulness? [Please tick the appropriate box]

☐ Yes [Please proceed to Question 4]
☐ No [Please proceed to Question 5]

4. How long have you been using mindfulness? _____ years _____ months
BELIEFS AND UNDERSTANDINGS OF MINDFULNESS

The next section asks about your beliefs and understandings about mindfulness. There are no right or wrong answers - we are just interested in learning more about your own thoughts and feelings about mindfulness.

5. Please describe your current understanding and knowledge of mindfulness (as used in counselling, therapy, personal development or spiritual enlightenment):

6. Have you found the use of mindfulness harmful to your well-being in any way? [Please tick the appropriate response]

□ Yes – Please specify how you have found mindfulness harmful to your well-being, and your reason(s) for this:

□ No

7. Please describe your own ideas and beliefs about the specific reason(s) or way(s) in which mindfulness has been helpful for you, if any:

CURRENT USE OF MINDFULNESS

8. Are you currently using mindfulness in your own time outside of the Pain Management Unit?

□ Yes [Please proceed to Question 9]
□ No [Please proceed to Question 11]
9. On average, how long per day do you currently spend using mindfulness in your own time outside of the Pain Management Unit?

_____ hours _____ minutes

10. Please name and briefly describe up to 10 specific mindfulness techniques you use in your own time:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

PAIN

11. In the past week, on average, how intense was your pain? [Please circle the appropriate number]

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No pain</td>
<td>Pain as bad as it could be</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

12. In the past week, on average, how much did your pain interfere in your life? [Please circle the appropriate number]

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No interference</td>
<td>Interference as bad as it could be</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:
13. **CAMS-R**

People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to you.

The rating scale is as follows:

<table>
<thead>
<tr>
<th></th>
<th>1 Rarely/Never at all</th>
<th>2 Sometimes</th>
<th>3 Often</th>
<th>4 Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is easy for me to concentrate on what I am doing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I am preoccupied by the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I can tolerate emotional pain</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I can accept things I cannot change</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I can usually describe how I feel at the moment in considerable detail</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I am easily distracted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I am preoccupied by the past</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. It's easy for me to keep track of my thoughts and feelings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I try to notice my thoughts without judging them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I am able to accept the thoughts and feelings I have</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I am able to focus on the present moment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I am able to pay close attention to one thing for a long period of time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
14. **DASS-21**

Please read each statement and circle a number 0, 1, 2 or 3 which 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:*

<table>
<thead>
<tr>
<th></th>
<th>Did not apply to me at all</th>
<th>Applied to me to some degree, or some of the time</th>
<th>Applied to me to a considerable degree, or a good part of time</th>
<th>Applied to me very much, or most of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found it hard to wind down</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was aware of dryness of my mouth</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I couldn't seem to experience any positive feeling at all</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I found it difficult to work up the initiative to do things</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tended to over-react to situations</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I experienced trembling (e.g., in the hands)</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that I was using a lot of nervous energy</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that I had nothing to look forward to</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I found myself getting agitated</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I found it difficult to relax</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt down-hearted and blue</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt I was close to panic</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was unable to become enthusiastic about anything</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt I wasn't worth much as a person</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that I was rather touchy</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt scared without any good reason</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that life was meaningless</td>
<td>0 1 2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. abcPIPS

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it.

The rating scale is as follows:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never true</td>
<td>Very rarely true</td>
<td>Seldom true</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
<td>Always true</td>
</tr>
</tbody>
</table>

- I would do almost anything to get rid of my pain
  - 1 2 3 4 5 6 7
- I do not do things that are important to me to avoid feeling my pain
  - 1 2 3 4 5 6 7
- When I am in pain, I stay away from other people
  - 1 2 3 4 5 6 7
- It is important that I learn to control my pain
  - 1 2 3 4 5 6 7
- It is important to understand what causes my pain
  - 1 2 3 4 5 6 7
- I feel angry about my pain
  - 1 2 3 4 5 6 7
- I say things like "I don't have any energy", "I am not well enough", "I don't have time", "I don't dare", "I have too much pain", "I feel too bad" or "I don't feel like it"
  - 1 2 3 4 5 6 7
- I avoid doing things when there is a risk it will hurt or make things worse
  - 1 2 3 4 5 6 7
- I avoid scheduling activities because of my pain
  - 1 2 3 4 5 6 7
- I put a lot of effort into fighting my pain
  - 1 2 3 4 5 6 7
- It is not me that controls my life, it is my pain
  - 1 2 3 4 5 6 7
- I need to understand what is wrong in order to move on
  - 1 2 3 4 5 6 7
- Because of my pain, I no longer plan for the future
  - 1 2 3 4 5 6 7
- I postpone things on account of my pain
  - 1 2 3 4 5 6 7
- I cancel planned activities when I am in pain
  - 1 2 3 4 5 6 7
- I interrupt activities if it starts to hurt or becomes worse
  - 1 2 3 4 5 6 7
Listed below are some statements that people might use to describe themselves. Please indicate how strongly you either agree or disagree with each of the following statements.

The rating scale is as follows:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Disagree</strong></td>
<td><strong>Moderately Disagree</strong></td>
<td><strong>Slightly Disagree</strong></td>
<td><strong>Slightly Agree</strong></td>
<td><strong>Moderately Agree</strong></td>
<td><strong>Strongly Agree</strong></td>
</tr>
</tbody>
</table>

My decisions are not usually influenced by what everyone else is doing | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I am good at juggling my time so that I can fit everything in that needs to get done | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I am not interested in activities that will expand my horizons | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I don't have many people who want to listen when I need to talk | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I enjoy making plans for the future and working to make them a reality | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I feel like many of the people I know have gotten more out of life than I have | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I have confidence in my own opinions, even if they are different from the way most other people think | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I tend to worry about what other people think of me | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I often feel overwhelmed by my responsibilities | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I have the sense that I have developed a lot as a person over time | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I enjoy personal and mutual conversations with family members and friends | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
My daily activities often seem trivial and unimportant to me | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
In general, I feel confident and positive about myself | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I am good at managing the responsibilities of daily life | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I often change my mind about decisions if my friends or family disagree | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I do not fit very well with the people and community around me | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
When I think about it, I haven't really improved much as a person over the years | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I often feel lonely because I have few close friends with whom to share my concerns | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I am an active person in carrying out the plans I set for myself | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
When I compare myself to friends and acquaintances, it makes me feel good about who I am | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I think it is important to have new experiences that challenge how I think about myself and the world | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I have difficulty arranging my life in a way that is satisfying to me | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
I don't want to try new ways of doing things - my life is fine the way it is | 1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---|---|
It seems to me that most other people have more friends than I do | 1 | 2 | 3 | 4 | 5 | 6 |
<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>I tend to focus on the present, because the future nearly always brings me problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>My attitude about myself is probably not as positive as most people feel about themselves</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>People would describe me as a giving person, willing to share my time with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Being happy with myself is more important to me than having others approve of me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I have been able to create a lifestyle for myself that is much to my liking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I do not enjoy being in new situations that require me to change my old familiar ways of doing things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Most people see me as loving and affectionate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I don't have a good sense of what it is I'm trying to accomplish in life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I made some mistakes in the past, but I feel that all in all everything has worked out for the best</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I sometimes feel as if I have done all there is to do in life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>It's difficult for me to voice my opinions on controversial matters</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I generally do a good job of taking care of my personal finances and affairs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>There is truth to the saying you can't teach an old dog new tricks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I know I can trust my friends, and they know they can trust me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I used to set goals for myself, but that now seems like a waste of time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The past had its ups and downs, but in general, I wouldn't want to change it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>In many ways, I feel disappointed about my achievements in life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I tend to be influenced by people with strong opinions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>In general, I feel I am in charge of the situation in which I live</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>For me, life has been a continuous process of learning, changing, and growing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Maintaining close relationships has been difficult and frustrating for me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Some people wander aimlessly through life but I am not one of them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>When I look at the story of my life, I am pleased with how things have turned out so far</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I judge myself by what I think is important, not by what others think is important</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The demands of everyday life often get me down</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I gave up trying to make big improvements or changes in my life a long time ago</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I have not experienced many warm and trusting relationships with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I live life one day at a time and don't really think about the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I like most aspects of my personality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
PSYCHOLOGICAL THERAPY AT THE PAIN MANAGEMENT UNIT

17. b What aspects of therapy did you find most useful?


18. b What aspects of therapy did you find least useful?


19. b Please provide any other comments you have about your experience of psychological therapy at the Pain Management Unit:


---- END OF SURVEY. THANK YOU FOR YOUR PARTICIPATION ----
A research study is currently underway at the Pain Management Unit (PMU) at the Canberra Hospital involving individuals with chronic pain attending for psychological support. The research is being undertaken by a psychologist at PMU who is also completing a Professional Doctorate in Clinical Psychology at the Australian National University.

The study aims to investigate the use of Acceptance and Commitment Therapy (ACT), a psychological therapy used at PMU. ACT is about being fully engaged and present in your life and taking effective action guided by your deepest values, whilst accepting the inevitable presence of negative private experiences such as pain sensations, emotional distress, and worrying thoughts that go with living a meaningful life. An important component of ACT is the use of mindfulness skills to handle these difficult private experiences. Mindfulness is about purposefully bringing your awareness to the present moment, and observing and accepting things as they are without trying to change them.

Specifically, the study aims to investigate the factors that may influence patients’ use of mindfulness skills during ACT therapy, including readiness to self-manage pain, motivation to use mindfulness skills, acceptance of the rationale (justification, logical reasons) for using mindfulness and ACT, understandings and beliefs about mindfulness, and goals for therapy. It is predicted that use of mindfulness will in turn influence therapy outcomes.

All patients who attend PMU for psychological therapy with the researching psychologist will complete some questionnaires and between-session activities over the course of therapy and discuss their experiences with the treating psychologist, in order to provide you with individualised care and enhance therapy. Anonymous feedback will also be provided within PMU about the study findings. With your permission, your de-identified anonymous information may also be included in the researcher’s dissertation and may be presented at professional conferences, and/or published in professional journals.

While the completion of all recommended questionnaires and between-session activities is encouraged, as this information will be used in treatment planning, you may choose not to answer any questions you do not wish to. Further, whether you give permission to have any anonymous information included in the researcher’s dissertation will not influence your current or future care. Your data will be kept and stored securely by the researcher. All material will be treated in a strictly confidential manner.

This study has been approved by ACT Health Human Research Ethics Committee and The Australian National University Human Research Ethics Committee. There are no known risks of participating. If you have any concerns or issues about the way in which this study has been carried out and you do not feel comfortable communicating with the staff conducting this study, please contact:

- The ACT Health Human Research Ethics Committee (ACT-HREC), Building 10, Level 6, Canberra Hospital, ACT (02 6205 0846)
- The Secretary, Human Research Ethics Committee, Research Office, Chancery 10B, The Australian National University, ACT 0200 (02 6125 7945; human.ethics.officer@anu.edu.au)
- The principal investigator, Debra Harris, Department of Psychology, The Australian National University (02 6125 5585; debra.harris@anu.edu.au)
Mindfulness in the Management of Chronic Pain Study

Participant Consent Form

Please read the attached Information Sheet about the research study 'ACT' in the Management of Chronic Pain Study currently underway at the Pain Management Unit (PMU) at the Canberra Hospital, with individuals with chronic pain attending for psychological support.

Please name, sign and date the relevant sections below for those aspects of the study to which you provide consent.

Consent to participate
I have read and understood the attached Information Sheet about the objectives and procedures of the 'ACT' in the Management of Chronic Pain Study and consent to taking part in the study. I understand that while I am encouraged to complete suggested questionnaires and activities as this information will be used in treatment planning, I may choose not to answer any questions I do not wish to you. I understand that I may withdraw from therapy at any time:

Name of Participant: __________________ Signature: __________________ Date:_________

Consent to have de-identified information included in dissertation/conferences/publications
I consent to have the anonymous, de-identified information gathered from me during the course of therapy included in the researcher's dissertation. I understand that I may request the exclusion of specific information I have provided from the dissertation/conferences/publications at any time. I have been advised that the results of the project may be published or presented at conferences but that my personal details will remain confidential.

Name of Participant: __________________ Signature: __________________ Date:_________

Consent to audio taping
I consent to have my therapy sessions with the researcher/treating psychologist audio taped. I understand that the recordings will be stored securely at the Pain Management Unit and not used for any other purpose than that explicitly stated and agreed to, and will be erased at the conclusion of the study.

Name of Participant: __________________ Signature: __________________ Date:_________