Chapter 6
Mindfulness- and Acceptance-Based Interventions in the Treatment of Anxiety Disorders

Jon Vøllestad

Introduction

Anxiety Disorders

Humans have a hard-wired ability to respond with fear to threatening situations and to solve problems by anticipating potential aversive outcomes. Unfortunately, these adaptive capacities can sometimes go awry, inhibiting the person in a number of ways. When this impairment becomes significant, we speak of anxiety disorders—a set of clinical conditions characterised by excessive fear, worry, or anxious apprehension (Barlow, 2002). Epidemiological data show anxiety disorders to be the second most common group of mental disorders after substance use, with an overall lifetime prevalence of 25 % (Kessler, Chiu, Demler, & Walters, 2005). Anxiety disorders incur large costs in terms of reduced quality of life and everyday functioning, poorer academic achievements, relationship instability, and low occupational and financial status (Lépine, 2002; Marciniak, Lage, Landbloom, Dunayevich, & Bowman, 2004; Olatunji, Cisler, & Tolin, 2007). For individuals with an early onset, these disorders lead to increased risk of comorbid mental and substance use disorders (Kessler, Ruscio, Shear, & Wittchen, 2010). Anxiety disorders are also independently linked to increased mortality due to heightened risk for coronary heart disease (Kubzansky, Davidson, & Rozanski, 2005) and suicide (Bolton et al., 2008).

Studies of the clinical course of anxiety disorders show that they are unlikely to remit without treatment and are highly likely to recur after observed recovery (Bruce et al., 2005; Ramsawh, Raffa, Edelen, Rende, & Keller, 2009; Wittchen, Lieb,

J. Vøllestad (✉)
Solli District Psychiatric Centre (DPS), Nesttun, Norway

Department of Clinical Psychology, University of Bergen, Bergen, Norway
e-mail: jon.vollestad@uib.no

E. Shonin et al. (eds.), *Mindfulness and Buddhist-Derived Approaches in Mental Health and Addiction*, Advances in Mental Health and Addiction,
DOI 10.1007/978-3-319-22255-4_6

Pfister, & Schuster, 2000). A substantial proportion of sufferers never seek treatment (Roness, Mykletun, & Dahl, 2005). For those who do, there is a considerable delay from onset of the disorder to referral for treatment (Wang et al., 2005). Concurrent with underutilisation of mental health services, anxiety disorders are associated with overutilisation of other health services, including emergency care (Deacon, Lickel, & Abramowitz, 2008; Greenberg et al., 1999). There is a need for interventions that are cost-efficient, easily disseminated, and attractive to individuals less likely to seek help for their problems.

Of the psychological treatments, cognitive behavioural therapy (CBT) has proven particularly effective in the treatment of anxiety disorders (Hofmann & Smits, 2008; Hollon & Beck, 2004; Norton & Price, 2007). However, current CBT interventions have not reached optimal levels of efficiency for anxiety disorders. Meta-analyses report dropout rates in the range of 9–21 %, and approximately a third of patients are classified as nonresponders (Taylor, Abramowitz, & McKay, 2012). For specific disorders, 40–50 % of patients suffering from social anxiety disorder treated with CBT show minimal improvement (Hofmann & Bögels, 2006; Rodebaugh, Holaway, & Heimberg, 2004) and continue to report considerable dissatisfaction with their lives following treatment (Heimberg, 2002). Research on generalised anxiety disorder (GAD) indicates that partial remission is a twice as likely outcome of CBT as full remission, and a number of responders continue to be troubled by residual symptoms (Ninan, 2001). A number of authors have argued that current interventions should be expanded upon or supplemented in order to meet the public health challenge of anxiety disorders in the twenty-first century (e.g. Antony, 2002; McManus, Grey, & Shafran, 2008). Mindfulness- and acceptance-based interventions constitute one potential avenue of expansion.

Mindfulness- and Acceptance-Based Interventions

'Mindfulness' is a mental state characterised by a present-centred and non-judging mode of awareness. Originally a Buddhist practice, mindfulness training aims to facilitate an adaptive way of relating to experience that can alleviate distress and suffering. A mindful state allows the person to be aware of what happens perceptually, psychologically, or physiologically, without being absorbed in it and without reacting to it in a habitual or non-reflective manner. Instead, the person cultivates an attitude of friendly acknowledgement of whatever arises in the present moment. The related notion of 'acceptance' captures the same allowing stance toward experience. Taken together, present-centred awareness and openness to experience constitutes a form of psychological flexibility (Hayes, 2004) that can enable the person to relate more adaptively to the bodily distress, strong emotions, and negative thinking characterising a number of clinical disorders.

A seminal contribution in the clinical use of mindfulness is *mindfulness-based stress reduction* (MBSR) created by Jon Kabat-Zinn (1990). This programme implements a secularised version of various mindfulness practices in the structured format

of an 8-week course. MBSR was originally aimed at chronically ill patients in a behavioural medicine setting but has subsequently been applied to a wide variety of presenting problems. Reviews of the research on MBSR show significant reductions in psychological symptoms secondary to medical illness, as well as the mitigation of stress and enhanced emotional well-being in nonclinical samples (Chiesa & Serretti, 2009; de Vibe, Bjørndal, Tipton, Hammerstrøm, & Kowalski, 2012).

Building on the MBSR programme, Segal, Williams and Teasdale (2012) developed mindfulness-based cognitive therapy (MBCT) for patients with recurring depressive problems. MBCT aims to prevent depressive relapse by familiarising patients with their own experience through mindfulness practice and by enabling them to view their thoughts and feelings as events in the mind rather than the truth about themselves and the world. The cultivation of a 'decentred' perspective on thoughts, feelings, and bodily sensations is presumed to inhibit the pattern of depressive rumination that could otherwise trigger new episodes of depression. Several randomised controlled trials have shown that MBCT significantly reduced the rate of relapse in recurrent major depression compared to treatment as usual (Bondolfi et al., 2010; Godfrin & van Heeringen, 2010; Ma & Teasdale, 2004; Teasdale et al., 2000). MBCT has also proven to be as effective as long-term maintenance treatment with antidepressants in preventing relapse (Kuyken et al., 2008; Segal et al., 2010).

MBSR and MBCT employ mindfulness training as the main intervention. As a second—although partially overlapping—developmental trajectory, several multicomponent treatment packages have integrated interventions from CBT into a conceptual framework of mindfulness and acceptance. This synthesis of models is argued by some to be a novel psychotherapeutic paradigm, constituting a 'third wave' in the historical development of CBT (see Hayes, 2004). The overall goal is to enable clients to relate in a non-identificatory and flexible way to experience, but the range of interventions employed in the service of this goal is typically broader than in stand-alone mindfulness-based therapies.

Acceptance and commitment therapy (ACT) combines principles of mindfulness and acceptance with treatment components from behavioural therapy and experiential psychotherapy (Hayes, Strosahl, & Wilson, 1999). The ACT model holds that psychopathology is due to relating to thoughts as literal truths (cognitive fusion), as well as maladaptive attempts to escape from or control unwanted experience (experiential avoidance) (Hayes, 2004). The strategies in ACT include metaphors, experiential work, exposure in the service of valued goals, as well as traditional mindfulness exercises to promote non-judgmental and nonreactive awareness of internal experiences. In ACT terms, these are all known as 'defusion techniques', aimed at undermining contexts of literality that constrict psychological flexibility (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Meta-analytic reviews have found ACT to outperform control conditions on primary and secondary outcomes after treatment and follow-up for a variety of conditions (Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009). There were no significant differences in effect sizes when comparing ACT to active control conditions, suggesting equal effectiveness relative to established treatments (Powers et al., 2009).

Acceptance-based behaviour therapy (ABBT) is a multicomponent intervention augmenting CBT with components from ACT, dialectical behaviour therapy (DBT), and MBCT (Roemer & Orsillo, 2007; Roemer, Orsillo, & Salters-Pedneault, 2008). ABBT has been developed specifically for the treatment of generalised anxiety disorder (GAD) and aims to decrease experiential avoidance through increased awareness and willingness to carry out valued action in important life domains.

One issue that needs to be considered is that of mindfulness-based interventions in a narrow sense versus treatment packages comprising a greater range of components. As noted, MBSR and MBCT aim most exclusively at the cultivation of mindfulness skills, while ACT, DBT, and ABBT include a broader array of therapeutic interventions from the cognitive behavioural tradition. However, these interventions share an overarching conceptualisation of the nature of mental processes, the causes of suffering, and the development of well-being. I argue that they have more shared than unique features, both conceptually and in terms of practical implementation. Their common denominator is an emphasis on changing the individual's relationship to experience, enabling a present-centred and nonevaluative stance that facilitates valued action in the face of distress. There is also a shared understanding of the tendency of discursive thoughts and linguistic processes to reify experience in ways that contribute to psychological suffering. Rather than changing the content of thoughts or verbal rules, these interventions aim for insight into the transient and non-veridical nature of mental phenomena. As such, mindfulness- and acceptance-based interventions (MABIs) can be seen as a family of interventions, with different treatment packages offering different routes to a common goal.

However, it must be noted that some authors disagree. For instance, Hofmann, Sawyer, Witt, and Oh (2010) and Strauss, Cavanagh, Oliver, and Pettman (2014) chose to exclude acceptance-based approaches from their recent reviews and meta-analyses on the grounds that the behaviour analytic framework constitutes a different therapeutic model. Also, Chiesa and Malinowski (2011) raise the question whether mindfulness is an adequate umbrella term for the diversity of backgrounds, aims, and practices found in different MABIs.

For the present purpose, I will use the term MABIs to refer to mindfulness- and acceptance-based interventions in the broad sense. When referring to the group-based modalities of MBSR and MBCT that offer mindfulness training in the pure form, the term mindfulness-based interventions (MBIs) will be used. Although a conceptual equivalence is assumed here, it is important to note that the comparative efficacy of pure or mixed approaches can only be assessed empirically. It is possible that as the field progresses, points of conceptual or empirical distinction between these approaches might emerge more clearly than is the case today.

Outline of the Chapter

In this chapter, I will present a more detailed rationale for why MABIs may be of relevance to the treatment of anxiety disorders. My point of departure will be the variety of transdiagnostic processes characterising these clinical conditions, before

I go on to consider more specifically how strategies of mindfulness and acceptance can modify these processes within the domains of cognition, emotion, behaviour, and self-experience. I then review the empirical status of MABIs for both transdiagnostic samples and samples with homogeneous anxiety disorders, before discussing their clinical implementation and recommendations for future research.

The Relevance of Mindfulness and Acceptance for the Treatment of Anxiety Disorders

Anxiety as such is, strictly speaking, not the problem in anxiety disorders. Rather, it is the way the person relates to his or her experience that creates distress and problems in functioning. Flexible adaptation is characterised by an ability to view thoughts, feelings, and bodily sensations as transient events. When this is the case, irrational thoughts, worry, and anxious arousal can arise and pass in awareness without being given too much credence or focus. By contrast, anxiety as a disorder manifests itself in cases where there is a reactive relationship to experience—that is, a state of being overly absorbed in thinking or arousal—and concurrent attempts to control, suppress, or avoid experience (Baer, 2007; Roemer, Erisman, & Orsillo, 2008). This inflexible relationship to the contents of awareness serves to maintain loops of avoidance and safety behaviours and related distress. As a somewhat paradoxical antidote, mindfulness- and acceptance-based interventions aim to facilitate willingness to stay in contact with whatever is present in a non-judgmental way and may thus be helpful for patients' suffering from anxiety disorders. Instead of fighting symptoms or trying to achieve control over them, the person practises attending to his or her experience as a temporary mental state. Thereby, reactive behavioural tendencies are expected to diminish, and the detrimental cognitive-affective processes characteristic of anxiety can be prevented from unfolding (Roemer, Erisman, & Orsillo, 2008). Additionally, therapeutic work is consistently embedded in a framework de-emphasising the removal of unpleasant thoughts and feelings. Instead, the focus is on valued action and the possibility of living a meaningful life regardless of anxiety-related discomfort (Eifert & Forsyth, 2005).

It is fair to assume that individuals vary in terms of how they habitually relate to their experience, including anxious arousal and distress. A number of self-report instruments have been developed to assess mindfulness, acceptance, and psychological flexibility. Research shows that measures of mindfulness as a dispositional variety or trait are inversely related to anxiety symptoms in nonclinical samples (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bränström, Duncan, & Moskowitz, 2011; Brown & Ryan, 2003; Cash & Whittingham, 2010). Research on dispositional mindfulness in samples with clinical levels of anxiety is more limited, but a recent study of patients seeking treatment for anxiety and depression found that the mindfulness facets of 'nonreactivity' and 'describing' were particularly indicative of lower levels of anxious distress (Desrosiers, Klemanski, & Nolen-Hoeksema, 2013). Also, a recent meta-analysis of studies incorporating a much-used measure of

acceptance and psychological flexibility, the Acceptance and Action Questionnaire (AAQ), found consistent negative correlations between the AAQ and both general measures of anxiety as well as measures of severity of specific anxiety disorders (Bluett, Homan, Morrison, Levin, & Twohig, 2014). This indicates that present-centred, non-judging awareness and value-oriented action constitute a potential counterpart to the psychophysiological state of anxiety. How might we understand this obverse relationship in greater detail?

The current diagnostic taxonomy for anxiety disorders contains a number of distinct phenotypes, characterised by specific cognitions, behaviours, symptoms, and maintaining factors. For instance, an individual with panic disorder (PD) will typically be cognitively preoccupied with signals of bodily harm (Austin & Richards, 2001), while an individual with social anxiety disorder (SAD) will rather be hypervigilant with regard to potential interpersonal embarrassment (Voncken, Bögels, & de Vries, 2003). The various diagnostic categories will be presented in more detail later, as clinical research on anxiety usually targets discrete disorders. However, in addition to diagnostically distinct symptom profiles, a number of processes are involved in the instigation and maintenance of the various anxiety disorders (Mansell, Harvey, Watkins, & Shafran, 2009; Norton & Philipp, 2008). When considering the potential for mindfulness and acceptance in the treatment of anxiety disorders, there is reason to consider both approaches. Emphasis on disorder-specific expressions could allow more effective targeting of unique symptoms and maintaining factors but requires that clinicians train in a variety of models and may be less suited to address cases where several diagnoses are present. Transdiagnostic approaches, on the other hand, can be applied to patient groups with different presenting problems. Theoretically and conceptually, MABIs emphasise mental and emotional processes that generate distress irrespective of diagnostic categories. Instead, these are seen as inherent tendencies in human psychology as such, but in clinical disorders are present in more extreme forms. I now go on to consider these shared features as they relate to anxiety disorders, and how the psychological processes associated with mindfulness may be beneficial with regard to the anxiety spectrum in general. Specifically, the following transdiagnostic features of anxiety disorders are addressed: dysfunctional cognitive processes (including attentional biases), avoidance behaviours, emotional dysregulation, and maladaptive self-relatedness. Table 6.1 presents an overview of these transdiagnostic features, their corresponding counterpoints in MABIS, as well as examples of relevant practices and interventions.

The Cognitive Domain

In the cognitive domain, anxiety disorders are characterised by attentional biases to threat (Craske et al., 2009), aversive self-focussed attention (Ingram, 1990; Mor & Winquist, 2002), as well as a tendency to catastrophic interpretations and repetitive negative thinking in the form of worry or rumination (Ehring & Watkins, 2009;

Table 6.1 MABIs and transdiagnostic features of anxiety disorders

Domain	Transdiagnostic psychopathological processes	Beneficial psychological processes from MABIs	Examples of practices from MABIs
Cognition	Attentional bias to threat, self-focussed attention	Self-regulation of attention/contact with the present moment	Awareness of breathing (MBSR/MBCT)
	Cognitive fusion and reactivity (worry, rumination, and catastrophising)	Metacognitive insight/decentring/defusion	Awareness of thinking (MBSR/MBCT) Defusion exercises (ACT/ABBT)
Emotion	Hyperarousal Emotional reactivity Experiential Avoidance	Body awareness: attending to internal sensations and feelings with non-judging attitude	Body scan, yoga (MBSR/MBCT)
		Acceptance-facilitated interoceptive exposure and emotion regulation	Working with difficulty (MBCT)
Behaviour	Avoidance Passivity Social isolation	Value clarification	Value work, establishing chosen life directions (ACT/ABBT)
		Committed action	Determining effective action guided by values (ACT)
	Reactivity/impulsivity Automatic pilot	Behavioural self-regulation/acting with awareness	Breathing space (MBCT)
Self	Attachment to narrative/conceptualised self and rigid self-standards	Self as process/context	Choiceless awareness (MBSR/MBCT) Observer exercises (ACT)
	Self-criticism	Self-compassion	Loving kindness/Metta meditation (MBSR)

MABIs mindfulness- and acceptance-based interventions, *MBSR* mindfulness-based stress reduction, *MBCT* mindfulness-based cognitive therapy, *ACT* acceptance and commitment therapy, *ABBT* acceptance-based behaviour therapy

Mathews & MacLeod, 2005). Experientially, this leads to an erratic or rigid attentional focus and a narrowing down of the bandwidth of information that is available from both the environment and about oneself. This frenzied hypervigilance exists alongside a state of 'cognitive fusion' that causes thoughts to be experienced as dominant in awareness and as factual and convincing despite their often dramatic one-sidedness. I now go on to consider separately the attentional and thought-related transdiagnostic processes implicated in anxiety disorders, as well as the potential of MABIs to counteract these processes.

Well-regulated attention is a central aspect of well-being and optimal performance in any kind of activity. To deal with challenges and arousal, the person needs to be able to voluntarily and flexibly direct, sustain, and disengage attention (Baumeister, Heatherton, & Tice, 1994; Wadlinger & Isaacowitz, 2010). It is also of value to be able to broaden the field of awareness in a manner that enables integration of information from the surroundings with ongoing mental events. One of the clinical features of anxiety disorders is the tendency for scarce attentional resources to be bound up in a hypervigilant scanning for cues of threat or danger. Reviews of the research conclude that threat-related biases in information processing have been found in all anxiety disorders (Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van Ijzendorn, 2007; Mathews & MacLeod, 2005). Conversely, a central facet of approaches based on mindfulness and acceptance is the 'self-regulation of attention' (Bishop et al., 2004; Carmody, 2009).

In order to cultivate contact with the here and now, the individual must practise engaging with present-moment stimuli, sustain attention, and redirect it whenever it wanders onto past- or future-focussed cognitive processing. The practice of sustaining and redirecting attention is assumed to lead to greater stability in attention and a corresponding greater deliberate control of what one is attending to. Furthermore, mindfulness practice also aims to strengthen a capacity to broaden the attentional focus, enabling the individual to accommodate more aspects of experience in the field of awareness, as well as learning to monitor his or her state of mind (Carmody, 2009). Most commonly, early phases of training involve a focussing of attention through concentrating on specific objects of awareness, while later phases gradually reduces the focus on an explicit object and instead emphasises an open monitoring of any element of awareness (Lutz, Slagter, Dunne, & Davidson, 2008). It is therefore conceivable that MABIs could exert positive effects on anxiety disorders by increasing the effective and flexible allocation of attentional resources.

A common mindfulness practice that can illustrate how MABIs facilitate self-regulation of attention is awareness of breathing as it is practised in MBSR and MBCT. The person here gathers attention and awareness around the felt physical sensation of breathing either in the abdomen or wherever else in the body that the breath can be sensed most clearly. The instruction is to follow the breath, and whenever one becomes aware that the mind has wandered, merely to notice what has caught one's attention and to return to breathing. This seemingly simple exercise most likely recruits a number of neural subsystems required for focussing, sustaining, and redirecting attention as needed. A related practice from MBSR/MBCT is awareness of sounds. This entails a greater degree of expansive awareness or open monitoring, as the person focusses on the sense modality of hearing—adopting an allowing and investigative stance toward sounds from the environment as they come and go.

One of the most consistent findings across brain imaging studies of meditation is the functional upregulation of brain regions involved in the mediation of attention control (Hölzel et al., 2011; Marchand, 2014). This is evidence of neural plasticity: experience and practice shape neural sculpture, leading to increased connectivity in brain areas underlying the capacity being exercised. Meditation techniques, including mindfulness training, have been shown to be associated with outcomes such as

enhanced ability to concentrate and inhibit distracting stimuli, reduced expectancy response when presented with unexpected stimuli, and improved sustained attention and attention switching (Ivanovski & Malhi, 2007; Rubia, 2009). Research on basic attentional processes also shows that mindfulness training modifies subsystems of attention, as indicated by performance on the attention network test (Jha, Krompinger, & Baime, 2007; van den Hurk, Giommi, Gielen, Speckens, & Barendregt, 2010) and the Stroop test (Chan & Woollacott, 2007; Kozasa et al., 2012). Taken together, these findings indicate that attentional performance and cognitive flexibility are positively related to mindfulness. Consequently, mindfulness training and its incorporation in acceptance-based behaviour therapies could serve to counteract the maladaptive attention deployment often seen in anxiety disorders.

Turning to the form and content of cognitive processes involved in anxiety, negative repetitive thinking is a central feature of these disorders (Ehring & Watkins, 2009; Mathews & MacLeod, 2005). Rumination is the repetitive focussing on negative feelings and thoughts in response to low mood, presumably in an effort to understand and cope with distress. Ironically, however, elaborating on negative emotional states and their corresponding mental content maintains the mood it seeks to reduce (Nolen-Hoeksema, 2000; Watkins, Moberly, & Moulds, 2008). Rumination is often focussed on the present or past, while worry is a process of future-focussed thinking characterised by overestimating negative outcomes and related tension and anxious apprehension (Barlow, 2002). Interwoven with the lack of flexible attention described above, rumination and worry constitute forms of negative self-absorption (Mor & Winquist, 2002; Ingram, 1990) that prevents the individual from relating in an adaptive manner to current situations and challenges.

Furthermore, negative or catastrophic interpretations or expectations are a prominent feature of anxiety disorders. For instance, individuals with PD/AG typically interpret descriptions of bodily sensations as indicative of impending physical collapse, and those with social phobia predict that social situations will have disastrous outcomes (e.g. Austin & Richards, 2001; Stopa & Clark, 2000; Voncken et al., 2003). Rumination, worry, and catastrophising are all characterised by cognitive fusion, that is, a quality of mental experience as being predominant in awareness, factually accurate, and requiring urgent action (Hayes, 2004). Phenomenologically, this feels as being 'zoned out', lost in a stream of thoughts that have an adhesive, sticky quality, with little freedom in choosing how to respond.

Mindfulness can be seen as an alternative behaviour to ruminating about the past and worrying about the future, where the person is clinging less to his or her thoughts or interpretations (Hayes, 2004). Although mindfulness practice is sometimes misconstrued as a form of emptying the mind of thoughts, it is better understood as a more flexible and less identified relationships to thinking. Both mindfulness training and acceptance-based interventions cultivate a mental mode that lets the person disengage somewhat from maladaptive cognitive processes while at the same time being aware of the patterns of thinking as they are unfolding in the mind. In that way, it gradually becomes clear that thoughts and mental images are temporary phenomena that do not always give actual representations of the self or reality. As a consequence, mental processes need not be identified with too strongly and don't

necessarily have to be acted upon. This form of spacious awareness of mental content is variously called 'metacognitive insight' (Teasdale et al., 2002), 'defusion' (Hayes, 2004), or 'decentring' (Shapiro, Carlson, Astin, & Freedman, 2006).

An illustrative exercise for the purpose of strengthening metacognitive skills is the practice of observing thinking. Here, the person practises mindful awareness of the content of the mind from a witnessing perspective, allowing thoughts to come and go without being absorbed in them and without trying to control them. Rather than avoiding mind wandering, the task is to observe such wandering as it is happening with a gently detached attitude. Similarly, in ACT, there are various interventions designed to facilitate defusion from thoughts, such as visualisations inviting one to relate to thoughts as one would to cars passing by outside one's house or leaves sailing by on a stream. Also, the 'milk exercise' is a way of facilitating defusion by repeating a word until it is experienced as meaningless, thereby garnering insight into the arbitrary and non-veridical nature of linguistic signifiers (and, by extension, thinking as such).

By developing the capacity for mindful awareness of thoughts, the mental proliferation or cognitive reactivity often seen in anxiety disorders may be diminished. This capacity for broadening the field of awareness can serve to facilitate a decoupling from negative cognitive loops or merely allowing processes of rumination and worry to play themselves out without being absorbed in them (Carmody, 2009). In line with this, evidence indicates that mindfulness training is associated with decreases in negative repetitive thinking (Deyo, Wilson, Ong, & Koopman, 2009; Frewen, Evans, Maraj, Dozois, & Partridge, 2008; Jain et al., 2007; Kumar, Feldman, & Hayes, 2008). There is also evidence from patients with depressive disorders indicating that MBCT leads to a more decentred perspective on mood and mental processes that may serve to counteract depressive relapse (Hargus, Crane, Barnhofer, & Williams, 2010; Kuyken et al., 2010).

The Domain of Behaviour

Behaviourally, anxiety disorders are characterised by avoidance of situations and activities seen as fear-provoking (Shear, Bjelland, Beesdo, Gloster, & Wittchen, 2007). This restricts the behavioural repertoire of patients and contributes to the functional impairment and reduced quality of life associated with these diagnoses (Mendlowicz & Stein, 2000). The lack of positive reinforcement and sense of disconnection caused by pervasive avoidance can also serve as a partial explanation for the high rates of comorbidity between anxiety and depressive disorders. That is, avoiding situations, or enduring them despite strong discomfort, contributes to a lack of mastery and a sense of helplessness that increase the risk of a secondary depressive disorder developing.

Mindfulness and acceptance might serve to counteract avoidance behaviours through the encouragement to seek out meaningful activities and situations despite

the discomfort they engender. This theme is most fully developed in the interventions in ACT, which to a large extent frames therapeutic work in terms of how it might help the client reconnect with important life goals. In this sense, mindfulness and acceptance can serve an important self-regulatory function—in accordance with self-determination theory which posits open awareness as a prerequisite for facilitating choices consistent with the individual's needs, values, and interests (Brown & Ryan, 2003). However, MBSR and MBCT also emphasise the cultivation of awareness as something different from and beyond a mere strategy for reducing distress. Instead, mindfulness training is seen as a reconfiguration of one's way of being in the world, also opening up to the aspects of life that give the individual enjoyment, occasion for relational connections, and a sense of purpose (Kabat-Zinn, 2003; Santorelli, 1999).

Interventions facilitating behavioural self-regulation include value work in ACT, where the person is assisted in exploring valued life directions and making them more explicit. In turn, this 'moral compass' serves to determine avenues of action to bring oneself more in line with overarching life goals. These exercises are similar to exposure interventions and behavioural activation strategies in traditional CBT but are consistently framed in terms of willingness to accept distress in the service of living an engaged life, as opposed to reducing anxiety as such (see Hayes et al., 1999).

There is evidence that willingness to engage in valued action despite distress is associated with outcome in studies on various disorders. Early changes in acceptance and valued action have been shown to predict later changes in social anxiety (Dalrymple & Herbert, 2007; Kocovski, Fleming, & Rector, 2009). Changes in acceptance and valued action have been found to mediate effects on depression at follow-up (Bohlmeijer, Fledderus, Rokx, & Pieterse, 2011), as well as predicting posttreatment responder status for patients with GAD (Hayes, Orsillo, & Roemer, 2010).

Behaviour in anxiety disorders is furthermore characterised by a lack of deliberate choice, as ingrained proclivities for avoidance cause people to act in an automatic or habitual manner. Mindfulness training aims to increase the ability to flexibly respond rather than mindlessly react to stressors and emotionally challenging situations (Kabat-Zinn, 1990). An example of an exercise supporting such flexibility is the 'three-minute breathing space' found in MBCT. In this brief practice, the person starts by bringing a spacious, non-judging awareness to his or her current experience (thoughts, feelings, and bodily sensations). As a next step, attention is narrowed for a brief period of time to focus on the breath, as a means of stabilising attention. The third step is to expand awareness again to include the totality of one's experience, allowing for the presence of worries, emotional distress, and physical discomfort/tension. This alternation between open monitoring and focussed attention may help the person step out of behavioural automaticity and gain a more decentred perspective on his or her situation. This can help him or her to see potential behavioural options that were previously unavailable. It also entails a form of emotion regulation, a process to which I now turn.

The Domain of Emotion Regulation

Emotional distress is considerable in all anxiety disorders, as they are characterised by physiological tension and hyperarousal (Craske et al., 2009). In addition to overt avoidance of anxiety-provoking activities and situations, individuals suffering from anxiety disorders usually display deficiencies in emotion regulation in the form of overreliance on covert strategies aimed at removing, diminishing, or controlling their distress (Amstadter, 2008; Campbell-Sills & Barlow, 2007). These strategies are usually counterproductive and serve to maintain or exacerbate the disorder in question (Clark, 1999; Salkovskis, 1991). By contrast, 'acceptance' is the active and aware embrace of current private events without attempting to change their form or frequency (Hayes et al., 2006). It involves a 'turning toward' experience regardless of its emotional valence and an emphasis on processing the concrete details of physical sensations in the body as opposed to judging, ruminating about, or trying to eliminate internal experiences (Williams, 2010). In this sense, regular mindfulness and acceptance can be seen as facilitating a form of interoceptive exposure (Barlow, 2002) that offers opportunities for desensitisation to internal events that would habitually be avoided or suppressed. This may lead to corrective learning experiences whereby fear and anxious apprehension can be attenuated or extinguished and a corresponding expansion in the range of behaviours engaged in (Treanor, 2011).

Mindfulness and acceptance can be seen as modes of emotion regulation that are not based on the deliberate manipulation of the affective experience itself. Instead, it entails a shift from representational experience (an evaluative, instrumental mode of processing) to a more direct mode of experiencing. In a mindful state, the individual is able to see more clearly the difference between direct perceptions or sensations and the reactions he or she has to these experiences (Williams, 2010). The ability to stand back and observe with an open-hearted curiosity enables the individual to relate to aversive experience as shifting patterns of thoughts and sensations, rather as something to be elaborated on or changed. Mindfulness is thus conceptualised as being in opposition to both avoidance and over-engagement by being *an emotional balance that involves acceptance of internal experiences, affective clarity, and ability to regulate one's emotions and moods* (Hayes & Feldman, 2004, p. 257). This does not imply passivity or resignation in the face of distress, but rather an acknowledgement that unpleasant experience is a part of life that can be coped with more adaptively if one does not try to fight or control it.

Notable practices that illustrate the process of emotion regulation in MBIs include those aimed at facilitating bodily awareness, such as body scan or yoga. By attending to shifting patterns of sensation in a non-judging manner, people can familiarise themselves with their bodies and can use its signals as information that can be acted upon intentionally instead of automatically. There are also exercises more explicitly targeting subjective distress, such as 'working with difficulty' from MBCT. Here, the person is asked to contemplate a distressing situation and, rather than thinking about it, is encouraged to stay experientially present with the way distress is sensed in the body. Instructions invite the person to allow the experience,

to open up to it, and to observe it from moment to moment with a caring attitude (see Segal, Williams, & Teasdale, 2012 for more detailed instructions).

Research in nonclinical samples show that attempts to suppress mental content or emotional arousal tends to backfire, leading to greater accessibility of unwanted thoughts and increased arousal (Gross, 2002; Wegner & Erber, 1992; Wegner, Broome, & Blumberg, 1997). Such ironic effects of experiential avoidance have also been demonstrated in subclinical and clinical samples. Laboratory studies show that when subjects with anxiety disorders or high anxiety sensitivity are instructed to accept their experience as opposed to suppressing it during biological challenge paradigms (CO_2 trials), they either report less anxiety symptoms (Eifert & Heffner, 2003) or evaluate their symptoms less negatively (Levitt, Brown, Orsillo, & Barlow, 2004). These findings on the benefits of acceptance with regard to panicogenic stimuli might be particularly relevant to panic disorder (PD), but studies indicate that patients with different anxiety disorders display lower degrees of present-centred awareness and an overreliance of suppression and avoidance strategies (Campbell-Sills, Barlow, Brown, & Hofmann, 2006a; Roemer et al., 2009). There is also evidence to suggest that distress may be related to more adaptively by applying present-centred acceptance as an intentional emotion regulation strategy (Campbell-Sills, Barlow, Brown, & Hofmann, 2006b).

Brain imaging studies support the notion that mindfulness training beneficially impacts brain areas associated with emotion regulation. Longitudinal studies indicate that participation in an MBSR course is associated with reduced grey matter density in the amygdala, a part of the limbic system involved in stress- and anxiety-related reactivity (Hölzel et al., 2009, 2010). Also, mindfulness has been shown to be associated with increased functional connectivity in brain networks associated with emotion regulation and present-moment awareness and reduced activity in limbic areas associated with fear and distress, including the amygdala. This pattern of findings have been reported for individuals scoring higher on dispositional mindfulness (Creswell, Way, Eisenberger, & Lieberman, 2007), for individuals having undergone a brief mindfulness induction (Lutz et al., 2014), and for individuals with generalised anxiety disorder having participated in MBSR (Hölzel et al., 2013). Hölzel et al. (2011) note that there appears to be striking similarities in brain regions influenced by mindfulness meditation and those involved in mediating fear extinction, suggesting that mindfulness meditation could facilitate the extinguishing of learned fear by enhancing brain networks involved in safety signalling.

Mindful emotion regulation involves an ability to accurately perceive and appraise ongoing emotional and physiological processes. Hölzel et al. (2008) found that meditators as opposed to non-meditators had increased grey matter concentration in the right anterior insula, an area involved in detecting interoceptive stimuli. Similarly, Farb, Segal, and Anderson (2012) found that MBSR participants showed plasticity in the middle and anterior insula relative to controls, indicating that mindfulness practice alters the way in which interoceptive attention is represented in the brain. Specifically, this is suggested to entail a shift in which experience is processed less by evaluative and elaborative cognitive activity involving cortical midline structures and more by way of attention to the shifting landscape of sensory

input as it is represented in interoceptive networks of the brain (Farb, Segal, & Anderson, 2012). Although there are many unanswered questions with regard to mindfulness and the brain, these investigations provide preliminary support that mindfulness training affects discrete neural networks in a way that might facilitate more adaptive emotion regulation.

The Domain of Self-experience

Anxiety disorders involve a sense of the self as precarious and vulnerable. At the same time, certain facets of the self become more salient, such as self-critical and demanding standards for one's own behaviour, performance, and control and the acceptability of bodily and mental experience. All of the facets of anxiety disorders detailed above (attentional and cognitive distortions, avoidance behaviours, and deficits in emotion regulation) contribute to a particular constellation of self-relatedness, characterised by heightened self-focus and a reactive relationship to experience. Interweaving this heightened self-salience and vulnerability, Barlow (2002) points to low expectations of mastery and self-efficacy with regard to perceived distress, akin to a state of learned helplessness. Interventions based on mindfulness and acceptance might facilitate different self-perceptions that could serve to counteract maladaptive self-relatedness.

Anxiety entails a perception of one's self as a distinct and static entity opposed to one's surroundings, whose experiences are identified with and whose current state is being monitored with regard to threats from within or without. By contrast, the mindful stance allows for experience to ebb and flow more freely, without putting rigid demands on sensations, thoughts, or emotions. In the process, a change in the sense of self may occur that entails a movement from a fixed sense of self (vulnerable, subject to self-critical performance standards, a high need for control, and low tolerance for fluctuation in affect) to what is termed 'self as process' or 'self as context' (Hayes, 2004)—a more relaxed and open way of being in the world, regardless of the ongoing emotional valence of experience. Instead of the pervasive self-criticism often seen in anxiety disorders, this mode of being is characterised by 'self-compassion'—that is, a sense of care, warmth, and kindness toward the experiencing self (Neff, 2003).

The practice of 'choiceless awareness' from MBSR captures well how mindfulness training may support the development of an observing self-experience rather than one based on narrative and self-evaluation. This is a form of open-monitoring meditation wherein the person practises mindfulness and acceptance of whatever enters the field of awareness, be it body sensations, feelings, sounds, or thoughts. Similarly, ACT features 'observer exercises' that invite a similar stance toward the various streams of experience while at the same time discerning between the objects of attention and the neutral core of the observing self watching the arising and passing of mental and physical phenomena. Finally, a number of mindfulness exercises

emphasise friendliness and compassion for self and others in a way that supports a less atomistic self-experience, such as 'loving-kindness' or 'Metta' meditation.

Theoretically, there is a compelling convergence between traditional Buddhist notions of 'non-self' and contemporary investigations of neurally based self-experience as it relates to well-being and distress. There is also some evidence from brain imaging studies indicating that mindfulness practice is associated with downregulation of conceptual-linguistic representations of the self (Farb et al., 2007; Goldin, Ramel, & Gross, 2009). These studies indicate that there is a network of cortical midline structures involved in maintaining a sense of the self as a permanent, cognitively elaborated, and narratively based entity that may also be implicated in processes of anxiety, rumination, and worry. Conversely, by engaging networks associated with moment-to-moment somatosensory experiencing, the person may be able to redeploy attention away from the reactive, maladaptive egocentric loops characterising anxiety and mood disorders (Farb, Anderson, & Segal, 2012).

Clinical Trials

Heterogeneous Anxiety Disorders

As detailed above, there is a sound theoretical and empirical rationale for expecting MABIs to impact transdiagnostic processes involved in all anxiety disorder. The first ever study of mindfulness-based interventions for anxiety disorders was carried out on a sample with different anxiety disorders (Kabat-Zinn et al., 1992). These authors studied the effects of MBSR in an open trial of 22 patients with generalised anxiety disorder or panic disorder with or without agoraphobia. Twenty of the twenty-two participants showed significant decreases over the course of treatment on both clinician-rated and self-report measures. Treatment gains on anxiety, agoraphobia, and panic frequency were maintained after 3 months and at a 3-year follow-up investigation (Miller, Fletcher, & Kabat-Zinn, 1995). The results from this pioneering study indicate that mindfulness training constitutes a potentially effective treatment for anxiety disorder that is responded to with compliance and lasting satisfaction from participants.

Despite these promising results, it took more than a decade for the next clinical trial for patients with anxiety disorders to appear (Ramel, Goldin, Carmona, & McQuaid, 2004). Subsequently, a number of open trials have yielded promising results in samples with heterogeneous anxiety disorders or mixed anxiety and depression (Finucane & Mercer, 2006; Ree & Craigie, 2007; Yook et al., 2008). These studies show MBSR and MBCT to be consistently associated with significant reductions in symptoms of anxiety, depression, worry, and rumination.

Several randomised controlled trials have investigated MABIs for samples with heterogeneous anxiety disorders. Vøllestad et al. (2011) compared MBSR to a

wait-list control for 76 patients diagnosed with panic disorder with or without agoraphobia, social anxiety disorder, or GAD. Treatment completers showed medium to large effect sizes on measures of anxiety, depression, and sleep problems, and gains were maintained at follow-up after 6 months. Analysis of clinical significance showed that two thirds of MBSR participants reached either recovery status or reliable improvement on measures of anxiety, worry, and depression. The percentages of patients in the clinical range reaching recovery status at posttreatment were highest for anxiety (44 %) and depression (53 %) and lower for trait anxiety (36 %) and worry (26 %).

At a treatment site in South Korea, Lee et al. (2007) and Kim et al. (2009) examined the effectiveness of a meditation-based stress management programme and MBCT, respectively, for two different samples of 46 patients with PD/AG or GAD receiving concurrent pharmacotherapy. Participants were randomly assigned to an 8-week trial of either mindfulness training or an anxiety disorder education programme. Compared to the education group, patients in the mindfulness condition group showed significant improvement in anxiety severity. Kim et al. (2009) report that 16 patients in the MBCT group and none in the anxiety education group were categorised as remitters, and this difference was statistically significant.

How do MABIs perform when compared to established treatment for patients with mixed anxiety disorders? One study compared ACT to CBT for a sample of 128 participants with heterogeneous anxiety disorders (Arch et al., 2012). Both treatments were given in individual format. Results for ACT ($n=57$) and CBT ($n=71$) were equal on self-reported measures of worry, fear, and behavioural avoidance. Within-group effect sizes were very large for principal disorder severity and in the moderate to large range for other anxiety measures, indicating that both treatments were highly efficacious. After the end of treatment, a steeper curve of improvement was observed for treatment completers in the ACT condition, yielding a greater reduction in anxiety severity than CBT at 1-year follow-up. As hypothesised, at follow-up, patients in the ACT condition reported greater psychological flexibility. However, patients in the CBT condition had higher quality of life scores—contrary to expectations, as the emphasis of broader goals and living a valued life is prominent in ACT and less explicit in CBT. This study is among the few to assess adherence to treatment manual and therapist competence, which were found to be good for both conditions. It thus indicates that ACT performs as well as a bona fide treatment of choice for anxiety disorders in the short term and even showing a potential edge over CBT in reducing anxiety severity in the long term.

Arch et al. (2013) compared adapted MBSR and Group CBT for a sample of 105 US combat veterans with one or more anxiety disorders. Care was taken to maximise external validity by carrying out the trial in a real-life veteran hospital setting with economically disadvantaged patients and by limiting exclusion criteria. The initial prediction that CBT ($n=60$) would outperform MBSR ($n=45$) on anxiety-specific outcomes was not supported, as both showed very large improvement in clinician-rated anxiety severity. A pattern of differential effects emerged at follow-up, where CBT was more effective at reducing perceived anxious arousal, whereas MBSR was more effective at reducing worry and comorbid disorders. There were

no significant differences in clinically significant improvement, with 54 % in the CBT sample and 68 % in the MBSR sample showing reliable and clinically significant change based on one or more primary outcomes. The authors note that overall, MBSR performs better in this study than in the other study comparing MBSR to CBT (Koszycki, Benger, Shlik, & Bradwejn, 2007), suggesting that MBSR may be a more favourable treatment choice than CBT for more severe and complex patients with anxiety disorders. However, attrition was high, with only half of patients completing the recommended number of sessions. Also, despite large effects on clinician-rated disorder severity, effects on self-report measures were considerably lower than those found in other trials for CBT for mixed anxiety disorders (Arch et al., 2013).

Finally, a Swedish study compared Internet-based mindfulness training to a discussion forum control group in a sample of 91 patients with PD, SAD, GAD, or anxiety not otherwise specified (Boettcher et al., 2014). Participants in the mindfulness condition ($n=45$) showed a large decrease of symptoms of anxiety, depression, and sleep problems relative to the control group ($n=46$). The between-group effect size posttreatment indicated a large group difference for both anxiety and depression, with no significant difference in effects for the different anxiety disorders and maintenance of gains for anxiety (but not depression) at follow-up. Forty percent of the participants in the mindfulness condition met criteria for clinically significant change, as opposed to only four participants in the control group. These results indicate that an Internet-delivered mindfulness intervention is associated with effects of the same magnitude as found for face-to-face MBSR as reported by Vøllestad et al. (2011). Boettcher et al. (2014) note that the between- and within-group effect sizes found in their trial are comparable to results from other trials on computerised CBT for anxiety disorders. Interestingly, the results of Boettcher et al. (2014) were obtained despite low amount of home practice (only 7 min a day) and low adherence (participants completed on average only half of the treatment protocol).

Generalised Anxiety Disorder

Generalised anxiety disorder (GAD) is primarily characterised by pervasive chronic worry about a number of different everyday events or problems, where worry is difficult to control and accompanied by muscle tension or other physical symptoms (American Psychiatric Association, 1994; Tyrer & Baldwin, 2006). Cognitive conceptualisations of the disorder also emphasise maladaptive psychological processes such as intolerance of uncertainty (Dugas, Buhr, & Ladouceur, 2004), as well as worry over everyday matters serving as a defensive strategy distracting from both larger life concerns and from current emotional experience (Borkovec, Alcaine, & Behar, 2004). From the mechanisms and evidence reviewed above, it is clear that MABIs have the potential to reduce rumination and worry and related distress by way of present-centred attention, increased metacognitive awareness, and more adaptive emotion regulation. Through increased acceptance and commitment to

valued action, the anxious person might also be able to live with greater ease with the unknown and unexpected in life. How does research on MABIs for GAD bear out these hypotheses?

Several pilot studies have explored MABIs in the treatment of GAD. Evans et al. (2008) found MBCT to be associated with decreases in anxiety, worry, and depression in a small sample of 11 patients, with about half of the participants who exhibited clinical levels of anxiety or worry dropping below the nonclinical range at posttreatment. Craigie, Rees, Marsh, and Nathan (2008) examined effects of MBCT in a larger GAD sample of 23 patients. They found significant improvements in pathological worry, stress, depression, and one of two anxiety scales, with moderate to large effect sizes for each. However, the authors note that effects in this study were smaller than those observed for the most effective trials of CBT for GAD and the rate of clinically significant improvement in pathological worry scores was very small (Craigie et al., 2008). Roemer and Orsillo (2007) carried out a small open trial of acceptance-based behaviour therapy (ABBT) for 16 patients with GAD, finding significant reductions in clinician-rated severity of GAD as well as self-reported improvement in anxiety, depressive symptoms, fear/avoidance of internal experience, and quality of life.

Turning to randomised controlled trials, a wait-list-controlled study by Roemer, Orsillo, and Salters-Pedneault (2008) found large effects of ABBT on GAD-specific outcomes as well as depressive symptoms. At posttreatment, 77 % of the treated sample met criteria for high end-state functioning, and 78 % no longer fulfilled diagnostic criteria for GAD. These effects were stable at follow-up after 9 months. The intervention group also showed significant change in the expected direction on measures of mindfulness and experiential avoidance and a subsequent study of process variables found changes in acceptance and valued action to predict responder status (Hayes et al., 2010).

Hoge et al. (2013) compared a slightly modified MBSR ($n=48$) programme to an attention control group (Stress Management Education—SME) ($n=45$). Both interventions led to significant reductions in clinician-rated anxiety on the Hamilton Anxiety Rating Scale (HAMA), with a large effect size. However, MBSR was associated with significantly greater reduction in anxiety on the three other clinical outcome measures. Furthermore, clinician-rated 'responder' status (being rated as 'very much' or 'much' improved) was higher for MBSR (66 %) than CME (40 %). MBSR participants also showed reduced ratings of distress and anxiety following a laboratory stress paradigm, suggesting that mindfulness training may have improved coping in challenging situations (Hoge et al., 2013).

Two studies have featured active and credible control groups. A recent RCT compared ABBT to applied relaxation (AR), an evidence-based treatment for GAD (Hayes-Skelton, Roemer, & Orsillo, 2013). Both ABBT ($n=40$) and AR ($n=41$) led to large effects on clinician-rated GAD severity, anxiety symptom severity, as well as on self-reported worry, anxiety, depressive symptoms, and quality of life. Results were comparable to, or better than, what has been reported in trials of conventional CBT for GAD, with between 60 and 80 % of participants in both conditions manifesting clinically significant change both at posttreatment and follow-up. The

authors had expected ABBT to outperform AR; however, they note that their version of AR was designed to be maximally effective—and may also be operative through some of the same mechanisms such as mindfulness, acceptance, and decentring (Hayes-Skelton et al., 2013).

Finally, ACT in a group format has been compared to cognitive behavioural group therapy (CBGT) for a sample of 51 patients (Avdagic, Morrissey, & Boschen, 2014). Both treatments led to significant improvement on all measures from pre- to post-assessment, with large within-group effect sizes for all symptom scales. The ACT group ($n=25$) showed more rapid gains in reduction of worry, distress, and symptom interference than the CBT group ($n=26$). However, at follow-up after 3 months, the treatments were equivalent. Also, a greater number of ACT participants achieved reliable and clinically significant change on worry symptoms at posttreatment (72 % vs. 42 %). Similarly to what was found for symptom scores, there were no differences between the treatments at follow-up, with both groups demonstrating rates of reliable and clinically significant change of 60 % (Avdagic et al., 2014).

Panic Disorder

Panic disorder (PD) is characterised by unexpected panic attacks, which are sudden surges of fear accompanied by physical sensations interpreted by the individual in a catastrophic manner. In PD, panic attacks lead to worry about the consequences of the attacks for one's physical health, safety, and well-being. PD is sometimes accompanied by agoraphobia, a pattern of phobic avoidance of situations or settings where it is difficult to escape or get help if a panic attack should occur (American Psychiatric Association, 1994; Roy-Byrne, Craske, & Stein, 2006).

How might the quality of awareness found in MABIs be brought to bear on PD? Fear of bodily sensations in PD often leads to watchful scanning for signs of an oncoming attack, as well as avoidance of both internal experience and of activities and external situations. In a sense, PD is clearly associated with heightened awareness—but this awareness is of the vigilant and fearful kind. Mindfulness, by contrast, entails a form of concrete and specific somatic awareness that is unlike the focus found in PD in that it is (a) inquiring in a gentle manner rather than fearful and (b) allowing for the natural ebb and flow of bodily sensations, rather than attempting to control or remove them. Individuals with PD are also often preoccupied with catastrophic thoughts, be it the possibility of a heart attack, fainting, or going mad/losing control. This thinking has a quality of absoluteness to it, where thoughts are seen as unquestionable facts rather than temporary mental phenomena that may or may not be true. By contrast, the processes of metacognitive awareness and defusion associated with the practice of mindfulness and acceptance could enable the individual to observe his or her thoughts from a witnessing perspective rather than being identified with them. The question is thus whether the cultivation of mindfulness and acceptance can counteract the psychological mechanisms triggering and exacerbating panic disorder.

The hypothesis would be that MABIs could provide what Barlow (2002) terms 'interoceptive exposure' by enabling the person to stay in touch with sensations of fear and panic without acting on them. It might facilitate a more relaxed and discerning attitude to bodily sensations, reducing the vigilant attention to them. Also, when panic occurs, allowing the physiological rush of it to arise and pass lends to an experiential realisation that the feared outcomes did not appear, thus constituting a form of extinction learning. A more spacious awareness of thoughts might make catastrophic interpretations either less salient or more liable to just fade away from awareness. Alternately, there is the possibility that the individual might also be able to challenge the veracity of these interpretations by way of merely becoming aware of them—or to counter them with more supportive and self-compassionate statements.

There is evidence from correlational studies that mindfulness and acceptance are inversely related to anxiety sensitivity, a heightened vulnerability to bodily symptoms that is seen as a precursor to developing a full-blown diagnosis of panic disorder (Vujanovic, Zvolensky, Bernstein, Feldner, & McLeish, 2007; McKee, Zvolensky, Solomon, Bernstein, & Leen-Feldner, 2007). Furthermore, analogue studies have shown that in laboratory paradigms designed to elicit panic symptomatology in both healthy subjects and subjects with anxiety disorders, behavioural strategies based on mindfulness and acceptance lead to better regulation of distress than what is the case for control groups (Eifert & Heffner, 2003; Levitt et al., 2004).

In sum, there exists a cogent theoretical rationale as to why mindfulness and acceptance may be beneficial for people suffering from PD/AG. According to both cross-sectional and analogue research designs, there are empirical indications that individuals high on measures of mindfulness and acceptance have less panic-related symptomatology. However, to this day, very few studies have examined the effect of MABIs on pure samples of patients with panic disorder.

An open trial of ACT for 11 patients with PD/AG found the intervention to be feasible and most likely effective. Large reductions in panic symptom severity were observed, comparing well to traditional CBT for panic disorder (Meuret, Twohig, Rosenfield, Hayes, & Craske, 2012). Another open trial investigated the effects of MBCT in combination with pharmacotherapy for a sample of 23 patients (Kim et al., 2010). Participants showed significant improvement on measures of panic severity, anxiety sensitivity, and specific catastrophic cognitions relating to bodily sensations. Effect sizes were large for clinician-rated scales but small for self-report outcome measures. Improvement was maintained at 1-year follow-up.

The first randomised controlled trial to examine a MABI for PD was recently published (Gloster et al., 2015). These authors examined the effects of ACT relative to a waiting list with delayed treatment for a sample of 43 patients with PD/AG who had failed to respond to previous evidence-based treatment. The ACT group ($n = 33$) demonstrated improvement on panic symptoms, general symptom load, and functioning relative to the control group ($n = 10$), with medium to large effect sizes that were maintained at follow-up after 6 months. Despite this being a small trial, the results indicate that ACT may be a viable treatment option for patients who do not respond to conventional CBT.

Social Anxiety Disorder

Social anxiety disorder (SAD)involves excessive anxiety and self-consciousness in social situations, with the primary concern in such situations being that the individual will say or do something that will result in embarrassment or humiliation (American Psychiatric Association, 1994; Stein & Stein, 2008). Like other anxiety disorders, social phobia constitutes the inverse of mindfulness as far as it involves negative self-focussed attention and a highly self-critical and judgmental stance toward oneself. The more adaptive form of attention toward thoughts and bodily sensations described above in relation to GAD and PD should thus be relevant also for SAD. In addition, mindfulness and acceptance as it is linked to the domain of self-experience might be particularly beneficial for individuals with SAD. The person could gently detach from reactive loops related to the narrative and evaluative self, instead allowing for thoughts and feelings as transient events and behaviour to be carried out in the service of broader life goals.

Bögels, Sijbers, & Voncken (2006) combined MBCT with task concentration training for nine patients with social phobia. They found significant decreases in self-reported symptoms of social phobia, and 7 out of 9 no longer met diagnostic criteria posttreatment. Patients kept improving from end of treatment to follow-up at 2 months. Effect sizes and the percentage of patients meeting criteria for high end-state functioning were within the range found for conventional CBT for social phobia (Bögels et al., 2006).

Ossman, Wilson, Storaasli, and McNeill (2006) investigated a group treatment protocol based on ACT for 22 patients with social phobia and reported significant decreases on measures of social phobia and experiential avoidance. In a pilot study of a 12-week programme integrating exposure therapy and ACT for patients with SAD, Dalrymple and Herbert (2007) found significant improvement and large effect sizes for social anxiety symptoms and quality of life.)Finally, Kocovski et al. (2009) assessed the feasibility and clinical effectiveness of mindfulness- and acceptance-based group therapy (MAGT) for 42 patients with social anxiety disorder in an open trial. MAGT resulted in significant reductions in social anxiety, depression, and rumination, as well as significant increases in mindfulness and acceptance. Gains were maintained at follow-up after 3 months. Most of the treatment completers met criteria for reliable change, and 43 % demonstrated clinically significant change on the Social Phobia Scale.

The most recent open trial examined the effects of ABBT for 38 patients with SAD and comorbid depression on concurrent pharmacotherapy (Dalrymple et al., 2014). Effect sizes for both clinician-rated and self-reported measures of social anxiety and depression were large for treatment completers. The authors note that while effects are lower than what is found in the most impressive efficacy trials of CBT for SAD, they compare well both to average effect sizes in meta-analyses of CBT for SAD, as well as to what is found in studies on real-world samples. Effects for broader measures of quality of life and everyday functioning were in the moderate range but also compare well to what has been found in trials of CBT for

SAD. However, the dropout rate was 32 %—fairly high, although not atypical for highly comorbid samples (Dalrymple et al., 2014).

Moving now to randomised controlled trials, Jazaieri, Goldin, Werner, Ziv, and Gross (2012) examined the effects of MBSR versus aerobic exercise for 56 patients with SAD ($n = 31$ vs. 25). Both conditions showed equal reductions in social anxiety and depressive symptoms, as well as increases in well-being at posttreatment and 3-month follow-up. Within-group effect sizes were in the moderate range. About ¼ of participants in both groups evidenced clinically significant change in social anxiety symptoms as measured by LSAS-SR and SIAS-S, indicating that both interventions were less effective than what has been found in previous trials of CBT for SAD.

In a well-designed randomised trial, Koszycki et al. (2007) compared MBSR and cognitive behavioural group therapy (CBGT) for 53 patients with generalised SAD. Results revealed better response and remission rate on both clinician-rated and self-report outcome measures for CBGT, although the effects found for MBSR were also in the large range. The treatments were equally efficacious in improving functioning, self-rated depression, and quality of life. The authors conclude that despite MBSR being less effective than CBGT in reducing core symptoms of SAD, MBSR might still be a potentially useful alternative intervention for some patients with SAD. It should be noted that treatment dosage was unequal in the study, with the duration of CBGT being 12 weeks versus 8 weeks for MBSR.

Piet, Hougaard, Hecksher, and Rosenberg (2010) compared MBCT and group cognitive behavioural therapy (GCBT) in a small randomised pilot trial for 26 young adults with SAD. They report results similar to those of Koszycki et al. (2007), with both groups achieving moderate to large within-group effects on composite measures of social phobia. Unlike Koszycki and colleagues, Piet et al. (2010) did not find a significant difference between mindfulness training and GCBT. The authors conclude that MBCT is a useful low-cost treatment for patients with social phobia. However, they note that it is probably less efficacious than CBT, on the basis that the trial in question did not have large enough sample size for numerical trends favouring CBT to reach statistical significance.

Finally, Kocovski, Fleming, Hawley, Huta, and Antony (2013) compared mindfulness- and acceptance-based group therapy (MAGT) to cognitive behavioural group therapy (CBGT) and a wait-list control condition for 137 patients with SAD. Both interventions were more effective than the control group, and gains were maintained at 3-month follow-up. There were no significant differences for MAGT ($n = 53$) and CBGT ($n = 53$) on most outcome measures. For both groups, two thirds of participants were categorised as ‘much’ or ‘very much’ improved on clinician-rated clinical severity. Forty percent of treatment completers met criteria for clinically significant change on self-report measures of social anxiety, with no difference between the active treatment groups. Contrary to expectations, there was no difference between conditions on measures of valued living, mindfulness, acceptance, or reappraisal—the three former being outcome dimensions more directly addressed in MAGT, while the latter is seen as a core mechanism in CBT.

Post-traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is an anxiety disorder in which an individual's ability to function is impaired by cognitive and emotional responses to memories of one or more traumatic events. The diagnosis of PTSD requires exposure to an extreme stressor or traumatic event to which the individual responded with fear, helplessness, or horror. Symptoms include re-experiencing the event in the form of distressing images, nightmares, or flashbacks; avoidance of reminders of the event; and hyperarousal (American Psychiatric Association, 1994; Yehuda, 2002).

Whereas MABIs encourage present-centred awareness, PTSD powerfully illustrates how the past can intrude into the present to create suffering. Trauma-related cues trigger both cognitive and emotional reactivity, usually accompanied by physiological arousal that is difficult to regulate. The potential for mindfulness and acceptance to be directed toward intrusive mental images seems particularly promising with regard to PTSD, and so do the various strategies helping the individual to anchor himself or herself in the actuality of the present rather than in overwhelming memories of the past.

A few open trials have examined the effects of MBSR for patients with PTSD. Kimbrough and colleagues (2010) found large effect sizes for depression, anxiety, and PTSD symptoms for 27 adult survivors of childhood sexual abuse. A follow-up study after 2 ½ years with 19 of 27 original participants showed that these gains were largely maintained, indicating that MBSR may be effective in reducing emotional distress in the long term for individuals with childhood sexual trauma (Earley et al., 2014). Another open trial of MBSR for 92 US combat veterans found significant improvements in measures of PTSD, depression, experiential avoidance, and quality of life (Kearney, McDermott, Malte, Martinez, & Simpson, 2012). Effect sizes for mental health were medium to large, and nearly half of participants had clinically significant reductions in PTSD symptomatology at follow-up after 6 months. Mindfulness skills increased significantly during participation and were found to statistically mediate improvement in PTSD, depression, and quality of life (Kearney et al., 2012). Similarly, Serpa, Taylor, and Tillisch (2014) observed significant improvement in anxiety, depression, and general mental health for 79 US combat veterans, with increased mindfulness skills found to mediate these outcomes. This study also found MBSR to decrease suicidal ideation by almost half, an important metric in a patient population at far higher risk for suicide or self-injury than the general population (Kang et al., 2015).

Following up their 2012 open trial, Kearney, McDermott, Malte, Martinez, and Simpson (2013) carried out a randomised controlled pilot study comparing MBSR to treatment as usual for 47 veterans with PTSD. MBSR completers showed medium to large between-group effect sizes for depression, quality of life, and mindfulness from pre- to posttreatment. However, these results were attenuated when taking the entire intention-to-treat sample into consideration. Also, neither completer nor intention-to-treat analyses found reliable effects of MBSR on PTSD. In sum, this study found no evidence that MBSR was more effective than treatment as usual for

trauma symptomatology in combat veterans, but there was some indication that mindfulness beneficially affects health-related quality of life for this population. The authors argue in favour of further trials to evaluate MBSR for veterans with PTSD and possibly augmenting the intervention to explicitly address the core symptoms of this disorder.

Another pilot study for combat veterans with long-term trauma symptoms compared MBCT modified for PTSD to treatment as usual (group-based psychoeducation or imagery rehearsal therapy) in a nonrandomised design (King et al., 2013). A reduction in clinician-rated PTSD symptoms was observed for MBCT participants, but not for the control condition. The effect size was moderate (0.67), and improvement was largely due to reduction in the avoidance subscale. Eleven of 15 treatment completers (73 %) in the MBCT condition showed 'clinically meaningful' improvement, as opposed to only 4 of 13 in the treatment as usual (33 %). As in the studies by Kearney et al. (2012) and Serpa et al. (2014), King et al. (2013) found indications that mindfulness was associated with better outcome, as decrease in intrusive symptoms was correlated with self-reported time spent on formal mindfulness exercises. The authors note that the findings are particularly noteworthy considering the brevity of the intervention and the long-standing trauma-related problems of the participants (all more than 10 years of PTSD, with the majority more than 30 years) (King et al., 2013).

Finally, one study has investigated MBSR as a telehealth intervention compared to psychoeducation for a)sample of 33 male combat veterans (Niles et al., 2012). MBSR participants showed an initial significant decrease in PTSD symptoms relative to the psychoeducation intervention, but returned to baseline levels of distress at follow-up after 6 weeks.

Other Anxiety Disorders

Obsessive-Compulsive Disorder

Obsessive-compulsive disorder (OCD) is characterised by intrusive thoughts or images (obsessions) and by repetitive or ritualistic actions or mental rituals (compulsions) which reduce anxiety (Stein, 2002). The most frequent symptoms in OCD are concerns about contamination and cleanliness with consequent washing or fear of harming oneself or others with consequent checking. However, there are a broad array of other obsessions and compulsions, including symmetry concerns and arranging, hoarding, as well as sexual, religious, and somatic concerns and corresponding rituals (American Psychiatric Association, 1994; Stein, 2002).

Two case series studies of patients with OCD found ACT protocols to be associated with reductions in compulsions in the magnitude of 80–90 %, as well as decreases in OCD severity (Dehlin, Morrison, & Twohig, 2013; Twohig, Hayes, & Masuda, 2006). In a more rigorous study design, Twohig et al. (2010) compared a

short ACT protocol to relaxation training for 79 patients with OCD, finding greater improvement in OCD symptoms and depression symptoms at posttreatment and follow-up for the ACT condition. Half of the ACT participants (19 of 41) showed clinically significant change on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), as opposed to only 5 of 38 of those having received relaxation training. ACT participants also showed larger initial decreases in thought control and increased psychological flexibility relative to relaxation training.

Hypochondriasis

A pilot study found significant improvement in health anxiety, disease-related thoughts, and somatic symptoms for 10 patients with hypochondriasis (Lovas & Barsky, 2010). Building on these results, McManus, Surawy, Muse, Vazquez-Montes, and Williams (2012) compared MBCT to unrestricted health service utilisation for 74 patients with hypochondriasis. They found no difference in levels of general anxiety and depression or in comorbid states, but on a composite measure of health anxiety, the MBCT had significantly more improvement than the control condition both immediately after treatment and at follow-up after 1 year. Half of MBCT treatment completers (53 %) no longer met diagnostic criteria for hypochondriasis at the end of treatment, with this rate increasing to 72 % at 1-year follow-up. The authors also found support for increased mindfulness as being a mechanism of change, as changes in self-reported mindfulness served as a statistical mediator for changes in health anxiety (McManus et al., 2012).

Meta-Analyses

A benefit of the accumulating empirical investigation in any field is the possibility of quantitatively integrating the available evidence. Several recent large-scale meta-analyses have examined the impact of MABIs for anxiety disorders. Firstly, anxiety has been considered as an outcome across patient groups and diagnostic categories. Khoury et al. (2013) summed up the results of 209 clinical trials ($n = 12\ 154$) and found large effect sizes for anxiety both within groups (0.89) and when comparing active treatment and wait-list control groups (0.96). These effects were maintained at follow-up. When MBIs were compared to active control groups, an advantage was found for MBIs over some interventions (e.g. psychoeducation, supportive therapy, relaxation) but not over traditional CBT (Khoury et al., 2013).

A more stringent recent meta-analysis included only randomised controlled trials where comparison groups were either active treatment or nonspecific placebo (i.e. matched for time and attention) (Goyal et al., 2014). When comparing mindfulness meditation to nonspecific placebo, these authors found moderate effect sizes on measures of anxiety at posttreatment (0.38) relative to controls. This effect was

attenuated somewhat at follow-up (0.22), but was still significant. The meta-analysis found no evidence that any meditation intervention was more effective than active comparisons including, among others, CBT, physical exercise, and progressive muscle relaxation. Nevertheless, they conclude that mindfulness meditation may serve to reduce anxiety and depression over and above the effects of time and attention—with effects akin to those of antidepressant medication, but without the potential side effects (Goyal et al., 2014).

Turning now to meta-analyses limited to clinical trials for patients diagnosed with anxiety disorders, the present author and colleagues (Vøllestad et al. 2011) found 19 studies examining the effects of MABIs for anxiety disorders (PD/AG, SAD, GAD, or mixed anxiety), with pre- to posttreatment effects yielding overall Hedge's g effect sizes of 1.08 for anxiety measures and 0.85 for depression symptoms, with treatment gains maintained over time. Effect sizes for measures of quality of life were in the medium range, indicating that MABIs do contribute to broader positive outcomes than reduced symptom distress. As the majority of the trials were uncontrolled, it is not possible to draw any definite conclusions about the contribution of the mechanisms assumed to be specific to MABIs to outcomes. The four trials employing proper randomisation procedures indicate that MABIs outperform no-treatment and placebo controls and either perform as well as or slightly poorer than established treatments (Vøllestad et al. 2012).

Strauss et al. (2014) focussed their meta-analysis on RCTs where participants met diagnostic criteria for a current episode of an anxiety or depressive disorder. The authors initially found reason to question the feasibility and effectiveness of MBIs for this purpose, as individuals in the midst of acute depression or anxiety might have difficulties bringing awareness to their present-moment experience, as well as difficulties in motivation and concentration inhibiting engagement in the therapeutic work of MBIs. The authors draw different conclusions for depression and anxiety. They report significant benefits of MBIs relative to control conditions for patients with primary diagnosis of depression, with a moderate to large between-group effect size (0.73). So contrary to the authors' expectations, a current depressive episode does not constitute a barrier to benefitting from MBIs. However, the authors did not find a similar significant effect for anxiety disorders—neither when examining participants with a confirmed diagnosis of anxiety nor when taking into account anxiety as an outcome irrespective of primary diagnosis. On this basis, they caution against offering MBIs to patients with anxiety disorders or when addressing anxiety severity as such in patients with other primary diagnoses. This more pessimistic conclusion is in opposition to what was found by Vøllestad et al. (2012) but Strauss et al. (2014) argue that their meta-analysis features more stringent inclusion criteria (restricted to MBIs and thus excluding acceptance-based interventions) and include more trials in the between-group analysis—and thus provides a more accurate picture of the (lacking) impact of MBIs on anxiety symptoms.

A recent review of ACT for anxiety disorders found modest support for the use of ACT with GAD, OCD, SAD, and mixed anxiety disorders (Bluett et al., 2014). These authors also conducted a preliminary meta-analysis of RCTs of ACT for anxiety disorders, including nine studies with a total sample size of 404 participants.

There were no significant differences between ACT and active comparison conditions on anxiety outcome measures or measures of change process (e.g. the Acceptance and Action Questionnaire). The authors conclude that although CBT should continue to be seen as the treatment of choice for anxiety disorder, there is sufficient evidence to recommend ACT to patients who choose to opt out of CBT or do not benefit from it.

Finally, Norton, Abbott, Norberg, and Hunt (2014) provide a systematic review of nine trials of MABIs (termed MABTs) for SAD (all of which have been presented in this chapter). They conclude that MABTs are associated with clinically significant reductions in social anxiety symptoms, with effect sizes in the moderate to large range at posttreatment and at follow-up after 3 or 6 months. However, they note that the observed effects are consistently smaller than those found in RCTs of CBT [1.24–2.63], as well as there being considerable methodological limitations in the current research on MABTs for SAD (small sample sizes, high attrition rates, lack of active control groups, or equivalent or slightly less favourable results when active comparisons are used).

Discussion

A Summary of the Evidence

We have seen in this chapter that there is a cogent theoretical rationale for employing mindfulness- and acceptance-based approaches to the treatment of anxiety disorders, detailing how the cultivation of non-judgmental, present-centred attention may alleviate the suffering associated with these clinical syndromes. Specifically, mindfulness and acceptance may serve to counteract the maladaptive psychological processes involved in anxiety disorders, such as attentional deficits, repetitive negative thinking, avoidance behaviours, emotional dysregulation, and maladaptive self-experience. Furthermore, correlational studies have shown mindfulness and acceptance to be inversely related to anxiety and related constructs; also basic laboratory research has demonstrated that strategies of present-centred awareness and acceptance constitute a viable response to distress. However, clinical trials have not as of yet unequivocally borne out the potential of these approaches.

In keeping with the transdiagnostic nature of MABIs, there is emerging evidence that they are consistently associated with significant reductions of anxiety and related problems for patients with heterogeneous anxiety disorders. They have outperformed wait-list (Vøllestad et al. 2011) and attentional control groups (Lee et al., 2007; Kim et al., 2009), and ACT and MBSR have proven equivalent to CBT in well-designed RCTs with adequate sample sizes (Arch et al., 2012; Arch et al., 2013). This would indicate that for samples of patients with heterogeneous anxiety disorders, MABIs may be regarded as empirically validated and even well-established treatments. It is also of interest that an Internet-delivered mindfulness intervention performs as well as face-to-face MBSR (Boettcher et al., 2014), giving grounds for optimism regarding alternative modes of delivery for MABIs.

When considering specific anxiety disorders, the picture is more mixed. The best evidence exists for the treatment of GAD, where clinical trials of MABIs have consistently found significant improvements in anxiety, worry, and comorbid depression. ABBT has outperformed wait-list control, demonstrating impressive effects with regard to end-state functioning and diagnostic remission (Roemer, Orsillo, & Salters-Pedneault, 2008). MBSR has outperformed an attentional control (Hoge et al., 2013), while a comparison of ACT and CBGT found both treatments to be equivalent (Avdagic et al., 2014). Finally, ABBT has also performed as well as an already established treatment for GAD, applied relaxation, with outcomes comparable to the strongest findings from trials of CBT for GAD (Hayes-Skelton et al., 2013). Similar to what was found for mixed anxiety disorders, the case could be made that MABIs are an empirically validated treatment option for GAD. However, comparisons between MABIs and CBT in trials with a greater number of participants are needed in order to clarify how well these interventions perform relative to the current treatment of choice for GAD.

For SAD, open trials of MABIs have demonstrated consistent reductions in social anxiety and related symptoms. One RCT found equivalent outcomes for MBSR and aerobic exercise, but the authors emphasise that the rate of clinically significant change is lower than what has been found for CBT in other trials (Jazaieri et al., 2012). In RCTs comparing MABIs to CBT, two studies have found equal outcomes, while one found CBT to be superior. However, the authors in both studies reporting equal effects conclude that CBT is most likely a more efficacious treatment for SAD. Piet et al. (2010) note that CBT would probably have proved more efficacious given a larger sample size, while Kocovski et al. (2013) point to the fact that larger effects are routinely found in individual CBT for SAD. It must also be noted that the UK guidelines for SAD caution against routinely offering MBIs to this patient group, on the basis of insufficient evidence (National Institute for Health and Care Excellence, 2013).

The current evidence suggests caution in offering MABIs as a first-line treatment for patients with SAD. However, there is a cogent theoretical rationale for employing MABIs for this disorder, as well as some evidence from laboratory and analogue studies showing strategies from these treatments to be effective in managing or counteracting psychopathological processes involved in SAD (Vassilopoulos, 2008; Vassilopoulos & Watkins, 2009) . It is possible that the strong negative self-focus and entrenched proneness to self-criticism and shame found in SAD require further tailoring of interventions for MABIs to fully benefit socially anxious individuals.

There is a gap between the strong theoretical rationale for MABIs and the promising analogue studies of mindfulness and acceptance for panic disorder and the paucity of research on this diagnostic category. This could be due to existing highly effective treatment in the form of CBT, with higher response rates than treatments for SAD and GAD. However, a recent open trial which shows effects for CBT non-responders (Gloster et al., 2015) indicates that MABIs merit further consideration also for this diagnostic category.

A reactive relationship to experience and lack of present-centred awareness are prominent features of PTSD. There is also correlational research showing acceptance

and mindfulness to be negatively associated with trauma symptomatology (Smith et al., 2011; Thompson & Waltz, 2010; Vujanovic, Youngwirth, Johnson, & Zvolensky, 2009). Despite this, clinical research on MABIs for PTSD has been lagging behind compared to the most-studied anxiety disorders. However, in recent years, both open and controlled trials comparing MBSR and MBCT to treatment as usual have produced promising results. Interestingly, pure-form mindfulness training seems to predominate in the trauma field. An exception here is dialectical behaviour therapy (DBT), which has been studied extensively for patients with borderline personality disorder, a clinical syndrome often featuring prominent trauma symptomatology (for a review, see Panos, Jackson, Hasan, & Panos, 2013). It will be interesting to see how ACT performs for patients with PTSD, as well as the relative efficacy of MBSR/MBCT compared to treatments already established as effective for PTSD (see Watts et al., 2013).

Clinical Implications

A considerable subset of patients with anxiety disorders does not respond to current treatment or suffers from residual symptoms or impairment after treatment (Hofmann & Bögels, 2006; Ninan, 2001). It is possible that MABIs could offer a novel way of relating to symptoms that might alleviate distress unsuccessfully targeted by CBT. The reasons for nonresponse or premature treatment termination are diverse, but one possibility is that the treatment format of CBT might not appeal equally to all patients. Matching treatments to patient preferences have been shown to beneficially affect outcome and reduce likelihood of premature termination. A recent meta-analysis found that matched clients have a 58 % chance of showing greater improvement, and further analyses indicate that they are about half as likely to drop out of treatment when compared with clients not receiving a preferred treatment (Swift & Callahan, 2009).

MABIs have features that might cause patients to prefer them over other treatment modalities, given the opportunity of patient choice. These include the downplaying of disorder-specific processes and symptom removal and an explicit focus on valued action and quality of life over and above that related to illness and mental health. MABIs typically engage more comprehensively with issues pertinent to the totality of the individual's life, advocating mindful awareness as a way of life rather than merely a more efficient way of managing symptoms.

MABIs come in different treatment modalities. The group format of MBSR, MBCT, and MAGT may confer potential advantages in terms of cost-effectiveness, although this has not hitherto been assessed in relation to patients with anxiety disorders. It could be argued that MABIs might be particularly suited for group administration: understanding of the somewhat counter-intuitive nature of mindfulness and acceptance strategies could be facilitated by vicarious learning, and the possibility for communal exercises could benefit motivation and commitment to therapeutic tasks. Also, many treatment centres are unable to recruit homogeneous

groups within manageable time frames, and allowing for diagnostically heterogeneous groups enables treatment providers to easily recruit from a broader spectrum of patients. On the other hand, the individual format that ACT and ABBT is usually delivered in has the advantage of tailoring treatment by way of personalised case formulations and interventions targeting the most pressing problem areas.

Some authors and guidelines caution against applying MABIs to anxiety disorders given the current status of evidence (National Institute for Health and Care Excellence, 2013; Strauss et al., 2014). However, there are no reports of adverse effects of mindfulness for these disorders. MABIs are likely to be effective for some patients, but more research is needed to determine who might benefit from MABIs as compared to other treatments. It is also important to keep in mind that research on these modalities is ongoing and progressing, so conclusions from current meta-analytic reviews should not be seen as final assessments of their efficacy. But until further notice, as a general rule CBT should be treatment of choice, while MABIs could be an option for patients not benefiting fully from CBT or who decline CBT treatment.

There is also the issue of how similar or different MABIs are from CBT. Should they be seen as a separate family of treatments, or should they rather be subsumed as a potential set of interventions within the framework of CBT? It can sometimes be difficult to distinguish MABIs from traditional CBT, as many include elements that are similar to CBT interventions. Consequently, some authors have argued that they should be seen as part of the CBT family (Hofmann & Asmundson, 2008; Mennin, Ellard, Fresco, & Gross, 2013). However, as argued initially in this chapter, MABIs can be seen as operating according to common principles and mechanisms of change that serve to unite them conceptually while at the same time distinguishing them from conventional CBT. There is still a need to further clarify how well the varieties of MABIs perform relative to established treatments. Given the tendency to differential effects for different MABIs in anxiety disorders, it might also be relevant to compare different treatment modalities within this tradition head to head. However, an equally relevant issue is the investigation of how different approaches may be suited to different types of patients or presenting problems, as some findings are beginning to suggest (Wolitzky-Taylor, Arch, Rosenfield, & Craske, 2012).

On the other hand, there is potential for selective integration between MABIs and CBT, informed by theory and research evidence. There is no reason that current treatment options for anxiety should be seen as final in this regard. It does seem that therapeutic packages combining mindfulness and cognitive behavioural principles (i.e. ACT, ABBT, and MBCT) fare somewhat better than the pure-form mindfulness of MBSR. This would seem to go counter to the transdiagnostic approach that is integral to MABIs and that has been emphasised in this chapter. However, one cannot disregard the possibility that specific anxiety disorders do constitute particular forms of suffering, characterised by certain deeply engrained reactive patterns that need to be more explicitly addressed. Indeed, some authors have cautioned against applying mindfulness training with disregard for the specific characteristics of particular disorders (Teasdale, Segal, & Williams, 2003; Williams, 2010). The addition of certain cognitive behavioural techniques to an MBI could further help participants

in disengaging from maladaptive patterns or biases in information processing. The behaviour-analytical approaches of ACT and ABBT are already practising this form of eclecticism. Such integration is also the foundation of MBCT, which in addition to the formal mindfulness exercises in MBSR features psychoeducational material and experiential exercises to address the particular modes of cognitive reactivity involved in depressive relapse. It is possible that the MBCT format could thus be tailored to address the specific pathogenic forms of information processing, behavioural avoidance, emotional dysregulation, and self-experience in different anxiety disorders. It would be relevant to further explore along these lines in future treatment development.

Recommendations for Research

There is a need for further studies that compare MABIs to CBTs, in order to clarify the relative benefit of these approaches to patients with anxiety disorders. It is advisable that such studies are sufficiently powered to test for statistical non-inferiority, i.e. equal efficacy. Also, few studies have provided adequate checks for fidelity and competence with regard to treatment manuals, and this is recommended to ensure that therapists are actually offering the treatment in question. It would also be of interest to compare different MABIs to each other, to test which mode of delivery is most useful with regard to anxiety disorders. However, it is possible that such head-to-head comparisons will demonstrate less of a difference between treatment groups, as is generally the rule rather than the exception in psychotherapy research when bona fide treatments are tested against each other. It will therefore be important to consider moderating variables that may tell us more about who benefits from what type of treatment.

A further avenue of investigation concerns mechanisms of action. There are indications that observed outcomes in clinical trials of MABIs can be ascribed to changes in the putative mechanisms of change, such as increased mindfulness and acceptance. However, future studies will benefit from designs that allow for stringent statistical tests of mediation, as this is rare in the extant research. Also, for MBIs it needs to be further investigated which role formal and informal mindfulness practice plays in bringing about outcomes. At present, neither changes in mindfulness/acceptance nor amount of practice have been established as prerequisites for observed benefits. As such, it cannot be ruled out that the effects of interventions are due to ‘nonspecific’ factors of treatment such as social support, group cohesion, therapeutic alliance, relaxation, increased self-efficacy, expectancy effects, and a host of other factors. It is also the case that particularly MBIs require therapists or mindfulness instructors to be sufficiently trained and grounded in meditative practice, in order to be able to embody the qualities of mindful awareness and non-judging inquiry in their clinical work. The relationship between such competencies and outcomes has of yet been largely neglected in the study of MABIs and may be a worthwhile path to follow in future investigations.

Conclusion

There is growing evidence that therapeutic strategies aimed at fostering a stance of mindfulness and acceptance are effective in reducing distress and improving functioning in individuals with anxiety disorders. The current evidence is strongest for mixed anxiety disorders and GAD, with equivocal findings for SAD and limited research on other anxiety disorders. At present, few trials of MABIs have demonstrated the same level of efficacy as found in both individual trials and meta-analytic reviews of CBT. These more modest findings suggest that despite a cogent theoretical rationale and evidence that mindfulness and acceptance is inversely correlated with anxiety, we still don't know how to optimally strengthen these important qualities in patients with anxiety disorders. However, given the level of nonresponding to CBT and varying patient preferences, there is reason to include MABIs as part of a differentiated set of treatment options. There may be reason to expect the further integration of strategies of mindfulness with conventional cognitive behavioural interventions to be a way forward. This might undercut the transdiagnostic foundation of MABIs somewhat, but could be necessary in order to effectively address the entrenched nature of psychological dysfunction in some of these disorders. MABIs may be of particular appeal as an empowering, non-pathologising approach emphasising the active participation of the individual in self-care and emotion regulation. They offer a broad range of coping mechanisms relevant not only to disorder-specific symptoms but also to everyday life more broadly conceived. Continued investigation of their implementation for patients with anxiety disorders is warranted.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV* (4th ed.). Washington, DC: APA.

Amstadter, A. (2008). Emotion regulation and anxiety disorders. *Journal of Anxiety Disorders, 22*, 211–221.

Antony, M. M. (2002). Enhancing current treatments for anxiety disorders. *Clinical Psychology: Science and Practice, 9*, 91–94.

Arch, J. J., Ayers, C. R., Baker, A., Almklov, E., Dean, D. J., & Craske, M. G. (2013). Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavioral therapy for heterogeneous anxiety disorders. *Behaviour Research and Therapy, 51*, 185–196.

Arch, J. J., Eifert, G. H., Davies, C., Vilardaga, J. C. P., Rose, R. D., & Craske, M. G. (2012). Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. *Journal of Consulting and Clinical Psychology, 80*, 750–765.

Austin, D. W., & Richards, J. C. (2001). The catastrophic misinterpretation model of panic disorder. *Behaviour Research and Therapy, 39*, 1277–1291.

Avdagic, E., Morrissey, S. A., & Boschen, M. J. (2014). A randomised controlled trial of acceptance and commitment therapy and cognitive-behaviour therapy for generalised anxiety disorder. *Behaviour Change, 31*, 110–130.

Baer, R. A. (2007). Mindfulness, assessment, and transdiagnostic processes. *Psychological Inquiry, 18*, 238–271.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27–45.

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J., & van Ijzendorn, M. H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin, 133*, 1–24.

Barlow, D. H. (2002). *Anxiety and its disorders* (2nd ed.). New York: The Guilford Press.

Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994). *Losing control: How and why people fail at self-regulation*. San Diego: Academic.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230–241.

Bluett, E. J., Homan, K. J., Morrison, K. L., Levin, M. E., & Twohig, M. P. (2014). Acceptance and commitment therapy for anxiety and OCD spectrum disorders: An empirical review. *Journal of Anxiety Disorders, 28*, 612–624.

Boettcher, J., Åström, V., Påhlsson, D., Schenström, O., Andersson, G., & Carlbring, P. (2014). Internet-based mindfulness treatment for anxiety disorders: A randomized controlled trial. *Behavior Therapy, 45*, 241–253.

Bögels, S. M., Sijbers, G. F. V., & Voncken, M. (2006). Mindfulness and task concentration training for social phobia: A pilot study. *Journal of Cognitive Psychotherapy, 20*, 33–44.

Bohlmeijer, E. T., Fledderus, M., Rokx, T. A. J. J., & Pieterse, M. E. (2011). Efficacy of an early intervention based on acceptance and commitment therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy, 49*, 62–67.

Bolton J. M., Cox, B. J., Afifi, T. O., Enns, M. W., Bienvenu, O. J., & Sareen, J. (2008). Anxiety disorders and risk for suicide attempts: Findings from the Baltimore Epidemiologic Catchment area follow-up study. *Depression and Anxiety, 25*, 477–481.

Bondolfi, G., Jermann, F., der Linden, M. V., Gex-Fabry, M., Bizzini, L., Rouget, B. W., et al. (2010). Depression relapse prophylaxis with Mindfulness-Based Cognitive Therapy: Replication and extension in the Swiss health care system. *Journal of Affective Disorders, 122*, 224–231.

Borkovec, T. D., Alcaine, O., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77–108). New York: Guilford Press.

Bränström, R., Duncan, L. G., & Moskowitz, J. T. (2011). The association between dispositional mindfulness, psychological well-being, and perceived health in a Swedish population-based sample. *British Journal of Health Psychology, 16*, 300–316.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848.

Bruce, S. E., Yonkers, K. A., Otto, M. W., Eisen, J. L., Weisberg, R. B., Pagano, M., et al. (2005). Influence of psychiatric comorbidity on recovery and recurrence in generalized anxiety disorder, social phobia, and panic disorder: A 12-year prospective study. *American Journal of Psychiatry, 162*, 1179–1187.

Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 542–559). New York: Guilford.

Campbell-Sills, L., Barlow, D. H., Brown, T. A., & Hofmann, S. G. (2006a). Acceptability and suppression of negative emotion in anxiety and mood disorders. *Emotion, 6*, 587–595.

Campbell-Sills, L., Barlow, D. H., Brown, T. A., & Hofmann, S. G. (2006b). Effects of suppression and acceptance of emotional responses of individuals with anxiety and mood disorders. *Behavior Research and Therapy, 44*, 1251–1263.

Carmody, J. (2009). Evolving concepts of mindfulness in clinical settings. *Journal of Cognitive Psychotherapy, 23*, 270–280.

Cash, M., & Whittingham, K. (2010). What facets of mindfulness contribute to psychological well-being and depressive, anxious, and stress-related symptomatology? *Mindfulness, 1*, 177–182.

Chan, D., & Woollacott, M. (2007). Effects of level of meditation experience on attentional focus: Is the efficiency of executive or orientation networks improved? *The Journal of Alternative and Complementary Medicine, 13*, 651–658.

Chiesa, A., & Malinowski, P. (2011). Mindfulness-based approaches: Are they all the same? *Journal of Clinical Psychology, 67*, 1–21.

Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *Journal of Alternative and Complementary Medicine, 15*, 593–600.

Clark, D. M. (1999). Anxiety disorders. Why they persist and how to treat them. *Behaviour Research and Therapy, 37*, 5–27.

Craigie, M. A., Rees, C. S., Marsh, A., & Nathan, P. (2008). Mindfulness-based cognitive therapy for generalized anxiety disorder: A preliminary evaluation. *Behavioral and Cognitive Psychotherapy, 36*, 553–568.

Craske, M. G., Rauch, S. L., Ursano, R., Prenoveau, J., Pine, D. S., & Zinbarg, R. E. (2009). What is an anxiety disorder? *Depression and Anxiety, 26*, 1066–1085.

Creswell, J. D., Way, B. M., Eisenberger, N. I., & Lieberman, M. D. (2007). Neural correlates of dispositional mindfulness during affect labeling. *Psychosomatic Medicine, 69*, 560–565.

Dalrymple, K. L., & Herbert, J. D. (2007). Acceptance and commitment therapy for generalized social anxiety disorder – a pilot study. *Behavior Modification, 31*, 543–568.

Dalrymple, K. L., Morgan, T. A., Lipschitz, J. M., Martinez, J. H., Tepe, E., & Zimmerman, M. (2014). An integrated, acceptance-based behavioral approach for depression with social anxiety - Preliminary results. *Behavior Modification, 38*, 516–548.

de Vibe, M., Bjørndal, A., Tipton, E., Hammerstrøm, K. T., & Kowalski, K. (2012). Mindfulness based stress reduction (MBSR) for improving health, quality of life, and social functioning in adults. *Campbell Systematic Reviews, 8*.

Deacon, B., Lickel, J., & Abramowitz, J. S. (2008). Medical utilization across the anxiety disorders. *Journal of Anxiety Disorders, 22*, 344–350.

Dehlin, J. P., Morrison, K. L., & Twohig, M. P. (2013). Acceptance and commitment therapy as a treatment for scrupulosity in obsessive compulsive disorder. *Behavior Modification, 37*, 409–430.

Desrosiers, A., Klemanski, D. H., & Nolen-Hoeksema, S. (2013). Mapping mindfulness facets onto dimensions of anxiety and depression. *Behavior Therapy, 44*, 373–384.

Deyo, M., Wilson, K. A., Ong, J., & Koopman, C. (2009). Mindfulness and rumination: Does mindfulness training lead to reductions in the ruminative thinking associated with depression? *Patient Education and Counseling, 5*, 265–271.

Dugas, M. J., Buhr, K., & Ladouceur, R. (2004). The role of intolerance of uncertainty in etiology and maintenance. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77–108). New York: Guilford Press.

Earley, M. D., Chesney, M. A., Frye, J., Greene, P. A., Berman, B., & Kimbrough, E. (2014). Mindfulness intervention for child abuse survivors: A 2.5-year follow-up. *Journal of Clinical Psychology, 70*, 933–941.

Ehring, T., & Watkins, E. R. (2009). Repetitive negative thinking as a transdiagnostic process. *International Journal of Cognitive Therapy, 1*, 192–205.

Eifert, G. H., & Forsyth, J. P. (2005). *Acceptance and commitment therapy for anxiety disorders: A practitioner's treatment guide to using mindfulness, acceptance, and value-based behavior change strategies*. Oakland, CA: New Harbinger Publications.

Eifert, G. H., & Heffner, M. (2003). The effects of acceptance versus control contexts on avoidance of panic-related symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 293–312.

Evans, S., Ferrando, S., Findler, M., Stowell, C., Smart, C., & Haglin, D. (2008). Mindfulness-based cognitive therapy for generalized anxiety disorder. *Journal of Anxiety Disorders, 22*, 716–721.

Farb, N. A., Anderson, A. K., & Segal, Z. V. (2012). The mindful brain and emotion regulation in mood disorders. *Canadian Journal of Psychiatry, 57*, 70–77.

Farb, N. A. S., Segal, Z. V., Mayberg, H., Bean, J., McKeon, D., Fatima, Z., et al. (2007). Attending to the present: Mindfulness meditation reveals distinct neural modes of self-reference. *Social Cognitive and Affective Neuroscience, 2*, 259–263.

Farb, N. A., Segal, Z. V., & Anderson, A. K. (2012). Mindfulness meditation training alters cortical representations of interoceptive attention. *Social Cognitive and Affective Neuroscience, 8*, 15–26.

Finucane, A., & Mercer, S. W. (2006). An exploratory mixed methods study of the acceptability and effectiveness of mindfulness-based cognitive therapy for patients with active depression and anxiety in primary care. *BMC Psychiatry, 6*, 14.

Frewen, P. A., Evans, E. M., Maraj, N., Dozois, D. J., & Partridge, K. (2008). Letting go: Mindfulness and negative automatic thinking. *Cognitive Therapy and Research, 32*, 758–774.

Gloster, A. T., Sonntag, R., Hoyer, J., Meyer, A. H., Heinze, S., Ströhle, A., et al. (2015). Treating treatment-resistant patients with panic disorder and agoraphobia using psychotherapy: A randomized controlled switching trial. *Psychotherapy and Psychosomatics, 84*, 100–109.

Godfrin, K. A., & van Heeringen, C. (2010). The effects of mindfulness-based cognitive therapy on recurrence of depressive episodes, mental health and quality of life: A randomized controlled study. *Behaviour Research and Therapy, 48*, 738–746.

Goldin, P. R., Ramel, W., & Gross, J. J. (2009). Mindfulness meditation training and self-referential processing in social anxiety disorders: Behavioral and neural effects. *Journal of Cognitive Psychotherapy, 23*, 242–257.

Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., et al. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine, 174*, 357–368.

Greenberg, P. E., Sisitsky, T., Kessler, R. C., Finkelstein, S. N., Berndt, E. R., Davidson, J. R. T., et al. (1999). The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry, 60*, 427–435.

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*, 281–291.

Hargus, E., Crane, C., Barnhofer, T., & Williams, J. M. G. (2010). Effects of mindfulness on meta-awareness and specificity of describing prodromal symptoms in suicidal depression. *Emotion, 10*, 34–42.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639–665.

Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Research and Practice, 11*, 255–262.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44*, 1–25.

Hayes, S. A., Orsillo, S. M., & Roemer, L. (2010). Changes in proposed mechanisms of action during an acceptance-based behavior therapy for generalized anxiety disorder. *Behaviour Research and Therapy, 48*, 238–245.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy. An experiential approach to behavior change*. New York: The Guilford Press.

Hayes-Skelton, S. A., Roemer, L., & Orsillo, S. M. (2013). A randomized clinical trial comparing an acceptance-based behavior therapy to applied relaxation for generalized anxiety disorder. *Journal of Consulting and Clinical Psychology, 81*, 761–773.

Heimberg, R. G. (2002). Cognitive-behavioral therapy for social anxiety disorder: Current status and future directions. *Biological Psychiatry, 51*, 101–108.

Hofmann, S. G., & Asmundson, G. J. G. (2008). Acceptance- and mindfulness-based therapy: New wave or old hat? *Clinical Psychology Review, 28*, 1–16.

Hofmann, S. G., & Bögels, S. M. (2006). Recent advances in the treatment of social phobia: Introduction to the special issue. *Journal of Cognitive Psychotherapy, 20*, 3–5.

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 78*, 169–183.

Hofmann, S. G., & Smits, J. A. (2008). Cognitive-behavioral therapy for adult anxiety disorders: A meta-analysis of randomized placebo-controlled trials. *Journal of Clinical Psychiatry, 69*, 621–632.

Hoge, E. A., Bui, E., Marques, L., Metcalf, C. A., Morris, L. K., Robinaugh, D. J., et al. (2013). Randomized controlled trial of mindfulness meditation for generalized anxiety disorder: Effects on anxiety and stress reactivity. *The Journal of Clinical Psychiatry, 74*, 786–792.

Hollon, S. D., & Beck, A. T. (2004). Cognitive and cognitive-behavioral therapies. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 428–466). Oxford: John Wiley & Sons.

Hölzel, B. K., Carmody, J., Evans, K. C., Hoge, E. A., Dusek, J. A., Morgan, L., et al. (2009). Stress reduction correlates with structural changes in the amygdala. *Social Cognitive and Affective Neuroscience, 5*, 11–17.

Hölzel, B. K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S. M., Gard, K., et al. (2010). Mindfulness practice leads to increases in regional gray matter density. *Psychiatry Research: Neuroimaging, 1*, 36–43.

Hölzel, B. K., Hoge, E. A., Greve, D. N., Gard, T., Creswell, J. D., Brown, K. W., et al. (2013). Neural mechanisms of symptom improvements in generalized anxiety disorder following mindfulness training. *NeuroImage: Clinical, 2*, 448–458.

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science, 6*, 537–559.

Hölzel, B. K., Ott, U., Gard, T., Hempel, H., Weygandt, M., Morgen, K., et al. (2008). Investigation of mindfulness meditation practitioners with voxel-based morphometry. *Social Cognitive and Affective Neuroscience, 3*, 55–61.

Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin, 107*, 156–176.

Ivanovski, B., & Malhi, G. S. (2007). The psychological and neuropsychological concomitants of mindfulness forms of meditation. *Acta Neuropsychiatrica, 19*, 76–91.

Jain, S., Shapiro, S. L., Swanwick, S., Roesch, P. J., Mills, P. J., Bell, I., et al. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, and distraction. *Annals of Behavioral Medicine, 33*, 11–21.

Jazaieri, H., Goldin, P. R., Werner, K., Ziv, M., & Gross, J. J. (2012). A randomized trial of MBSR versus aerobic exercise for social anxiety disorder. *Journal of Clinical Psychology, 68*, 715–731.

Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive Affective and Behavioral Neuroscience, 7*, 109–119.

Kabat-Zinn, J. (1990). *Full catastrophe living. Using the wisdom of your body and mind to face stress, pain, and illness*. New York: Bantam.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Research and Practice, 10*, 144–156.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L., Fletcher, K. E., Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*, 936–943.

Kang, H. K., Bullman, T. A., Smolenski, D. J., Skopp, N. A., Gahm, G. A., & Reger, M. A. (2015). Suicide risk among 1.3 million veterans who were on active duty during the Iraq and Afghanistan wars. *Annals of Epidemiology, 25*, 96–100.

Kearney, D. J., McDermott, K., Malte, C., Martinez, M., & Simpson, T. L. (2012). Association of participation in a mindfulness program with measures of PTSD, depression and quality of life in a veteran sample. *Journal of Clinical Psychology, 68*, 101–116.

Kearney, D. J., McDermott, K., Malte, C., Martinez, M., & Simpson, T. L. (2013). Effects of participation in a mindfulness program for veterans with posttraumatic stress disorder: A randomized controlled pilot study. *Journal of Clinical Psychology, 69*, 14–27.

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry, 62*, 617–627.

Kessler, R. C., Ruscio, A. M., Shear, K., & Wittchen, H.-U. (2010). Epidemiology of anxiety disorders. *Current Topics in Behavioral Neurosciences, 2*, 21–35.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., et al. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review, 33*, 763–771.

Kim, Y. W., Lee, S., Choi, T. K., Young, S. Y., Kim, B., Kim, C. M., et al. (2009). Effectiveness of mindfulness-based cognitive therapy as an adjuvant to pharmacotherapy in patients with panic disorder or generalized anxiety disorder. *Depression and Anxiety, 26*, 601–606.

Kim, B., Lee, S., Kim, Y. W., Choi, T. K., Yook, K., Suh, S. Y., et al. (2010). Effectiveness of a mindfulness-based cognitive therapy program as an adjunct to pharmacotherapy in patients with panic disorder. *Journal of Anxiety Disorders, 24*, 590–595.

Kimbrough, E., Magyari, T., Langenberg, P., Chesney, M., & Berman, B. (2010). Mindfulness intervention for child abuse survivors. *Journal of Clinical Psychology, 66*, 17–33.

King, A. P., Erickson, T. M., Giardino, N. D., Favorite, T., Rauch, S. A., Robinson, E., et al. (2013). A pilot study of group Mindfulness-Based Cognitive Therapy (MBCT) for combat veterans with posttraumatic stress disorder (PTSD). *Depression and Anxiety, 30*, 638–645.

Kocovski, N. L., Fleming, J. E., Hawley, L. L., Huta, V., & Antony, M. M. (2013). Mindfulness and acceptance-based group therapy versus traditional cognitive behavioral group therapy for social anxiety disorder: A randomized controlled trial. *Behaviour Research and Therapy, 51*, 889–898.

Kocovski, N. L., Fleming, J. E., & Rector, N. A. (2009). Mindfulness and acceptance-based group therapy for social anxiety disorder: An open trial. *Cognitive and Behavioral Practice, 16*, 276–289.

Koszycki, D., Benger, M., Shlik, J., & Bradwejn, J. (2007). Randomized trial of a meditation-based stress reduction program and cognitive behavior therapy in generalized social anxiety disorder. *Behavior Research and Therapy, 45*, 2518–2526.

Kozasa, E. H., Sato, J. R., Lacerda, S. S., Barreiros, M. A., Radvany, J., Russell, T. A., et al. (2012). Meditation training increases brain efficiency in an attention task. *NeuroImage, 59*, 745–749.

Kubzansky, L. D., Davidson, K. W., & Rozanski, A. (2005). The clinical impact of negative psychological states: Expanding the spectrum of risk for coronary heart disease. *Psychosomatic Medicine, 67*, 10–14.

Kumar, S., Feldman, G., & Hayes, A. (2008). Changes in mindfulness and emotion regulation in an exposure-based cognitive therapy for depression. *Cognitive Therapy and Research, 32*, 734–744.

Kuyken, W., Byford, S., Taylor, R. S., Watkins, E., Holden, E., White, K., et al. (2008). Mindfulness-based cognitive therapy to prevent relapse in recurrent depression. *Journal of Consulting and Clinical Psychology, 76*, 966–978.

Kuyken, W., Watkins, E., Holden, E., White, K., Taylor, R. S., Byford, S., et al. (2010). How does mindfulness-based cognitive therapy work? *Behaviour Research and Therapy, 48*, 1105–1112.

Lee, S. H., Ahn, S. C., Lee, Y. J., Choi, T. K., Yook, K. H., & Suh, S. Y. (2007). Effectiveness of a meditation-based stress management program as an adjunct to pharmacotherapy in patients with anxiety disorder. *Journal of Psychosomatic Research, 62*, 189–195.

Lépine, J. P. (2002). The epidemiology of anxiety disorders: Prevalence and social costs. *Journal of Clinical Psychiatry, 63*, 4–8.

Levitt, J. T., Brown, T. A., Orsillo, S. M., & Barlow, D. H. (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy, 35*, 747–766.

Lovas, D. A., & Barsky, A. J. (2010). Mindfulness-based cognitive therapy for hypochondriasis, or severe health anxiety: A pilot study. *Journal of Anxiety Disorders, 24*, 931–935.

Lutz, J., Herwig, U., Opialla, S., Hittmeyer, A., Jäncke, L., Rufer, M., et al. (2014). Mindfulness and emotion regulation—An fMRI study. *Social Cognitive and Affective Neuroscience, 9*, 776–785.

Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Science, 12*, 163–169.

Ma, S., & Teasdale, J. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*, 31–40.

Mansell, W., Harvey, A., Watkins, E., & Shafran, R. (2009). Conceptual foundations of the transdiagnostic approach to CBT. *Journal of Cognitive Psychotherapy, 23*, 6–19.

Marchand, W. R. (2014). Neural mechanisms of mindfulness and meditation: Evidence from neuroimaging studies. *World Journal of Radiology, 6*, 471.

Marciniak, M., Lage, M. J., Landbloom, R. P., Dunayevich, E., & Bowman, L. (2004). Medical and productivity costs of anxiety disorders: Case control study. *Depression and Anxiety, 19*, 112–120.

Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. *Annual Review of Clinical Psychology, 1*, 167–195.

McKee, L., Zvolensky, M. J., Solomon, S. E., Bernstein, A., & Leen-Feldner, E. (2007). Emotional vulnerability and mindfulness: A preliminary test of associations among negative affectivity, anxiety sensitivity, and mindfulness skills. *Cognitive Behaviour Therapy, 36*, 91–101.

McManus, F., Grey, N., & Shafran, R. (2008). Cognitive therapy for anxiety disorders: Current status and future challenges. *Behavioural and Cognitive Psychotherapy, 36*, 695–704.

McManus, F., Surawy, C., Muse, K., Vazquez-Montes, M., & Williams, J. M. G. (2012). A randomized clinical trial of mindfulness-based cognitive therapy versus unrestricted services for health anxiety (hypochondriasis). *Journal of Consulting and Clinical Psychology, 80*, 817–828.

Mendlowicz, M. V., & Stein, M. B. (2000). Quality of life in individuals with anxiety disorders. *American Journal of Psychiatry, 157*, 669–682.

Mennin, D. S., Ellard, K. K., Fresco, D. M., & Gross, J. J. (2013). United we stand: Emphasizing commonalities across cognitive-behavioral therapies. *Behavior Therapy, 44*, 234–248.

Meuret, A. E., Twohig, M. P., Rosenfield, D., Hayes, S. C., & Craske, M. G. (2012). Brief acceptance and commitment therapy and exposure for panic disorder: A pilot study. *Cognitive and Behavioral Practice, 19*, 606–618.

Miller, J. J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry, 17*, 192–200.

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128*, 638–662.

National Institute for Health and Care Excellence. (2013). *Social anxiety disorder: Recognition, assessment and treatment of social anxiety disorder* (Clinical guideline 159.) http://guidance.nice.org.uk/CG159

Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*, 85–102.

Niles, B. L., Klunk-Gillis, J., Ryngala, D. J., Silberbogen, A. K., Paysnick, A., & Wolf, E. J. (2012). Comparing mindfulness and psychoeducation treatments for combat-related PTSD using a telehealth approach. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*, 538–547.

Ninan, P. T. (2001). Dissolving the burden of generalized anxiety disorder. *Journal of Clinical Psychiatry, 62*, 5–10.

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorder and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*, 504–511.

Norton, A. R., Abbott, M. J., Norberg, M. M., & Hunt, C. (2014). A systematic review of mindfulness and acceptance-based treatments for social anxiety disorder. *Journal of Clinical Psychology*. doi:10.1002/jclp.22144.

Norton, P. J., & Philipp, L. M. (2008). Transdiagnostic approaches to the treatment of anxiety disorders: A quantitative review. *Psychotherapy: Theory, Research, Practice, Training, 45*, 214–226.

Norton, P. J., & Price, E. M. (2007). A meta-analytic review of adult cognitive-behavioral treatment outcome across the anxiety disorders. *The Journal of Nervous and Mental Disease, 195*, 521–531.

Olatunji, B. O., Cisler, J. M., & Tolin, D. F. (2007). Quality of life in the anxiety disorders: A meta-analytic review. *Clinical Psychology Review, 27*, 572–581.

Ossman, W. A., Wilson, K. G., Storaasli, R. D., & McNeill, J. W. (2006). A preliminary investigation of the use of Acceptance and Commitment Therapy in group treatment for social phobia. *International Journal of Psychology and Psychological Therapy, 6*, 397–416.

Panos, P. T., Jackson, J. W., Hasan, O., & Panos, A. (2013). Meta-analysis and systematic review assessing the efficacy of dialectical behavior therapy (DBT). *Research on Social Work Practice*, Retrieved from: http://rsw.sagepub.com/content/early/2013/09/16/1049731513503047

Piet, J., Hougaard, E., Hecksher, M. S., & Rosenberg, N. K. (2010). A randomized pilot study of mindfulness-based cognitive therapy and group cognitive-behavioral therapy for young adults with social phobia. *Scandinavian Journal of Psychology*, *51*. doi:10.1111/j.1467-9450.2009.00801.x/pdf

Powers, M. B., Zum Vörde Sive Vörding, M. B., & Emmelkamp, P. M. G. (2009). Acceptance and commitment therapy: A meta-analytic review. *Psychotherapy and Psychosomatics, 78*, 73–80.

Ramel, W., Goldin, P. R., Carmona, P. E., & McQuaid, J. R. (2004). The effects of mindfulness meditation on cognitive processes and affect in patients with past depression. *Cognitive Therapy and Research, 28*, 433–455.

Ramsawh, H. J., Raffa, S. D., Edelen, M. O., Rende, R., & Keller, M. B. (2009). Anxiety in middle adulthood: Effects of age and time on the 14-year course of panic disorder, social phobia and generalized anxiety disorder. *Psychological Medicine, 39*, 615–624.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogeneous sample of adult outpatients. *Behavior Change, 24*, 70–86.

Rodebaugh, T. L., Holaway, R. M., & Heimberg, R. G. (2004). The treatment of social anxiety disorder. *Clinical Psychology Review, 24*, 883–908.

Roemer, L., Erisman, S. M., & Orsillo, S. M. (2008). Mindfulness and acceptance-based treatments for anxiety disorders. In M. M. Antony & M. B. Stein (Eds.), *Oxford handbook of anxiety and related disorders* (pp. 476–487). Oxford: Oxford University Press.

Roemer, L., Lee, J. K., Salters-Pedneault, K., Erisman, S. M., Orsillo, S. M., & Mennin, D. S. (2009). Mindfulness and emotion regulation difficulties in generalized anxiety disorder: Preliminary evidence for independent and overlapping contributions. *Behavior Therapy, 40*, 142–154.

Roemer, L., & Orsillo, S. M. (2007). An open trial of an acceptance-based behavior therapy for generalized anxiety disorder. *Behavior Therapy, 38*, 72–85.

Roemer, L., Orsillo, S. M., & Salters-Pedneault, K. (2008). Efficacy of an acceptance-based behavior therapy for generalized anxiety disorder: Evaluation in a randomized controlled trial. *Journal of Consulting and Clinical Psychology, 76*, 1083–1089.

Roness, A., Mykletun, A., & Dahl, A. A. (2005). Help-seeking behaviour in patients with anxiety disorder and depression. *Acta Psychiatrica Scandinavia, 111*, 51–58.

Roy-Byrne, P. P., Craske, M. G., & Stein, M. B. (2006). Panic disorder. *Lancet, 368*, 1023–1032.

Rubia, K. (2009). The neurobiology of meditation and its clinical effectiveness in psychiatric disorders. *Biological Psychology, 82*, 1–11.

Salkovskis, P. M. (1991). The importance of behaviour in the maintenance of anxiety and panic. *Behavioural and Cognitive Psychotherapy, 19*, 6–19.

Santorelli, S. (1999). *Heal thy self: Lessons on mindfulness in medicine*. New York: Bell Tower.

Segal, Z. V., Bieling, P., Young, T., MacQueen, G., Cooke, R., Martin, L., et al. (2010). Antidepressant monotherapy vs sequential pharmacotherapy and Mindfulness-Based Cognitive Therapy, or placebo, for relapse prophylaxis in recurrent depression. *Archives of General Psychiatry, 67*, 1256–1264.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2012). *Mindfulness-based cognitive therapy for depression*. New York: Guilford Press.

Serpa, J. G., Taylor, S. L., & Tillisch, K. (2014). Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. *Medical Care, 52*, 19–24.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*, 373–386.

Shear, M. K., Bjelland, I., Beesdo, K., Gloster, A. T., & Wittchen, H. (2007). Supplementary dimensional assessment in anxiety disorders. *International Journal of Methods in Psychiatric Research, 16*, 52–64.

Smith, B. W., Ortiz, J. A., Steffen, L. E., Tooley, E. M., Wiggins, K. T., Yeater, E. A., et al. (2011). Mindfulness is associated with fewer PTSD symptoms, depressive symptoms, physical symptoms, and alcohol problems in urban firefighters. *Journal of Consulting and Clinical Psychology, 79*, 613–617.

Stein, D. J. (2002). Obsessive-compulsive disorder. *Lancet, 360*, 397–405.

Stein, M. B., & Stein, D. J. (2008). Social anxiety disorder. *Lancet, 371*, 1115–1125.

Stopa, L., & Clark, D. M. (2000). Social phobia and interpretation of social events. *Behaviour Research and Therapy, 38*, 273–283.

Strauss, C., Cavanagh, K., Oliver, A., & Pettman, D. (2014). Mindfulness-based interventions for people diagnosed with a current episode of an anxiety or depressive disorder: A meta-analysis of randomised controlled trials. *PLoS ONE, 9*, e96110.

Swift, J. K., & Callahan, J. L. (2009). The impact of client treatment preferences on outcome: A meta-analysis. *Journal of Clinical Psychology, 65*, 368–381.

Taylor, S., Abramowitz, J. S., & McKay, D. (2012). Non-adherence and non-response in the treatment of anxiety disorders. *Journal of Anxiety Disorders, 26*, 583–589.

Teasdale, J. D., Moore, R. G., Hayhurst, H., Pope, M., Williams, S., & Segal, Z. V. (2002). Metacognitive awareness and prevention of relapse in depression: Empirical evidence. *Journal of Consulting and Clinical Psychology, 70*, 275–287.

Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*, 615–623.

Teasdale, J. D., Segal, Z. V., & Williams, J. M. G. (2003). Mindfulness training and problem formulation. *Clinical Psychology: Science and Practice, 10*, 157–160.

Thompson, B. L., & Waltz, J. (2010). Mindfulness and experiential avoidance as predictors of posttraumatic stress disorder avoidance symptom severity. *Journal of Anxiety Disorders, 24*, 409–415.

Treanor, M. (2011). The potential impact of mindfulness on exposure and extinction learning in anxiety disorders. *Clinical Psychology Review, 31*, 617–625.

Twohig, M. P., Hayes, S. C., & Masuda, A. (2006). Increasing willingness to experience obsessions: Acceptance and commitment therapy as a treatment for obsessive-compulsive disorder. *Behavior Therapy, 37*, 3–13.

Twohig, M. P., Hayes, S. C., Plumb, J. C., Pruitt, L. D., Collins, A. B., Hazlett-Stevens, H., & Woidneck, M. R. (2010). A randomized clinical trial of acceptance and commitment therapy versus progressive relaxation training for obsessive-compulsive disorder. *Journal of Consulting and Clinical Psychology, 78*, 705–716.

Tyrer, P., & Baldwin, D. (2006). Generalised anxiety disorder. *Lancet, 368*, 2156–2166.

van den Hurk, P. A., Giommi, F., Gielen, S. C., Speckens, A. E., & Barendregt, H. P. (2010). Greater efficiency in attentional processing related to mindfulness meditation. *The Quarterly Journal of Experimental Psychology, 63*, 1168–1180.

Vassilopoulos, S. P. (2008). Social anxiety and ruminative self-focus. *Journal of Anxiety Disorders, 22*, 860–867.

Vassilopoulos, S. P., & Watkins, E. R. (2009). Adaptive and maladaptive self-focus: A pilot extension study with individuals high and low in fear of negative evaluation. *Behavior Therapy, 40*(2), 181–189.

Vøllestad, J., Nielsen, M. B., & Nielsen, G. H. (2012). Mindfulness- and acceptance-based interventions for anxiety disorders: A systematic review and meta-analysis. *British Journal of Clinical Psychology, 51*, 239–260.

Vøllestad, J., Sivertsen, B., & Nielsen, G. H. (2011). Mindfulness-based stress reduction for patients with anxiety disorders: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy, 49*, 281–288.

Voncken, M. J., Bögels, S. M., & de Vries, K. (2003). Interpretation and judgmental biases in social phobia. *Behaviour Research and Therapy, 41*, 1481–1488.

Vujanovic, A. A., Youngwirth, N. E., Johnson, K. A., & Zvolensky, M. J. (2009). Mindfulness-based acceptance and posttraumatic stress symptoms among trauma-exposed adults without axis I psychopathology. *Journal of Anxiety Disorders, 23*, 297–303.

Vujanovic, A. A., Zvolensky, M. J., Bernstein, A., Feldner, M. T., & McLeish, A. C. (2007). A test of the interactive effects of anxiety sensitivity and mindfulness in the prediction of anxious arousal, agoraphobic cognitions, and body vigilance. *Behaviour Research and Therapy, 45*, 1393–1400.

Wadlinger, D. A., & Isaacowitz, D. M. (2010). Fixing our focus: Training attention to regulate emotion. *Personality and Social Psychology Review, 20*, 1–28.

Wang, P. S., Berglund, P., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry, 62*, 603–613.

Watkins, E., Moberly, N. J., & Moulds, M. L. (2008). Processing mode causally influences emotional reactivity. Distinct effects of abstract versus concrete construal on emotional response. *Emotion, 8*, 364–378.

Watts, B. V., Schnurr, P. P., Mayo, L., Young-Xu, Y., Weeks, W. B., & Friedman, M. J. (2013). Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *The Journal of Clinical Psychiatry, 74*, 541–550.

Wegner, D. M., Broome, A., & Blumberg, S. J. (1997). Ironic effects of trying to relax under stress. *Behaviour Research and Therapy, 35*, 11–21.

Wegner, D. M., & Erber, R. (1992). The hyperaccessibility of suppressed thought. *Journal of Personality and Social Psychology, 63*, 903–912.

Williams, J. M. G. (2010). Mindfulness and psychological process. *Emotion, 10*, 1–7.

Wittchen, H.-U., Lieb, R., Pfister, H., & Schuster, P. (2000). The waxing and waning of mental disorders: Evaluating the stability of syndromes of mental disorders in the population. *Comprehensive Psychiatry, 41*, 122–132.

Wolitzky-Taylor, K. B., Arch, J. J., Rosenfield, D., & Craske, M. G. (2012). Moderators and non-specific predictors of treatment outcome for anxiety disorders: A comparison of cognitive behavioral therapy to acceptance and commitment therapy. *Journal of Consulting and Clinical Psychology, 80*, 786–799.

Yehuda, R. (2002). Post-traumatic stress disorder. *New England Journal of Medicine, 346*, 108–114.

Yook, K., Lee, S., Ryu, M., Kim, K., Choi, K. C., Suh, S. Y., et al. (2008). Usefulness of mindfulness-based cognitive therapy for treating insomnia in patients with anxiety disorders. *The Journal of Nervous and Mental Disease, 196*, 501–503.