How Do the Five Facets of Mindfulness and Dispositional Gratitude Relate to Depression, Anxiety, and Stress?

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This thesis is submitted in partial fulfilment of the requirements for the degree of Master of Clinical Psychology,
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March 2016
Declarations

Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library**, being made available for loan and photocopying, subject to the conditions of the Copyright Act 1968.

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Acknowledgement of Authorship

I hereby certify that the work embodied in this thesis contains a scholarly work of which I am a joint author. I have included, as part of the thesis, a written statement, endorsed by my supervisor, attesting to my contribution to the joint scholarly work.

Signed:

____________________________________  __________________

Madeline Sarah Collings Begg  Date
Acknowledgements

I would like to thank my supervisor, Associate Professor Ross Wilkinson, for his expertise and invaluable insight, for his comprehensive reviews of my work, and for being so generous with his time. Ross made the process of writing this thesis as smooth as it could possibly be for me.

I am grateful to my fellow Masters students, for their encouragement, candour and humour over the last two and a half years. In particular, I would like to thank Alexandra Thorpe for her support while compiling the thesis, Debbie Etienne-Ward and Kaitlyn Massey for sharing the numerous long drives between Sydney and Newcastle, and Ruby Hooke, Rachel Ross, Lauren Ell, and Evelyn Henry for generously hosting me on many occasions. It has been wonderful to meet such an intelligent and supportive group of women who will make lifelong friends and colleagues.

Finally, I would like to express my gratitude to my family, who have provided me with endless practical and emotional support over the course of writing this thesis, and over the last ten years in general as I have travelled the long path toward registration as a Psychologist. Special appreciation is reserved for my mum, Sandy Collings, for her superb editing skills, loving concern, and unwavering belief in me.
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Structured Abstract

Scope

Anxiety disorders and depressive disorders are the two most common kinds of emotional disorders, with 12-month prevalence in Australia of 14.4% for any anxiety disorder and 6.2% for any depressive disorder (Australian Bureau of Statistics, 2008). As part of the ‘third wave’ of psychological therapies (Hayes, 2004), interventions based on positive psychology constructs, such as mindfulness and gratitude, have garnered an increasing research base supporting their utility in alleviating psychological distress (e.g., depression, anxiety, and stress) and enhancing psychological health (Kahl, Winter, & Schweiger, 2012; Keng, Smoski, & Robins, 2011). Little research, however, has investigated how different aspects of mindfulness may relate to gratitude, or how the combined effects of both mindfulness and gratitude may protect against psychological distress.

Purpose

The current study aimed to investigate the relationships between the five facets of mindfulness, dispositional gratitude, and psychological distress. Psychological distress was defined by the presence of symptoms of depression, anxiety, or stress. The study also sought to assess whether dispositional gratitude predicted psychological distress, beyond the variance accounted for by the five facets of mindfulness.

Methodology

Six hundred and fifty-four participants were recruited for the study. Participation was restricted to Australian residents aged 18 years or older who had access to a computer and the internet. After multivariate outliers were deleted, 649 participants remained (510 females, 79%) with a mean age of 30.6 years (range = 17-82 years). Participants comprised undergraduate psychology students at the University of Newcastle (n = 226) and members of the general population (n = 423). Participants completed an online questionnaire, with 12 empirically supported scales, as part of a wider study. Completion time was approximately 45 minutes. For the present study, data from the following scales were analysed: the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), the Gratitude Questionnaire–Six Item Form (GQ–6; McCullough et al., 2002), and the Depression Anxiety Stress Scale–21 Item Form (DASS–21; Lovibond & Lovibond, 1995).
Results

The hypotheses were tested using correlational analysis and hierarchical multiple regression analysis (MRA). Correlational analyses indicated that: (1) dispositional mindfulness and dispositional gratitude were both related to psychological distress outcomes; and (2) there was a varied pattern of relationships between the five facets of mindfulness and dispositional gratitude. MRA revealed that, even when controlling for the five facets of mindfulness, dispositional gratitude was predictive of depression, anxiety, and stress, accounting for 7.1%, 0.7% and 1.6%, respectively, of the unique variance in each variable. MRA also showed that, when controlling for dispositional gratitude, the five facets of mindfulness differentially predicted psychological distress.

Conclusions and Implications

The weak to moderate correlations between the five facets of mindfulness and dispositional gratitude indicate that dispositional gratitude—whilst linked to mindfulness—is a separate construct that is not wholly represented by measures of mindfulness. This suggests that dispositional gratitude should be examined independently in future research, and that gratitude practice has a place in clinical interventions in its own right.

Moreover, dispositional gratitude was found to be a significant predictor of depression, anxiety, and stress in its own right. In fact, dispositional gratitude predicted more variance in levels of depression than any of the five facets of mindfulness. This suggests that gratitude-enhancing exercises, which are sometimes included in mindfulness interventions, may be especially beneficial for individuals with depression.

Lastly, the five facets of mindfulness were not all equally predictive of psychological distress outcomes: describing did not predict psychological distress, and observing predicted an increase in symptoms of psychological distress. The latter finding suggests that observing might actually represent rumination, or possibly hypervigilance. The status of observing and describing as facets of mindfulness was, therefore, questioned. Future research was recommended to delineate the role of observing and describing, and to further examine how best to measure mindfulness and its components.

Several limitations were identified. The cross-sectional design of the study meant that causal relationships between variables could not be inferred, and future research was recommended that would employ an experimental or longitudinal design. The considerable length of the questionnaire was noted to potentially over- or under-represent the prevalence of psychological distress. The measures solely
assessed dispositional mindfulness and dispositional gratitude, and relied exclusively on self-report—however, all measures utilised were noted to have good reliability and validity. The study also covered a broad cross-section of the community, with a wide age range, thus increasing confidence that its findings may be generalised to the wider population.

Following the current exploratory analysis of the relationships between the five facets of mindfulness, dispositional gratitude, and psychological distress, future studies should seek to further investigate and confirm these findings. Improved understanding of the different components that specifically constitute mindfulness will ultimately lead to the progressive refinement of existing mindfulness and gratitude-based interventions. This, in turn, will allow psychologists to provide efficacious, evidence-based treatments for individuals who present with anxiety and depression.
The Relationships between the Five Facets of Mindfulness, Dispositional Gratitude, and Psychological Distress: A Literature Review

Mental health disorders affect a majority of the community. By age 21, half of all individuals will have met diagnostic criteria for at least one mental health disorder (Copeland, Shanahan, Costello, & Angold, 2011). Mental health problems affect one’s ability to engage in employment (e.g., Kessler & Frank, 1997; Wittchen & Jacboi, 2005) and markedly compromise quality of life for individuals and their families (e.g., Harpin, 2005; Mendelowicz & Stein, 2014; Northouse et al., 2002; Sawyer et al., 2002). One significant area of mental health that has been well researched is emotional disorders. Emotional disorders occur when an individual’s emotions— and resulting behaviours— are inappropriate or unhelpful, resulting in clinically significant distress or impairment (Gross, 1999; American Psychiatric Association, 2013). Anxiety disorders and depressive disorders are the two most common kinds of emotional disorders, with 12-month prevalence\(^1\) in Australia of 14.4% for any anxiety disorder, and 6.2% for any depressive disorder (Australian Bureau of Statistics, 2008).

As part of the ‘third wave’ of psychological therapies (Hayes, 2004), interventions based on positive psychology constructs, such as mindfulness and gratitude, have garnered an increasing research base supporting their utility in alleviating distress and enhancing psychological health (Kahl, Winter, & Schweiger, 2012; Keng, Smoski, & Robins, 2011). Practising mindfulness allows for the development of self-awareness and for an individual to learn to self-regulate their emotional responses (Chlebak, 2013). Gratitude is a separate positive psychological construct which, when practised, allows an individual to think specifically about the valuable and meaningful aspects of life, leading to more positive emotions (Wood, Froh, & Geraghty, 2010).

The present review aims to organise and evaluate the important relevant research in the fields of mindfulness and gratitude and their relationship to psychological distress, and to demonstrate that there is a gap in the literature pointing to an avenue for further research. This review will bring together the findings from a range of studies, published principally in the last two decades, on the relationship of both mindfulness and gratitude to psychological distress.

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\(^1\) Twelve-month prevalence refers to, “persons with a lifetime mental disorder who experienced symptoms in the 12 months prior to the survey interview” (Australian Bureau of Statistics, 2008, p. 4).
Mindfulness

Mindfulness is a positive psychology construct, that has increasingly been the focus of psychological research. Mindfulness refers to the practice of purposefully focusing one’s attention on the present moment in an open, receptive, curious and non-judgmental way (Kabat-Zinn, 1994). The origins of mindfulness lie in ancient Buddhist principles, practices and perspectives (Kabat-Zinn, 2003). Four noble truths underlie the religion of Buddhism; one of these truths is that life is full of suffering and is, thus, fundamentally unsatisfactory (Hanh, 1999). Buddhists view the practice of mindfulness as being one way that an individual can come to accept this truth and ultimately reach acceptance and enlightenment (Hanh, 1999). Despite its religious origins, mindfulness can also be viewed as a non-religious, evidence-based set of beliefs and practices that has been integrated into mainstream modern medicine and psychology (Keng et al., 2011).

Research into mindfulness, both as a positive psychological construct and as an effective intervention in clinical settings, has burgeoned since the 1980s (Gu, Strauss, Bond, & Cavanagh, 2015; Keng et al., 2011). Mindfulness now has a strong evidence base and plays a central role in a number of psychological interventions utilised in clinical practice (Cash & Whittingham, 2010). There are a number of interventions based on mindfulness training, including Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982, 1990) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002). There are also several interventions in which mindfulness training is a key component, such as Dialectical Behaviour Therapy (DBT; Linehan, 1993a, 1993b), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), and Relapse Prevention (RP; Marlatt & Gordon, 1985). Whilst mindfulness is a component in each of these five evidence-based interventions, each cultivates mindfulness in a different way (Cash & Whittingham, 2010).

Mindfulness can be conceptualised as both a skill, that can be developed through practice, and as a disposition, that occurs naturally without intentional focus or active development. State mindfulness refers to the state of being mindful, and is achieved only through practised mindfulness meditation training (Cahn & Polich, 2006). On the other hand, dispositional mindfulness, or trait mindfulness, refers to one’s ability and willingness to maintain awareness and focused attention, and the skill, characteristics, attitude and philosophy toward mindfulness that result (Brown & Ryan, 2003). Dispositional mindfulness is seen in everyday activities and in varying levels across the population; this ability to orient attention
and awareness to the present moment varies both within and between individuals, and it has been found that this ability can be quantified empirically (Black, 2011).

A number of questionnaires have been created to measure one’s predisposition to be mindful in day-to-day life. These include:

- The Cognitive Affective Mindfulness Scale Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007)
- The Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001)
- The Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004)
- The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003)
- The Philadelphia Mindfulness Scale (PMS; Cardaciotto et al., 2008)
- The Southampton Mindfulness Questionnaire (SMQ; Chadwick et al., 2008), and
- The Toronto Mindfulness Scale Trait Version (TMS-Trait; Davis, Lau, & Cairns, 2009)

Keng et al. (2011) noted that these questionnaires measure mindfulness as either a one-dimensional construct (e.g., MAAS) or a multi-dimensional construct (e.g., KIMS).

Baer, Smith, Hopkins, Krietemeyer and Toney (2006) examined 475 participants’ responses to the MAAS, the FMI, the KIMS, the CAMS-R, and the SMQ in order to determine if there were key constructs underlying these measures. Upon conducting a factor analysis of participants’ responses to the five mindfulness questionnaires, Baer et al. suggested that mindfulness could be broken down into five main facets, or dimensions. The five facets of mindfulness were proposed to be: observing, describing, acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences.

Observing involves being aware of and attentive to thoughts, emotions, sensations and experiences—both internal and external. Describing refers to the process of using words to express or illustrate one’s experiences. Acting with awareness entails focusing one’s attention on the present moment. Non-judgment of inner experiences encompasses taking a neutral stance towards all thoughts and feelings whilst stepping back from any judgments that the mind may produce. Lastly, non-reactivity to inner experiences describes an ability to experience thoughts and feelings as transient—letting them pass by, without becoming consumed by, or absorbed in, them. The five facets were found to be internally consistent yet also moderately inter-correlated, which suggested that they were separate—but related—constructs.
Baer et al. (2006) noted that conceptualising mindfulness as a multi-faceted construct helps psychologists to better understand what mindfulness is, how it relates to other variables, and which specific skills are implicated in its practice. Based on their identification of the five facets of mindfulness, Baer et al. developed the Five Facet Mindfulness Questionnaire (FFMQ) as a multi-faceted measure of dispositional mindfulness. The measure has been shown to have good construct validity as well as good internal consistency and appropriate stability (Baer et al., 2008).

Van Dam, Hobkirk, Danoff-Burg, and Earleywine (2012) examined the psychometric properties of the FFMQ, drawing on a sample of university students (mean age 18.9 years; 70% female). The researchers utilised confirmatory factor analysis to investigate the validity of a hierarchical mindfulness model; however, they found that a correlated facets model more accurately explained the data. The researchers noted that this indicated that the FFMQ “measures components that may relate to, but do not seem to directly reflect, a latent variable of mindfulness” (p. 198). In other words, their findings suggest that the individual subscales of the FFMQ—not the total FFMQ score—should be used to measure mindfulness, since a superordinate mindfulness factor does not appear to exist. This suggestion is also consistent with research conducted by Coffey, Hartman and Fredrickson (2010), who sampled university students (mean age 19.2 years; 60% female) and found that some subscales of the FFMQ appear to have more predictive utility than others. Hence, considering scores on the individual subscales of the FFMQ appears to be more useful than looking at the FFMQ total score on its own.

The Relationship between Dispositional Mindfulness and Psychological Distress. The characteristics of a mindful disposition have been shown to be associated with emotional well-being (Brown & Ryan, 2003; Fredrickson, 2000) and broad positive physical and psychological attributes (Hoffman, Sawyer, Witt, & Oh, 2010). Several studies have provided evidence that self-reported dispositional mindfulness is linked to better psychological health outcomes, with statistically significant correlations found for samples of undergraduate university students, adult community populations, and adult clinical populations (Baer et al., 2004; Baer et al., 2006; Brown & Ryan, 2003; Chadwick et al., 2008; Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006). Moreover, according to Hayes, Strosahl and Wilson (1999), individuals with high levels of dispositional mindfulness tend to react less sensitively to their thoughts and feelings, and tend to be less emotionally affected by life stressors, in comparison with those with low levels of dispositional mindfulness.
Brown and Ryan (2003) examined the effect of dispositional mindfulness (i.e., scores on the MAAS) on psychological well-being, in a sample of university students ($n = 327$) and a community sample ($n = 239$), and found that higher levels of dispositional mindfulness are linked with greater life satisfaction, self-esteem, vitality, autonomy, competence, optimism, self-awareness, and pleasant affect. Their research also revealed that dispositional mindfulness predicts both the experience of positive emotional states and the ability to self-regulate behaviour. The researchers also conducted an eight-week mindfulness intervention with cancer patients (mean age 55.3 years; 78% female), which revealed a negative correlation between dispositional mindfulness and levels of stress and mood disturbance, even when they controlled for levels of both fatigue and pain.

In a similar vein, Bowlin and Baer (2012) examined whether dispositional mindfulness accounts for a significant percentage of the variance in psychological health when controlling for level of dispositional self-control. The researchers asked university undergraduates ($N = 280$; mean age 19.0 years; 63% female) to complete self-report measures on mindfulness, self-control, psychological well-being, and psychological distress (depression, anxiety, and stress). Results revealed that there was a positive correlation between mindfulness and psychological well-being, and a negative correlation between mindfulness and psychological distress. The researchers also found that mindfulness explained a significant amount of the variance in psychological well-being and psychological distress, even when accounting for level of self-control. Mindfulness was also shown to significantly moderate the association between self-control and psychological distress symptoms.

Using self-report measures, Rasmussen and Pidgeon (2011) examined the relationship between dispositional mindfulness (i.e., scores on the MAAS), self-esteem (i.e., scores on the Rosenberg Self-Esteem Scale [RSES; Rosenberg, 1989]) and social anxiety (i.e., scores on the Social Interaction Anxiety Scale [SIAS; Mattick & Clarke, 1998]), in a sample of university students (mean age 23.1 years; 59% female). Correlational analyses indicated that mindfulness was significantly associated with increased self-esteem and decreased social anxiety, and self-esteem was shown to be a partial mediator between mindfulness and social anxiety.

In addition to the considerable evidence showing that higher levels of dispositional mindfulness are associated with lower levels of psychological distress, there is also research to suggest that higher levels of dispositional mindfulness are linked to neurophysiological differences in brain activity (Keng et al., 2011). A study by Creswell, Way, Eisenberger and Lieberman (2007) utilised functional
neuroimaging to explore what effect dispositional mindfulness may have on the brain. The researchers drew on a sample of university students (59% female) and found that, when participants were asked to label emotions, the brains of participants with higher levels of dispositional mindfulness showed decreased bilateral activation of the amygdala and increased widespread activation of the prefrontal cortex. They also found a strong, negative correlation between activation in the prefrontal cortex and in the right amygdala in individuals with high levels of dispositional mindfulness, but not in individuals with low levels of dispositional mindfulness. Based on these findings, the researchers suggested that the prefrontal cortex may be utilised by individuals who are higher in dispositional mindfulness to inhibit the amygdala, when regulating their emotions.

Drawing on the same sample as Creswell et al. (2007), Way, Creswell, Eisenberger, and Lieberman (2010) also noted a negative association between dispositional mindfulness and resting activity in the amygdala and the medial prefrontal and parietal brain regions, and a positive association between symptoms of depression and resting activity in these regions. This finding is consistent with a previous finding in university students (73% female) that higher levels of dispositional mindfulness are linked to an increased ability to let go of negative automatic thoughts about oneself (Frewen, Evans, Maraj, Dozois, & Partridge, 2008).

The mechanisms by which mindfulness reduces psychological distress are not yet fully understood. One hypothesis is that mindfulness allows individuals to react emotionally to events in the moment and not connect them in their mind to past or future concerns (Williams, 2010). According to this hypothesis, mindfulness allows individuals to remember that the negative emotions they experience in any one moment (i.e., feeling depressed, anxious and/or stressed) are transient and, therefore, they do not dwell on them as much (Farb, Anderson, & Segal, 2012).

When an individual is truly being mindful, they are not judging or reacting to any inner experiences. However, when an individual experiences depression, they have a negative view of themselves, the world, and the future—this is known as Beck’s (1970) cognitive triad. In fact, depression, anxiety, and stress all involve negative judgments and reactions to both inner and outer experiences. Mindfulness, then, may help an individual experiencing psychological distress by allowing them to minimise their negative judgments and reactions.

The Relationship between the Five Facets of Mindfulness and Psychological Distress. There have been preliminary investigations into the relationships between the five facets of mindfulness and
depression, anxiety, and stress. Cash and Whittingham (2010) examined the five facets of mindfulness with the intention of determining which of the facets predicted symptoms of depression, anxiety, and stress. The researchers drew on a sample comprised of meditators who were recruited from Vipassana or Zen meditation organisations (n = 80), and university students (n = 26) (mean age 36.8 years; 59% female). Using hierarchical multiple regression analysis, the researchers found that non-judgment of inner experiences was a significant independent predictor of depression, anxiety, and stress, accounting for 6.9%, 10.6% and 8.7%, respectively, of the variance in levels of depression, anxiety, and stress. The researchers also found that acting with awareness was a significant independent predictor of depression, accounting for 9.1% of the variance in levels of depression. None of the three remaining facets of mindfulness (observing, describing, and non-reactivity to inner experiences) was found to be a significant independent predictor of psychological distress. Based on these findings, Cash and Whittingham suggested that non-judgment of inner experiences and acting with awareness “may be the most important mindfulness facets in predicting psychological symptoms, with Act-aware [acting with awareness] having particular relevance for depression” (p. 180).

Bränström, Duncan and Moskowitz (2011) also completed a cross-sectional study into the relationship between dispositional mindfulness and psychological functioning (depression, anxiety, and stress). The FFMQ was utilised to measure dispositional mindfulness, the Hospital Anxiety and Depression Scale (HADS; Bjelland, Dahl, Haug, & Neckelmann, 2002) was utilised to measure participants’ current state of depression and anxiety, and the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was utilised to measure perceptions of stressful events in the past month. Drawing on a non-clinical sample of the Swedish population (59% female), the researchers found that mindfulness—especially acting with awareness and non-reactivity to inner experiences—was negatively correlated with depression and anxiety. Moreover, it was found that mindfulness acted as a buffer against the negative influence of stress on psychological health—that is, the strength of the relationship between perceived stress and depressive symptoms was moderated (i.e., reduced) by higher levels of dispositional mindfulness. Based on these findings, the researchers suggested that mindfulness interventions may improve psychological health in those who are experiencing stress.

The studies by Cash and Whittingham (2010) and Bränström et al. (2011) emphasised the importance of acting with awareness, non-reactivity to inner experiences, and non-judgment of inner experiences as protective factors against psychological distress. In turn, these findings suggest that
observing and describing may be less important elements of mindfulness in relationship to psychological distress. The two studies have been the only investigations conducted, thus far, into the incremental validity of each of the five facets of mindfulness in predicting depression, anxiety, and stress. Therefore, further research should be conducted into the relationships between specific mindfulness facets and symptoms of depression, anxiety, and stress, in order to confirm and build on these findings. Improved understanding of the relationship between the five facets of mindfulness and psychological distress may enhance the development of mindfulness interventions for clinical use. Previous research (e.g., Bohlmeijer et al., 2011) has shown that dispositional mindfulness (as measured by scores on the FFMQ) can be enhanced by engagement in mindfulness-based interventions.

In summary, research suggests that dispositional mindfulness is negatively correlated with symptoms of depression, anxiety, and stress. Only a few studies, however, have investigated which of the five facets of mindfulness are significantly associated with depression, anxiety, and stress, and there is no clear consensus. Further research is, thus, needed in order to solidify understanding of the “clinically active ingredients of mindfulness” (Cash & Whittingham, 2010, p. 181) and their importance to depression, anxiety, and stress. This may in turn enhance understanding of how and why mindfulness acts as a protector against psychological distress.

**Gratitude**

How does dispositional mindfulness relate to other positive psychological constructs, such as gratitude? Gratitude has been described as the practice of recognising, in a positive way, the gifts or benefits that one has been given (Nelson, 2009). In other words, gratitude requires an individual to be aware of what they have in their life. Mindfulness may be seen as a starting point for gratitude: in order to feel grateful, one must first be aware of and attentive to one’s internal and external experiences (i.e., observing) and then one must be able to use words to express or illustrate these experiences (i.e., describing). Thus, two of the five facets of mindfulness appear to be implicated in the practice of gratitude and, consequently, mindfulness and gratitude appear theoretically linked (Chlebak, 2013).

Gratitude can be experienced as a disposition (or trait or attitude), as a mood, or as a state (McCullough, Emmons, & Tsang, 2002). The current review is concerned with dispositional gratitude, which refers to a “wider life orientation towards noticing and appreciating the positive in the world”

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2 “Appreciation”, “thankfulness” and “gratefulness” are commonly used interchangeably with “gratitude”, and are considered as synonyms for the purpose of this review.
The key adaptive function of gratitude may be that it prepares an individual to be more generous and act in a pro-social manner (McCullough, Kimeldorf, & Cohen, 2008).

Like mindfulness, gratitude has theological origins. Historically, gratitude was a virtue promoted and emphasised by the three main monotheistic religions in the world—Christianity, Islam and Judaism—as one way to lead an individual to live a fulfilling life (Emmons & Crumpler, 2000; Emmons & Kneezel, 2005). A study by Lambert, Fincham, Braithwaite, Graham, and Beach (2009) of a sample of university students (mean age 19.0 years; 74% female) found a strong positive correlation between prayer frequency and gratitude, and noted that frequency of prayer was a predictor of gratitude levels six weeks later, even when controlling for pre-experimental levels of gratitude and religiosity. Rosmarin, Pirutinsky, Cohen, Galler, and Krumrei (2011), in a sample of community dwellers (n = 140) and a sample of university students (n = 265) also found that there was a positive correlation between gratitude and “religious commitment” (p. 390).

Notwithstanding the religious origins of gratitude, researchers in recent years have begun to approach gratitude from a scientific perspective. Gratitude is often discussed in relation to mindfulness, and activities to increase state gratitude are sometimes included in mindfulness interventions (e.g., Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010).

Different assessment tools have been developed to measure dispositional gratitude (Sansone & Sansone, 2010). The most commonly utilised measure of gratitude is the Gratitude Questionnaire–Six Item Form (GQ–6; McCullough et al., 2002). The GQ–6 is a six-item questionnaire which uses a seven-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”) to measure the frequency, intensity, and density of an individual’s gratitude. McCullough and colleagues found that the items measure a one-dimensional conception of gratitude, and that the questionnaire has good internal consistency.

The Relationship between Dispositional Gratitude and Psychological Distress. While the negative correlations between dispositional mindfulness and psychological distress outcomes are relatively well established, research into the association between gratitude and psychological distress is only just emerging. Preliminary research, however, appears to indicate that gratitude is associated with enhanced emotional functioning—that is, high positive affect and life satisfaction, and low negative affect (Sansone & Sansone, 2010; Wood et al., 2010).

Sheldon and Lyubomirsky (2006) tested the effect of a gratitude intervention on a sample of undergraduate university students (N = 67; 75% female). Participants were allocated to either complete
one of two mental exercises—“counting one’s blessings (“gratitude”)” (p. 73) or “visualizing best possible selves (BPS)” (p. 73)—or to the control group, in which they were asked to pay attention to details of their day. Participants performed either the gratitude, BPS or control exercises at three points in time, with the sessions spaced two weeks apart. The researchers were interested in determining whether there would be an effect of intervention on the participants’ emotions. They found that participants in both the gratitude condition and the BPS condition immediately experienced statistically significant boosts in positive affect and reductions in negative affect, by comparison with participants in the control condition. After four weeks, these changes in mood persisted for participants in both experimental conditions, although the authors noted that BPS mental exercises appeared superior in raising and maintaining positive affect.

Wood, Joseph and Maltby (2009) assessed whether dispositional gratitude (as measured by scores on the GQ–6) predicted psychological well-being, even when controlling for both the domains and the facets of the Big Five personality traits. A sample of 201 university students (64% female) completed the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) as well as scales of psychological well-being. Data analysis revealed a small correlation between gratitude and autonomy ($r = .17$), and medium to large correlations between gratitude and sense of mastery, personal growth, positive relationships, life purpose, and self-acceptance ($rs$ ranged from .28 to .61). Most importantly, the researchers found that gratitude accounted for a significant amount of unique variance in psychological well-being, even when controlling for the Big Five personality traits.

Kerr, O’Donovan and Pepping (2014) analysed the effect of either a two-week gratitude intervention or a two-week kindness intervention on patients on a waiting list for outpatient psychological intervention (mean age 43.0 years; 75% female). The authors found that participation in either intervention—in comparison with the control condition—led to an increased sense of connectedness with others, improved life satisfaction and optimism, and reduced anxiety. Moreover, participants who received the gratitude intervention were found to reliably foster gratitude in this short period, whilst participants who received the kindness intervention were not. The brief interventions, however, did not influence general psychological function and perceived meaning in one’s life. Kerr and colleagues concluded that the emotional experiences of gratitude and kindness are both able to induce beneficial emotional change, and that both may have a role in clinical practice as “useful pre-treatment interventions that reduce the negative impact of long waiting times to receive treatment” (p. 33).
Boehm, Lyubomirsky and Sheldon (2011) were interested in exploring if positive psychological interventions were effective in increasing positive affect for a range of cultural backgrounds, given that previous studies had predominantly drawn on Caucasian samples. The researchers studied a sample of community dwellers (mean age 35.6 years; 53% female). They randomly assigned both Caucasian Americans and Asian Americans (not born in America) to either practise expressing gratitude or optimism, or list past experiences (control group). Boehm et al. found that, after six weeks, participants in both experimental conditions reported experiencing greater life satisfaction than participants in the control condition—regardless of ethnicity. Moreover, the researchers noted that Caucasian Americans in the experimental conditions showed greater improvements in life satisfaction than the Asian Americans. The authors ascribed this finding to the fact that, in individualist cultures, a high value is assigned to self-improvement—in comparison with collectivist cultures, which traditionally focus less on the self and individual goals with regard to enhancing well-being.

Gratitude has also been associated with a lower incidence of psychopathology. A large study (\(N = 2621\)) by Kendler et al. (2003) examined how different dimensions of religiosity related to lifetime risk of developing psychiatric and substance use disorders, in a sample of male and female twins drawn from the Virginia Twin Registry. Utilising logistic regression, the researchers identified that (religiously oriented) thankfulness was one factor that predicted a significantly lower lifetime risk for internalising and externalising disorders, which includes anxiety and depressive disorders. Kendler et al. were careful to emphasise, nevertheless, that the link between thankfulness and lower incidence of psychopathology was not necessarily causal. It should be noted, moreover, that this study did not specifically assess gratitude, but rather religious thankfulness, which likely measures other constructs besides gratitude. The four items that were identified as drawing on the factor of thankfulness were: (1) “I feel thankful for what I have received in life”, (2) “I feel grateful nearly every day”, (3) “I express anger at God for letting terrible things happen” (reverse scored), and (4) “I wonder whether God has abandoned me” (reverse scored). Items (3) and (4) appear to draw on constructs besides gratitude (e.g., anger and abandonment) and, thus, the study’s findings need to be considered with this qualification.

Similarly, Wood, Maltby, Gillett, Linley and Joseph (2008) conducted two longitudinal studies in order to analyse the relationships between dispositional gratitude, perceived social support, stress and depression while experiencing a life transition—starting university. Participants were first year undergraduate university students (51% female), who completed all measures both before and after their
first semester at university. The researchers utilised structural equation modelling, which revealed a direct model in which gratitude resulted in an increase in perceived social support and decreases in stress and depressive symptomatology. Moreover, their analyses revealed that no variable led to gratitude. The researchers noted that gratitude appeared to directly cultivate perceived social support and act as a protective factor against depression and stress.

Like mindfulness, the mechanisms by which gratitude reduces psychological distress have not been fully explored. Nelson (2009) noted that gratitude invokes positive feelings outwardly to both the gift and the source of the gift (i.e., another person, a God, or the universe) and, thus, fostering a sense of gratitude leads to reductions in negative affect such as self-pity and anger. Gratitude, therefore, requires a shift in attention—moving away from the self, and onto others—and a change in perspective to an outward focus (i.e., on the gift and the source of the gift), which then leads to a change in emotional state (Nelson, 2009). In this way, when an individual is practising gratitude, they are not making negative judgments or reacting negatively to inner or outer experiences—as one does when one is depressed, anxious or stressed. Instead, gratitude may help an individual experiencing psychological distress by moving their focus away from negative inner and outer experiences, and putting it onto positive inner and outer experiences.

In sum, only a handful of studies have investigated the link between dispositional gratitude and psychological distress. Early evidence indicates that dispositional gratitude is negatively correlated with symptoms of depression, anxiety, and stress; however, further research should specifically examine the relationships between these variables.

The Five Facets of Mindfulness and Dispositional Gratitude

As described earlier, mindfulness appears to be implicated in the practice of gratitude and, thus, the two positive psychological constructs are likely linked. Two facets of mindfulness, observing and describing, appear to be essential for gratitude to occur. One of the other facets of mindfulness, acting with awareness, would not appear to be essential for gratitude to occur, as gratitude can involve directing one’s awareness to aspects of the past or the future, and not just to the present moment. Moreover, the two remaining facets of mindfulness, non-judgment of inner experiences and non-reactivity to inner experiences, would likely not be implicated in the practice of gratitude at all, given that gratitude involves making (positive) judgments about, and reacting to, one’s inner and outer experiences.
Preliminary research suggests that there are statistically significant links between dispositional mindfulness and dispositional gratitude (e.g., McCullough, 2002). Only one study to date, however, has directly explored the association between the five facets of mindfulness and dispositional gratitude. Ahrens, Breetz and Forbes (2011) were interested in exploring the relationship between the five facets of mindfulness and dispositional gratitude, and sought to determine if any of the five facets predicted gratitude after positive events had been experienced. The researchers drew on a sample of university students (N = 89; mean age 20.0 years; 73% female), and measured dispositional gratitude (utilising scores on the GQ-6) and dispositional mindfulness (utilising scores on the FFMQ) of participants. Then, participants were asked to complete an online gratitude diary every day for two weeks, in which they wrote about a positive event that had not been caused by themselves or others. Each day participants also completed the State Event Gratitude (SEG) scale (Kirby & Smith, 2010), in which they chose, from 11 groups of adjectives, which group best described their emotional response to gratitude-inducing situations, with gratitude being contained within the “grateful, thankful” group. They were also asked to report which emotions they had experienced when writing the diary entry, and if any behavioural urges were present. On average, participants wrote 11.43 daily gratitude entries over the two-week period.

Analyses by Ahrens et al. (2011) revealed a moderate and positive correlation between dispositional mindfulness and dispositional gratitude. The researchers also found that, of the five facets of mindfulness, dispositional gratitude was only significantly correlated with observing and describing. This finding provides preliminary evidence that dispositional mindfulness and dispositional gratitude are indeed linked, and that some of the five facets of mindfulness appear to be more relevant to the practice of gratitude than others. However, further research is needed in order for these findings to be replicated and for the links between these constructs to be more precisely determined.

Conclusions

This review has evaluated research in the fields of mindfulness and gratitude, and demonstrated that there are significant gaps in the literature. As outlined in this review, there is an extensive body of literature documenting the links between dispositional mindfulness and psychological distress. There has been comparatively less research, however, into the links between dispositional gratitude and psychological distress, and no studies that have evaluated the impact of both dispositional mindfulness and dispositional gratitude on psychological distress. Moreover, no study has comprehensively explored
the relationship between the five facets of mindfulness and gratitude, and how each of these variables uniquely contributes to psychological distress.

These gaps in the literature should be addressed by research that investigates how dispositional mindfulness, and particularly its facets, and dispositional gratitude relate to each other and to depression, anxiety, and stress. Given that the concepts of mindfulness and gratitude are somewhat intertwined, future research should also examine whether dispositional gratitude significantly predicts psychological distress outcomes, even when controlling for the five facets of mindfulness. This will assist researchers to establish to what degree dispositional gratitude diminishes levels of depression, anxiety, and stress—over and above the contribution made by the five facets of mindfulness. Understanding the extent of the relationship between dispositional mindfulness and dispositional gratitude will have implications for how clinical interventions (e.g., mindfulness training, gratitude practice) are designed and applied in a wide range of clinical settings. This research will add to the growing body of knowledge in this field, in turn leading to the refinement of existing mindfulness- and gratitude-based interventions. Ultimately, this will allow psychologists to provide highly efficacious, evidence-based treatment for individuals who present with anxiety and depressive disorders.
References


doi:10.1016/j.cpr.2015.01.006


How Do the Five Facets of Mindfulness and Dispositional Gratitude Relate to Depression, Anxiety, and Stress?

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Funding
The authors disclose that the School of Psychology at the University of Newcastle provided funding in order to compensate the participants for their contribution to this study.

Conflict of Interest
Associate Professor Ross Wilkinson is an employee of the University of Newcastle.

Authors’ Contributions
Madeline Sarah Collings Begg contributed to the conception and design of the research, collection, analysis, and interpretation of data, drafting of the thesis and article, and final approval of the version to be published. Associate Professor Ross Wilkinson contributed to the conception and design of the research, collection, analysis, and interpretation of data, critical revision of the thesis and article, and final approval of the version to be published.

Acknowledgements
The authors would like to thank the numerous participants in this study who generously offered their time in completing the survey.
How Do the Five Facets of Mindfulness and Dispositional Gratitude Relate to Depression, Anxiety, and Stress?
Abstract

Research has revealed that positive psychology strategies, such as mindfulness and gratitude enhancement, can optimise psychological health and protect against depression, anxiety, and stress. Little research, however, has investigated how the five facets of mindfulness may relate to gratitude, and how both mindfulness and gratitude may protect against psychological distress. The current study aimed to investigate the relationships between the five facets of mindfulness, dispositional gratitude, and psychological distress outcomes. From an online survey of 649 adults (510 females), correlational analyses indicated that both dispositional mindfulness and dispositional gratitude were negatively correlated with depression, anxiety, and stress, and that dispositional gratitude was positively correlated with all five facets of mindfulness. Hierarchical multiple regression analysis (MRA) revealed that, even when controlling for the five facets of mindfulness, dispositional gratitude was predictive of depression, anxiety, and stress. MRA also showed that, when controlling for dispositional gratitude, the five facets of mindfulness differentially predicted psychological distress. Limitations of the study, and directions for future research, are discussed.

Keywords: dispositional mindfulness, FFMQ, dispositional gratitude, depression, anxiety, stress
How Do the Five Facets of Mindfulness and Dispositional Gratitude Relate to Depression, Anxiety, and Stress?

By age 21, half of all individuals will have met diagnostic criteria for at least one mental health disorder (Copeland et al. 2011). Mental health problems affect the ability to engage in employment (e.g., Kessler and Frank 1997; Wittchen and Jacboi 2005) and markedly compromise quality of life for individuals and their families (e.g., Harpin 2005; Mendlowicz and Stein 2014; Northouse et al. 2002; Sawyer et al. 2002). Anxiety disorders and depressive disorders are the two most common kinds of emotional disorders, with 12-month prevalence in Australia of 14.4% for any anxiety disorder and 6.2% for any depressive disorder (Australian Bureau of Statistics 2008).

As part of the ‘third wave’ of psychological therapies (Hayes, 2004), interventions based on positive psychology constructs, such as mindfulness and gratitude, have garnered an increasing research base supporting their utility in alleviating distress and enhancing psychological health (Kahl et al. 2012; Keng et al. 2011). Little research, however, has investigated how different aspects of mindfulness may relate to gratitude, or how the combined effects of both mindfulness and gratitude may protect against psychological distress. The current study investigates the relationships between the five facets of mindfulness, dispositional gratitude, and psychological distress.

Mindfulness

Mindfulness refers to the practice of purposefully focusing one’s attention on the present moment in an open, receptive, curious and non-judgmental way (Kabat-Zinn 1994). The origins of mindfulness lie in ancient Buddhist principles, practices and perspectives (Kabat-Zinn 2003). Despite its religious origins, mindfulness can be viewed as a non-religious, evidence-based set of beliefs and practices that have been integrated into mainstream modern medicine and psychology (Keng et al. 2011). Indeed, research into mindfulness, as both a positive psychological construct and as an effective intervention in clinical settings, has burgeoned since the 1980s (Gu et al. 2015; Keng et al. 2011). Mindfulness now plays a central role in a number of psychological interventions utilised in clinical practice (Cash and Whittingham 2010), including Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn 1982; Kabat-Zinn 1990), Mindfulness-Based Cognitive Therapy (MBCT; Segal et al. 2002).

1 Twelve-month prevalence refers to, “persons with a lifetime mental disorder who experienced symptoms in the 12 months prior to the survey interview” (Australian Bureau of Statistics 2008 p. 4).
Dialectical Behaviour Therapy (DBT; Linehan 1993a; Linehan 1993b), Acceptance and Commitment Therapy (ACT; Hayes et al. 1999), and Relapse Prevention (RP; Marlatt and Gordon 1985).

State mindfulness refers to the state of being mindful, and is a skill that can be achieved through practising mindfulness meditation (Cahn and Polich 2006). Conversely, dispositional mindfulness, or trait mindfulness, refers to one’s ability and willingness to maintain awareness and focused attention in everyday activities; it occurs naturally without intentional focus or active development (Brown and Ryan 2003). Dispositional mindfulness varies both within and between individuals and can be quantified empirically (Black 2011).

Baer et al. (2006) proposed that dispositional mindfulness could be broken down into five main facets, or dimensions:

1. **Observing** – being aware of and attentive to thoughts, emotions, sensations and internal and external experiences
2. **Describing** – using words to express or illustrate one’s experiences
3. **Acting with awareness** – focusing attention on the present moment
4. **Non-judgment of inner experiences** – taking a neutral stance towards all thoughts and feelings whilst stepping back from any judgments that the mind may produce, and
5. **Non-reactivity to inner experiences** – experiencing thoughts and feelings as transient and letting them pass by without becoming consumed by, or absorbed in, them.

The researchers noted that conceptualising mindfulness as a multi-faceted construct aids understanding of what mindfulness is, how it relates to other variables, and which specific skills are implicated in its practice. Based on their identification of the five facets of mindfulness, Baer et al. developed the Five Facet Mindfulness Questionnaire (FFMQ) as a multi-dimensional measure of dispositional mindfulness.

Van Dam et al. (2012) examined the psychometric properties of the FFMQ, drawing on a sample of university students (mean age 18.9 years; 70% female). The researchers utilised confirmatory factor analysis to investigate the validity of a hierarchical mindfulness model; however, they found that a correlated facets model more accurately explained the data. The researchers noted that this indicated that the FFMQ “measures components that may relate to, but do not seem to directly reflect, a latent variable of mindfulness” (p. 198). In other words, the findings suggest that the individual subscales of the FFMQ—not the total FFMQ score—should be used to measure mindfulness, since a superordinate mindfulness factor does not appear to exist. This suggestion is also consistent with research conducted by
Coffey et al. (2010), who sampled university students (men age 19.2 years; 60% female) and found that some subscales of the FFMQ appear to have more predictive utility than others. Hence, considering scores on the individual subscales of the FFMQ appears to be more useful than looking at the FFMQ total score.

The Relationship between Dispositional Mindfulness and Psychological Distress. Higher levels of dispositional mindfulness have been consistently linked with better psychological health outcomes in a variety of clinical and non-clinical samples. The characteristics of a mindful disposition have been shown to be associated with enhanced emotional well-being (Brown and Ryan 2003; Fredrickson 2000) and broad positive physical and psychological attributes (Hoffman et al. 2010).

Brown and Ryan (2003), who studied a sample of university students ($n = 327$) and community dwellers ($n = 239$), found associations between dispositional mindfulness and greater life satisfaction, self-esteem, vitality, autonomy, competence, optimism, self-awareness, and pleasant affect. The researchers also found that dispositional mindfulness predicts both the experience of positive emotional states and the ability to self-regulate behaviour. In a similar vein, Bowlin and Baer (2012) studied university undergraduates (mean age 19.0 years; 63% female), and found a positive correlation between mindfulness and psychological well-being, and a negative correlation between mindfulness and psychological distress. Bowlin and Baer also noted that mindfulness accounted for a significant amount of the variance in psychological well-being and psychological distress, even when accounting for self-control. Dispositional mindfulness has also been found to correlate significantly with increased self-esteem and decreased social anxiety, according to Rasmussen & Pidgeon (2011), who studied a sample of university students (mean age 23.1 years; 59% female).

There have been preliminary investigations into the relationships between the five facets of mindfulness and depression, anxiety, and stress. In a sample comprised of meditators who were recruited from Vipassana or Zen meditation organisations ($n = 80$), and university students ($n = 26$) (mean age 36.8 years; 59% female), Cash and Whittingham (2010) found that: (1) non-judgment of inner experiences was significantly correlated with reductions in symptoms of depression, anxiety, and stress; and (2) acting with awareness was significantly correlated with reductions in symptoms of depression. On the other hand, a study by Brönström et al. (2011) of a non-clinical sample of the Swedish population (59% female) found that dispositional mindfulness—particularly acting with awareness and non-reactivity to inner experiences—was negatively correlated with depression and anxiety. The strength of the relationship
between perceived stress and depressive symptoms was also found to be moderated by level of dispositional mindfulness, thus suggesting that a mindful disposition may protect against depression in those who are experiencing stress. These two studies emphasised that acting with awareness, non-reactivity to inner experiences, and non-judgment of inner experiences may be protective factors against psychological distress, thereby suggesting that observing and describing may be less important elements of mindfulness in relation to psychological distress.

In summary, research suggests that dispositional mindfulness is negatively correlated with symptoms of depression, anxiety, and stress. However, only a few studies have investigated which of the five facets of mindfulness are significantly associated with depression, anxiety, and stress, and there is no clear consensus. Further research is, thus, needed in order to solidify understanding of the relationship between the five facets of mindfulness and psychological distress, which may, in turn, enhance understanding of how and why mindfulness acts as a protector against psychological distress.

Gratitude

Gratitude has been described as the practice of recognising, in a positive way, the gifts or benefits that one has been given (Nelson 2009). In other words, gratitude requires an individual to be aware of what they have in their life. Mindfulness may be seen as a starting point for gratitude: in order to feel grateful, one must first be aware of and attentive to one’s internal and external experiences (i.e., observing) and then one must be able to use words to express or illustrate these experiences (i.e., describing). Thus, two of the five facets of mindfulness appear to be implicated in the practice of gratitude and, consequently, mindfulness and gratitude appear theoretically linked (Chlebak 2013).

Gratitude can be considered as a disposition (or trait or attitude), as a mood, or as a state (McCullough et al. 2002). Dispositional gratitude refers to a “wider life orientation towards noticing and appreciating the positive in the world” (Wood et al. 2010 p. 2). Like mindfulness, gratitude has theological origins. Historically, gratitude was a virtue promoted and emphasised by the three main monotheistic religions in the world—Christianity, Islam and Judaism—as one way to lead an individual to live a fulfilling life (Emmons and Crumpler 2000; Emmons and Kneezel 2005). Notwithstanding the religious origins of gratitude, researchers in recent years have begun to approach gratitude from a scientific perspective.

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2 “Appreciation”, “thankfulness”, and “gratefulness” are commonly used interchangeably with “gratitude”, and are considered as synonyms for the purpose of the present study.
The Relationship between Dispositional Gratitude and Psychological Distress. While the negative correlation between dispositional mindfulness and psychological distress is relatively well established, research into the association between dispositional gratitude and psychological distress is only just emerging. Preliminary research appears to indicate that gratitude is associated with enhanced emotional functioning—that is, high positive affect and life satisfaction, and low negative affect (Sansone and Sansone 2010; Wood et al. 2010). Indeed, Wood et al. (2009) studied a sample of 201 university students (64% female) and found that gratitude accounted for a significant amount of the variance in psychological well-being, even when controlling for the Big Five personality traits.

Gratitude has also been associated with lower incidence of psychopathology. A large study (N = 2621) of a sample of male and female twins drawn from the Virginia Twin Registry found that religiously oriented thankfulness predicted significantly lower risk of mental health problems, such as depression and anxiety, across the lifetime (Kendler et al. 2003). Another study by Wood et al. (2008) examined the relationships between dispositional gratitude, stress and depression in first year undergraduate university students (51% female). Structural equation modelling revealed that gratitude directly led to decreases in symptoms of stress and depression, thus acting as a protective factor.

In sum, only a handful of studies have investigated the link between dispositional gratitude and psychological distress. Early evidence indicates that dispositional gratitude is negatively correlated with symptoms of depression, anxiety, and stress; however, there is an imperative for further research that specifically examines these variables.

The Five Facets of Mindfulness and Dispositional Gratitude

As described earlier, mindfulness appears to be implicated in the practice of gratitude and, thus, the two positive psychological constructs are likely linked. Two facets of mindfulness, observing and describing, appear to be essential for gratitude to occur. However, one of the other facets of mindfulness, acting with awareness, does not appear to be essential for gratitude to occur, as gratitude can involve directing one’s awareness to aspects of the past or the future, and not just to the present moment. Moreover, the remaining facets of mindfulness, non-judgment of inner experiences and non-reactivity to inner experiences, would likely not be implicated in the practice of gratitude at all, given that gratitude involves making judgments about, and reacting to, one’s experiences.

Preliminary research suggests that there are statistically significant links between dispositional mindfulness and dispositional gratitude (e.g., McCullough 2002). However, only one study to date has
directly explored the association between the five facets of mindfulness and dispositional gratitude. Ahrens et al. (2011), drawing on a sample of university students ($N = 89$; mean age 20.0 years; 73% female), found a positive correlation between dispositional mindfulness and dispositional gratitude and that, of the five facets of mindfulness, dispositional gratitude was only significantly correlated with observing and describing. This finding provides preliminary evidence that dispositional mindfulness and dispositional gratitude are indeed linked, and that some of the five facets of mindfulness are more relevant to the practice of gratitude than others. However, further research is needed in order for these findings to be replicated and for the links between the two constructs to be better understood.

**The Present Study**

Whilst there is an extensive body of literature documenting the links between dispositional mindfulness and psychological distress, there is comparatively less research into the link between dispositional gratitude and psychological distress, and no studies have specifically evaluated the impact of both dispositional mindfulness and dispositional gratitude on psychological distress. Moreover, no study has comprehensively explored the relationship between the five facets of mindfulness and gratitude, or how these individual facets uniquely contribute to psychological health. Therefore, the present study aims to investigate how dispositional mindfulness (specifically, its five facets) and dispositional gratitude relate to each other and to depression, anxiety, and stress. Given that the concepts of mindfulness and gratitude are somewhat intertwined, this study also aims to determine whether dispositional gratitude significantly predicts psychological distress outcomes, even when controlling for the five facets of mindfulness. Given the findings from previous studies, it is hypothesised that:

**Hypothesis 1:** The five facets of mindfulness are differentially correlated with depression, anxiety, and stress, such that:

a. Acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences are moderately and negatively correlated with depression, anxiety, and stress

b. Observing and describing are not significantly correlated with depression, anxiety, and stress

**Hypothesis 2:** Dispositional gratitude is moderately and negatively correlated with depression, anxiety, and stress
Hypothesis 3: The five facets of mindfulness are differentially correlated with dispositional gratitude, such that:

c. Observing and describing are moderately and positively correlated with dispositional gratitude

d. Acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences are not significantly correlated with dispositional gratitude; and

Hypothesis 4: Dispositional gratitude predicts depression, anxiety, and stress, beyond the variance accounted for by the five facets of mindfulness.

Method

Participants

Overall, 654 participants were recruited to complete an online questionnaire. After multivariate outliers were deleted, 649 participants remained (510 females, 79%). The mean age of participants was 30.6 years (range = 17–82 years). Participation was restricted to Australian residents aged 18 years or older who had access to a computer and the internet. Participants were undergraduate psychology students at the University of Newcastle (n = 226) and members of the general population (n = 423). Eligible undergraduate psychology students were recruited through a university online system and received credit points for subjects they were enrolled in, if they participated in the study. Participants from the general population were recruited via the Hunter Medical Research Institute (HMRI) volunteer register, the Relationships and Psychological Health (RAPH) Lab website, Facebook, and posters placed around the university campus. Volunteers from the general population were given the option of being entered in a lottery with the chance to win one of 24 $50 gift vouchers for taking part in the study. All participants were able to withdraw from the research at any time. The study received approval from the University of Newcastle Human Research Ethics Committee (H-2014-0210). The online participant information statement (see Appendix A) and consent form (see Appendix B) were developed in adherence with the standards outlined by the National Statement on Ethical Conduct in Human Research 2007 (National Health and Medical Research Council 2007).

Design

A cross-sectional design was implemented. The independent variables were scores on the five subscales of the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al. 2006) and scores on the Gratitude Questionnaire–Six Item Form (GQ–6; McCullough et al. 2002). The dependent variables were
scores on the three subscales of the Depression Anxiety Stress Scale–21 Item Form (DASS–21; Lovibond and Lovibond 1995).

**Measures**

Participants’ scores on 12 empirically supported scales were collected as part of a wider study conducted over a two-year period. However, only scores on the following three scales were included in data analysis for the present study.

**Five Facet Mindfulness Questionnaire.** The Five Facet Mindfulness Questionnaire (FFMQ) is a 39-item questionnaire, which utilises a five-point Likert scale (1 = “never or very rarely true”, 5 = “very often or always true”) to measure dispositional mindfulness across five subscales:

1. Observing (8 items; e.g., “When I’m walking, I deliberately notice the sensations of my body moving”)
2. Describing (8 items; e.g., “I’m good at finding words to describe my feelings”)
3. Acting with Awareness (8 items, reverse scored; e.g., “When I do things, my mind wanders off and I’m easily distracted”)
4. Non-judgment of Inner Experiences (8 items, reverse scored; e.g., “I criticise myself for having irrational or inappropriate emotions”), and
5. Non-reactivity to Inner Experiences (7 items; e.g., “I perceive my feelings and emotions without having to react to them”).

Baer et al. (2008) have shown support for the construct validity of the FFMQ, and the subscales have been found to have acceptable to excellent internal consistency (.75 > α < .91; Baer et al. 2006). The full questionnaire is included in Appendix C.

**Gratitude Questionnaire–Six Item Form.** The Gratitude Questionnaire–Six Item Form (GQ–6) is a six-item questionnaire, which utilises a seven-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”) to measure the frequency, intensity, and density of an individual’s gratitude (example item: “I have so much in life to be thankful for”). The full questionnaire is included in Appendix D. Chen et al. (2009) have shown support for the construct validity of the GQ–6, and the scale has been found to have good internal consistency in adult samples (α = .82; McCullough et al. 2002).

**Depression Anxiety Stress Scale–21 Item Form.** The Depression Anxiety Stress Scale–21 Item Form (DASS–21) is a 21-item questionnaire, which utilises a four-point Likert scale (0 = “did not apply to me at all”, 3 = “applied to me very much, or most of the time”) to measure bodily symptoms and
negative affect across three subscales: Depression (7 items; e.g., “I felt down-hearted and blue”), Anxiety (7 items; e.g., “I felt I was close to panic”), and Stress (7 items; e.g., “I found it hard to wind down”). The full questionnaire is included in Appendix E. Lovibond and Lovibond (1995) have shown support for the construct validity of the DASS–21, and also found that its subscales have good to excellent internal consistency (.81 > α < .91).

Procedure

Participants who completed the online consent form were directed to the online survey. Those that did not give consent were unable to access the survey. The questionnaire was administered using LimeSurvey software. Participants answered 270 questions based on 12 empirically supported scales, along with demographic information including age, sex, ethnicity, relationship status, and occupation. Completion time was approximately 45 minutes. One hundred and twenty participants started the questionnaire but did not complete it and these data are not included in the current study.

Data analysis

The data were screened for non-completion, normality, and univariate and multivariate outliers. Depression was positively skewed, however, the statistical methods employed are robust to deviations from normality and, thus, it was not transformed. The procedure outlined by Tabachnick and Fidell (2013) was employed to examine multivariate outliers using Mahalanobis’ distance criteria. Five multivariate outliers were detected and deleted from the data. After screening, 506 cases remained. Data were analysed using correlational analysis and hierarchical linear regression analysis.

Results

Relationships between Variables

To assess the size and direction of the linear relationship between the five facets of mindfulness, dispositional gratitude, and depression, anxiety, and stress, bivariate Pearson’s product-moment correlation coefficients (r) were calculated. For the complete correlation matrix, see Table 1.

The five facets of mindfulness and depression, anxiety, and stress. Scores on the Depression subscale of the DASS–21 were moderately and negatively correlated with Acting with Awareness, Non-judgment of Inner Experiences, and Non-reactivity to Inner Experiences, and weakly and negatively correlated with Observing and Describing. Scores on the Anxiety subscale of the DASS–21 were moderately and negatively correlated with Non-judgment of Inner Experiences, and weakly and negatively correlated with Describing, Acting with Awareness, and Non-reactivity to Inner Experiences.
The correlation between the Anxiety subscale of the DASS–21 and Observing was non-significant.
Scores on the Stress subscale of the DASS–21 were moderately and negatively correlated with Acting with Awareness, Non-judgment of Inner Experiences, and Non-reactivity to Inner Experiences, and weakly and negatively correlated with Observing and Describing.

**Dispositional gratitude and depression, anxiety, and stress.** Total scores on the GQ–6 were negatively correlated with the Depression, Anxiety, and Stress subscales of the DASS–21; these correlations were moderate, small and moderate in size, respectively.

**The five facets of mindfulness and dispositional gratitude.** Scores on the GQ–6 were moderately and positively correlated with Observing, Describing, Non-judgment of Inner Experiences, and Non-reactivity to Inner Experiences, and weakly and positively correlated with Acting with Awareness.

**Predictors of Depression, Anxiety, and Stress**

To test the hypothesis that dispositional gratitude can account for a significant proportion of the variance in levels of depression, anxiety, and stress, beyond that already accounted for by dispositional mindfulness, hierarchical multiple regression analysis (MRA) was employed. At step 1, sex and age were added into the regression equation to control for their effects. At step 2, the five facets of mindfulness were added into the regression equation. At step 3, dispositional gratitude was added into the regression equation. Unstandardised (B) and standardised (β) regression coefficients for each predictor, at each step of the hierarchical MRA, are reported in Table 2 for depression, Table 3 for anxiety, and Table 4 for stress.

**Depression.** On step 1 of the hierarchical MRA, sex and age accounted for 3.6% of the variance in levels of depression, $R^2 = .036, F(2, 503) = 9.50, p < .001$. On step 2, the five facets of mindfulness were added to the regression equation, and accounted for an additional 29.0% of the variance, $\Delta R^2 = .290, \Delta F(5, 498) = 42.90, p < .001$. On step 3, dispositional gratitude was added, and accounted for an additional 7.1% of the variance in depression, $\Delta R^2 = .071, \Delta F(1, 497) = 58.20, p < .001$. In combination, the eight predictor variables explained 39.7% of the variance in levels of depression, $R^2 = .397$, adjusted $R^2 = .387, F(8, 497) = 40.92, p < .001$. By the conventions of Cohen (1988), a combined effect of this magnitude can be considered medium ($f^2 = .19$).

As seen in Table 2, there were six significant predictors of depression in the final regression model: sex, four of the five facets of mindfulness (observing, acting with awareness, non-judgment of
inner experiences, and non-reactivity to inner experiences), and dispositional gratitude. Describing was not a significant predictor of depression in either step 2 or 3, but observing, which was not initially a significant predictor, became significant after the entry of gratitude in step 3. In contrast to the other facets of mindfulness, the beta coefficient for observing was positive at step 3. This indicated that, when controlling for dispositional gratitude, higher levels of observing actually predicted higher levels of depression. In other words, suppression was occurring, given that the zero order correlation between observing and depression was different in the presence of other variables (Tabachnick & Fidell, 2013).

Overall, dispositional gratitude added to the prediction of depression, after controlling for the five facets of mindfulness. The beta coefficient for dispositional gratitude was the largest out of the six significant predictors in the model at step 3.

**Anxiety.** On step 1 of the hierarchical MRA, sex and age accounted for 4.2% of the variance in levels of anxiety, $R^2 = .042$, $F(2, 503) = 10.91$, $p < .001$. On step 2, the five facets of mindfulness were added to the regression equation, and accounted for an additional 20.0% of the variance, $\Delta R^2 = .200$, $\Delta F(5, 498) = 26.20$, $p < .001$. On step 3, dispositional gratitude was added, and accounted for an additional 0.7% of the variance in anxiety, $\Delta R^2 = .007$, $\Delta F(1, 497) = 4.94$, $p = .027$. In combination, the eight predictor variables explained 24.9% of the variance in levels of anxiety, $R^2 = .249$, adjusted $R^2 = .237$, $F(8, 497) = 20.56$, $p < .001$. By the conventions of Cohen (1988), a combined effect of this magnitude can be considered small ($f^2 = .07$).

As seen in Table 3, there were five significant predictors of anxiety in the final regression model: age, three of the five facets of mindfulness (observing, non-judgment of inner experiences, and non-reactivity to inner experiences), and dispositional gratitude. Unlike for depression, acting with awareness was not a significant predictor of anxiety in either step 2 or 3. Describing was a significant predictor in step 2 but, after the entry of gratitude in step 3, it became non-significant. In contrast to the other facets of mindfulness, the beta coefficient for observing was positive at step 3. This indicated that, when controlling for dispositional gratitude, higher levels of observing actually predicted higher levels of anxiety. In other words, suppression was occurring, given that the zero order correlation between observing and anxiety was different in the presence of other variables (Tabachnick & Fidell, 2013). Overall, dispositional gratitude added to the prediction of anxiety, after controlling for the five facets of mindfulness; however, the variance accounted for by dispositional gratitude was comparably less for
anxiety than it was for depression. The beta coefficient for dispositional gratitude was the smallest out of the five significant predictors in the model at step 3.

**Stress.** On step 1 of the hierarchical MRA, sex and age accounted for 4.2% of the variance in levels of stress, $R^2 = .042$, $F(2, 503) = 10.92$, $p < .001$. On step 2, the five facets of mindfulness were added to the regression equation, and accounted for an additional 30.3% of the variance, $\Delta R^2 = .303$, $\Delta F(5, 498) = 46.03$, $p < .001$. On step 3, dispositional gratitude was added, and accounted for an additional 1.6% of the variance in stress, $\Delta R^2 = .016$, $\Delta F(1, 497) = 12.36$, $p < .001$. In combination, the eight predictor variables explained 36.0% of the variance in levels of stress, $R^2 = .360$, adjusted $R^2 = .350$, $F(8, 497) = 35.01$, $p < .001$. By the conventions of Cohen (1988), a combined effect of this magnitude can be considered medium ($f^2 = .15$).

As seen in Table 4, there were six significant predictors of stress in the final regression model: age, four of the five facets of mindfulness (observing, acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences), and dispositional gratitude. As in depression, acting with awareness was a significant predictor of stress (note, this was not the case for anxiety). As in depression, describing was not a significant predictor of stress in either step 2 or 3 but observing, which was not initially a significant predictor, became significant after the entry of gratitude in step 3. In contrast to the other facets of mindfulness, the beta coefficient for observing was positive at step 3. This indicated that, when controlling for dispositional gratitude, higher levels of observing actually predicted higher levels of stress. In other words, suppression was occurring, given that the zero order correlation between observing and stress was different in the presence of other variables (Tabachnick & Fidell, 2013). Overall, dispositional gratitude added to the prediction of stress, after controlling for the five facets of mindfulness; however, the variance accounted for by dispositional gratitude was comparably less for stress than it was for depression. The beta coefficient for dispositional gratitude was the fourth largest out of the six significant predictors in the model at step 3.

**Discussion**

The present study aimed to investigate how the five facets of mindfulness and dispositional gratitude relate to each other and to psychological distress, and also to determine whether dispositional gratitude is a significant predictor of psychological distress, even when controlling for the five facets of mindfulness. Overall, the initial hypotheses were largely supported. Specifically, in the sample, it was found that: (1) greater dispositional mindfulness and dispositional gratitude were both associated with less
psychological distress; (2) there was a varied pattern of relationships between the five facets of mindfulness and dispositional gratitude; and (3) dispositional gratitude was predictive of less psychological distress (especially depression), even when controlling for the five facets of mindfulness.

**Interpretation of Results and Links to Previous Research**

**Relationships between variables.**

*The five facets of mindfulness and depression, anxiety, and stress.* As hypothesised, acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences were all negatively correlated with depression, anxiety, and stress, although these correlations were stronger than expected for depression and stress. Contrary to the hypotheses, weak negative correlations were found between observing and depression, and observing and stress (although there was no significant correlation between observing and anxiety), and weak negative correlations were found between describing and depression, anxiety, and stress.

The negative direction of these correlations indicate that the five facets of mindfulness may indeed be protective factors against the development of depression, anxiety, and stress. The findings also indicate that all five of the facets of mindfulness were, at least weakly, related to depression, anxiety, and stress (with the exception of the relationship between observing and anxiety), but that these relationships vary in their strength. Some of the five facets of mindfulness were more strongly linked with lower scores on psychological distress outcome measures than others.

Although the results were not exactly as hypothesised, a general trend was found in which acting with awareness, non-judgment of inner experiences, and non-reactivity to inner experiences all correlated more strongly with the psychological distress measures than observing and describing. These findings are in line with findings from previous research by Cash and Whittingham (2010) and Bränström et al. (2011).

*Dispositional gratitude and depression, anxiety, and stress.* As hypothesised, dispositional gratitude was moderately and negatively correlated with depression and stress, although only weakly and negatively correlated with anxiety. In other words, a grateful disposition was linked with less symptoms of depression and stress, and with less symptoms of anxiety, although the latter association was not as strong as the former two associations. These findings are in line with previous research that has found a negative association between dispositional gratitude and psychological distress in general (e.g., Kendler et al. 2003; Wood et al. 2008) and support the notion that dispositional gratitude—like dispositional
mindfulness—may be a protective factor against the development of psychological distress. However, further research is needed to replicate and confirm these findings.

**The five facets of mindfulness and dispositional gratitude.** As hypothesised, observing and describing were both moderately positively correlated with dispositional gratitude. However, contrary to that which was originally hypothesised, the remaining facets of mindfulness were also significantly correlated with dispositional gratitude—with non-judgment of inner experiences and non-reactivity to inner experiences both being moderately positively correlated with dispositional gratitude, and acting with awareness being weakly positively correlated with dispositional gratitude. Whereas Ahrens et al. (2011) found that dispositional gratitude was only significantly correlated with observing and describing, the findings of the present study indicate that all five of the facets of mindfulness are significantly associated with dispositional gratitude. This may be the case because the sample size of the present study provided sufficient power to detect these significant associations.

Importantly, the weak to moderate correlations between the five facets of mindfulness and dispositional gratitude in this study indicate that dispositional gratitude—whilst linked to mindfulness—is a separate construct that is not wholly represented by measures of mindfulness such as the FFMQ. Thus, as dispositional gratitude is not merely an element of dispositional mindfulness, there is justification for examining dispositional gratitude independently in future research, and perhaps studying the efficacy of gratitude practice as a clinical intervention in its own right.

**Predictors of depression, anxiety, and stress.**

**The role of dispositional gratitude.** As hypothesised, even when controlling for the five facets of mindfulness, dispositional gratitude added to the prediction of depression, anxiety, and stress. This indicates that dispositional gratitude, whilst somewhat intertwined with dispositional mindfulness, is a significant predictor of psychological distress in its own right. Notably, dispositional gratitude was found to predict more variance in levels of depression than any of the five facets of mindfulness; however, this was not the case for anxiety or stress. Gratitude-enhancing exercises are sometimes included in mindfulness interventions (e.g., Kimbrough et al. 2010), and this finding suggests that gratitude practice, in its own right, may be beneficial for individuals with depression. This finding is not particularly surprising, given that gratitude involves noticing the positives in one’s life, and depression involves an unhealthy focus on a negative triad of beliefs about oneself, the world, and the future (Beck et al. 1979).
Depression and the five facets of mindfulness. Not all of the five facets of mindfulness were found to be significant predictors of depression. The ability to use words to express or illustrate one’s experiences (i.e., describing) was not found to contribute significantly to variability in levels of depression. The ability to be aware of and attend to internal and external experiences (i.e., observing) was not initially a significant predictor of depression, but became significant after the entry of dispositional gratitude. Importantly, the beta coefficient for observing at step 3 was, in fact, positive. This indicates that observing is not inherently a significant predictor of depression, but that when dispositional gratitude is accounted for, observing actually predicts higher levels of depression (unlike the other facets of mindfulness, which all predict lower levels of depression).

Anxiety and the five facets of mindfulness. As in depression, not all of the five facets of mindfulness were found to be significant predictors of anxiety. The ability to focus one’s attention on the present moment (i.e., acting with awareness) was not found to contribute significantly to variability in levels of anxiety. The ability to use words to express or illustrate one’s experiences (i.e., describing) was initially a significant predictor of anxiety, but became insignificant after the entry of dispositional gratitude. This indicates that the variance in levels of anxiety, accounted for by describing, may be encapsulated by gratitude. The ability to be aware of and attend to internal and external experiences (i.e., observing) was a significant predictor of anxiety both before and after dispositional gratitude was accounted for, and the beta coefficient for observing at step 3 was positive. This indicates that, when dispositional gratitude is and is not accounted for, observing actually predicts higher levels of anxiety (unlike the other facets of mindfulness, which all predict lower levels of anxiety).

Stress and the five facets of mindfulness. As in depression and anxiety, not all of the five facets of mindfulness were found to be significant predictors of stress. The findings for stress were similar to those for depression. The ability to use words to express or illustrate one’s experiences (i.e., describing) was not found to contribute significantly to variability in levels of stress. The ability to be aware of and attend to internal and external experiences (i.e., observing) was not initially a significant predictor of stress, but became significant after the entry of dispositional gratitude. Importantly, the beta coefficient for observing at step 3 was positive. This indicates that observing is not inherently a significant predictor of stress, but that when dispositional gratitude is accounted for, observing actually predicts higher levels of stress (unlike the other facets of mindfulness, which all predict lower levels of stress).
The key finding here is that observing and describing both play complex roles in the prediction of psychological distress. Correlational analyses initially showed that describing was weakly and negatively correlated with depression, anxiety, and stress, yet it was never a significant predictor of depression or stress in the regression equations, and it was only a significant predictor of anxiety when the variability accounted for by dispositional gratitude was not taken into account. Furthermore, MRA revealed that higher levels of observing predicted higher levels of depression, anxiety, and stress. In other words, when dispositional gratitude was taken into account, more observing was associated with more symptoms of depression, anxiety, and stress. This happened even though the simple correlations initially showed that observing was negatively correlated with levels of depression and stress, and was not correlated at all with levels of anxiety. This finding is of interest because it indicates that suppression is occurring (Tabachnick & Fidell, 2013). Once all of the positive aspects of observing one’s inner state have been accounted for, observation appears to in fact represent rumination, or hypervigilance. This is an important finding for psychologists, as it provides evidence that higher levels of observation—as one of the five facets of mindfulness—can actually lead to poorer mental health outcomes.

Ultimately, the findings of the present study indicate that looking at the correlation coefficients by themselves can be problematic, as the regression analyses showed that, when controlling for certain variables, the relationships between observing and describing and psychological distress changed. These findings somewhat replicate the results of a study by de Bruin et al. (2012), in which all five of the facets of mindfulness were negatively correlated with psychological distress, and all of the mindfulness facets, except for observing and describing, significantly predicted psychological distress.

Observing, in particular, has been previously targeted in the literature as problematic, with some researchers investigating the factor structure of the FFMQ and, consequently, questioning whether observing should be included in measurements of mindfulness. For example, a recent study by Williams et al. (2014) analysed the factor structure of the FFMQ in three different samples: in a community sample of adults, in adults who had experienced recurrent episodes of depression, and in adult meditators. Confirmatory factor analyses revealed that while a 5-factor hierarchical model of the FFMQ best fitted the sample of adult meditators, a 4-factor hierarchical model best fitted the community and clinical samples. In other words, the observing factor did not load significantly onto an overarching mindfulness factor for the community and clinical samples, but this was not the case for the sample of meditators. This
indicates that for those who do not meditate, mindfulness is better conceptualised by only four facets and, thus, observing should not be included as one of the five facets of mindfulness for non-meditators.

**Limitations and Strengths**

When interpreting these findings, the cross-sectional design of this study should be considered. As there was no longitudinal aspect to the study, causality cannot be inferred. The DASS–21 measures psychological distress over the last week, so it may not accurately reflect the true levels of depression, anxiety, and stress experienced by individuals over the long term. Moreover, given the episodic nature of depression (American Psychiatric Association 2013), conclusions around the causation of depression are even more problematic. Further research should ideally take a longitudinal view of the relationship between dispositional mindfulness, dispositional gratitude, and psychological distress. However, prospective, longitudinal studies are often time- and resource-intensive. Future research, then, could perhaps assess participants’ previous—as well as current—symptoms of psychological distress in order to gather data from more than one time point and, thus, develop a more accurate picture of participants’ longitudinal patterns of psychological distress.

Although some interesting correlations were found, we were not able to infer causality from correlations alone. For example, the data indicate that higher dispositional mindfulness is associated with lower levels of stress. Is mindfulness protecting individuals from becoming stressed, is stress preventing individuals from being mindful, or are both of these events happening simultaneously? Prospective researchers in this field should therefore utilise an experimental design to further explore the relationships between the variables. Future studies could attempt to manipulate dispositional mindfulness and dispositional gratitude (i.e., via mindfulness- and gratitude-based interventions) and then investigate the effect of these interventions on psychological distress.

Another limitation, worthy of consideration, is that this study measured dispositional mindfulness and gratitude, yet clinical interventions aim to increase state mindfulness and gratitude; this raises the question of how applicable the findings of the present study may be in clinical contexts. Recent research, however, has found that increasing state mindfulness can also lead to an increase in dispositional mindfulness (Kiken et al. 2015), and that dispositional mindfulness can, in fact, be enhanced by engagement in mindfulness-based interventions (Bohlmeijer et al. 2011). Given the parallels noted between mindfulness and gratitude, there may be similar links between dispositional and state gratitude.
Therefore, it may be appropriate to utilise disposition-based research findings to inform state-based clinical interventions.

In view of the complexities identified with the observing and describing facets of mindfulness, future research should delineate the role of these two facets of mindfulness and continue to examine how best to measure mindfulness and its components. Additionally, the findings of this study could be replicated using alternative measures of mindfulness.

Furthermore, the length of the questionnaire (approximately 45 minutes to completion) is an issue for consideration. Individuals who are more depressed might be less likely to finish the full questionnaire because of factors often associated with depression (e.g., low motivation, poor concentration). Conversely, individuals who are more anxious might be more likely to finish the full questionnaire because of factors often associated with anxiety (e.g., perfectionism). Given this, it is possible that the results obtained from the sample used in the present study may over- or under-represent the wider population with regard to anxiety and depression.

Whilst the measures employed in this study to assess dispositional mindfulness, dispositional gratitude, and psychological distress all rely on self-report—which is said to reduce validity—it would be difficult for these constructs to be accurately rated by an observer. Moreover, the FFMQ, GQ–6 and DASS–21 have all been shown to be reliable and valid measures. The study also used a broad cross-section of the general population with a wide age range, when compared with many studies that only use university students. This increases the confidence with which the findings of the present study may be generalised to the wider population.

**Conclusions**

Consistent with previous research, this study found mindfulness and gratitude to be related constructs; however, there was evident a varied pattern of relationships between each of the five facets of mindfulness and dispositional gratitude. Dispositional gratitude was found to be predictive of psychological distress outcomes (especially depression), even when controlling for the five facets of mindfulness. Most importantly, the key finding of this study was that the five facets of mindfulness do not all equally predict depression, anxiety, and stress. The regression analyses revealed that, when controlling for dispositional gratitude, describing was not a predictor of psychological distress, and observing predicted an increase in symptoms of psychological distress.
This study contributes to the growing literature on the five facets of mindfulness and provides more evidence that observing—and perhaps describing—should not be included as facets in an overall measure of mindfulness, at least in non-meditators. This study was an initial exploration into the relationships between the five facets of mindfulness, dispositional gratitude, and psychological distress, and future research should further investigate and confirm these findings. Improved understanding of the different components that constitute mindfulness will ultimately lead to the refinement of existing mindfulness and gratitude-based interventions, allowing psychologists to provide more efficacious, evidence-based treatment for individuals who present with anxiety and depressive disorders.
Compliance with Ethical Standards

Research involving human participants and/or animals. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Ethical approval of the study was granted by the University of Newcastle’s Human Research Ethics Committee (reference number: H-2014-0210). This article does not contain any studies with animals performed by any of the authors.

Informed consent. Informed consent was obtained from all individual participants included in the study.
References


doi:10.1007/s12671-010-0023-4

doi:10.1007/s10902-008-9112-7


doi:10.1007/s12671-010-0033-2


doi:10.1016/j.jaac.2010.12.014


doi:10.1016/j.cpr.2015.01.006


Table 1

*Pearson’s Correlation Coefficients, Cronbach’s Alpha Values, Means and Standard Deviations for the Variables*

<table>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
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<td>Depression</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td>(.91)</td>
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<tr>
<td>Anxiety</td>
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<td>Stress</td>
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<td>.667</td>
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<td>(.85)</td>
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<td>Describing</td>
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<td>.330</td>
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<td>Acting with Awareness</td>
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<td>-.285</td>
<td>-.428</td>
<td>.177</td>
<td>.355</td>
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<td>Non-judgment of Inner Experiences</td>
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<td>-.429</td>
<td>-.485</td>
<td>.101</td>
<td>.319</td>
<td>.416</td>
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<td>(.91)</td>
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<tr>
<td>Non-reactivity to Inner Experiences</td>
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<td>-.288</td>
<td>-.427</td>
<td>.352</td>
<td>.304</td>
<td>.396</td>
<td>.422</td>
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<td>(.83)</td>
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<td>Dispositional Gratitude</td>
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<td>-.247</td>
<td>-.327</td>
<td>.318</td>
<td>.336</td>
<td>.242</td>
<td>.320</td>
<td>.363</td>
<td>(.83)</td>
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<tr>
<td>Mean</td>
<td>22.23</td>
<td>21.58</td>
<td>26.95</td>
<td>3.32</td>
<td>3.45</td>
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<td>SD</td>
<td>8.66</td>
<td>7.65</td>
<td>8.44</td>
<td>0.66</td>
<td>0.82</td>
<td>0.73</td>
<td>0.84</td>
<td>0.66</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Note. Cronbach’s alpha given in brackets on the diagonal.

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

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

*Unstandardised (B) and Standardised (β) Regression Coefficients for the Predictor Variables on Each Step of a Hierarchical Multiple Regression Predicting Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>2.76</td>
<td>.13</td>
<td>2.97</td>
<td>.003</td>
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<td>Age</td>
<td>-0.10</td>
<td>-.16</td>
<td>-3.54</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>2.72</td>
<td>.13</td>
<td>3.41</td>
<td>.001</td>
</tr>
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<td>Age</td>
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<td>-.05</td>
<td>-1.28</td>
<td>.200</td>
</tr>
<tr>
<td>Observing</td>
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<td>.08</td>
<td>1.95</td>
<td>.052</td>
</tr>
<tr>
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<td>-0.66</td>
<td>-.06</td>
<td>-1.49</td>
<td>.137</td>
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<td>Acting with awareness</td>
<td>-2.35</td>
<td>-.20</td>
<td>-4.51</td>
<td>.000</td>
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<td>Non-judgment of inner experiences</td>
<td>-2.85</td>
<td>-.28</td>
<td>-6.38</td>
<td>.000</td>
</tr>
<tr>
<td>Non-reactivity to inner experiences</td>
<td>-2.72</td>
<td>-.21</td>
<td>-4.64</td>
<td>.000</td>
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<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>1.78</td>
<td>.09</td>
<td>2.33</td>
<td>.020</td>
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<tr>
<td>Age</td>
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<td>.13</td>
<td>3.21</td>
<td>.001</td>
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<td>-0.38</td>
<td>.708</td>
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<tr>
<td>Acting with awareness</td>
<td>-2.28</td>
<td>-.19</td>
<td>-4.62</td>
<td>.000</td>
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<tr>
<td>Non-judgment of inner experiences</td>
<td>-2.37</td>
<td>-.23</td>
<td>-5.54</td>
<td>.000</td>
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<tr>
<td>Non-reactivity to inner experiences</td>
<td>-1.94</td>
<td>-.15</td>
<td>-3.42</td>
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</tr>
<tr>
<td>Dispositional gratitude</td>
<td>-2.98</td>
<td>-.31</td>
<td>-7.63</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 3

*Unstandardised (B) and Standardised (β) Regression Coefficients for the Predictor Variables on Each Step of a Hierarchical Multiple Regression Predicting Anxiety*

<table>
<thead>
<tr>
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<th>B</th>
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Table 4

*Unstandardised (B) and Standardised (β) Regression Coefficients for the Predictor Variables on Each Step of a Hierarchical Multiple Regression Predicting Stress*

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<thead>
<tr>
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<th>B</th>
<th>β</th>
<th>t</th>
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<td>-.22</td>
<td>-4.89</td>
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<tr>
<td>Dispositional gratitude</td>
<td>-1.38</td>
<td>-.15</td>
<td>-3.52</td>
<td>.000</td>
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</tbody>
</table>
Appendix A: Participant Information Statement

INFORMATION STATEMENT

Thank you for checking out our survey. Before you start, there are some things you need to know.

Who is running this survey? This survey is part of research being conducted by Associate Professor Ross Wilkinson from the School of Psychology at the University of Newcastle with assistance from a number of postgraduate students.

Why is the research being done? The purpose of the research is to help us better understand how attitudes and beliefs about relationships, stress, and coping strategies are related to our psychological health and wellbeing.

Who can participate in the research? You need to be at least 18 years of age (or at university) and live in Australia in order to do the survey.

What would I have to do? If you agree to participate, you will be asked to complete an online survey which involves a number of different questionnaires. The questionnaires ask about, among other things, your attitudes to close relationships, how grateful or appreciative you may feel about different things, how you cope with stress in your life, and how stressed or depressed you might be feeling.

What do I get out of it? Besides learning more about yourself and how psychology research is done in this area, you will receive a $10 iTunes voucher for participating in the research. If you decide you do not want the voucher then that is okay too, you can still complete the survey.

What choices do I have? Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time prior to submitting your completed survey. Please note that due to the anonymous nature of the survey, you will not be able to withdraw your response after it has been submitted.

How much time will it take? The survey should take approximately 40-50 minutes to complete.
Are there any risks in participating? Although it is unlikely to cause you distress, some of the content of the survey is sensitive in nature. Some of the questions ask about interpersonal relationships, your thoughts and feelings about yourself and others, and whether you have feelings of depression or anxiety. Should you find any of the questions upsetting, you can withdraw from the survey at any time. You can also contact Lifeline on 13 11 14 or beyondblue on 1300 22 4636 (www.beyondblue.org.au) should you wish to seek support regarding any of the issues raised within the survey.

How will my privacy be protected? The answers you give to the survey questions will be stored securely on password protected computers and files that only the researchers will have access to. Due to the anonymous nature of the survey, the responses you provide will not be able to be linked back to you.

How will the information collected be used? The collected data will contribute towards postgraduate theses and may be presented in academic publications or conferences. Non-identifiable data may also be shared with other parties to encourage scientific scrutiny and to contribute to further research and public knowledge, or as required by law. A summary of the results will be made available on the RAPH Lab website (address to be determined). Individual participants will not be named or identified in any reports arising from the project. The data collected will be destroyed after 5 years and only summary data kept.

What do I need to do to participate? If you want to do the survey, please read the Consent information below and then click on the NEXT button. If there is anything you do not understand, or you have questions, please contact the researchers before starting the survey.

Further Information: After you finish the survey, you will be given some more information about the research including reminders about who to contact if you have any concerns or issues about the research. If you would like further information before doing the survey then please contact Dr Ross Wilkinson (ross.wilkinson@newcastle.edu.au).

Complaints about the research: This project has been approved by the University of Newcastle Human Research Ethics Committee, Approval Number H 2014 0210. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Human Research Ethics
Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 4921 6333, email: human-ethics@newcastle.edu.au
Appendix B: Consent Form

CONSENT

By completing this online survey, I agree to participate in this research project and give my consent freely. I understand that the project will be conducted as described above in the information Statement which I have read and understood. I understand I can withdraw from the survey at any time and do not have to give any reason for withdrawing. I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction before I begin the survey. I am at least 18 years of age and currently reside in Australia.

If you agree to participate, please click on the NEXT button below and the survey will begin.

If you do not agree, please click Exit and Clear Survey below.

Thank you.
Appendix C: Five Facet Mindfulness Questionnaire

Description:

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. More information is available in:

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

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never or very rarely true</td>
<td>rarely true</td>
<td>sometimes true</td>
<td>often true</td>
<td>very often or always true</td>
</tr>
</tbody>
</table>

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

19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.

20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

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

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

23. It seems I am “running on automatic” without much awareness of what I’m doing.

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

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

26. I notice the smells and aromas of things.

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

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

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

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

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

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

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

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

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

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

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

38. I find myself doing things without paying attention.

39. I disapprove of myself when I have irrational ideas.
Scoring Information:

Observe items:
1, 6, 11, 15, 20, 26, 31, 36

Describe items:
2, 7, 12R, 16R, 22R, 27, 32, 37

Act with Awareness items:

Nonjudge items:

Nonreact items:
4, 9, 19, 21, 24, 29, 33
Appendix D: Gratitude Questionnaire–Six Item Form

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neutral
5 = slightly agree
6 = agree
7 = strongly agree

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don’t see much to be grateful for. *
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
6. Long amounts of time can go by before I feel grateful to something or someone. *

Scoring Instructions:

1. Add up your scores for items 1, 2, 4, and 5.
2. Reverse your scores for items 3 and 6. That is, if you scored a "7," give yourself a "1," if you scored a "6," give yourself a "2," etc.
3. Add the reversed scores for items 3 and 6 to the total from Step 1. This is your total GQ–6 score. This number should be between 6 and 42.
Appendix E: Depression Anxiety Stress Scale–21 Item Form

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<th>DASS21</th>
<th>Name:</th>
<th>Date:</th>
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</thead>
</table>

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

The rating scale is as follows:
0  Did not apply to me at all
1  Applied to me to some degree, or some of the time
2  Applied to me to a considerable degree, or a good part of time
3  Applied to me very much, or most of the time

<p>| | | | | | |</p>
<table>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
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<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>15</td>
<td>I felt I was close to panic</td>
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<td>2</td>
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<td>I was unable to become enthusiastic about anything</td>
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<td>2</td>
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<td>I felt I wasn't worth much as a person</td>
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<td>18</td>
<td>I felt that I was rather touchy</td>
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<td>2</td>
<td>3</td>
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<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)</td>
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<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
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<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</table>
Appendix F: Scope of Mindfulness Journal

Mindfulness seeks to advance research, clinical practice, and theory on mindfulness. It is interested in manuscripts from diverse viewpoints, including psychology, psychiatry, medicine, neurobiology, psychoneuroendocrinology, cognitive, behavioral, cultural, philosophy, spirituality, and wisdom traditions. Mindfulness encourages research submissions on the reliability and validity of assessment of mindfulness; clinical uses of mindfulness in psychological distress, psychiatric disorders, and medical conditions; alleviation of personal and societal suffering; the nature and foundations of mindfulness; mechanisms of action; and the use of mindfulness across cultures. The Journal also seeks to promote the use of mindfulness by publishing scholarly papers on the training of clinicians, institutional staff, teachers, parents, and industry personnel in mindful provision of services.

Examples of topics include:

- Mindfulness-based psycho-educational interventions for children with learning, emotional, and behavioral disorders
- Treating depression and clinical symptoms in patients with chronic heart failure
- Yoga and mindfulness
- Cognitive-behavioral mindfulness group therapy interventions
- Mindfulness and emotional regulation difficulties in children
- Loving-kindness meditation to increase social connectedness
- Training for parents and children with ADHD
- Recovery from substance abuse
- Changing parents’ mindfulness
- Child management skills
- Treating childhood anxiety and depression
Appendix G: Mindfulness Journal – Notes for Contributors

Information from http://www.springer.com/psychology/cognitive+psychology/journal/12671

Instructions for Authors

EDITORIAL PROCEDURE

Double-blind peer review

This journal follows a double-blind reviewing procedure. Authors are therefore requested to submit:

• A blinded manuscript without any author names and affiliations in the text or on the title page. Self-identifying citations and references in the article text should be avoided.
• A separate title page, containing title, all author names, affiliations, and the contact information of the corresponding author. Any acknowledgements, disclosures, or funding information should also be included on this page.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

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Online Submission

Please follow the hyperlink “Submit online” on the right and upload all of your manuscript files following the instructions given on the screen.

SUGGESTED REVIEWERS

Authors of research and review papers, excluding editorial and book review submissions, are allowed to provide the names and contact information for, maximum, 4 to 6 possible reviewers of their paper. When uploading a paper to the Editorial Manager site, authors must provide complete contact information for each recommended reviewer, along with a specific reason for your suggestion in the comments box for each person. The journal will consider reviewers recommended by the authors only if the reviewers’ institutional email is provided. A minimum of two suggested reviewers should be from a university or research institute in the United States. You may not suggest the Editor or Associate Editors of the journal as potential reviewers. Although there is no guarantee that the editorial office will use your suggested reviewers, your help is appreciated and may speed up the selection of appropriate reviewers.

Authors should note that it is inappropriate to list as preferred reviewers researchers from the same institution as any of the authors, collaborators and co-authors from the past five years as well as anyone whose relationship with one of the authors may present a conflict of interest. The journal will not tolerate this practice and reserves the right to reject submissions on this basis.

TITLE PAGE

Title Page

The title page should include:
• The name(s) of the author(s)
A concise and informative title
The affiliation(s) and address(es) of the author(s)
The e-mail address, telephone and fax numbers of the corresponding author

Abstract
Please provide an abstract of 150 to 250 words. The abstract should not contain any undefined abbreviations or unspecified references.

Keywords
Please provide 4 to 6 keywords which can be used for indexing purposes.

TEXT

Text Formatting
Manuscripts should be submitted in Word.
• Use a normal, plain font (e.g., 10-point Times Roman) for text.
• Use italics for emphasis.
• Use the automatic page numbering function to number the pages.
• Do not use field functions.
• Use tab stops or other commands for indents, not the space bar.
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