Individual Differences in Responsiveness to Compassion-Focused Imagery

By

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Abstract

Interventions involving the intentional use or cultivation of compassion are becoming increasingly more common in the mental health fields. Spiritual and psychological wisdom, and more recently empirical research, has long held that having greater levels of compassion is related to positive mental health traits. Researchers and practitioners are now finding that even in the short term, active practice of compassion and loving-kindness can decrease symptoms of mental illness and increase mental health. At the individual level, however, there is significant variation in how patients react and respond to compassion-based interventions. This study sought to explore those individual differences. Participants drawn from Amazon's Mechanical Turk ($n = 160$) were randomly assigned to one of three compassion-focused imagery conditions or a control body scan condition and completed measures of visualization ability and attitudes toward compassion. Imaging ability was found to be significantly positively related to participants' ability to mindfully engage with the compassionate imagery ($\beta = .28$ to $.37$, $p < .01$). Fears of compassion was related to less relaxation in response to the compassionate imagery ($\beta = -.38$, $p < .01$). Absorption ($\beta = .28$, $p < .01$) and baseline compassion for others ($\beta = .29$, $p < .01$) were both related to an increased likelihood of future practice following the intervention. This study provides further evidence of the individual-level differences in responses to compassion-focused imagery and suggests that both ability and attitude play an important role in predicting how individuals will respond to these interventions.

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Table of Contents

Chapter 1

Individualized compassion: A review of the individual differences in responsiveness to compassion-based interventions

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Abstract

Interventions involving the intentional use or cultivation of compassion are becoming increasingly more common in the mental health fields. Spiritual and psychological wisdom, and more recently empirical research, has long held that having greater levels of compassion is related to positive mental health traits. Researchers and practitioners are now finding that even in the short term, active practice of compassion and loving-kindness can decrease symptoms of mental illness and increase mental health. At the individual level, however, there is significant variation in how patients react and respond to compassion-based interventions. Previous experience with mindfulness and compassion, attitudes towards compassion, and baseline visualization ability may be particularly important individual factors in responsiveness to the interventions. To date, however, there is limited extant research which includes individual measures as potential moderators, leaving a significant gap in the research and practice guidelines. Future research should strive to include individual difference variables in their exploration of compassion-based interventions in order to provide practitioners with more detailed guidance on the implementation of those practices.

Individualized compassion: A review of the individual differences in responsiveness to compassion-based interventions

Over the past 15 years, research on compassion, commonly defined as a sensitivity to suffering with a motivation to reduce that suffering (Gilbert, 2014), has blossomed into a distinct sub-discipline and a legitimate focal point for research and practice in psychology and psychotherapy. The growth of research on compassion has been spurred forward by empirical work showing that various measures of compassion tend to show strong relationships to measures of well-being and positive psychological functioning (Körner et al., 2015; Neff & Germer, 2013; MacBeth & Gumley, 2012), and that interventions aimed at cultivating compassion are effective at both reducing maladaptive psychological symptoms and increasing well-being (Graser & Stangier, 2018; Kirby, Tellegen, & Steindl, 2017). Despite the broadening acceptance of compassion as a potentially potent facet of mental health and well-being, and a growing number of interventions using compassion, relatively little work has been done exploring the factors related to individual differences in responsiveness to those interventions.

This review provides a brief background of compassion research and interventions, and then reviews the literature which examines why certain individuals respond more or less positively to compassion-based interventions. The relevant variables can be broadly categorized as demographic and diagnostic variables, personality and attitude variables, and ability variables. Studies examining each category as potential moderators have tended to derive from distinct lines of research, and few studies have considered either combinations of individual difference variables, or how individual differences may interact with different types or orientations of compassionate intervention. Recommendations for future research will then be provided.

Definitions of Compassion

Compassion as a concept has been integrated into spiritual and healing practices across the world for most of human history, but the current research coming out of western countries which studies compassion as a psychological construct was born primarily out of Buddhist traditions. Within Buddhism, the cultivation of compassion (karunā in both Sanskrit and Pali) is conceptualized as a practice prescribed to all individuals as a way to improve oneself, and an integral part of the spiritual journey (Leighton, 2003). It is only recently that compassion has begun to be explicitly studied and applied in western psychology and psychotherapy (Hofmann et al., 2011). As such, the working definitions of compassion have tended to vary between research teams, leading to some challenges in integrating the different findings (Kirby, 2016). One of the primary discrepancies is whether compassion is defined as an emotion, a motivation, a cognitive construct, or whether it represents a multidimensional construct containing components of each of these (Jazaieri et al., 2013). Much of the recent research acknowledges the multidimensional nature of compassion, but researchers may choose to focus primarily on one of its components based on the goals of the intervention or study.

Commonly, the emotion of compassion is defined simply as the "heartfelt wish that all sentient beings be free from suffering" (Hopkins, 2001 p.13). The definition of compassion as an emotion or affective experience is the most traditional way to conceptualize compassion as a construct and represented the predominant definition in psychological literature until recently (Goetz, Keltner & Simon-Thomas, 2010). Even definitions which conceptualize compassion as primarily an emotional state, however, tend to include motivational components. Hopkins' "heartfelt wish" could be seen as motivational as well as affectual, and the Dalai Lama (2001)

compared compassion to the feeling that a mother has toward her child in distress, including the desire (or motivation) to alleviate that suffering. With a growing focus on the role of compassion within psychological and psychotherapeutic interventions, definitions which place the focus more on the motivational components of compassion have begun to become more prominent.

Gilbert (2014 p. 19) uses a definition of compassion as "a sensitivity to suffering in self and others, with a commitment to try and alleviate and prevent it" and focuses on two sets of motivational competencies which come from that definition. The first set involves the motivation to turn toward and be sensitive to suffering, and the second involves the motivation to learn how to address that suffering. This more action-oriented conceptualization fits well with an integration into western psychotherapeutic interventions and their more goal-directed focus. Within the compassion intervention literature, however, there is an acknowledgment of the roles of compassion at both a state and trait level. State compassion refers to the moment-to-moment experience of compassionate motivations and related emotions. Trait compassion refers to an individual's overall tendency to experience compassionate states.

Compassionate interventions such as guided imagery exercises (Gilbert & Irons, 2004) focus on cultivating compassionate *states*, with an assumption that repeated practice will encourage the development of stable compassionate *traits*. Research using various methodologies, including diary studies (e.g., Fredrickson et al., 2008) and neurological and physiological change studies (e.g., Davidson et al., 2003), have lent support to the idea that state-level changes in affect and motivation from mind-training interventions do lead to sustained trait-level changes.

Orientations of Compassion

Beyond definitions of compassion as a multidimensional construct at a more global level, there has also been an increasing focus on the differing orientations, or directional flows, which compassion can take (Gilbert, 2014). These are generally categorized into three directions: compassion flowing outward to others, compassion flowing from others to our self, and compassion directed toward our self (self-compassion). Each of the orientations falls under the broader umbrella of compassion but together represent distinct sub-components which are generally found to be only moderately correlated to each other (Gilbert et al., 2017).

Giving compassion to others and receiving compassion are both linked to evolutionary systems of nurturance and child rearing (Gilbert, 2008). The ability to be soothed by others stems from the helplessness of human infants and the reliance on parental care and warmth for survival. Similarly, the ability to show compassion for others, as seen in the Dalai Lama's description of compassion above, is born out of parental drives to care for and soothe their children. Giving compassion to others is a near universal concept in spiritual and cultural traditions and tends to be the most widely accepted orientation of compassion throughout the lifespan (Jazaieri et al., 2013). Self-compassion tends to be considered a more complex construct and is generally defined as having three components: an awareness of one's own suffering, care and concern for one's suffering, and an ability to see one's suffering within the broader scope of human experience (Neff, 2003).

While researchers and clinicians differ on the specific definition they choose to adopt, the interventions they choose to use tend to share many similar qualities. Many are either meditation practices or guided imagery exercises based on traditional Buddhist practices of compassion meditation (CM) and loving-kindness meditation (LKM). Whether the focus is on compassion as an emotional construct or as a motivational construct, the compassion exercises elicit particular

feelings while being practiced. Those feelings then function to support the development of insights and more stable compassionate traits (Kirby, 2016).

Compassion and Mental Health

In the mental health fields, increasing attention is being paid to positive psychological traits and the development of strengths in addition to the treatment of symptoms and focus on risk-factors (Wood & Tarrier, 2010). Positive psychological traits, including compassion, have been found to be inversely correlated to clinical symptoms over and above those predicted by negative traits (Findlay-Jones et al., 2016). Compassion is consistently found to be predictive of psychological health and well-being (Neff, 2011), including decreased stress response (Pace et al., 2009), increased feelings of social connectedness (Hutcherson et al., 2008), and increased satisfaction with social support (Steffen & Masters, 2005).

A majority of the research exploring the relationship of compassion to other psychological constructs has focused on self-compassion. Macbeth & Gumley (2012) conducted a meta-analysis on the relationship between self-compassion and psychopathology and, despite heterogeneous results, found a large overall effect size for the inverse relationship between self-compassion and psychopathology. In addition to being negatively related to more severe clinical symptomatology, self-compassion also appears to promote more positive coping strategies when dealing with stressful situations in a variety of contexts (Allen & Leary, 2010; Neff, Kirkpatrick, & Rude, 2007; Sirois, Molnar, & Hirsch, 2015). Allen and Leary found that individuals high in self-compassion tend to use more positive cognitive restructuring strategies to deal with stressful situations than those lower in self-compassion. Self-compassion has been theorized to be an important component of emotional intelligence (Neff, 2003), and studies have consistently found

significant positive correlations been trait self-compassion and measures of emotional intelligence (e.g., Heffernan et al., 2010; Neff, 2003; Senyuva et al., 2014).

Leary et al. (2007), in a series of five studies, found that self-compassion functions to buffer people's reactions to negative events by allowing people to experience negative emotions without becoming overwhelmed, and that self-compassion supported positive coping even in those individuals with low self-esteem. Körner et al. (2015) similarly found that the positive aspects of self-compassion acted as a buffer between self-coldness and depression.

Compassionate Interventions

With research supporting the importance of compassion to positive development and mental health, the next important findings related to compassion were those which showed that compassion can, in fact, be taught and learned in community and clinical settings, and many times positive effects can be seen within very brief periods of time (Findlay-Jones et al., 2016; Hofmann et al., 2011; Jazaieri et al., 2014). While a variety of compassion-focused interventions have been developed and researched, all of the major interventions share a number of key features. They all include components of mindfulness training and psychoeducation, and they all include experiential components involving the practice of compassion either through meditation (LKM or CM) or through guided imagery exercises (Kirby, 2016).

During and immediately following compassionate practice, there are decreases in negative affect and increases in positive affect, and the practices function to reduce both subjective and physiological responsiveness to stressors. In addition to their effects modulating affect, these compassionate meditation and imagery practices work to broaden attention and increase empathic and compassionate perceptions of the self and others (Hofmann et al., 2011). Through their proximal effects on attention, arousal, motivation, and affect, compassion

practices support the development of skills and insights which can be applied to a variety of situations. In doing so, the effects of the practices quickly begin to broaden and translate into beneficial outcomes outside of the practice setting (Fredrickson et al., 2008). Fredrickson found that the positive emotions experienced as a result of daily practice of loving-kindness meditation led to increases in a variety of personal resources, such as increased mindfulness and social support. In turn, those resources were developed into protective factors which led to decreases in depressive symptoms and increases in overall life satisfaction. In a systematic review of the effects of LKM and CM, Shonin et al. (2015) found consistent support for changes in affect, psychological distress, positive thinking, interpersonal relations and empathic accuracy.

The gains seen by practicing compassion appear to begin to take hold relatively quickly. Hutcherson et al. (2008) noted that even just a few minutes of compassion practice was enough to increase feelings of social connection, and Hofmann et al. (2011) extended those findings to show that brief practice also has the ability to increase positivity toward oneself. A number of brief interventions have been developed and tested to explore how gains compound and develop over time and have shown that in some populations, significant change can be seen in as few as three to six 1-hour sessions, and that those changes are maintained after concluding the training (Au et al., 2017; Kemper et al., 2015).

Compassionate interventions are also increasingly being incorporated into formal psychotherapeutic settings, both as stand-alone interventions (Jazaieri et al., 2013; Neff & Germer, 2013) and as full theories through which to frame psychotherapeutic work (Gilbert, 2010). One of the most heavily researched and rapidly growing therapies using compassionate interventions is Gilbert's Compassion-Focused Therapy (CFT; 2012). CFT offers an integrated model of therapy which draws from many different fields and therapeutic models in order to

provide a framework by which to view therapy in many different contexts. One of the primary interventions offered in CFT is Compassionate Mind Training (Gilbert, 2010).

Compassionate Mind Training (CMT) is based on the theory that internal stimuli, such as self-criticism and shame, can activate threat systems and promote negative affect just as easily as external stimuli, and that cultivating compassion acts as a buffer or remedy for negative self-to-self relating (Gilbert & Proctor, 2006). CMT uses a motivational definition of compassion and attempts to incorporate exercises which focus on each of the three orientations of compassion in order to increase compassion globally. CMT uses a variety of compassionate interventions including meditations, guided imagery exercises, and compassionate letter writing.

Researchers and practitioners across treatment settings have begun to use and adapt the theory and techniques of CMT to different populations and concerns. For example, in an initial test of the CMT protocol, Gilbert and Procter (2006), implemented the training with patients of a day center who had histories of pervasive mental health symptoms, including personality disorders and chronic mood disorders. They found that after the training, patients showed greater ability to self-sooth and access emotions of warmth, and that they showed decreases in depression, anxiety, and shame. In a more rigorous test of compassionate interventions, Au and colleagues (2017) used a multiple baseline design to test a brief compassion-based intervention, which drew techniques from Mindful Self-Compassion (Neff & Germer, 2013) in addition to those from CMT, for individuals suffering from PTSD. They found that 9 of the 10 participants showed reliable decreases in PTSD symptoms, with those improvements maintained at two and four week follow-ups. In addition to the populations studied above, current applications of CMT-based interventions include treatments for depression (Gilbert & Irons, 2004; Gilbert, 2010), anxiety (Tirch, 2012), eating disorders (Gale, Gilbert, Read & Goss, 2014; Goss, 2011),

psychosis (Braehler et al., 2013; Laithwaite et al., 2009; Mayhew & Gilbert, 2008), Trauma and PTSD (Lee & James, 2013) and anger management (Kolts, 2012).

Across research on a range of compassionate interventions, one consistent finding is that a significant portion of the outcome efficacy can be predicted by engagement, outside practice, and buy-in, suggesting some level of "dose-dependent" effects (Jazaieri et al., 2013). In the context of Fredrickson's (2008) path model suggesting that compassionate interventions work by developing personal resources, some level of dose dependency makes sense. More engagement and practice should lead to a faster and more significant development of insight and positive coping skills, and so be related to better long-term outcomes. This highlights the importance for practitioners using compassionate interventions of ensuring sufficient buy-in and monitoring resistance to the intervention.

Fears of Compassion and Positive Emotions

Recently, research has begun to suggest that in addition to individuals being able to have varying levels of compassion at both the state and trait levels, they can also vary in their fear or resistance to compassion. Clinical and research findings suggest that having a fear of compassion is distinct from an absence of compassion and that the psychological resistance to compassion and other positive emotions holds distinct clinical relevance (Gilbert et al., 2011). Research on compassionate interventions has consistently found that fears of compassion, particularly fears of receiving compassion from others and fears of self-compassion, are uniquely related to depression, anxiety, stress and self-criticism, above and beyond their relationship to other personality and affective variables (Gilbert et al., 2014a; Gilbert, et al., 2014b).

Fears of compassion have also been linked to difficulties in identifying and describing emotional experiences (alexithymia), and in a reduced ability to self-reassure (Gilbert et al.,

2012). In general, fears of receiving compassion from others and from oneself tend to be highly correlated (Gilbert, et al., 2014b), while fear of giving compassion to others is less related to both receiving compassion and to the negative relationships with other variables noted above. Because of this, it has been suggested that having a fear of offering compassion to others operates via a different pathway than fears of receiving compassion (Gilbert et al., 2012). More recent research has also shown that scales measuring trait compassion relate differentially to other psychological constructs than those measuring fears of compassion, providing further evidence for their treatment as distinct constructs (Gilbert et al., 2017; Goldin & Jazaieri, 2017). For example, Goldin & Jazaieri found that while fear of compassion for self and self-compassion were correlated (r = -.49 to -.7), they responded differentially to treatment, with baseline characteristics such as trait mindfulness and levels of stress moderating the effects of treatment on fears of self-compassion, but self-compassion increasing after treatment regardless of baseline characteristics. The authors suggest that in light of these findings the presence of fears of self-compassion and the absence of self-compassion should be treated as related, but conceptually distinct, constructs.

The mechanism by which fears of compassion and other positive emotions affects negative outcomes such as depression, self-criticism, and alexithymia does not appear to be a direct pathway. Instead, fear of compassion appears to play a more indirect role. Hermanto et al. (2016) found that fear of receiving compassion from others moderated the relationship between self-criticism and depression, such that having low fears of receiving compassion acted as a protective factor for high self-critics. Similarly, Gilbert et al. (2014b) found that a fear of positive emotions more generally fully mediated the relationships between alexithymia and depression. Together, these findings have led to an increased focus on interventions which act both to

increase compassionate characteristics and to reduce fears of compassion in order to reduce vulnerability to psychological symptoms.

Compassion-Focused Imagery

Within the theory of Compassionate Mind Training, the use of imagery and guided visualization centers around the administration of Compassion-Focused Imagery (CFI; Gilbert, 2010). Beyond simply assuming that the brain treats imagery similarly to external stimuli, CFI works under the assumption that the evolved human brain privileges social imagery - imagery which focuses on the self in relationship to others (Gilbert, 2009). Social imagery of this nature has the advantage of being able to tap into evolved affect regulation systems which were developed to drive and regulate interpersonal relationships. There is a long history of imagery focused on contact with imagined others as a means for instilling comfort and a sense of safeness, whether that other be God, an enlightened Buddha, or a wise and compassionate version of oneself. CFI, in particular, has included a range of practices, from imagining a specific compassionate 'other', to practices where the target of the imagery is on the qualities of compassion.

One theme which permeates compassionate imagery practices is a focus on a sense of community through shared humanity. Through this sense of community, and through the activation of affect regulation systems related to feeling safe, connected, and compassionate, CFI develops new patterns of behavioral and affective responding which are less threat-focused (Gilbert, 2009). Researchers have found that among widely differing populations, from individuals diagnosed with personality disorders (Naismith, Mwale & Feigenbaum, 2017), to non-clinical populations (McEwan & Gilbert, 2016), training and practice in compassionate imagery leads to reductions in shame and self-criticism.

Within the focus on compassion, there is also a differentiation based on the imagined sender and receiver of compassion. One can imagine receiving compassion from another, sending compassion outwards, or sending compassion inwards towards oneself (Gilbert et al., 2017). Within these three orientations, however, there has been little research into how the content and structure of the compassionate imagery exercises affect the way in which people respond to them, despite the fact that individuals can show significant differences in the manner in which they experience compassion and affiliation (Gilbert, 2009; Rockliff et al., 2008; Rockliff et al., 2011). It also appears that in the process of learning and practicing CFI, the experience of state mindfulness and positive affective states, particularly those associated with feelings of safeness and social connectedness, are important to positive outcomes (Falconer et al., 2014; Matos et al., 2017). Individuals who experience negative affect associated with the practice of CFI may find less effectiveness overall (Naismith, Mwale & Feigenbaum, 2017).

This barrier is particularly relevant as research is beginning to find that many of those people who would benefit most from compassionate interventions, those with high shame and clinical symptomatology, have greater levels of resistance to, and fears of, compassion (Gilbert, McEwan, Gibbons, Chotai, Duarte & Matos, 2012). In combination with the dosing effects discussed above, these findings highlight the need to consider how individual differences affect responses to compassionate interventions.

Individual Factors in Compassion Interventions

Despite the consistent finding both clinically and in compassion research that responses to compassionate interventions can vary widely between individual participants (e.g., Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Rockliff et al., 2011), there has been little research directly addressing the role of baseline characteristics as predictors or moderators of outcome (Goldin &

Jazaieri, 2017). Even for related mind-body interventions, such as Mindfulness-Based Stress Reduction, which have a larger research base, there is limited evidence around potential moderating variables. Kirby, Tellegen, and Steindl (2017) conducted a meta-analysis on outcomes of compassion-based interventions and found that overall there was insufficient reporting of potential moderating variables to test for any specific trends. Those studies which have explored potential moderators have focused on three categories of variables: demographic and diagnostic variables (e.g., gender, age, ethnicity, diagnosis), personality and attitude variables (e.g., emotion regulation, self-criticism, stress, fears of compassion), and ability variables (e.g., past experience, imagery ability).

Demographic and Diagnostic Moderators

When considering demographic variables in compassion intervention research, the most common means of handling these variables is including them in analyses as controlling variables, rather than exploring their potential role as moderators per se. Mongrain et al. (2011), for example, found that demographic variables such as age and income were significantly related to both predictor and outcome variables, as well as adherence, and chose to control for them in further analyses. The fact that being younger, less educated, and male were all related to an increased drop-out rate, however, could be highly valuable clinical information. When demographics are considered as potential moderators the most common variable that is examined is gender. Few studies have found significant differences in responsiveness to compassionate interventions between men and women, though some (e.g., Goldin & Jazaieri, 2017; Rockliff et al., 2011) have found small differences in the amount of change seen in affect and mindfulness post-intervention. Similarly, when considering baseline differences in self-compassion, a recent

meta-analysis (Yarnell et al., 2015) found small (d=.18) but significant differences between men and women, with men showing slightly greater levels of trait self-compassion.

Of those studies which considered diagnosis as a potential variable related to compassion, nearly all have been correlational in nature, rather than experimental, and have looked at how clinical and non-clinical populations compare on measures of compassion and mental health. For example, Gilbert and colleagues conducted two studies looking at the relationships between fears of compassion and happiness and alexithymia, depression and self-criticism, one using a student sample (Gilbert et al., 2012) and one using a sample of individuals suffering from moderate to severe depression (Gilbert et al., 2014c). They found similar results across both groups, with the primary difference being higher base levels of fears of positive emotions and clinical symptomology in the depressed sample. Treatment studies have tended to focus on homogeneous populations in terms of diagnosis, but the overall efficacy of compassionate interventions across a range of diagnoses, as well as non-clinical samples, points to at least some level of consistency in outcomes across diagnosis (Kirby, Tellegen & Steindl, 2017). As more studies are conducted on differing populations, and with the inherent challenges in using heterogeneous populations in clinical research, reviews and meta-analyses may provide the best opportunity to examine differential responding based on diagnosis.

Personality and Attitude Moderators

There has been more attention paid in intervention studies to personality and attitude variables as potential moderators. Goldin & Jazaieri (2017) advocate for intervention studies including variables such as affect and self-esteem as potential moderators of outcomes. With significant variability in both the populations to which compassionate interventions are applied and in individual responsiveness to the interventions, variables such as these appear to be natural

options for capturing some of that variability. To date, the most commonly studied variables within this category have been baseline self-criticism, attachment orientation, baseline affect, and fears of positive emotions and compassion.

Self-Criticism. Compassion-Focused Therapy and the interventions associated with Compassionate Mind Training were initially designed specifically to work with populations who were high in self-criticism (Gilbert, 2012), so the inclusion of a measure of self-criticism has been a natural extension for many intervention studies using those methods. Researchers have consistently found significant interactions between trait levels of self-criticism and outcomes, but the results paint a more complicated picture. Studies which examine single episodes of compassionate interventions, such as response to compassion-focused imagery, have found that individuals who are higher in baseline self-criticism show greater resistance to compassionate emotions (McEwan & Gilbert, 2016), and tend to show threat-like physiological responses rather than the soothing effects experienced by those lower in self-criticism (Rockliff et al., 2008). Naismith et al. (2017) note that individuals who are high in self-criticism tend to view that self-criticism as a positive trait which helps support their self-standards, and thus are resistant to efforts aimed at reducing it. The activation of affiliative systems through compassion interventions may also lead to feelings of grief and loneliness in highly self-critical individuals (Rockliff et al., 2011).

When, on the other hand, self-criticism is examined in longer intervention studies, there tend to be relatively consistent findings that individuals who begin the intervention with higher levels of trait self-criticism actually show greater improvements in clinical symptoms (Leaviss & Utley, 2015). Some of these results could be accounted for by floor effects, as higher self-criticism is associated with greater levels of depression, anxiety, stress, and fear of compassion

(Gilbert et al., 2012; Hermanto et al., 2016). Some studies, however, have shown that practice and perseverance play a significant role, such that when participants higher in self-criticism are able to overcome their initial resistance and engage in consistent practice, they are able to show significant improvements and begin to change their relationship to themselves (McEwan & Gilbert, 2016; Jazaieri et al., 2013). This complex relationship points to the importance of developing engagement and buy-in despite initial resistance. In clinical interventions, there is evidence that positive therapeutic alliances contribute to this ability to overcome initial barriers (Lawrence & Lee, 2013), and it has also been suggested that taking a more indirect approach by initially targeting less feared aspects of compassion may be beneficial (Falconer et al., 2014).

Attachment Orientation. Findings related to the role of attachment orientation in response to compassionate interventions have been less definitive. Insecure attachment tends to correlate with common predictor and outcome variables, such as self-criticism, fear of compassion, and psychopathology (Gilbert et al., 2014a; Roy, 2015). When examined as a moderator, however, results are more ambiguous. Mongrain et al. (2011) found that anxious attachment predicted less sustained improvement in response to a compassionate intervention, while Goldin & Jazaieri (2017) note that insecure attachment has been associated with greater stress reduction following interventions. Roy (2015) found that priming attachment security prior to a loving-kindness meditation did not result in increased benefits from the intervention. With limited and mixed findings, nothing definitive can be said about the role of attachment in individual responsiveness to compassionate interventions at this time.

Affect. One of the primary outcome variables measured in compassionate intervention studies is affect, but it appears that baseline emotions may play a role as a moderating variable as well. Beginning an intervention with higher state levels of negative affect (Naismith et al., 2017)

or having greater discomfort with emotions more generally (Sass et al., 2013) have both been related to reduced efficacy of compassionate interventions. Additionally, it appears important that individuals attain a level of social safeness prior to beginning a compassionate intervention in order to experience compassionate emotions positively (Rockliff et al., 2008; Rockliff et al., 2011). This may be particularly true for individuals who are higher in baseline self-criticism, where the combination of an attachment to their self-critical voice and an insecurity with their current social support lead to significant resistance to the intervention.

Fear of Positive Emotions. Similarly to affect, fears of compassion and happiness have primarily been utilized as outcome variables in intervention studies (i.e., compassion interventions leading to reduced fears of compassion and happiness), however, an argument can be made that they could serve as important moderating variables. Gilbert et al. (2011) note that within therapeutic settings if clients are resistant to, or unable to experience positive emotions or compassion, therapeutic interventions, in general, may have a reduced impact. Clients may resist participating in interventions designed to elicit compassionate feelings and motivations, and similar to those high in self-criticism may respond negatively to those interventions when administered (Gilbert et al., 2014b).

Few studies have attempted to use fears of compassion as a moderating variable, and those that have (e.g., Naismith et al., 2017) have not paired the orientation of the intervention with the measured fears, for example measuring fear of self-compassion while administering an intervention focused on receiving compassion from others. With a growing body of literature around the importance of fears of compassion and happiness as predictors of mental health, as well as qualitative reports suggesting that fears of compassion could play a role in differential

responding to compassionate interventions (Gilbert & Irons, 2004; Gilbert & Proctor, 2006), future studies should consider examining their potential role as moderators of outcome.

The Five-Factor Model of Personality. Despite no studies to date which have examined the role of broad personality factors in compassionate intervention outcomes, there is related evidence suggestive of its importance. Neff et al. (2007), examined relationships between self-compassion and trait personality characteristics derived from the five-factor model of personality, and found that self-compassion was negatively correlated with neuroticism and positively correlated with agreeableness, extraversion and conscientiousness. They also found that self-compassion captured significant variance in positive functioning, beyond that of the broader personality characteristics. Pfattheicher et al. (2017), however, suggest that self-compassion, as measured by the Self-Compassion Scale (Neff, 2003), may not account for any significant variance in life satisfaction after accounting for personality.

In an applied setting, de Vibe et al. (2015), explored whether personality factors acted as moderators of outcome of a mindfulness intervention which included components of compassion. Similar to findings which examined baseline self-criticism as a potential moderator, de Vibe and colleagues found that having higher baseline levels of neuroticism was predictive of greater gains in well-being. Additionally, they found that higher levels of baseline conscientiousness were related to better outcomes. The findings around conscientiousness could be related to previously discussed findings on practice effects, with more conscientious participants more likely to practice regularly.

Ability Moderators

The final class of variables which has been explored as potential moderators of outcome is ability-related variables. Previous experience has been used as a proxy for skills in

compassionate interventions, though recently a new scale has been developed which may capture trait level compassionate abilities (Gilbert et al., 2017). In addition, within theories of compassion, there is frequently an assumption that mindfulness plays a role in an individual's ability to engage in compassionate interventions, so trait mindfulness could be categorized as a potential ability variable. Finally, as imagery and visualization are frequently key components of compassionate interventions, either indirectly within CM and LKM, or directly in compassion-focused imagery, trait levels of imagery ability must be considered an important variable when talking about potential moderators of outcome.

As seen in other potential moderating variables discussed above, trait levels of mindfulness and compassion are more frequently assessed as outcome variables in compassion intervention studies than as potential moderators. Within the literature on mindfulness interventions, there are more examples of ability being explored as it relates to differing outcomes. For example, Shapiro et al. (2011), found that within a mindfulness-based stress-reduction program (which includes components of compassion), higher baseline trait mindfulness was related to larger increases in outcome variables. There are also numerous examples of studies which compare novice and expert meditators and response to mindfulness practices (e.g., Berkovich-Ohana et al., 2016; Lutz et al., 2009), results which Hofmann et al. (2011) suggest could be important in compassionate interventions as well.

From early studies exploring the potential for guided imagery exercises to be used as compassionate interventions (Gilbert & Irons, 2004; Gilbert & Proctor, 2006), researchers have noted that those participants who struggle with compassionate imagery are those who are unable to easily bring to mind vivid images and engage with those images. Cooley et al. (2013) note that researchers frequently assume that participants have sufficient imagery abilities to successfully

generate and maintain images, but that many times that is not the case. Few studies have looked directly at the role of imagery ability in compassion-focused imagery, but those that have (Kelly et al., 2010; Naismith et al., 2017) have found that the ability of participants to create and hold vivid images was significantly related to outcome. The ability to produce vivid images of compassionate stimuli appeared to be related to imagery ability more generally, so it is possible to look at findings from other fields which have explored trait imagery abilities and guided imagery exercises in order to glean more information on expected relationships.

Working with guided imagery as a potential treatment for cancer pain, Kwekkeboom and colleagues (e.g., Kwekkeboom et al., 1998; Kwekkeboom et al., 2003; Kwekkeboom, 2008) have likely conducted more work directly addressing the potential moderating role of imagery ability on guided imagery outcomes than any other research team over the past two decades. They found that imagery ability can be meaningfully broken into two subscales: image generation skill and absorption. Both appear to play an important role in moderating outcome, but absorption, the ability to fully engage with and be absorbed by the generated images, may account for a greater portion of the variance in differing outcomes. Kwekkeboom et al. (1998) suggest that when considering pain reduction as an outcome, that in individuals low in absorption, guided imagery interventions do not cause a high enough level of sensory input to affect gating mechanisms and block the pain stimuli. A weaker activation of sensory and affective systems could play a role in the reduced efficacy of compassionate imagery for individuals lacking sufficient imagery abilities as well.

Recommendations for Research and Practice

As compassionate interventions are increasingly used in both clinical and non-clinical settings, it will become increasingly important for researchers to develop a more nuanced view

of their efficacy. In addition to validating current interventions on different populations, researchers should strive to include individual difference variables in their research designs. There is preliminary evidence that differences in baseline self-criticism, compassion competence, and fears of compassion, as well as visualization ability, could play a role in individual responsiveness to compassionate interventions. Expanding the current evidence could not only provide guidance on who would be likely to benefit from compassionate interventions but could also provide a framework for developing new interventions or modifying current interventions to better fit differing clientele.

While it is difficult to generate any clear conclusions about individual differences to compassion-focused clinical interventions, the current literature does offer some suggestions to practitioners. For clients who present with high baseline levels of self-criticism, compassionate interventions have the potential to be helpful in the long-term, but it is particularly important to ensure a strong therapeutic alliance and monitor affect when considering their use. Similarly, clients who have strong fears of compassion or other positive emotions could benefit from compassionate interventions, but it could be more challenging to develop buy-in and engagement. It may be helpful to begin by working on a less feared orientation, for example beginning by practicing compassion for others with a client who has high fears of self-compassion. It is also important for practitioners to consider the ability levels of their clients. Many compassionate intervention programs begin by establishing baseline mindfulness skills, though some clients may be able to benefit from compassion practices even with a weaker background in mindfulness (Kirby, 2017). Visualization ability may prove to be a more important ability to consider, as lower absorption and imagery generation abilities have been linked to reduced outcome efficacy across a range of mind-body practices (Kwekkeboom,

Huseby-Moore & Ward, 1998; Kwekkeboom, Kneip & Pearson, 2003; Naismith, Mwale & Feigenbaum, 2017; Williams, Burns & Cumming, 2013). While findings are mixed on whether imagery ability can be trained or improved (Naismith, Mwale & Feigenbaum, 2017), there is preliminary evidence that interventions such as imagery primes (Ostinelli & Böckenholt, 2017) may work to reduce the discrepancies seen in individuals with lower imagery ability. In addition, it may be helpful to use more structured and directed scripts with clients who have lower baseline absorption or imagery generation ability.

The primary takeaway for practitioners and researchers alike is that there are significant variations among individuals in their response to compassionate interventions, and these differences should be adequately considered. Researchers should strive to include individual difference variables in their studies and analyses in order to capture a greater portion of the variance between participants, as well as to lay the foundation for improved interventions. Practitioners should be tuned to each client's experience of the compassionate interventions they use, and be prepared to adjust the interventions to better fit each client's attitudes and abilities. Additionally, researchers should continue to rely on the experiences and needs of practitioners to guide their explorations of responsiveness to interventions, and practitioners should stay abreast of research findings which may help them to more effectively create and administer compassionate interventions to a diverse clientele.

References

Allen, A. B., & Leary, M. R. (2010). Self-Compassion, stress, and coping. *Social and Personality Psychology Compass, 4*(2), 107-118.

Au, T. M., Sauer-Zavala, S., King, M. W., Petrocchi, N., Barlow, D. H., & Litz, B. T. (2017). Compassion-Based Therapy for Trauma-Related Shame and Posttraumatic Stress: Initial Evaluation Using a Multiple Baseline Design. *Behavior Therapy, 48*(2), 207–221. http://doi.org/10.1016/j.beth.2016.11.012

Berkovich-Ohana, A., Harel, M., Hahamy, A., Arieli, A., & Malach, R. (2016). Data for default network reduced functional connectivity in meditators, negatively correlated with meditation expertise. *Data in Brief, 8*, 910-914.

Braehler, C., Gumley, A., Harper, J., Wallace, S., Norrie, J., & Gilbert, P. (2013). Exploring change processes in compassion focused therapy in psychosis: Results of a feasibility randomized controlled trial. *British Journal of Clinical Psychology, 52*(2), 199-214.

Cooley, S. J., Williams, S. E., Burns, V. E., & Cumming, J. (2013). Methodological Variations in Guided Imagery Interventions Using Movement Imagery Scripts in Sport: A Systematic Review. *Journal of Imagery Research in Sport and Physical Activity, 8*(1), 13–34. http://doi.org/10.1515/jirspa-2012-0005

The Dalai Lama (2001). *An open heart: Practicing compassion in everyday life.* Boston, MA: Little Brown and Company.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., ... & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic medicine, 65*(4), 564-570.

de Vibe, M., Solhaug, I., Tyssen, R., Friborg, O., Rosenvinge, J. H., Sørlie, T., ... & Bjørndal, A. (2015). Does personality moderate the effects of mindfulness training for medical and psychology students? *Mindfulness, 6*(2), 281-289. https://doi.org/10.1007/s12671-013-0258-y

Falconer, C. J., Slater, M., Rovira, A., King, J. A., Gilbert, P., Antley, A., & Brewin, C. R. (2014). Embodying compassion: A virtual reality paradigm for overcoming excessive self-criticism. *PLoS ONE,* 9(11). http://doi.org/10.1371/journal.pone.0111933

Finlay-Jones, A., Kane, R., & Rees, C. (2017). Self-Compassion Online: A Pilot Study of an Internet-Based Self-Compassion Cultivation Program for Psychology Trainees. *Journal of Clinical Psychology, 73*(7), 797-816. http://doi.org/10.1002/jclp.22375

Fredrickson, B., Cohn, M., Coffey, K., Pek, J., & Finkel, S. (2008). Open Hearts Build Lives: Positive Emotions, Induced Through Loving-Kindness Meditation, Build Consequential Personal Resources. *Journal of Personality and Social Psychology, 95*(5), 1045–1062. http://doi.org/10.1037/a0013262.Open

Gale, C., Gilbert, P., Read, N., & Goss, K. (2014). An evaluation of the impact of introducing compassion focused therapy to a standard treatment programme for people with eating disorders. *Clinical Psychology & Psychotherapy, 21*(1), 1-12.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment, 15*(3), 199-208.

Gilbert, P. (2010). *The compassionate mind: A new approach to life's challenges.* Oakland, CA: New Harbinger Publications.

Gilbert, P. (2012). Compassion-focused therapy. *Cognitive Behaviour Therapies, 15*, 140–165. http://doi.org/10.4135/9781446288368.n7

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6–41. http://doi.org/10.1111/bjc.12043

Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., … Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care, 4*(1), 4. http://doi.org/10.1186/s40639-017-0033-3

Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory, 12*(4), 507–516. http://doi.org/10.1080/09658210444000115

Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M. (2012). Fears of compassion and happiness in relation to alexithymia, mindfulness, and self-criticism. *Psychology and Psychotherapy: Theory, Research and Practice, 85*(4), 372-390. http://doi.org/10.1111/j.2044-8341.2011.02046.x

Gilbert, P., McEwan, K., Catarino, F., Baiao, R., & Palmeira, L. (2014a). Fears of happiness and compassion in relationship with depression, alexithymia, and attachment security in a depressed sample. *British Journal of Clinical Psychology 53*(2), 228-244. http://doi.org/10.1111/bjc.12037

Gilbert, P., McEwan, K., Catarino, F., & Baiao, R. (2014b). Fears of Negative Emotions in Relation to Fears of Happiness, Compassion, Alexithymia and Psychopathology in a Depressed Population: A Preliminary Study. *Journal of Depression and Anxiety 2*(4), 1-7. http://doi.org/10.4172/2167-1044.S2-004

Gilbert, P., McEwan, K., Catarino, F., & Baiao, R. (2014c). Fears of Compassion in a Depressed Population Implication for Psychotherapy. *Journal of Depression and Anxiety 2*(1), 1-8. http://doi.org/10.4172/2167-1044.S2-003

Gilbert, P., Mcewan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice, 84*, 239–255. http://doi.org/10.1348/147608310X526511

Gilbert, P., & Procter, S. (2006). Compassionate Mind Training for People with High Shame and Self-Criticism : Overview and Pilot Study of a Group Therapy Approach. *Clinical Psychology & Psychotherapy, 13*, 353–379. http://doi.org/10.1002/cpp.507

Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: an evolutionary analysis and empirical review. *Psychological Bulletin, 136*(3), 351.

Goldin, P. R., & Jazaieri, H. (2017). Investigating Moderators of Compassion Meditation Training in a Community Sample. *Mindfulness,* 1-11. http://doi.org/10.1007/s12671-017-0857-0

Goss, K. (2011). *The compassionate-mind guide to ending overeating: using compassion-focused therapy to overcome binging and disordered eating.* Oakland, CA: New Harbinger Publications

Graser, J., & Stangier, U. (2018). Compassion and Loving-Kindness Meditation: An Overview and Prospects for the Application in Clinical Samples. *Harvard Review of Psychiatry, 26*(4), 201-215.

Heffernan, M., Quinn Griffin, M. T., McNulty, S. R., & Fitzpatrick, J. J. (2010). Self-compassion and emotional intelligence in nurses. *International Journal of Nursing Practice, 16*(4), 366-373. https://doi.org/10.1111/j.1440-172X.2010.01853.x

Hermanto, N., Zuroff, D. C., Kopala-Sibley, D. C., Kelly, A. C., Matos, M., Gilbert, P., & Koestner, R. (2016). Ability to receive compassion from others buffers the depressogenic

effect of self-criticism: A cross-cultural multi-study analysis. *Personality and Individual Differences 98*, 324-332. http://doi.org/10.1016/j.paid.2016.04.055

Hofmann, S. G., Grossman, P., & Hinton, D. E. (2011). Loving-kindness and compassion meditation: Potential for psychological interventions. *Clinical Psychology Review, 31*(7), 1126–1132. http://doi.org/10.1016/j.cpr.2011.07.003

Hopkins, J. (2001). *Cultivating compassion: A Buddhist perspective.* New York, NY: Broadway Books.

Hutcherson, C. A., Seppala, E. M., & Gross, J. J. (2008). Loving-Kindness Meditation Increases Social Connectedness. *Emotion 8*(5), 720-724. http://doi.org/10.1037/a0013237

Jazaieri, H., Jinpa, G. T., McGonigal, K., Rosenberg, E. L., Finkelstein, J., Simon-Thomas, E., … Goldin, P. R. (2013). Enhancing Compassion: A Randomized Controlled Trial of a Compassion Cultivation Training Program. *Journal of Happiness Studies 14*(4) 1113-1126. http://doi.org/10.1007/s10902-012-9373-z

Jazaieri, H., McGonigal, K., Jinpa, T., Doty, J. R., Gross, J. J., & Goldin, P. R. (2014). A randomized controlled trial of compassion cultivation training: Effects on mindfulness, affect, and emotion regulation. *Motivation and Emotion, 38*(1), 23–35. http://doi.org/10.1007/s11031-013-9368-z

Kelly, A. C., Zuroff, D. C., Foa, C. L., & Gilbert, P. (2010). Who benefits from training in self-compassionate self-regulation? A study of smoking reduction. *Journal of Social and Clinical Psychology, 29*(7), 727-755.

Kemper, K. J., Lynn, J., & Mahan, J. D. (2015). What Is the Impact of Online Training in Mind–Body Skills? *Journal of Evidence-Based Complementary and Alternative Medicine 20*(4), 275-282. http://doi.org/10.1177/2156587215580882

Kirby, J. N. (2016). Compassion interventions: The programmes, the evidence, and implications for research and practice. *Psychology and Psychotherapy: Theory, Research and Practice 90*(3), 432-455. http://doi.org/10.1111/papt.12104

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A Meta-Analysis of Compassion-Based Interventions: Current State of Knowledge and Future Directions. *Behavior Therapy, 48*(6), 778–792. http://doi.org/10.1016/j.beth.2017.06.003

Kolts, R. (2012). *The Compassionate-Mind Guide to Managing Your Anger: Using Compassion-Focused Therapy to Calm Your Rage and Heal Your Relationships.* Oakland, CA: New Harbinger Publications.

Körner, A., Coroiu, A., Copeland, L., Gomez-Garibello, C., Albani, C., Zenger, M., & Brähler, E. (2015). The role of self-compassion in buffering symptoms of depression in the general population. *PLoS ONE, 1*0(10), 1–14. http://doi.org/10.1371/journal.pone.0136598

Kwekkeboom, K., Huseby-Moore, K., & Ward, S. (1998). Imaging Ability and Effective Use of Guided Imagery. *Research in Nursing and Health, 21*(3), 189–198. http://doi.org/10.1002/(SICI)1098-240X(199806)21:3

Kwekkeboom, K. L., Kneip, J., & Pearson, L. (2003). A Pilot Study to Predict Success with Guided Imagery for Cancer Pain. *Pain Management Nursing, 4*(3), 124–133. http://doi.org/10.1053/S1524-9042(02)00000-0

Kwekkeboom, K. L., Wanta, B., & Bumpus, M. (2008). Individual Difference Variables and the Effects of Progressive Muscle Relaxation and Analgesic Imagery Interventions on Cancer Pain. *Journal of Pain and Symptom Management, 36*(6), 604–615. http://doi.org/10.1016/j.jpainsymman.2007.12.011

Laithwaite, H., O'Hanlon, M., Collins, P., Doyle, P., Abraham, L., Porter, S., & Gumley, A. (2009). Recovery after psychosis (RAP): A compassion focused programme for individuals residing in high security settings. *Behavioural and Cognitive Psychotherapy, 37*(5), 511-526.

Lawrence, V. A., & Lee, D. (2013). An exploration of people's experiences of compassion-focused therapy for trauma, using interpretative phenomenological analysis. *Clinical Psychology and Psychotherapy 21*(6), 495-507. http://doi.org/10.1002/cpp.1854

Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887–904. http://doi.org/10.1037/0022-3514.92.5.887

Leaviss, J., & Uttley, L. (2015). Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychological Medicine, 45*(5), 927–945. http://doi.org/10.1017/S0033291714002141

Lee, D. A., & James, S. (2013). *The compassionate-mind guide to recovering from trauma and PTSD: Using compassion-focused therapy to overcome flashbacks, shame, guilt, and fear.* Oakland, CA: New Harbinger Publications.

Leighton, T.D. (2003). *Faces of compassion: Classic Bodhisattva archetypes and their modern expression.* Boston, MA: Wisdom Publications.

Lutz, A., Greischar, L. L., Perlman, D. M., & Davidson, R. J. (2009). BOLD signal in insula is differentially related to cardiac function during compassion meditation in experts vs. novices. *Neuroimage, 47*(3), 1038-1046.

Macbeth, A., & Gumley, A. (2012). Exploring Compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review, 32*(6), 545-552.

Matos, M., Duarte, C., Duarte, J., Pinto-Gouveia, J., Petrocchi, N., Basran, J., & Gilbert, P. (2017). Psychological and Physiological Effects of Compassionate Mind Training: a Pilot Randomised Controlled Study. *Mindfulness, 8*(6), 1699–1712. http://doi.org/10.1007/s12671-017-0745-7

Mayhew, S. L., & Gilbert, P. (2008). Compassionate mind training with people who hear malevolent voices: A case series report. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice, 15*(2), 113-138.

McEwan, K., & Gilbert, P. (2016). A pilot feasibility study exploring the practising of compassionate imagery exercises in a nonclinical population. *Psychology and Psychotherapy: Theory, Research and Practice, 89*(2), 239–243. http://doi.org/10.1111/papt.12078

Mongrain, M., Chin, J. M., & Shapira, L. B. (2011). Practicing Compassion Increases Happiness and Self-Esteem. *Journal of Happiness Studies, 12*(6), 963–981. http://doi.org/10.1007/s10902-010-9239-1

Naismith, I., Mwale, A., & Feigenbaum, J. (2017). Inhibitors and facilitators of compassion-focused imagery in personality disorder. *Clinical Psychology & Psychotherapy, (25)*2, 283-291. http://doi.org/10.1002/cpp.2161

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101.

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and identity, 2*(3), 223-250. https://doi.org/10.1080/15298860309027

Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass, 5*, 1-12. https://doi.org/10.1111/j.1751-9004.2010.00330.x

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology, 69*(1), 28-44.

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*, 139-154. https://doi.org/10.1016/j.jrp.2006.03.004

Ostinelli, M., & Böckenholt, U. (2017). Overcoming lower imagery ability through process priming. *International Journal of Research in Marketing 34*(4), 799-812. http://doi.org/10.1016/j.ijresmar.2017.08.004

Pace, T. W. W., Negi, L. T., Adame, D. D., Cole, S. P., Sivilli, T. I., Brown, T. D., … Raison, C. L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology 34*(1), 87-98. http://doi.org/10.1016/j.psyneuen.2008.08.011

Rockliff, H., Gilbert, P., McEwan, K., Lightman, S., & Glover, D. (2008). A pilot exploration of heart rate variability and salivary cortisol responses to compassion-focused imagery. *Clinical Neuropsychiatry 5*(3), 132-139.

Rockliff, H., Karl, A., McEwan, K., Gilbert, J., Matos, M., & Gilbert, P. (2011). Effects of Intranasal Oxytocin on "Compassion Focused Imagery." *Emotion, 11*(6), 1388–1396. http://doi.org/10.1037/a0023861

Roy, A., (2015). Self-Compassion and Attachment Priming: Does Security Priming Aid Self-Compassion in Self-Critical Individuals? (Doctoral dissertation). *Retrieved from Open Research Exeter.*

Sass, S. M., Berenbaum, H., & Abrams, E. M. (2013). Discomfort with emotion moderates distress reduction in a brief mindfulness intervention. *International Journal of Behavioral Consultation and Therapy, 7*(4), 24.

Şenyuva, E., Kaya, H., Işik, B., & Bodur, G. (2014). Relationship between self-compassion and emotional intelligence in nursing students. *International Journal of Nursing Practice, 20*(6), 588-596. https://doi.org/10.1111/ijn.12204

Shapiro, S. L., Brown, K. W., Thoresen, C., & Plante, T. G. (2011). The moderation of mindfulness-based stress reduction effects by trait mindfulness: results from a randomized controlled trial. *Journal of Clinical Psychology, 67*(3), 267-277.

Shonin, E., Van Gordon, W., Compare, A., Zangeneh, M., & Griffiths, M. D. (2015). Buddhist-derived loving-kindness and compassion meditation for the treatment of psychopathology: A systematic review. *Mindfulness 6*(5), 1161-1180. http://doi.org/10.1007/s12671-014-0368-1

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2015). Self-compassion, stress, and coping in the context of chronic illness. *Self and Identity, 14*(3), 334-347.

Steffen, P. R., & Masters, K. S. (2005). Does compassion mediate the intrinsic religion-health relationship? *Annals of Behavioral Medicine, 30*(3), 217-224.

Tirch, D. (2012). *The compassionate-mind guide to overcoming anxiety: Using compassion-focused therapy to calm worry, panic, and fear*. Oakland, CA: New Harbinger Publications.

Williams, S. E., Burns, V. E., & Cumming, J. (2013). Methodological variations in guided imagery interventions using movement imagery scripts in sport: A systematic review. *Journal of Imagery Research in Sport and Physical Activity, 8*(1), 13-34.

Wood, A. M., & Tarrier, N. (2010). Positive Clinical Psychology: A new vision and strategy for integrated research and practice. *Clinical Psychology Review 30*(7), 819-829. http://doi.org/10.1016/j.cpr.2010.06.003

Yarnell, L. M., Stafford, R. E., Neff., K. D., Reilly, E. D., Knox, M. C., & Mullarkey, M. (2015). Meta-analysis of Gender differences in self-compassion. *Self & Identity, 14*(5), p.499-520. http://doi.org/10.1080/15298868.2015.1029966

Chapter 2

Individual differences in responsiveness to compassion-focused imagery

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Abstract

In the mental health fields, interventions designed to elicit and train compassionate traits have grown in popularity. One of the most commonly utilized techniques is compassion-focused imagery. Patients are guided to visualize themselves either receiving or giving compassion, with the intent of strengthening both self-compassion and compassion for others. There is significant evidence in the long-term effectiveness of compassion-focused imagery at increasing mental health. At an individual level, however, there is significant anecdotal, and limited empirical, evidence for important differences in how patients respond to the interventions. This study sought to explore those individual differences. Participants drawn from Amazon's Mechanical Turk (n = 160) were randomly assigned to one of three compassion-focused imagery conditions or a control body scan condition, and completed measures of visualization ability and attitudes toward compassion. Imaging ability was found to be significantly positively related to participants' ability to mindfully engage with the compassionate imagery (β = .28 to .37, p < .01). Fears of compassion was related to less relaxation in response to the compassionate imagery (β = -.38, p < .01). Absorption (β = .28, p < .01) and baseline compassion for others (β = .29, p < .01) were both related to an increased likelihood of future practice following the intervention. This study provides further evidence of the individual-level differences in responses to compassion-focused imagery and suggests that both ability and attitude play an important role in predicting how individuals will respond to these interventions.

Individual differences in responsiveness to compassion-focused imagery

The cultivation of compassion was originally conceptualized as a practice prescribed to all individuals as a means to improve oneself and integrated within a broader spiritual or self-developmental journey (Leighton, 2003). Since being adopted by western psychology, however, compassion is increasingly used as an independent, targeted intervention, either to increase well-being or remediate psychological symptoms. From interventions which simply incorporate aspects of compassion into larger mind-body interventions (e.g., Mindfulness-Based Stress Reduction; Kabat-Zinn & Hanh, 2009) to those which center therapy around theories of compassion (e.g., Compassion Focused Therapy; Gilbert, 2010), there has been a significant rise in compassionate interventions over the past two decades. Despite the rapid increase in interest in compassion by both researchers and practitioners, and the long history of compassion as a practice across cultures (Goetz, Keltner & Simon-Thomas, 2010), most of the compassion-based interventions in western psychology are still navigating the early stages of development and research support. Both compassionate programs as a whole and the interventions within those programs have begun to be validated for various problems and populations, with generally positive findings. There has been less work, however, which considers the role of moderating variables and individual differences, such as differences in baseline attitudes toward compassion or imagery abilities, in responsiveness to those interventions.

Outcome Research

Working with community samples, Mongrain, Chin & Shapira (2011) found that practicing compassion for one week increased self-esteem and sustained happiness, and Jazaieri et al. (2014) found that over a 9-week period the cultivation of compassion led to increased mindfulness and happiness and decreased worry. In clinical settings where compassion is

integrated into treatment, there is an additional focus on reducing psychological symptoms. For example, in addition to measured self-compassion being strongly correlated with depression and anxiety scores (Matos et al., 2017), the intentional cultivation of self-compassion through loving-kindness meditation practice has been shown to decrease reported symptoms of depression and anxiety, with these changes taking place over as little as a few weeks (McEwan & Gilbert, 2016). Kirby, Tellegen & Steindl (2017) conducted a meta-analysis on 21 randomized controlled trials which looked at compassion-based interventions and found consistent improvements in self-compassion, mindfulness, depression, and anxiety, and overall well-being, even when compared to active control groups. Importantly to the development of the field, the construct of compassion, while present in differing levels in the general population, appears to be a skill which can be obtained and developed.

Interventions

In therapeutic settings, various methods are implemented in the service of cultivating and training compassion. The traditional intervention by which compassion is intentionally cultivated is through meditative practices such as loving-kindness meditation and compassion meditation (Hofmann, Grossman & Hinton, 2011) and these practices continue to be included in many compassion-based therapies. Another commonly utilized intervention is compassionate letter writing (Gilbert, 2010), which encourages clients to offer themselves compassion toward their struggles. One of the most utilized interventions in contemporary compassion-based therapies is compassion-focused guided imagery (CFI; Gilbert & Irons, 2004; Gilbert & Proctor, 2006; Naismith, Mwale & Feigenbaum, 2017).

Guided imagery refers to the multi-sensory mental generation of internal experiences (Arbuthnott, Arbuthnott & Rossiter, 2001), and has been used for healing and personal

development for thousands of years (Stopa, 2009). Western laboratory-based research into imagery began in the 1800s, highlighted by the work of Galton (1883) comparing the imagery experiences of individuals from different vocational fields. During this time period, much of the study of psychology was conducted through introspection, so there was frequent discussion of how imagery played into psychological phenomenon (Hall et al., 2006). Within the field of psychotherapy, the use of guided imagery as a technique has pervaded many of the primary theories, from Jungian psychoanalysis to modern behavioral desensitization procedures (Gilbert, 2009). In contemporary behavioral practices, the use of imagery is based in the theory that the brain treats internal sensory-based experiences, such as visualization and imagery, in nearly identical ways to how it treats externally based stimuli, for which there is growing support from neuropsychological studies (Decety, 1996; Ganis, Thompson & Kosslyn, 2004). This means that psychologists can create contexts in which clients experience a much wider range of targeted situations than would be possible by using only external stimuli.

Compassion-Focused Imagery

In compassion-focused imagery (CFI), these contexts typically have three primary features (Gilbert, 2014). First, the interventions include the imagining and feeling of compassionate characteristics or attributes, such as empathy, sensitivity, non-judgment, distress tolerance, and wisdom. Second, there is a specific target for those compassionate attributes. This may be oneself, a person from memory, an imagined other, a religious figure, or may encompass many people or lifeforms. This target may change throughout the practice, but because of the dynamic nature of compassion, it always involves the third component, a directional flow. Compassion involves both a sensitivity to suffering and a motivation to alleviate that suffering, and so necessarily requires both a giver and receiver. Even if the compassion is self-focused

there is a sense of 'giving oneself' compassion, rather than simply experiencing compassion as an independent emotion or motivation. The directional flow then can take one of three forms - self-focused compassion, compassion flowing from oneself to others, or compassion flowing from others to oneself. The practice of compassionate imagery, therefore, requires the openness to experience compassionate attributes and feelings, either directed toward others or toward oneself, as well as the ability to create and engage with an image involving direction flow of those attributes.

Gilbert suggested in 2009 that there was little research into how the specific content and format of compassionate imagery affected outcomes, and this remains true today. The majority of research utilizing CFI exercises focus either on the use of a single type of compassionate imagery (e.g., Mongrain, Chin & Shapira, 2011), or includes all three major orientations (self-compassion, compassion for others, compassion from others) in a broader multi-session intervention (e.g., Matos et al., 2017). To date, no research has explored how different compassionate images could be tailored to specific clients, despite the knowledge that there is significant variability in responses to the most widely used CFI exercises (Gilbert & Irons, 2004). The current study seeks to help fill that gap and provide clinicians with a potential tool by which to help select the most appropriate form of compassionate imagery for each client.

As noted above, two of the presumed underlying conditions of CFI practice are a willingness to engage emotionally with compassionate qualities, and an ability to create and maintain an image of those qualities in reference to either an imagined self or other. In order to most accurately capture those constructs, proximate variables related to compassionate attitudes and imagery ability will be examined. Future research, however, should consider including

broader or more distal constructs as potential moderators, such as self-criticism, personality factors or emotional intelligence.

The Present Study

The goal of the current study is to contribute to the extant research on compassionate imagery around how different types of imagery exercises are received by and benefit different individuals. In order to explore the differential effectiveness of three common compassionate imagery exercises based on the orientations of the compassion (directed toward self, toward others, or from others to self), participants will be randomly assigned to one of the three compassionate imagery exercises or a guided relaxation control condition. In addition to looking at the relative efficacy of the three major orientations of compassionate imagery on affective response, the roles of attitude toward compassion and imagery ability in differential responsiveness to CFI will be explored. With negative affective responsiveness appearing to be a key barrier to effectiveness, and fears of compassion linked to resistance and negative reactions to compassionate interventions, the current study will look at whether there is a relationship between an individual's fears of compassion within a specific orientation and their outcomes from CFI in the associated orientation. Additionally, to complement the avoidance construct of fears of compassion, an approach construct of compassionate engagement and action will be included to explore whether competence in compassion plays a role in outcomes. Finally, to capture the ability component, image generation ability and absorption (tendency to fully engage with self-generated images) will be examined to determine the role that ability plays in moderating outcomes.

Method

Participants

Power analyses indicated that large effect sizes should be expected for the overall effects of compassionate imagery on the dependent variables used (e.g. Naismith, Mwale & Feigenbaum, 2017) and suggested a minimal sample size of approximately 20. Because multiple analyses were planned, including analyses broken down by intervention and dependent variable, a total sample of 160 participants was collected (40 participants in each intervention condition).

Participants were recruited from Amazon's Mechanical Turk (MTurk) workforce and Qualtrics Research Panels & Samples. To qualify, participants had to be adults located in the United States. These qualifications were administered through MTurk. Participants were paid $3.25 for participating. In total, 184 participants accessed the survey. Of those, 2 started but did not complete the survey, and 22 failed to pass at least one adherence check.

The final sample consisted of 160 participants with a mean age of 35.6 (SD = 11.6). The majority of the sample was male (n = 88), with 69 participants identifying as female, and 3 identifying as nonbinary or gender queer. One hundred sixteen of the participants in the sample identified as White, 13 as Black or African American, 6 as Asian/Pacific Islander, 14 as Hispanic/Latinx, 1 as Middle Eastern or North African, and 10 as multiracial. Half of the sample (n = 80) responded that they had no prior experience with mindfulness or compassion practices, 39 responded that they had "minimal" prior experience, 19 "some" prior experience, 16 "moderate" prior experience, and 6 responded that they had "extensive" prior experience.

Interventions

The basic intervention procedures were based on those used by Rockliff and colleagues (2011), and began with an audio recording which gave a brief explanation of the guided exercise they were to complete (either one of the CFIs or guided relaxation based on their random

assignment), simple definitions of mindfulness and compassion, and instructions on how to handle mind wandering during the exercises. All participants then participated in a five-minute guided breathing meditation which transitioned into their assigned intervention lasting 10 minutes.

Compassion-Focused Imagery. The compassionate imagery exercises used in this study mirrored those used by practitioners researching compassionate mind training as a more global intervention (e.g., Matos et al., 2017). They were constructed by the researcher and reviewed by two experts in the field of mindfulness and compassionate therapy for content validity (see Appendix A). For the compassion *from other* CFI, participants were directed to imagine compassion flowing into themselves from a compassionate being or image. The specific nature of this image was undefined, but had compassionate qualities of wisdom, strength, and a motivation to alleviate and prevent suffering. For the compassion *for other* CFI, participants imagined themselves with those same compassionate qualities, and imagined compassion flowing out of themselves into someone they care about. For the *self-compassion* CFI, participants imagined themselves with the qualities of compassion but imagined sending themselves compassionate feelings (Gilbert & Choden, 2014). Each of these involved imagining compassionate qualities residing in the self or other and flowing in a particular direction.

Guided Relaxation Control. Participants assigned to the guided relaxation control group, after listening to the guided breathing meditation, went through a guided body-scan exercise (Kabat-Zinn, & Hanh, 2009). They were instructed to focus on various parts of their body, beginning at their feet and moving upwards, and instructed to direct their breath and awareness to each area before moving on.

Measures

Imagery Experience and Behavioral Questionnaire. At the conclusion of the study, participants completed a brief self-report of their ability to engage with the guided exercise. For those in the compassionate imagery conditions, items included the ease with which they felt they could experience compassion during the exercise, to what extent their image of the other or themselves had compassionate qualities, and the vividness of the imagery in terms of sound, sight, movement and interactions. This measure has been used in previous research (Naismith et al., 2017) and has shown good internal consistency with alpha coefficients ranging from .82 to .95.

Participants also completed a questionnaire which assessed how the intervention affected their likelihood to participate in compassion practices in the future (i.e., “Did this experience make you more or less likely to practice compassion in the future?”). In clinical settings, continued active participation has been shown to be one of the best predictors of a client’s ability to overcome resistance and eventual outcomes (McEwan & Gilbert, 2016).

They were also asked to what extent they participated in the imagery and how much effort and attention they put into the exercise. These items acted as an adherence check for active participation in the guided exercise.

Negative Affect (NA). The negative affect (NA) subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988) is a 10-item scale which measures negative affect through the rating of a series of adjectives. The scale was adapted to focus on current experience of affect, so participants were instructed to rate each adjective (e.g., ‘afraid', ‘upset') for how much they feel each emotion "right now, at the present moment" on a scale from 0 (very slightly or not at all) to 4 (extremely). The PANAS has been well validated across a

range of populations and has consistently shown good internal consistency with Cronbach alphas in the .80-.90 range (Crawford & Henry, 2004; Watson, Clark & Tellegen, 1998).

Types of Positive Affect Scale (TPAS). The TPAS (Gilbert et al., 2008) is an 18-item scale which involves the rating of a series of 'feeling' words in order to capture positive affect along three different factors: active positive affect (e.g., 'excited', 'active'), relaxed positive affect (e.g., 'calm', 'peaceful'), and safe/content positive affect (e.g., 'safe', 'warm'). The scale was adapted to focus on current experience with participants instructed to rate how much each adjective is "characteristic of them right now, in the present moment" on a scale from 0 (not characteristic of me) to 4 (very characteristic of me). In the initial validation study, all three scales showed adequate reliability, with the active and relaxed scales having reliability coefficients of .83, and the safe/content scale having an alpha of .73. The safe/content subscale was found to have the largest negative correlations with depression, anxiety, and stress.

Toronto Mindfulness Scale (TMS). The TMS (Lau et al., 2006) is a 13-item scale which measures state mindfulness across two dimensions - curiosity and decentering. For this study, the two dimensions were combined into a total state mindfulness score. Participants rated how much each statement (e.g., "I was curious about my reactions to things") applies to their experience in the guided imagery or relaxation exercise on a scale from 0 (not at all) to 4 (very much). The TMS has shown very high internal consistency, with an alpha coefficient of .95 in the initial validation samples, and has been widely used and validated as a measure of state mindfulness sensitive to the effects of brief mindfulness-related interventions (e.g., Garland, Hanley, Farb, & Froeliger, 2015; Pepping, O'Donovan, & Davis, 2013).

Fears of Compassion Scales (FCS). The FCS (Gilbert et al., 2011) are a set of three scales designed to measure fears of compassion within each of the three orientations of

compassion. The Fears of Compassion *for self* scale (e.g., “I feel that I don’t deserve to be kind and forgiving to myself”) is 15 items, the Fears of Compassion *for others* scale (e.g., “People will take advantage of me if they see me as too compassionate”) is 10 items, and the Fears of Compassion *from others* scale (e.g., “Wanting others to be kind to oneself is a weakness”) is 13 items. Participants rated how much they agree with each statement on a scale from 0 (don’t agree at all) to 4 (completely agree). All three scales showed good psychometrics in initial studies, with Cronbach alphas ranging from .78 to .87 in a sample of therapists and from .84 to .92 in a student sample. All three scales also correlated significantly with anxiety, stress, depression and attachment security in the expected directions.

Compassionate Engagement and Action Scales (CEAS). The CEAS (Gilbert et al., 2017) are a set of three scales designed to measure each of the two primary components of compassion, an orientation and sensitivity to suffering, and a motivation to alleviate or prevent it (Gilbert, 2014). The three scales measure these two components for each of the three orientations of compassion. The components are captured in a subscale measuring *engagement*, or the motivation to engage with and be empathetic toward suffering, and a subscale measuring *action*, or the ability to behave in compassionate ways. For this study the two subscales were combined for each of the three orientation scales, creating three scales which measure overall compassion competence within each orientation of compassion. Each scale consists of 13 statements (eight engagement items and five action items), in which participants are asked to rate how frequently each statement (e.g., "I am motivated to engage and work with my distress when it arises"; “I take the actions and do the things that will be helpful to me”) applies to them when they are "distressed or upset by things" on a scale from 1 (never) to 10 (always). The CEAS were validated on samples from the United States, the United Kingdom, and Portugal, and the

measures had adequate reliability in all three samples (all above .74). Compassion for others related only to well-being, but compassion from others and self-compassion were both negatively correlated with depression, anxiety, and stress, as well as being positively related to well-being.

Imaging Ability Questionnaire (IAQ). The IAQ (Kwekkeboom, 2000) is a 32-item scale which captures two factors of overall imagery ability - image generation ability, and absorption. It draws items from the Tellegen Absorption Scale (TAS; Tellegen, 1982), the Vividness of Visual Imagery Questionnaire (VVIQ; Marks, 1973), and Betts' Questionnaire Upon Mental Imagery (QMI; Betts, 1909). The image generation subscale asks participants to visualize various scenes and rate the vividness of the generated images. The absorption subscale has items designed to capture six facets of absorption - responsiveness to stimuli, synesthesia, enhanced cognition, dissociative involvement, vivid reminiscence, and enhanced awareness. Together the absorption subscales assess a general tendency to fully engage with and become absorbed in mental imagery. Previous research has found that absorption and image generation ability both play a role in moderating the effectiveness of imagery-based interventions (Kwekkeboom, Kneip, & Pearson, 2003; Kwekkeboom, Wanta, & Bumpus, 2008). The IAQ shows good internal consistency (r = .93 in the initial validation study), and test-retest reliability (r = .92 over a 1-week interval). The IAQ total score, as well as both subscales, have been shown to discriminate between individuals who find guided imagery helpful in reducing anxiety (Kwekkeboom, 2000), or reducing pain (Kwekkeboom, Wanta & Bumpus, 2008) and those who don't.

Demographic Questionnaire. An author-constructed demographics questionnaire was administered (see Appendix B). The questionnaire collected information on age, gender, race and

ethnicity, marital status, highest level of educational attainment, income range, and experience with compassion or mindfulness practices. They were then given the opportunity to give any qualitative feedback about their experience with the study through an open question asking for any comments, questions or concerns about the study or exercise they completed. This data will be used to refine the study procedures for future research.

Procedures

Once participants registered for the study and completed the informed consent, they were directed to a Qualtrics survey in which they completed the study. They first read a written description of the procedures, and instructions about how to prepare themselves and their environment for completing the audio-guided exercises. They were informed that dedicated time in a safe, quiet and comfortable environment is necessary to fully participate in the task, and they were required to affirm that they are in such a location before proceeding. They were then directed to the first audio recording which provided an outline of the guided exercise they would be completing. It briefly discussed the definitions and meanings of mindfulness and compassion and instructed them on how to manage wandering mind as it arises during the practice. Inclusion of these introductory components adds to the ecological validity of the study, as those practicing compassionate imagery exercises, either independently or as a client, will nearly always have some background information and instruction prior to beginning the practice. Once they completed the introductory audio, they were directed to their assigned guided exercise.

Following the imagery exercise, participants completed the survey measures. They first completed the measure of engagement and adherence, then the scales of affect and state mindfulness, followed by the measures of attitudes toward compassion, and concluded with the demographics survey.

Hypotheses

This study examined the following hypotheses:

H1: Participants in the compassion-focused imagery conditions will have greater positive affect scores and lower negative affect scores after the intervention than the guided relaxation control group. With limited theory or data to suggest an advantage for a particular orientation of compassionate imagery no specific hypotheses will be put forward around the differential benefits of the imagery orientations, but relationships between orientation and outcomes will be explored.

H2: Across all intervention conditions, greater imaging ability will be related to more positive scores on the outcome variables (i.e., greater state mindfulness, greater positive affect, lower negative affect, and increased intent to practice compassion in the future).

H3: Within a matched orientation (e.g., the relationship between fears of self-compassion for participants assigned to the self-compassion intervention), there will be a significant relationship between fears of compassion and outcome variables, such that participants with higher fears of compassion will have less positive scores on the outcome variables (i.e., lower state mindfulness, lower positive affect, higher negative affect, and intent to practice compassion in the future).

H4: Within a matched orientation (e.g., the relationship between self-compassion competence for participants assigned to the self-compassion intervention), there will be a significant relationship between compassion competence and outcome variables, such that participants with higher compassion competence will have more positive scores on the outcome variables (i.e., greater state mindfulness, greater positive affect, lower negative affect, and increased intent to practice compassion in the future).

Data Analysis

Data was analyzed using R (R Core Team, 2013). Histograms of dependent variables were constructed and assessed for normality. All dependent variables were roughly normal. As a primary goal of the current study is to provide clinicians with applied data related to measures which could be utilized within sessions, clinical utility was a strong consideration in determining the appropriate statistical methods. Therefore, in order to maintain clinical applicability, analyses utilized linear models and means analyses. Future studies could consider using structural equation modeling or other latent construct analyses in order to provide a finer-grained assessment of the underlying relationships between constructs.

Repeated-measure ANOVAs were used to assess for the overall effects of the interventions and for differences in effects across the four conditions (one control and three compassion conditions). The remaining hypotheses focused only on the compassion conditions so the control condition was excluded from all other analyses.

Correlations were calculated between all variables. Regression models for each dependent variable were examined to assess for the hypothesized interaction between condition and the subscales of fears of compassion and compassion engagement and action. Hierarchical regression models were then examined to assess the relationship between the independent variables (IAQ absorption and image generation, fears of compassion, and compassion engagement and action) and the dependent variables (change in affect, state mindfulness, engagement, and change in the likelihood of future compassion practice). In order to assess the relative contribution of imagery ability and experience of compassion, IAQ absorption and image generation were entered in the first step, and fears of compassion and compassion engagement and action were entered in the second step in all models. Given the increased risk

for Type I errors due to multiple analyses, a conservative significance level of .01 was used to interpret all analyses.

Results

Test of Conditions

Repeated measures ANOVAs were run for each of the affect variables to assess the overall effectiveness of the guided interventions and to test the hypotheses that the compassion-focused imagery conditions would lead to more positive outcomes. Time was a significant predictor of increased relaxed affect ($F(1,156) = 70.54$, $p < .0001$) from baseline ($M = 3.19$, $SD = 0.91$) to post-intervention ($M = 3.81$, $SD = 0.85$) and safe/content positive affect ($F(1,156) = 30.75$, $p < .0001$) from baseline ($M = 3.37$, $SD = 0.92$) to post-intervention ($M = 3.71$, $SD = 0.84$; Table 1) but was not significantly related to change in negative affect or active positive affect. Condition and the interaction between time and condition were non-significant for all affect variables.

Correlations

Zero-order correlations between study variables were calculated (see Table 2). IAQ absorption and image generation were both significantly related to state mindfulness ($r = .48$; $r = .46$) and engagement with the guided compassion imagery ($r = .33$; $r = .38$), while IAQ absorption was also correlated with change in likelihood of future compassion practice ($r = .30$) and with all three FCS subscales (rs from .50 to .61). CEAS for others was significantly related to change in likelihood ($r = .24$), change in relaxed positive affect ($r = .28$) and change in safe/content positive affect ($r = .25$). CEAS compassion for others was also correlated with fears of compassion for others ($r = -.28$), and both CEAS compassion for others and CEAS self-compassion were correlated with fears of compassion from others ($r = -.39$; $r = -.31$) and with

fears of self-compassion (r = -.38; r = -.32). CEAS self-compassion and CEAS compassion from others were related to state mindfulness (r = .41; r = .31) and with engagement (r = .37; r = .29).

The CEAS subscales were all intercorrelated (rs from .26 to .50), but not strongly enough to suggest problems with multicollinearity. The FCS subscales were all highly intercorrelated (rs from .67 to .92). Change in negative affect and active positive affect were not significantly correlated with any independent variables. State mindfulness, engagement, and change in likelihood were all correlated (rs between .42 and .65). Change in safe/content positive affect was correlated with change in relaxed positive affect (r = .58) and change in active positive affect (r = .39).

Interaction Testing and Variable Consolidation

With negative affect and active positive affect being unrelated to any independent variables and unaffected by the intervention, they were excluded from further analyses. Regressions were run for each remaining dependent variable exploring the interaction between condition and the fears of compassion and compassion competence subscales, and no interaction terms were found to be significant. Given the lack of significant differences in outcome variables between the compassion intervention conditions and lack of interaction between the FCS and CEAS subscales with condition, remaining analyses were collapsed across the three compassion intervention conditions. Additionally, with the FCS subscales showing high intercorrelations and VIFs above 5 indicating multicollinearity (Fox, 1991), FCS total score was used in subsequent models. The CEAS subscales were moderately intercorrelated, as noted above, and had VIFs ranging from 1.38 to 1.77 so were maintained as distinct subscales.

Individual Differences Regressions

Hierarchical regression analyses (see Table 3) revealed that overall across the compassion intervention conditions (n = 120), the independent variables accounted for the largest proportion of variance in state mindfulness (R^2 = .46), followed by engagement (R^2 = .33).

As hypothesized, change in relaxed positive affect was significantly related to fears of compassion (β = .27), with fears of compassion accounting for eight percent of the variance in relaxed positive affect. Participants with greater fears of compassion, therefore, experienced less increase in relaxed affect from the interventions. Contrary to my hypothesis, change in safe/content positive affect was not significantly predicted by any of the independent variables included in the model.

As predicted, state mindfulness was significantly related to IAQ absorption and image generation (β = .37; β = .35), as well as CEAS self-compassion (β = .27). Participants higher in IAQ absorption (i.e., tendency to become engaged and absorbed in mental imagery) and IAQ image generation (i.e., ability to create clear and vivid mental images; Kwekkeboom, 2000), as well as those higher in CEAS self-compassion (i.e., motivation and actions to engage compassionately with one's own distress) reported higher state mindfulness (i.e., an experience of feeling separate from, and curious about, internal experience; Lau et al., 2006).

Engagement was significantly related to IAQ absorption (β = .30) and image generation (β = .28). Participants higher in absorption and image generation reported greater engagement (i.e., the ease with which they were able to generate vivid images imbued with compassionate qualities) in the compassionate imagery interventions.

Reported change in the likelihood of future compassion practice was significantly related to IAQ absorption (β = .28) and CEAS compassion for others (β = .29). Participants who were

higher in absorption and CEAS compassion for others (i.e., motivation and actions to engage compassionately with others' distress) reported greater increases in their likelihood to practice compassion independently after experiencing the intervention.

Discussion

This study explored the impacts of brief guided imagery exercises in a non-clinical population. Specifically, the relationship between outcomes and baseline levels of imaging ability, fears of compassion, and compassion competence were explored. Key findings were that imaging ability and baseline self-compassion were related to a more engaged experience of the intervention itself, while higher fears of compassion was related to a less relaxing experience. Ability to become fully engaged in imagery and baseline levels of compassion for others were related to higher self-reported likelihood to practice compassion in the future after completing the intervention.

Intervention Checks

The initial hypothesis, that the compassion intervention conditions would lead to greater increases in positive affect and decreases in negative affect than the body scan condition was not supported. The interventions led to increases in relaxed and safe/content positive affect, but there were no significant differences between the intervention and control conditions. This is perhaps unsurprising with the significant overlap in content between the compassion conditions and the body-scan condition. All conditions completed the introduction script which included discussion of both mindfulness and compassion and then completed the same breathing script before beginning their separate interventions. The inclusion of an introduction, while increasing the ecological validity of the protocol, may also have encouraged participants in all of the

conditions, including the body scan control condition, to consider compassion while completing the guided visualization.

Regarding the non-significant change in negative affect, previous research has been mixed as to whether compassionate imagery interventions affect both negative and positive affect (e.g., Hofmann et al., 2011), or just positive affect (e.g., Fredrickson et al., 2008). It is also possible that floor effects prevented significant changes in negative affect, as participants reported low negative affect prior to the intervention ($M = 1.85$), leaving little room for reduction. Mirroring the results found in this brief intervention, Matos et al., (2017) also found that a 2-week compassion training led to increases in relaxed and safe/content positive affect, but did not relate to changes in active positive affect (negative affect was not measured in their study).

Imaging Ability

Hypothesis 2 predicted that greater imaging ability would be related to more positive outcomes across conditions, and was partially supported. The ability to generate and engage with imagery more generally was not related to change in affect but was predictive of an ability to engage in the compassionate imagery, and an ability to generate a state of mindfulness while participating in the compassionate imagery. Independent of the other predictor variables, imaging ability accounted for 21% of the variance in engagement in the compassionate imagery, and 34% of the variance in state mindfulness during imagery. Additionally, increased ability to engage with imagery was related to greater self-reported likelihood to practice compassion in the future.

These results align with previous research showing that general imagery ability is predictive of engagement in compassionate imagery more specifically (Naismith et al., 2017).

Additionally, research which has looked at longer-term interventions using guided imagery has found that being able to generate and engage with vivid images is predictive of better outcomes (Kelley et al., 2010; Kwekkeboom et al., 1998). Researchers have also found that positive outcomes from longer-term compassionate interventions are related to outside practice and engagement (Naismith et al., 2017; Jazaieri et al., 2013), so it may be through those mechanisms that imaging ability relates to more positive outcomes, rather than directly through short-term changes in affect. Future research looking at the effects of broad compassion interventions should include a measure of imaging ability to explore possible pathways.

Differences Between Conditions

With treatment condition being non-significantly related to all outcome variables, and no indication of differential relationships between the fears of compassion and compassion engagement and action subscales across conditions, the portion of hypotheses three and four which suggested that the relationship between fears of compassion and compassion engagement and action would be greater within matched orientations was not supported. As with the non-significant differences between the control and compassionate intervention conditions, it is possible that the similarities between the conditions outweighed the differences in scripts. All of the compassionate imagery conditions included, in addition to the introductory script and guided breathing exercise, suggestions to focus on specific qualities of compassion and experience feelings of gratitude and pleasure, with only the specific directionality of the compassionate qualities being different.

Previous research has either focused on a single orientation, such as just compassion from others (e.g., Naismith et al., 2017), or each participant experienced multiple orientations within a broader compassion-focused intervention (e.g., Matos et al., 2017). This is the first study to

attempt to directly compare immediate responses to the different compassion orientations. While the non-significant differences between conditions could suggest minimal differences in immediate responses to the different orientations, the lack of significant differences could be due to smaller sample sizes within conditions, making it difficult to detect subtle discrepancies in responsiveness. Larger sample sizes or the inclusion of non-self-report outcome measures (e.g., behavioral or physiological measures) could increase sensitivity in future studies.

Orientations of Compassion Subscales

When exploring the relationships between the subscales of the fears of compassion scale, a number of interesting trends emerged. In this sample, the correlations between the subscales followed the same general patterns as previous research (with fears of self-compassion and fears of compassion from others being most highly correlated, and each slightly less related to fears of compassion for others), but the intercorrelations were all noticeably higher (see Table 2) than has been found previously (e.g., Gilbert et al., 2011; Jazaieri et al., 2013). Additionally, when examining histograms of the responses, the distributions appeared to group into a bimodal, rather than normal, pattern (see Figure 1). This finding was mirrored in a post hoc item-by-item analysis, suggesting that it was a feature of the responses more globally, rather than outlier items skewing the data.

In this sample it appeared that respondents tended to either have relatively high or relatively low fears of compassion, regardless of the specific orientation of compassion. Clinically, this could suggest that prior to beginning interventions, individuals tend to hold relatively strong views one way or the other on compassion. It would be interesting to explore whether this tend holds over longer interventions, where changes in fears of compassion have been found. That is, do participants jump from one category to the other, or do more nuanced

perspectives develop over time? This distribution pattern has not been noted in previous research, so replication of this finding will be important.

The subscales on the CEAS, which measure engagement and action in compassion when dealing with difficult emotions, were moderately correlated with each other, and at levels consistent with previous research (Gilbert et al., 2017). Additionally, as has been found previously, fears of compassion and compassion competence, while moderately correlated, appear to measure distinct constructs. Competence in self-compassion and compassion for others showed small to moderate correlations with fears of compassion, while compassion from others was unrelated to any of the fears of compassion subscales. Conceptually, the CEAS compassion from others subscale could be seen as distinct as it asks participants about their perceptions of how others "engage with your distress" and so could represent an external, rather than internal, perspective and locus of control. Matos et al., (2017) found that while the CEAS subscales showed relatively low correlations at baseline (r = .10 to .32), after a two-week training in compassion the correlations between the different orientations became significantly stronger (r = .54 to .71). This could suggest that through more sustained practice, the perceived differences between engaging in compassion personally and being open to the compassion of others are lessened.

Fears of Compassion

Hypothesis 3 predicted that baseline levels of fears of compassion would be related to responses to the compassionate imagery conditions. Specifically, they predicted that having lower fears of compassion would be associated with more positive outcomes following the compassion interventions. This hypothesis was partially supported by the results. Fears of compassion was significantly related to change in relaxed positive affect following compassion

interventions, such that participants who were higher in fears of compassion derived significantly less benefit from the intervention. Level of fear of compassion accounted for eight percent of the total variance in change in relaxed positive affect. The only other study which included fears of compassion as a potential moderator (as opposed to an outcome) did not find any significant relationship between fears of compassion and other outcomes, however only the fears of self-compassion scale was administered, and the researchers noted that their imagery conditions were limited to the compassion from others orientation (Naismith et al., 2017).

Fears of compassion has consistently been found to be related to depression, anxiety, and stress in both clinical and nonclinical populations (Gilbert et al., 2014a; Gilbert et al., 2014). Post hoc analysis showed that in this sample fears of compassion, while unrelated to change in negative affect, was highly correlated with baseline levels of negative affect ($r = .74$, $p < .001$). This suggests that while there is a significant relationship between fears of compassion and baseline negative affect, a single experience of compassion-focused imagery may not be sufficient to effect change. Naismith et al. (2017) found that higher levels of baseline negative affect was significantly related to poorer outcomes in a multiple-intervention study, and suggested that beginning with higher levels of negative affect could have led to decreased motivation and engagement. In this study there was no significant relationship between fears of compassion and engagement or change in likelihood of future practice, but with fears of compassion being strongly linked to baseline negative affect and related to more difficulty experiencing relaxation during compassion interventions, clinicians should be aware of the possibility that clients with significant fears of compassion and baseline negative affect may struggle to gain full benefits from compassionate imagery interventions.

Compassion Competence

Hypothesis 4, which predicted that having greater baseline levels of compassion competence would be related to better outcomes, similarly found partial support in the data. Compassion competence was not significantly related to any change in affect after the intervention, but subscales were related to state mindfulness, engagement, and change in likelihood of future practice. Being open to compassion from others was independently correlated with state mindfulness and engagement in the compassion practices, but after controlling for the other predictors, was not significantly related to any of the outcome variables. As noted above, the CEAS from others scale may have captured a slightly different construct than the other CEAS subscales, as its focus was on other's compassion, rather than one's own. During the development of the scale, Gilbert et al. (2017) also found that the compassion from others subscale was only weakly correlated with measures of mood and well-being, so the findings of this study may not be all that surprising.

Greater competence with self-compassion was related to a greater ability to experience state mindfulness during the compassion interventions, accounting for seven percent of the total variance in state mindfulness. While not quite reaching significance when controlling for the other predictive variables ($p = .011$), competence in self-compassion was independently correlated with engagement ($r = .37$, $p < .001$) and accounted for six percent of the total variance in engagement. Together, these findings suggest that a participant's baseline levels of self-compassion competence play a significant role in their ability to mindfully generate and engage with compassionate imagery.

Previous research has found that baseline self-compassion is related to better outcomes in intervention studies, such as lower stress (Bluth, Roberson & Gaylor, 2015), improvement in physiological symptoms (Kelly et al., 2013), and reduced self-stigma and shame (Chandler,

2013). Findings are more limited, however, as to how baseline self-compassion relates to engagement in interventions. Toole and Craighead (2016) found that practice frequency of brief self-compassion meditation was unrelated to baseline self-compassion, and Prezezdziecki and Sherman (2016) found no relationship between baseline self-compassion on the effects of a self-compassion writing intervention. The current findings suggest that trait self-compassion could function in a more proximal role, affecting participant's ability to fully and mindfully engage in compassionate interventions, which could lead to the differences in outcomes seen in longer intervention studies.

The CEAS compassion for others subscale was independently correlated with changes in relaxed ($r = .28$, $p < .01$) and safe/content affect ($r = .25$, $p < .01$), but after controlling for the other predictive variables was not significantly related to either. Compassion for others was, however, significantly related to change in likelihood of practicing compassion in the future, and accounted for the largest percent of total variance of any predictor variable (six percent). The relationship between baseline compassion for others and well-being variables has seen mixed evidence. Trait level of compassion for others has been related to lower self-judgment (Beaumont et al., 2016), but in the development of the CEAS scales, the compassion for others subscale was the only subscale to show non-significant relationships with depression, anxiety, and stress (Gilbert et al., 2017).

Matos et al. (2018) found that the processes underlying offering compassion to others differed from those of being the recipient of compassion (either from others or oneself). In this sample, even when controlling for fears of compassion and openness to receiving compassion, participants who had greater compassion for others found the experience of a compassionate imagery exercise to be distinctly motivating - encouraging them to pursue their own practice in

the future. This could suggest that encouraging clients to engage with their caregiving perspectives prior to beginning compassionate interventions could help increase the motivating aspects of those interventions.

Strengths and Limitations

A non-clinical sample was utilized, broadening the generalizability of the findings to a wider population, but potentially limiting the generalizability to clinical populations, particularly those with more severe psychopathology. Additionally, the current sample included a higher percentage of males and a higher percentage of participants who identified as white than the population as a whole. The use of a control condition, as well as the inclusion of pre and post measures of affect, allowed for a check on the efficacy of the interventions. The lack of significant difference between the body scan control condition and then compassion intervention conditions, however, leaves open the possibility that the effects seen resulted from other uncontrolled factors, rather than the specific interventions chosen. Additionally, while sample sizes may have been sufficient to explore pre-post differences, they may have been underpowered to detect more subtle differences between groups.

Similarly, including each of the three orientations of compassion as separate conditions was a strength of the design, but finding no interaction between condition and any outcomes, and no differential relationships between any predictors within different conditions removed the possibility of exploring intervention specific relationships.

At least half of the participants in the study did not have any previous experience or training in compassionate imagery, whereas in clinical practice clients may have received significant exposure to the concepts of compassion and compassionate imagery prior to beginning the imagery exercises. This was addressed somewhat by including an introductory

script in all conditions. Additionally, previous experience with mindfulness and compassion was explored as a potential covariate, but was unrelated to outcome.

This study represented a brief, single-episode of compassionate imagery, administered online, all factors which could have served to reduce the potency of the intervention. Manipulation and attention checks were used to encourage engagement, but the level of sustained attention given by online participants may in many cases have been very different from what could be seen in an in-person clinical setting. Additionally, as many of the variables being studied appear to have indirect relationships with clinical outcome, future studies should include potential moderators in longer-term interventions to examine the temporal pathways between baseline characteristics and outcome. Inclusion of other broader trait level measures, such as personality, may also help to further define the roles of potential moderators.

In an effort to maintain clinical utility, statistical analyses were limited to means analyses within the general linear model. Many of the variables, however, appear to potentially have more complicated relationships, and structural equation modeling or other latent variable analysis could provide a more accurate depiction of the relationships between baseline attitudes and abilities, engagement, and affect variables.

Clinical Implications

Supporting previous findings (Kelly et al., 2010; Naismith et al., 2017), imaging ability appears to play a key role in clients' ability to generate and engage mindfully with the compassionate qualities of guided imagery exercises. While it appears that clients can still experience positive affective and long-term benefits from the exercises even when lower in imaging ability, it may be particularly important to explore the expectations of those clients. Identifying clients with lower imaging ability and highlighting instruction that they may or may

not be able to develop a clear picture (Gilbert & Choden, 2014), may create a more positive experience for those clients. Additionally, while there has yet to be research directly exploring imagery primes in a clinical setting, it may be beneficial to "warm-up" the client's imagery system with some brief exercises (Ostinelli & Böckenholt, 2017). Having them practice visualizing a clear positive memory or a familiar scene prior to beginning a compassionate imagery exercise could encourage a more engaging experience.

Much of the previous research into compassionate interventions has shown that over time, they have the ability to decrease fears of compassion (Jazaieri et al., 2013) and increase engagement in compassion (Matos et al., 2017). Having greater fears of compassion and less compassion competence at baseline, however, may represent initial barriers to clients. Clients who are particularly high in fears of compassion (and the current data suggests it may be a fairly dichotomous distinction) will likely struggle to relax during compassionate imagery exercises. While a common instruction in mindfulness and compassion practices is that relaxation is not necessarily a goal, it is still likely that the client will come in with strong expectations around meditation and imagery needing to be relaxing experiences to be effective. Particularly for those clients who find the practice of compassion threatening, those expectations should be directly addressed.

In western society, it tends to be more difficult for individuals to allow themselves to receive compassion, either from self or others, than it is to give compassion outwardly (Jazaieri et al., 2013). Participants in this sample showed lower fears of and greater competence in compassion for others than either of the receiving compassion orientations, a pattern seen in research on a range of western countries (Gilbert et al., 2017). While there was no evidence in this study of differences in responding based on the specific orientation of the compassionate

imagery exercise, clients may find it helpful to approach the discussion of the concepts of compassion from a caregiving, rather than a care-receiving standpoint, at least in the initial stages.

Therapists are highly aware of the differences between individuals, but many times intervention research fails to include that micro-level data, instead favoring broader brush strokes. With growing evidence supporting the overall efficacy of compassion-based interventions, it is important that researchers begin to include individual level variables in their work. The findings of this study, while certainly not comprehensive, provide some insights for practitioners attempting to adapt their interventions to best fit each individual client. As future studies build on these findings and provide finer-grained pictures of how compassion interventions work with different individuals, therapists will be better able to tailor their work to provide greater benefit to all of their clients.

References

Arbuthnott, K. D., Arbuthnott, D. W., & Rossiter, L. (2001). Guided imagery and memory: Implications for psychotherapists. *Journal of Counseling Psychology, 48*(2), 123–132. http://doi.org/10.1037//0022-0167.48.2.123

Betts, G. H. (1909). *The distribution and functions of mental imagery (No. 26).* Teachers College, Columbia University.

Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British journal of clinical psychology, 43*(3), 245-265.

Decety, J. (1996). The neurophysiological basis of motor imagery. *Behavioural brain research, 77*(1-2), 45-52.

Galton, F. (1883). *Inquiries into human faculty and its development.* Macmillan and Company.

Ganis, G., Thompson, W. L., & Kosslyn, S. M. (2004). Brain areas underlying visual mental imagery and visual perception: an fMRI study. *Cognitive Brain Research, 20*(2), 226-241.

Garland, E. L., Hanley, A., Farb, N. A., & Froeliger, B. (2015). State mindfulness during meditation predicts enhanced cognitive reappraisal. *Mindfulness, 6*(2), 234-242.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in psychiatric treatment, 15*(3), 199-208.

Gilbert, P. (2010). *The compassionate mind: A new approach to life's challenges.* Oakland, CA: New Harbinger Publications.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6–41. http://doi.org/10.1111/bjc.12043

Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., … Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care, 4*(1), 4. http://doi.org/10.1186/s40639-017-0033-3

Gilbert, P., & Choden (2014). *Mindful Compassion: How the Science of Compassion Can Help You Understand Your Emotions, Live in the Present, and Connect Deeply with Others.* Oakland, CA: New Harbinger Publications.

Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory, 12*(4), 507–516. http://doi.org/10.1080/09658210444000115

Gilbert, P., Mcewan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice, 84*, 239–255. http://doi.org/10.1348/147608310X526511

Gilbert, P., McEwan, K., Mitra, R., Franks, L., Richter, A., & Rockliff, H. (2008). Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism. *The Journal of Positive Psychology, 3*(3), 182-191.

Gilbert, P., & Procter, S. (2006). Compassionate Mind Training for People with High Shame and Self-Criticism : Overview and Pilot Study of a Group Therapy Approach. *Clinical Psychology & Psychotherapy, 13*, 353–379. http://doi.org/10.1002/cpp.507

Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: an evolutionary analysis and empirical review. *Psychological bulletin, 136*(3), 351.

Hall, E., Hall, C., Stradling, P., & Young, D. (2006). *Guided Imagery: Creative Interventions in Counselling and Psychotherapy.* Thousand Oaks, CA: SAGE Publications Inc.

Hofmann, S. G., Grossman, P., & Hinton, D. E. (2011). Loving-kindness and compassion meditation: Potential for psychological interventions. *Clinical Psychology Review, 31*(7), 1126–1132. http://doi.org/10.1016/j.cpr.2011.07.003

Jazaieri, H., McGonigal, K., Jinpa, T., Doty, J. R., Gross, J. J., & Goldin, P. R. (2014). A randomized controlled trial of compassion cultivation training: Effects on mindfulness, affect, and emotion regulation. *Motivation and Emotion, 38*(1), 23–35. http://doi.org/10.1007/s11031-013-9368-z

Kabat-Zinn, J., & Hanh, T. N. (2009). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness.* New York, NY: Bantam Dell.

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A Meta-Analysis of Compassion-Based Interventions: Current State of Knowledge and Future Directions. *Behavior Therapy, 48*(6), 778–792. http://doi.org/10.1016/j.beth.2017.06.003

Kwekkeboom, K. L. (2000). Measuring imaging ability: Psychometric testing of the imaging ability questionnaire. *Research in Nursing and Health, 23*(4), 301–309. http://doi.org/10.1002/1098-240X(200008)23:4

Kwekkeboom, K. L., Kneip, J., & Pearson, L. (2003). A Pilot Study to Predict Success with Guided Imagery for Cancer Pain. *Pain Management Nursing, 4*(3), 124–133. http://doi.org/10.1053/S1524-9042(02)00000-0

Kwekkeboom, K. L., Wanta, B., & Bumpus, M. (2008). Individual Difference Variables and the Effects of Progressive Muscle Relaxation and Analgesic Imagery Interventions on Cancer Pain. *Journal of Pain and Symptom Management, 36*(6), 604–615. http://doi.org/10.1016/j.jpainsymman.2007.12.011

Lau, M., Bishop, S., Segal, Z., Buis, T., Anderson, N., Carlson, L., … Carmody, J. (2006). The Toronto Mindfulness Scale: Development and Validation. *Journal of Clinical Psychology, 62*(12), 1445–1467. http://doi.org/10.1002/jclp.20326

Leighton, T.D. (2003). *Faces of compassion: Classic Bodhisattva archetypes and their modern expression.* Boston, MA: Wisdom Publications.

Marks, D. F. (1973). Visual imagery differences and eye movements in the recall of pictures. *Perception & Psychophysics, 14*(3), 407-412.

Matos, M., Duarte, C., Duarte, J., Pinto-Gouveia, J., Petrocchi, N., Basran, J., & Gilbert, P. (2017). Psychological and Physiological Effects of Compassionate Mind Training: a Pilot Randomised Controlled Study. *Mindfulness, 8*(6), 1699–1712. http://doi.org/10.1007/s12671-017-0745-7

McEwan, K., & Gilbert, P. (2016). A pilot feasibility study exploring the practising of compassionate imagery exercises in a nonclinical population. *Psychology and Psychotherapy: Theory, Research and Practice, 89*(2), 239–243. http://doi.org/10.1111/papt.12078

Mongrain, M., Chin, J. M., & Shapira, L. B. (2011). Practicing Compassion Increases Happiness and Self-Esteem. J*ournal of Happiness Studies, 12*(6), 963–981. http://doi.org/10.1007/s10902-010-9239-1

Naismith, I., Mwale, A., & Feigenbaum, J. (2017). Inhibitors and facilitators of compassion-focused imagery in personality disorder. *Clinical Psychology & Psychotherapy, 25*(2), 283-291. http://doi.org/10.1002/cpp.2161

Pepping, C. A., Davis, P. J., & O'Donovan, A. (2013). Individual differences in attachment and dispositional mindfulness: The mediating role of emotion regulation. *Personality and Individual Differences, 54*(3), 453-456.

R Core Team (2013). *R: A language and environment for statistical computing.* R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

Rockliff, H., Karl, A., McEwan, K., Gilbert, J., Matos, M., & Gilbert, P. (2011). Effects of Intranasal Oxytocin on "Compassion Focused Imagery." *Emotion, 11*(6), 1388–1396. http://doi.org/10.1037/a0023861

Stopa, L. (2009). *Imagery and the threatened self.* New York, NY: Routledge.

Tellegen, A. (1982). *Brief manual for the multidimensional personality questionnaire.* Unpublished manuscript, University of Minnesota, Minneapolis, 1031-1010.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063.

Appendix A

What is your age? _____

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than a high school degree (1)
- ○ High school graduate (diploma or equivalent [For example: GED]) (2)
- ○ Some college credit, no degree (3)
- ○ Trade/technical/vocational training (4)
- ○ Associates degree (5)
- ○ Bachelor's degree (6)
- ○ Master's degree (7)
- ○ Professional degree (8)
- ○ Doctorate degree (9)

Are you currently_____

- ○ Employed for wages (1)
- ○ Self-employed (2)
- ○ Out of work and looking for work (3)
- ○ Out of work but not currently looking for work (4)
- ○ A homemaker (5)
- ○ A student (6)
- ○ Military (7)
- ○ Retired (8)

○ Unable to work (9)

Please indicate the answer that includes your entire household income in the previous year before taxes.

○ Less than $10,000 (1)

○ $10,000 to $19,999 (2)

○ $20,000 to $29,999 (3)

○ $30,000 to $39,999 (4)

○ $40,000 to $49,999 (5)

○ $50,000 to $59,999 (6)

○ $60,000 to $69,999 (7)

○ $70,000 to $79,999 (8)

○ $80,000 to $89,999 (9)

○ $90,000 to $99,999 (10)

○ $100,000 to $149,999 (11)

○ $150,000 or more (12)

In what US region do you live?

○ Northeast (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, Pennsylvania) (1)

○ Midwest (Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota) (2)

○ South (Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Mississippi, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, West Virginia, Tennessee, Oklahoma, Texas) (3)

○ West (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, Washington). (4)

○ US Territory (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, US Virgin Islands) (5)

Assigned sex at birth:

○ Male (1)

○ Female (2)

○ Intersex (3)

○

Current gender identity

○ Male (1)

○ Female (2)

○ Transgender - Male to Female (3)

○ Transgender - Female to Male (4)

○ Agender (5)

○ Androgynous (6)

○ Gender Fluid/Gender Queer (7)

○ Nonbinary (8)

○ Prefer to self-describe: (9) _____

Do you consider yourself to be:

○ Heterosexual or straight (1)

○ Gay (2)

○ Lesbian (3)

- ○ Bisexual (4)
- ○ Asexual (5)
- ○ Queer (6)
- ○ Questioning (7)
- ○ Prefer to self-describe: (8) _____

We understand these categories are not mutually exclusive and someone may identify with multiple categories (e.g., currently married after the passing of a previous spouse). However, what is your current relationship status at this time?

- ○ Single, never married (1)
- ○ Partnered, not married (6)
- ○ Married or domestic partnership (2)
- ○ Widowed (3)
- ○ Divorced (4)
- ○ Separated (5)

What is your race/ethnicity?

- ☐ White (1)
- ☐ Black or African American (2)
- ☐ American Indian or Alaska Native (3)
- ☐ Asian/Pacific Islander (4)
- ☐ Hispanic/Latinx (5)
- ☐ Middle Eastern or North African (7)
- ☐ Other (6) _____

Display This Question:

If What is your race/ethnicity? = White

If you selected White or Caucasian, check those that apply:

- ☐ American (1)
- ☐ German (2)
- ☐ Irish (3)
- ☐ English (4)
- ☐ Italian (10)
- ☐ Polish (9)
- ☐ Spanish (5)
- ☐ French (6)
- ☐ Scandinavian (7)
- ☐ Scottish (8)
- ☐ Other White (specify): (11) _____

Display This Question:

If What is your race/ethnicity? = Asian/Pacific Islander

If you selected Asian/Pacific Islander, check those that apply:

- ☐ Asian Indian (1)
- ☐ Chinese (2)
- ☐ Filipino (3)
- ☐ Japanese (4)
- ☐ Korean (5)

☐ Vietnamese (6)

☐ Native Hawaiian (7)

☐ Guamanian or Chamorro (8)

☐ Samoan (9)

☐ Other Asian (specify): (10) _____

Display This Question:

If What is your race/ethnicity? = Hispanic/Latinx

If you circled Hispanic/Latinx, check those that apply:

☐ Mexican (1)

☐ Puerto Rican (2)

☐ Cuban (3)

☐ Salvadoran (4)

☐ Dominican (5)

☐ Guatemalan (6)

☐ Colombian (7)

☐ Honduran (8)

☐ Ecuadorian (9)

☐ Peruvian (10)

☐ Other (specify): (11) _____

Display This Question:

If What is your race/ethnicity? = Middle Eastern or North African

If you selected Middle Eastern/North African, check those that apply:

- [ ] Lebanese (1)
- [ ] Iranian (2)
- [ ] Egyptian (3)
- [ ] Syrian (4)
- [ ] Moroccan (5)
- [ ] Algerian (6)
- [ ] Other (specify) (7) _____

Display This Question:

If What is your race/ethnicity? = American Indian or Alaska Native

If you selected American Indian or Alaska Native, check those that apply:

- [ ] Cherokee (1)
- [ ] Navajo (2)
- [ ] Latin American Indian (3)
- [ ] Choctaw (4)
- [ ] Sioux (5)
- [ ] Chippewa (6)
- [ ] Apache (7)
- [ ] Blackfeet (8)
- [ ] Iroquois (9)
- [ ] Other (specify) (10) _____

Display This Question:

If What is your race/ethnicity? = Black or African American

If you selected Black or African American, check those that apply:

- ☐ African American (1)
- ☐ Black (11)
- ☐ African (2)
- ☐ Nigerian (3)
- ☐ Cape Verdean (4)
- ☐ Ethiopian (5)
- ☐ Ghanaian (6)
- ☐ South African (7)
- ☐ Jamaican (8)
- ☐ Haitian (9)
- ☐ Other (specify) (10) _____

Do you have any prior experience practicing mindfulness or compassion?

- ○ No prior experience (1)
- ○ Minimal prior experience (e.g., have taken a yoga class or tried a guided meditation) (2)
- ○ Some prior experience (e.g., have taken part in multiple classes which incorporated mindfulness or compassion) (3)
- ○ Moderate prior experience (e.g., have had a sustained personal practice and/or received formal training in mindfulness or compassion) (4)
- ○ Extensive prior experience (e.g., have participated in retreats and received extensive formal training) (5)

Display This Question:

If Do you have any prior experience practicing mindfulness or compassion? Does not equal -> No prior experience

Please briefly describe your prior experience.

_____

Do you have any comments, questions or feedback about the compassion interventions or study as a whole?

_____

Appendix B

Introduction to Mindfulness and Compassion Script

Following this introduction, you will complete 15 minutes of guided meditation practice. You will begin with 5 minutes of a breathing practice, and will then transition into 10 minutes of guided imagery.

During the recordings, you may be asked to use mental imagery to work with feelings or sensations. When you practice mental imagery, you may or may not see a clear "picture," and that's okay. The goal is to try and engage as many of your senses as you can - so trying to imagine sounds, smells, tastes, feelings, and images. Even if it feels like not much is coming up for you, just focusing on the intention, or imagining what it might be like, is enough.

One of the central ideas in a practice such as this is the concept of compassion. For our purposes, you can think of compassion as a sensitivity to suffering, along with a motivation to try to alleviate it. In this way, compassion contains both kindness and courage - including a courageous willingness to approach things that make us uncomfortable. When thinking about the qualities of a compassionate being, you might consider them having: kindness, warmth, courage, gentleness, and maybe a sense of having 'been there' and having a deep wisdom as a result.

Finally, as you go through these recordings, you will certainly notice that your mind has wandered at times. That's alright. This type of meditation isn't about staying perfectly focused, or clearing your mind. Just noticing when your mind has wandered is actually part of the practice. When you notice that, just gently bring your attention back to practice. It may happen many times over the course of the experience, and each time you can just notice, and then return your attention to the guided imagery.

Soothing Breathing Rhythm Script

As we begin, I would encourage you to sit forward in your chair, away from the back, and place both of your feet on the floor. Try to find a posture that is comfortable, yet alert. It may be helpful to rock a little forward and backward and side to side to find a place that feels balanced.

Once you have reached a place of relative stillness, allow your eyes to close if that feels comfortable. Begin to bring your awareness towards your breath. Begin by just noticing the rhythm of your breath, the pace of each in-breath and out-breath. Begin to play with that pace a little bit, maybe breathing a little bit faster, now a little bit slower. Now gradually allow your breath to slow, until you find yourself taking 4-5 seconds on the in-breath, and around 5 seconds on the outbreath. Notice your entire body begin to slow down.

Notice your breath, coming in through your nose, down into your lungs, your belly expanding on each in-breath, contracting on each out-breath. Maybe see if you can watch your soothing rhythm as a rise and fall of your belly, expanding on the in, contracting on the out.

When you notice that your attention has wandered, that's okay, just noticing, and then bringing it back to the breath, the rising and falling of your soothing breathing rhythm.

Body Scan Script

Now, take a few moments to feel your body as a "whole," from head to toe, the sensations associated with touch in the places you are in contact with the chair or the floor.

Bring your attention to your feet. As you direct your attention to them, see if you can "direct," or channel, your breathing to them as well, so that it feels as if you are breathing into your feet and out from your feet. Not trying to change anything, just allow yourself to feel any

and all sensations from your feet, watching the flux of sensations in this region. If you don't feel anything at the moment, that is fine too. Just allow yourself to feel "not feeling anything."

As you are ready to leave the feet and move on, take a deeper, more intentional breath in all the way down to the toes and, on the out-breath, allow them to "dissolve" in your "mind's eye." Stay with your breathing for a few breaths at least, and then move on to focus on your lower legs. Once again, try to direct your breathing into your lower legs. Allow yourself to feel any and all sensations coming from your lower legs.

Again now, taking a deep breathing and sending it down into your lower legs, then letting them dissolve from your attention on the out-breath. Stay with your breath. Now direct your attention to your upper legs and let your breath rest into that attention. Any time you notice that your mind has wandered, just gently bring your attention back to the breath and the region you are focused on.

Now on a deep breath, letting go of the upper legs and letting your attention move upwards into your hips. Just noticing whatever arises.

Another deep breath into the hips, and on the out-breath letting your attention return to your breathing… before moving your attention into your lower back and abdomen. Gently bringing your attention back to your breath and abdomen when it wanders.

A deep breath, then releasing the abdomen… Directing your breath and attention to your chest and upper back. Not trying to change anything, just noticing.

Deep breath into the chest and upper back, then releasing your attention back to the breath. Now taking your attention up into your face and head. Channeling your breath upwards.

Finally, with a few deep breaths, taking your attention and broadening it to include your whole body again. Notice where in your body your attention is drawn and each time come back to an open awareness of your body as a whole.

When you are ready, gently let your awareness come back to your surroundings and slowly open your eyes.

Self-Compassion Script

As we move into the imagery portion, maybe trying to adopt a friendly facial expression, as if meeting someone you cared about, and if you haven't already, allowing your eyes to gently close.

Now I'd invite you to imagine that you are identifying with your compassionate self. Bring to mind the qualities of your compassionate self: warmth, wisdom, strength, and non-judgment. Imagine these qualities arising vividly within you. Practice hearing your voice, in your own mind, as kind and encouraging.

As you begin to imagine and embody these compassionate qualities, imagine that you are directing them inwards, towards yourself. Recognize yourself as a being created in the flow of life; like all of us, you've just found yourself here. Consider your deep and true desire to be at peace with yourself and have a kind and contented mind.

Now imagine a time when you went through a difficult event or experience. Bring that struggling version of you to mind. Allow yourself to be sensitive to your suffering in that moment and to empathize with your experiences. Notice your feelings of care and concern for yourself, allowing compassion to arise naturally. Notice your motivation to be helpful and to alleviate your suffering.

Focus on what it feels like to know within yourself that there's a compassionate part of you that understands the struggles of the flow of life, and really wants to help that version of you that sometimes struggles. Connect with the realization that this compassionate part of you is wise and caring. The part that really wants peaceful contentment may recognize pain, tiredness, or struggle, but that part itself doesn't feel them - it maintains a wise, strong, warm, and accepting position.

From the perspective of your compassionate self, with a warm tone of voice, imagine sending the following heartfelt wishes to yourself:

• May I be happy and well.

• May I be free of suffering and pain.

• May I experience joy and well-being.

Repeat the above sequence for the next minute, connecting to the flow of compassion toward yourself. *Repeat phrases* Bring your attention to how you feel when expressing these wishes. If you have any difficulties in the flow of your feelings toward yourself, kindly notice these and reconnect with your intention and motivation to be compassionate, kind, and committed.

In your own time, gently allow the image to fade and return your focus to your breathing. Open your eyes and re-adjust to your present environment.

Compassion For Others Script

As we move into the imagery portion, maybe trying to adopt a friendly facial expression, as if meeting someone you cared about, and if you haven't already, allowing your eyes to gently close.

Now imagine that you are identifying with your compassionate self. Bring to mind the qualities of your compassionate self: warmth, wisdom, strength, and non-judgment. Imagine these qualities vividly within you. Practice hearing your voice, in your own mind, as kind and encouraging.

Bring to mind someone you care about and feel close to: a person you naturally feel warmly toward. Imagine this person before you—how he or she looks, sounds, and moves about in the world. It might be a clear image, or it might just be a sense of him or her being there. Just try to notice and engage with what comes up.

Now imagine a time when this person went through a difficult event or experience. Allow yourself to be sensitive to his or her suffering and to empathize with his or her experiences. Notice your feelings of care and concern for this person, allowing compassion to arise naturally. Notice your motivation to be helpful and to alleviate this person's suffering.

From the perspective of your compassionate self, with a warm tone of voice, imagine sending the following heartfelt wishes to this person:

• May you be happy and well.

• May you be free of suffering and pain.

• May you experience joy and well-being.

As you repeat the statements, visualize this person in your mind. Repeat the above sequence for the next minute, connecting to the flow of compassion toward this person. *Repeat phrases* Bring your attention to how you feel when expressing these wishes. Imagine them experiencing the positive states you are wishing for them, and notice the feelings that come up in you as you imagine this. If you have any difficulties in the flow of your feelings toward him or

her, kindly notice these and reconnect with your intention and motivation to be compassionate, kind, and committed.

In your own time, gently allow the image to fade and return your focus to your breathing. Open your eyes and re-adjust to your present environment.

Compassion From Others Script

As we move into the imagery portion, maybe trying to adopt a friendly facial expression, as if meeting someone you cared about, and if you haven't already, allowing your eyes to gently close.

Now begin to allow yourself to imagine a 'compassionate other'. This compassionate other may or may not be human, but should include qualities of compassion: wisdom, strength, warmth, and non-judgment. You don't need to try too hard, just let images emerge as well as you can. If nothing comes into your mind immediately, or your mind wanders, just gently bring it back to your breathing and to accepting the compassionate qualities coming into you: wisdom, strength, warmth, non-judgment.

You might want to ask yourself what your compassionate other looks or feels like to you - is it human or non-human? Old or young? Masculine or feminine? What colors and sounds are associated with the qualities of wisdom, strength, warmth, and non-judgment? Allow yourself to explore as much sensory detail as you can about your compassionate other.

Now begin to focus on the compassion other's desire and motivation to be helpful, supportive, and kind to you. Imagine the kind and caring expression they direct toward you, maybe things that they say or sounds that they make. Notice how you feel as they direct this compassion towards you - maybe protected, nurtured, cared for, valued, like you belong, loved.

Allow yourself to feel gratitude and pleasure in receiving this kindness. You may not experience much in the moment, and that's okay, just focus on the intention and imagine what it might feel like if you were able to feel that gratitude and joy. Imagine how it would feel to be held compassionately in your other's mind.

In your own time, gently allow the image to fade and return your focus to your breathing. Open your eyes and re-adjust to your present environment.

Scripts adapted from:

Gilbert, P. (2010). *The compassionate mind: A new approach to life's challenges.* Oakland, CA: New Harbinger Publications.

Kolts, R. L. (2016). *CFT made simple: A clinician's guide to practicing compassion-focused therapy*. New Harbinger Publications.

Kolts, R. L., Bell, T., Bennett-Levy, J., & Irons, C. (2018). *Experiencing compassion-focused therapy from the inside out: A self-practice/self-reflection workbook for therapists*. Guilford Publications.

Table 1

Means, standard deviations by condition

Condition	*Control*		*Self-Compassion*		*Compassion For Others*		*Compassion From Others*	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
1. Negative Affect Pre	1.81	0.87	1.89	1.01	1.59	0.86	2.11	1.12
2. Negative Affect Post	1.72	1.04	1.92	1.11	1.57	0.96	2.01	1.19
3. Active Positive Affect Pre	2.67	1.19	3.13	1.17	2.77	1.16	2.83	1.05
4. Active Positive Affect Post	2.71	1.24	3.02	1.06	2.71	1.10	2.92	1.12
5. Relaxed Positive Affect Pre	3.02	0.90	3.28	0.92	3.24	0.89	3.23	0.95
6. Relaxed Positive Affect Post	3.79	0.83	3.88	0.85	3.75	0.95	3.84	0.77
7. Safe Positive Affect Pre	3.33	0.99	3.39	0.88	3.41	0.99	3.35	0.84
8. Safe Positive Affect Post	3.56	0.83	3.78	0.76	3.65	1.00	3.84	0.75
9. State Mindfulness	43.90	8.93	45.66	8.56	45.14	9.30	44.32	8.98
10. Engagement	--	--	35.37	6.03	35.90	7.00	37.01	7.25
11. Change in Likelihood	4.10	0.64	4.29	0.57	4.10	0.69	4.02	0.82
12. IAQ Absorption	60.15	18.21	68.34	15.19	62.31	18.06	71.82	15.26
13. IAQ Image Generation	38.95	8.01	40.74	7.99	42.40	6.63	41.93	5.58
14. CEAS Self-Compassion	76.79	19.03	81.51	16.72	84.81	21.74	80.77	14.75
15. CEAS Compassion For Others	83.05	20.25	87.80	17.39	90.02	16.01	86.70	17.41
16. CEAS Compassion From Others	69.95	19.75	77.43	21.09	71.50	21.67	77.34	21.35
17. Fears of Self-Compassion	39.69	16.98	39.86	16.21	33.74	16.53	42.61	16.29
18. Fears of Compassion For Others	32.00	9.73	29.86	9.86	27.71	11.04	33.36	8.68
19. Fears of Compassion From Others	36.95	12.76	36.74	13.90	31.14	14.71	40.05	13.78
20. Age	31.10	7.29	35.80	13.05	39.90	12.27	35.43	11.80
21. Gender	1.51	0.51	1.43	0.50	1.76	1.51	1.52	1.11
22. Prior Experience	1.82	1.23	1.83	1.04	1.86	1.07	2.18	1.28
N	39		35		42		44	

Note. M and *SD* are used to represent mean and standard deviation, respectively.

Table 2
Correlations Between Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. IAQ Absorption	—														
2. IAQ Image Generation	.30*	—													
3. CEAS Self-Compassion	.06	.31*	—												
4. CEAS Compassion For Others	–.11	.18	.52*	—											
5. CEAS Compassion From Others	.04	.07	.38*	.26*	—										
6. FCS Self-Compassion	.53*	–.05	–.32*	–.38*	.05	—									
7. FCS Compassion For Others	.50*	.06	–.18	–.28*	–.11	.67*	—								
8. FCS Compassion From Others	.61*	–.03	–.37*	–.39*	–.07	.92*	.71*	—							
9. Negative Affect	–.01	–.14	.03	–.10	.03	–.04	–.16	.12	—						
10. Active Positive Affect	.08	.05	.02	.06	.11	.07	–.09	.06	.03	—					
11. Relaxed Positive Affect	–.11	.05	.10	.28*	.06	–.31*	–.33*	–.29*	–.21	.20	—				
12. Safe/Content Positive Affect	–.04	.03	.06	.25*	.01	–.13	–.29*	–.13	–.16	.39*	.58*	—			
13. State Mindfulness	.48*	.46*	.41*	.16	.31*	.19	.06	.19	.01	.22	.02	.05	—		
14. Engagement	.33*	.38*	.37*	.10	.29*	.13	.10	.14	–.01	.14	.03	.08	.65*	—	
15. Change in Likelihood	.30*	.17	.15	.24*	.19	.14	.00	.18	–.06	.13	.17	.14	.57*	.42*	—
M	67.51	41.75	82.39	88.17	75.34	38.74	30.39	36.00	–0.34	–0.16	3.41	1.48	44.99	36.15	4.12
SD	16.64	6.69	17.94	16.85	21.39	16.67	10.10	14.53	4.38	5.03	5.59	2.95	8.92	6.80	0.71

Note. $N = 121$.
* $p < .01$

Table 3
Hierarchical Multiple Regressions with IAQ, FCS, and CEAS for Each Outcome Variable

Outcome variable	Variable	Step 1	Step 2	sr^2
Relaxed Positive Affect	IAQ Absorption	-.14	.14	.01
	IAQ Image Generation	.09	.00	.00
	CEAS Self Compassion		-.15	.02
	CEAS Compassion For Others		.22	.04
	CEAS Compassion From Others		-.04	.00
	FCS Total		-.38*	.08
	ΔR^2	.02	.14*	
Safe/Content Positive Affect	IAQ Absorption	-.06	.11	.01
	IAQ Image Generation	.05	-.01	.00
	CEAS Self Compassion		-.13	.01
	CEAS Compassion For Others		.26	.05
	CEAS Compassion From Others		-.02	.00
	FCS Total		-.19	.02
	ΔR^2	.00	.08	
State Mindfulness	IAQ Absorption	.37*	.33*	.10
	IAQ Image Generation	.35*	.27*	.10
	CEAS Self Compassion		.27*	.07
	CEAS Compassion For Others		-.13	.00
	CEAS Compassion From Others		.18	.05
	FCS Total		.06	.00
	ΔR^2	.34*	.12*	
Engagement	IAQ Absorption	.30*	.21	.03
	IAQ Image Generation	.28*	.23*	.06
	CEAS Self Compassion		.26	.06
	CEAS Compassion For Others		-.09	.01
	CEAS Compassion From Others		.19	.04
	FCS Total		.11	.01
	ΔR^2	.21*	.11*	
Change in Likelihood	IAQ Absorption	.28*	.28	.05
	IAQ Image Generation	.09	.05	.00
	CEAS Self Compassion		-.06	.00
	CEAS Compassion For Others		.29*	.06
	CEAS Compassion From Others		.12	.02
	FCS Total		.06	.00
	ΔR^2	.10*	.09	

Note. $N = 121$. Standardized regression coefficients (β) are reported. sr^2 refers to the squared semipartial correlation or the amount of variance explained by each predictor in the model from Step 2.
* $p < .01$

Figure 1

Fears of Compassion Histogram