SELF-COMPASSION: AN ADAPTIVE WAY TO REDUCE RECURRENT DEPRESSION SYMPTOMS THROUGH EMOTION REGULATION

by

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Abstract

Major depressive disorder (MDD) is often a recurring disorder, with multiple major depressive episodes (MDEs) experienced over a lifetime. A key challenge for those who struggle with depression is the prevention of recurrence, given that the risk of recurrence increases significantly with each episode. Difficulty with emotion regulation has consistently been found to predict both depression symptoms and MDD, and is proposed to be an important factor in both the development and chronicity of this disorder (Atherton, Nevels, & Moore, 2015; Aldao, Nolen-Hoeksema, & Schweizer, 2010). Recently, self-compassion has been presented as a robust protective factor in depression (Diedrich, Grant, Hofmann, Hiller, & Berking, 2014; Ehret, Joormann, & Berking, 2015; Krieger, Berger, & Hotlforth, 2016). Furthermore, it has been suggested that low levels of self-compassion may be an enduring risk factor for depression recurrence (Ehret et al., 2015). This study examined how self-compassion may be protective in the recurrence of depression symptoms through specific emotion regulation strategies associated with depression: rumination, experiential avoidance, acceptance, and cognitive reappraisal. Surprisingly little research has examined the pathways through which self-compassion and depression symptoms are linked. A sample of 105 participants with a history of recurrent depression were recruited using Amazon's Mechanical Turk (MTurk). Simple and multiple mediation analyses (Preacher & Hayes, 2008) were conducted. Results from the simple mediation models indicated that higher levels of self-compassion were associated with lower depression symptoms through rumination, experiential avoidance, and acceptance. Surprisingly, cognitive reappraisal did not mediate the relation between self-compassion and recurrent depression symptoms. The multiple mediation model revealed that rumination was the only significant mediator, when controlling for other emotion regulation strategy variables. Theoretical and clinical implications are discussed.

Preface

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To my family, and to all those who have struggled with the black dog

Chapter 1: Introduction

Major depressive disorder (MDD) is a common and significant mental health issue that remains prevalent across age, gender and cultural spectrums. Depression is a leading cause of disability worldwide, and is one of the primary disorders responsible for global disease burden (Cuijpers, Beekman, & Reynolds, 2012). At its worst, MDD can be life-threatening and has the potential to lead to self-injury or suicide. It deeply impacts individuals, families, communities, and society as a whole, and remains a significant issue that needs to be addressed.

MDD is often a chronic, or recurring disorder, with multiple major depressive episodes (MDEs) experienced over a lifetime (Bulloch, Williams, Lavorato, & Patten, 2014). A key challenge in the management of MDD is prevention of depression relapse and recurrence, which is a frequent issue in this disorder (Bockting, Hollon, Jarrett, Kuyken, & Dobson, 2015). Recurrence is strongly dependent on the number of previous MDEs, and once someone has experienced an MDE, they are at increased risk for subsequent episodes, making them vulnerable to a more persistent cycle of suffering (Bulloch et al., 2014). It has been suggested that 40-60% of people who experience a MDE may experience another episode, and with each successive episode, the chance of recurrence increases significantly (Bockting et al., 2015; Bulloch et al., 2014). In those with three or more episodes, 90% will experience additional recurrences (Monroe & Harkness, 2011). Given the significance of MDD, and specifically its potential recurrent nature, increased understanding about the protective factors for depression recurrence is important for informing and improving targeted psychological interventions (Bockting et al., 2015).

Self-compassion has recently been identified as a significant protective factor in MDD, and interventions have been developed that seek to foster it in those who struggle with depression and other psychopathologies (Berking & Whitley, 2014; Ehret et al., 2015; Germer & Neff, 2013;

Gilbert & Procter, 2006). The construct of self-compassion has emerged in Western psychological and health literatures over the last fifteen years. The roots of this construct lie in Buddhist psychology and philosophy (Neff, 2003a). Self-compassion is described as having kindness towards oneself during times of difficulty or when suffering is experienced. It offers an alternate way to relate to the experience of pain, suffering, and unwanted emotional experiences. People with low self-compassion are more likely to suffer from symptoms of depression (Neff, 2003b). The relationship between self-compassion and depression symptoms is robust, with large effect sizes found across numerous studies (see MacBeth & Gumley, 2012). Similar results have been demonstrated in clinical samples; however, this research is in its infancy (Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013; Krieger et al., 2016).

Those with remitted depression have reported low-levels of self-compassion compared to those who have never experienced depression (Ehret et al., 2015), suggesting that decreased self-compassion may be an enduring risk factor, which could be targeted through effective interventions. However, there is a dearth of research in this area. Researchers have suggested that the mechanisms involved in recurrence of depression may be different than the first episode, which is why the risk of recurrence increases with each subsequent episode (Elgersma et al., 2015). This warrants a more comprehensive investigation of how self-compassion is protective in those who are at risk for recurrent depression symptoms.

Researchers have begun to examine the pathways through which self-compassion may be protective in depression; however, there is surprisingly limited research given the significant association between the two variables (Finlay-Jones, Rees, & Kane, 2015). A possible pathway that has been identified is emotion regulation (Dietrich, Burger, Kirchner, & Berking, 2016; Finlay-Jones et al., 2015; Krieger et al., 2013; Raes, 2010). Emotion regulation is how people modify the

intensity, duration, and/or expression of emotional experiences, through both automatic and strategic processes (Gross, 2014). Difficulty with emotion regulation has consistently been found to predict both depression symptoms and MDD, and is proposed as a key factor in the development and chronicity of depression psychopathology (Aldao et al., 2010; Atherton et al., 2015; Berking, Wirtz, Svaldi, & Hofmann, 2014). It has been suggested that an inability or difficulty in regulating negative emotions is one of the maintaining factors in depression, and contributes to the chronicity and cycle of recurrence that is common among those who suffer from MDD (Ehring, Fischer, Schnülle, Bösterling, & Tuschen-Caffier, 2008).

Specific maladaptive emotion regulation strategies that people use, such as rumination and experiential avoidance, are predictive of depression symptoms (Aldao et al., 2010; Gámez Chmielewski, Kotov, Ruggero, & Watson, 2011; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hofmann, Sawyer, Fang, & Asnaani, 2012). Both rumination and avoidance have been found to have large effect sizes in relation to depression symptoms, and are maladaptive emotion regulation strategies that are often targeted in treatment for depression (Aldao et al., 2010). Conversely, adaptive emotion regulation strategies such as cognitive reappraisal and acceptance, have been shown to protect against depression symptoms (Aldao et al., 2010; Berking et al., 2014). These are also often targets of intervention for depression, as those with depression often underuse adaptive emotion regulation strategies.

Recently, maladaptive emotion regulation strategies, specifically, rumination and avoidance, have been found to explain, in part, how self-compassion is associated with depression symptoms (Krieger et al., 2013; Raes, 2010). However, there are no studies that the author has found that have examined these relationships in the context of prevention of recurrent depression symptoms. There is only one study to my knowledge that explores general adaptive emotion regulation as a mediator

in the relationship between self-compassion and depression symptoms (Diedrich, Burger, Kirchner, & Berking, 2016). This study did not find support for the subscale of acceptance, however, they did not examine this in the context of recurrent depression. No studies have examined other emotion regulation strategies, such as experiential avoidance, an unwillingness to experiencing negative emotions, thoughts, or physical sensations (Hayes et al., 2006; Hofmann et al., 2012), as a mediating variables between self-compassion and recurrent depression symptoms. In addition, there is no research to my knowledge, that examines cognitive reappraisal as a mediator in the relationship between self-compassion and depression symptoms. Research from mindfulness studies point to these as potentially important mediators (Desrosiers, Vine, Klemanski, & Nolen-Hoeksema, 2013).

The current proposed research seeks to evaluate if emotion regulation strategies that have been linked with depression symptoms mediate the relationship between self-compassion and depression symptoms in those with recurrent depression, who are particularly vulnerable to further episodes (Bulloch et al., 2014). This study will explore maladaptive emotion regulation strategies (i.e., rumination and experiential avoidance), and adaptive emotion regulation strategies (i.e., acceptance and cognitive reappraisal), as possible mediators in the relationship between self-compassion and depression symptoms. By understanding this relationship further, psychological interventions for the treatment or prevention of depression recurrence can be increasingly informed and adapted to improve outcomes for people who suffer from depression.

Chapter 2: Literature Review

Self-Compassion

In the last 40 years, dialogue between Buddhist and Western psychology has led to broadened views on mental health and well-being, with Buddhist concepts being integrated into Western psychotherapeutic practices (Germer & Siegel, 2012). This interchange of ideas has led to expansive research in a number of areas including mindfulness, compassion, and more specifically, self-compassion.

Historical Roots

The construct of self-compassion is related to the more general concept of compassion, which has historical roots in many ancient contemplative traditions (Neff, 2003a). The word compassion comes from Latin and Greek language origins, and translates as: "to suffer with" another person (Germer & Siegel, 2012). Generally, compassion involves witnessing the experience of suffering, and a wish to alleviate that suffering (Germer & Siegel, 2012). The conceptualizations addressed in this study originate from Eastern philosophical traditions, and Buddhist psychology in particular (Neff, 2003a).

Defining Self-Compassion

Neff (2003a; 2003b) was one of the first to define and operationalize self-compassion as a construct to be explored within the Western research context. The definition and understanding of self-compassion is derived, in large part, from teachings from the Buddhist Insight tradition (see Brach, 2003; Kornfield, 1993; Neff, 2016; Salzberg, 1997). However, within the Western scientific literature, the construct is conceptualized in secular terms (Neff, 2011). In this framework, self-compassion is described a way of relating with kindness to oneself in times of suffering or failure (Neff, 2003b). Neff operationalized self-compassion as encompassing three inter-related

components, which collectively represent a self-compassionate (or uncompassionate) frame of mind (Neff, 2011; Neff, 2016; Neff, Rude, & Kirkpatrick, 2007). Each element has a positive and negative pole, characterizing compassionate and uncompassionate responses towards oneself in times of suffering or difficulty: (a) self-kindness versus self-judgment; (b) common humanity versus isolation; and (c) mindfulness versus over-identification (Neff, 2003b; Neff, 2016).

The first component, self-kindness versus self-judgment, represents how people emotionally respond to themselves in times of suffering (see Neff, 2011; Neff, 2016). Self-kindness entails having an unconditional acceptance and warmth towards painful feelings, and responding towards oneself as someone might towards a loved one in pain. This includes having a supportive, gentle, and understanding attitude, as well as the ability to actively comfort and soothe oneself. Conversely, self-judgment encompasses harsh self-criticism and disparaging responses to experiences of failure, pain, or suffering. Self-judgment creates further pain through relentless negative evaluations of perceived inadequacies or negative experiences.

The second component, common humanity versus isolation, encompasses how people cognitively understand their situation or predicament, in a relational sense, and the ability to frame it as part of the experience of being human (see Neff 2011; Neff, 2016). Having an understanding that all humans are imperfect, make mistakes, or fail, allows the reframing of pain and suffering, and the ability to view it as part of the shared human condition. This gives people a sense of feeling interconnected. Conversely, viewing oneself as isolated in shortcomings or imperfections leads to feeling disconnected and alone, or inherently flawed. A sense of being alone in pain or suffering, perpetuates problematic feelings of shame or inadequacy.

The third key component of Neff's operationalization of self-compassion is mindfulness versus over-identification (see Neff, 2011; Neff, 2016). Mindfulness is the ability to pay attention

to the experience of suffering, and having awareness of the present moment experience as an objective observer. Conversely, over-identification refers to getting wrapped up in emotional experiences, being tied to storylines about negative aspects of the experience, and becoming absorbed by this exaggerated response.

Self-Compassion and Depression

Cognitive theories of depression have suggested that attitudes, thoughts, and interpretations of negative mood states or negative life events can increase the risk for depression symptoms, and MDEs (Gotlib & Joormann, 2010). Depression has often been explained by cognitive processes that make people vulnerable to low mood, and increased difficulty with emotion regulation (Aldao et al., 2010; Gotlib & Joormann, 2010). The way that people respond to negative emotions has often been implicated in both the development and maintenance of depression (Ehret et al., 2015). When people experience a negative mood state, mood-congruent cognitive processes, which interact and worsen negative affect, can occur. These include deficits in cognitive control when processing unpleasant information, difficulties disconnecting from negative thoughts, and intensification of negative information (Gotlib & Joormann, 2010). For example, in response to a perceived failure, increasingly negative ruminative thinking may further exacerbate low mood and lead to depression symptomatology.

Self-compassion has been hypothesized to be protective against depression, because it shifts people's relationship towards their experiences of pain or suffering (Neff, 2003b). Self-compassion can change one's perceptions of, and relationship to, negative emotional experiences, interrupting a more vicious cycle of suffering, such as ruminating about one's perceived failure. Specifically, with a self-compassionate frame of mind, negative emotions are not perpetuated or worsened

through harsh self-judgment or self-criticism, beliefs that one is alone in their suffering, or overly identifying with these thoughts and emotional experiences (Neff, 2003b).

Self-compassion has been demonstrated to be a robust protective factor for depression, with strong empirical support for the negative association between self-compassion and depression symptoms found in both cross-sectional and longitudinal studies in non-clinical samples (e.g., Neff, 2003b; Neff et al., 2007; Raes, 2010; Raes, 2011; Wong & Mak, 2012). Meta-analytic evidence showed a large overall effect size for the relationship between self-compassion and depression symptoms (see MacBeth & Gumley, 2012 for review). More recently, research has begun to examine self-compassion and its relationship to clinical depression, demonstrating that patients with MDD have lower levels of self-compassion than those who have never experienced depression, though research with clinical samples is in its infancy (Dietrich et al., 2016b; Krieger et al., 2013; Krieger et al., 2016). A recent longitudinal study demonstrated that depressive symptoms were predicted by decreased levels of self-compassion in a group of outpatients treated for clinical depression (Krieger et al., 2016). Of note, the study found that depressive symptoms did not predict lower levels of self-compassion, supporting the hypothesized directionality of the model in the current study.

Self-compassion and recurrent depression. Depression is often recurrent, and one of the key challenges that is important to address in MDD is the prevention of recurrent depressive episodes (Bockting et al., 2015; Bulloch et al., 2014; Burcusa & Iacono, 2007; Cuijpers et al., 2012). Recurrence is strongly dependent on the number of previous MDEs, with each episode increasing vulnerability to a more repetitive pattern of illness (Bulloch et al., 2014).

An issue that exists within depression research is that often there is no formalized distinction between relapse and recurrence made within a study, which can make interpreting findings difficult

(Beshai, Dobson, Bockting, & Quigley, 2011). Operational criteria set out by Frank and colleagues (1991) proposed guidelines for distinction between these terms (Burcusa & Iacono, 2007). Recurrence is an onset of a MDE following a period of full recovery, which is defined as the absence of significant symptoms for at least 2 months, in line with the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013). Relapse refers to the return to full diagnostic criteria for an MDE before recovery has been reached. Relapse can occur from either a partial remission (still having minimal symptoms of depression, but less than a full MDE) to full remission (mostly symptom free for less than 2 months). While much of the research and intervention literature uses mixed meanings or overlapping of the terms, it is important to be aware of their differences (Burcusa & Iacono, 2007). Research suggests relapse rates following remission tend to be higher than recurrence; however, it has also been suggested that relapse cases included in studies may have met criteria for recurrence (Beshai et al., 2011). The following discussion includes both terms, and when possible seeks to use the most accurate term if available within the literature.

Research has suggested that there is a change that results from an initial episode of depression, which is long-lasting, and puts people at risk for subsequent recurrent episodes (Burcusa & Iacono, 2007; Teasdale, 1988). Cognitive scar theories posit that there are changes at both cognitive and neuronal levels that result from an initial episode of depression. With repeated MDEs, there is a stronger association between the experience of low mood and negative thinking patterns (Segal, Williams & Teasdale, 2012; Teasdale, 1988; Teasdale et al., 2000). This subsequently leads to the development of MDEs more easily with each episode, as mild stress or negative mood states trigger depressogenic cognitive processes. There is a lower threshold to the progression of a full MDE (Elgersma et al., 2015). Thus, patterns of thinking activated by sadness

in those who have recovered from an MDE differ from those who have never experienced depression (Teasdale et al., 2000). People with remitted depression have been found to have increased cognitive reactivity and negative cognitive biases in response to experimental inductions of negative mood, compared to never-depressed people, suggesting an underlying difference in those who have experienced MDEs and those who have not (Elgersma et al., 2015; Segal et al., 2012). This supports the theory that there is a stronger link between negative affect and a depressogenic information-processing style in those who have had at least one or more episodes of depression (Burcusa & Iacono, 2007). Given the heightened vulnerability to recurrence of depression in those who have experienced one or more previous MDEs, understanding the processes through which recurrence occurs, and how it can be prevented, is imperative.

Self-compassion may be especially important for those who are more vulnerable to recurrent depression symptoms (Ehret et al., 2015). It is protective in targeting the negative thinking patterns and low moods that can make recurrent depression symptoms more likely by shifting the relationship to suffering when distress is experienced. Having a self-compassionate frame of mind in the face of suffering may be a way to break the lowered threshold of cyclical depressogenic responses to distress, which are typical of recurrent depression.

Recently, decreased self-compassion has been identified as a possible enduring risk factor for depression recurrence (Ehret et al., 2015). Lower levels of self-compassion have been demonstrated in those with remitted depression when compared to controls. In addition, self-criticism, which is indicative of low levels of self-compassion, has been identified as an enduring vulnerability factor in depression relapse and recurrence (Ehret et al, 2015; Joeng & Turner, 2015). Having decreased self-compassion may be an ongoing risk factor in the development of further episodes of depression once people are in remission, and therefore bolstering the capacity to be self-

compassionate could be important in the prevention of recurrent depression symptoms. Literature in this area is limited, and understanding the benefits of self-compassion in the prevention of recurrent depression symptoms remains an under-examined and important area of inquiry (Ehret et al., 2015; Raes, 2011).

Emotion Regulation and Depression

Emotion regulation is defined here as the use of both automatic and strategic processes to modify the occurrence, intensity, duration, and/or expression of an emotional response (Gross, 2014). Difficulty with emotion regulation has been identified as a predictive and maintaining factor in depression (Aldao et al., 2010; Berking et al., 2014; Ehring et al., 2008). Emotion regulation deficits, specifically related to downregulating negative affect, is posited to be at the core of mood disorders (Hofmann et al., 2012). Being unable to effectively regulate emotional responses to everyday events or emotional experiences may lead to more persistent and severe periods of distress, which can evolve into negative mood states, or MDD (Berking & Whitley, 2014; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

Researchers have identified emotion regulation strategies that have a tendency to be maladaptive (e.g., rumination and avoidance) and less likely to successfully regulate emotion, or adaptive (e.g., acceptance and cognitive reappraisal) and likely to regulate emotion more effectively (Joormann & Siemer, 2014). Individual differences in strategies used to regulate negative emotions or moods play a significant role in the onset and maintenance of depression (Joormann & Siemer, 2014). Using maladaptive emotion regulation strategies with negative emotions has been found to be predictive of worsening symptoms of depression (Aldao et al., 2010; Ehring et al., 2008). Alternatively, adaptive emotion regulation strategies have been linked with reducing the duration and intensity of the associated dysphoric state, and preventing the full cascade of depressive

patterns (Berking et al. 2014; Berking, Ebert, Cuijpers & Hofmann, 2013; Jarrett et al., 2012). Research has demonstrated that maladaptive emotion regulation strategies tend to be more strongly associated with the development of depression than a lack of adaptive strategies (e.g., Aldao & Nolen-Hoeksema, 2010).

There is an increased evidence-based discussion on targeting emotion regulation strategies for managing depression, as well as preventing relapse or recurrence after an episode has occurred (Dam, Hobkirk, Sheppard, Aviles-Andrews, & Earleywine, 2013). Therapies, such as Affect Regulation Training, Mindfulness-Based Cognitive Therapy, and Dialectical Behaviour Therapy, have been developed and empirically evaluated, which target aspects of emotion regulation as an intervention point (Berking & Whitley, 2014).

Emotion Regulation and Recurrent Depression

While substantial research has evaluated the relationship between emotion regulation and depression, less has investigated the relationship between emotion regulation and recurrent depression. There is some evidence that difficulty with emotion regulation is an important vulnerability factor in recurrent depression (Ehring et al., 2008; Joormann & Siemer, 2014). Research has identified that individual differences in the use of specific emotion regulation strategies may play a critical role in recurrence of depression symptoms, and may be an important target for recovery and sustained wellness from depression (Gotlib & Joormann, 2010). People who have recovered from a MDE use more maladaptive emotion regulation strategies than those who have never experienced depression, indicating that difficulty with emotion regulation may be an enduring risk factor (Joormann & Siemer, 2014). Those with a history of a depressive episode utilized more maladaptive emotion regulation strategies, such as rumination, and less adaptive

emotion regulation strategies, in addition to perceiving their emotion regulation strategies as less successful than those without a history of depression (Ehring et al., 2008).

Emotion regulation as a mediator between self-compassion and depression symptoms. While self-compassion has consistently been linked to depression, there is little research investigating the pathways (i.e., mediators) through which they are linked. A possible mediating variable that has been suggested is emotion regulation; however, this research is in its infancy, and thus limited. Self-compassion has been found to be inversely related to difficulty with emotion regulation, resulting in decreased depression symptoms (Finlay-Jones et al., 2015; Krieger et al., 2013; Raes, 2010). These few studies have examined maladaptive emotion regulation strategies (Krieger et al., 2013; Raes, 2010) or difficulty with emotion regulation in general (Finlay-Jones et al., 2015). A recent study found that overall use of adaptive emotion regulation strategies may link self-compassion and depression (Diedrich et al, 2016b).

Given that self-compassion involves a shift in how one relates to painful experiences and negative emotion (Neff, 2003a), it would seem to follow that emotion is in some way changed or regulated as a result, leading to less depression symptoms. Self-compassion may operate by changing specific emotion regulation strategies that those who are vulnerable to depression recurrence tend to utilize. This may be through decreasing maladaptive emotion regulation strategies and/or bolstering adaptive ones.

Specific mediators between self-compassion and recurrent depression symptoms. Meta-analytic evidence has pointed to the following specific emotion regulation strategies that have been empirically linked to depression: rumination, experiential avoidance, cognitive reappraisal, and acceptance (Aldao et al., 2010). Rumination and experiential avoidance are maladaptive emotion regulation strategies that are strongly associated with depression symptoms (Aldao &

Nolen-Hoeksema, 2010; Brockmeyer et al., 2012). Conversely, adaptive emotion regulation strategies that have been pointed to as protective in the development and maintenance of depression symptoms are acceptance (Hayes et al., 2006) and cognitive reappraisal (Aldao & Nolen-Hoeksema, 2010). Self-compassion may be protective in the recurrence of depression symptoms by decreasing maladaptive emotion regulation strategies and/or enhancing adaptive strategies (see Figure 1). Each potential mediating emotion regulation strategy is discussed in relation to depression and self-compassion in the following paragraphs.

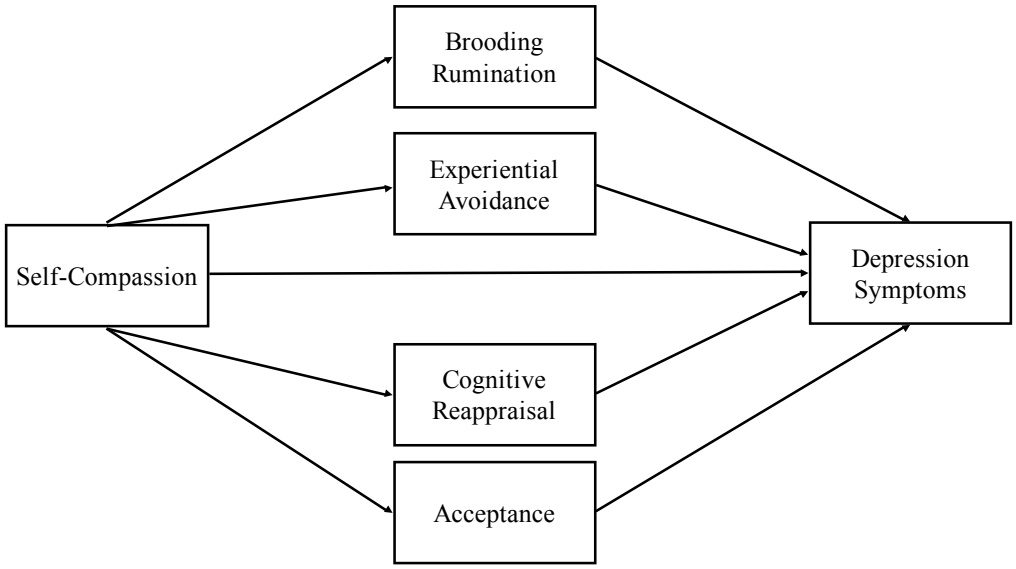

Figure 1. Specific mediators between self-compassion and depression symptoms.

Rumination. Rumination is way of responding to negative emotions that is characterized by repetitively focusing on the causes, circumstances and consequences associated with the symptoms of distress (Nolen-Hoeksema et al., 2008). It involves over-engagement with negative thought patterns in an attempt to reduce or control unwanted and undesired emotions (Desrosiers et al., 2013). Brooding rumination, the tendency to have repetitive and frequent negative thoughts, which

are self-critical, is the type of rumination most frequently associated with depression symptoms (Treynor et al., 2003).

When faced with negative emotions, ruminators repetitively focus on their experience of negative emotions and the causes and consequences of emotions in an attempt to regulate them (Nolen-Hoeksema et al., 2008). Rumination tends to exacerbate distress by increasing the impact of negative moods on thoughts used to understand current circumstances, creating cyclical depressogenic thinking patterns (Nolen-Hoeksema et al., 2008). These thinking patterns impact people's ability to problem solve and take action as issues are perceived through a pessimistic lens, which further perpetuates distress. Consequently, rumination makes it more likely that dysphoria or symptoms of depression are prolonged, and develop into a MDE. Robust research findings support the theory that rumination plays a key role in the development and maintenance of depression (Aldao & Nolen-Hoeksema, 2010; Nolen-Hoeksema, 2000). Large effect sizes have consistently been found in the relationship between rumination and depression (see Aldao & Nolen-Hoeksema, 2010). The brooding subtype of rumination has been found to be particularly problematic in the development and maintenance of depression (Nolen-Hoeksema et al., 2008; Raes, 2010; Treynor et al., 2003). Furthermore, rumination has been identified as a correlate of depression symptom recurrence (Michalak, Hölz, & Teismann, 2011).

One way that self-compassion may be protective for recurrent depression symptoms is by reducing the tendency to ruminate in response to negative affect. Self-compassion allows people to hold negative thoughts and emotions in mindful and non-judgmental awareness, and not fixate on them (Neff, 2011). Additionally, self-compassion facilitates having a compassionate and soothing response to suffering, instead of having a self-critical or blaming response, which is typical with rumination (Nolen-Hoeksema et al., 2008). Thus, being more self-compassionate likely eases the

vicious cycle of rumination and worsening depression symptoms. Those who are higher in self-compassion have been found to ruminate less about unpleasant events when compared to those with lower levels of self-compassion (Hofmann et al., 2012; Leary, Tate, Adams, Batts Allen, & Hancock, 2007; Neff, 2003b). Highly self-compassionate people tend to fixate less on perceived failures or experience negative affect when confronted with mistakes (Leary et al., 2007). Further, rumination was found to be a significant mediator in the relation between self-compassion and depressive symptoms in two recent studies (Krieger et al., 2013; Raes, 2010).

Experiential avoidance. Experiential avoidance is an unwillingness or aversion to experiencing difficult or negatively evaluated emotions, thoughts, or physical sensations (Hayes et al., 2006; Hofmann et al., 2012). It is an emotion regulation strategy characterized by attempts to avoid distress (Gámez et al., 2011). Experiential avoidance has been identified as a maladaptive emotion regulation strategy that is related to depression (Gámez et al., 2011; Hayes et al., 2006; Hofmann et al., 2012).

Avoidance of negative emotions or distress, which is often related to fear of experiencing unwanted emotions, can lead to further negative affect, anhedonia, and depression symptoms (Beblo et al., 2012). While avoidance may be initially protective or adaptive in that people do not experience immediate pain or distress, it has been suggested that over time it becomes maladaptive and can lead to worsening symptoms (Hayes et al., 2006). Studies have found that attempts to avoid or suppress negative thoughts or emotions have a paradoxical effect, the unwanted experience can become more intrusive and become more feared or exacerbated over time, leading to long-term emotional difficulties (Gámez et al., 2011; Hofmann et al., 2012). Large effect sizes have been demonstrated for the positive association between avoidance and depression symptoms (Aldao et al., 2010).

Self-compassion may be protective for recurrent depression symptoms by changing people's tendency to engage in experiential avoidance. One effective strategy that has been found to counter experiential avoidance is mindfulness, which allows de-identifying with painful thoughts (Hofmann et al., 2012). This is one of the facets of self-compassion that encourages people to turn towards, instead of avoid, distress. Furthermore, being able to adopt a new perspective of distress, one of self-kindness and non-judgment, may increase people's willingness to face unwanted thoughts, experiences and emotions, instead of avoid them. Since experiential avoidance relates to people's relationship with distress (Gámez et al., 2011), shifting this through self-compassion may foster a more adaptive relationship to negative emotions. Self-compassion has been found to be negatively related to experiential avoidance (Thompson & Waltz, 2008). Furthermore, avoidance was found to mediate the relationship between self-compassion and depressive symptoms in clinically depressed outpatients (Krieger et al., 2013).

Cognitive reappraisal. Cognitive reappraisal is reframing an experience to regulate emotional distress (Desrosiers et al., 2013). It is posited to change the emotional impact of a distressing event by shifting negative cognitive biases (Gross & John, 2003). Cognitive reappraisal is viewed as an adaptive emotion regulation strategy, and has been associated with reductions in depression symptoms (Aldao et al., 2010).

Depression is associated with negatively biased information processing (Gotlib & Joormann, 2010), and the use of cognitive reappraisal is viewed as reducing distress or depression symptoms by changing the way in which experiences are interpreted (Gross & John, 2003). Less frequent use of reappraisal in the face of negative life events or cognitions is associated with the maintenance of associated depression symptoms (Gross & John, 2003). There is a large amount of evidence that deficits in cognitive reappraisal play an important role in the development and maintenance of

depression (Aldao & Nolen-Hoeksema, 2010; Diedrich et al., 2014; Gross & John, 2003). Further, there is evidence that negative cognitive styles are a risk factor for recurrent depression (see Burcusa & Iacono, 2007).

Self-compassion involves being able to view negative emotions or experiences as part of being human, which is a change in perspective that is hypothesized to reduce feelings of disconnection and isolation (Finlay-Jones et al., 2015). Being able to shift thoughts in the face of distress is hypothesized to be the result of an ability to cognitively reappraise a situation to a view of common humanity. The concept of self-compassion also involves a shifting or reframing of people's relationship to an emotional experience, with increased mindfulness and self-kindness, and it could be that this non-judgmental reappraisal or reframing could lead to reductions in depression symptoms (Desrosiers et al., 2013; Neff, 2003b). Some research has indicated that those who are more self-compassionate use more accurate appraisals of their self-evaluations (Leary et al., 2007). It has been proposed that those with high self-compassion think about distressing events in a way that reduces their negative impact (Allen & Leary, 2010; Leary et al., 2007). A recent experimental study demonstrated that using explicit self-compassion prior to utilizing cognitive reappraisal was more effective in reducing depressive symptoms than cognitive reappraisal alone, in a sample of people with depression (Diedrich et al., 2016a). Additionally, cognitive reappraisal has been found to mediate the relationship between mindfulness and depression symptoms (Desrosiers et al., 2013). Given that mindfulness of suffering is a key component of self-compassion, and recent findings linking self-compassion, cognitive reappraisal, and depressive symptoms, it may be that reappraisal plays a role in the relationship between self-compassion and recurrent depression symptoms.

Acceptance. Acceptance is the willingness to experience emotional or other sensations, without a need to alter or suppress them (Bond et al., 2011; Hayes et al., 2006). It is viewed as an

adaptive emotion regulation strategy that has been associated with being protective against depression (Aldao et al., 2010).

Having more acceptance of emotions when faced with distress allows people to acknowledge unwanted feelings or thoughts, instead of reverting to automatic or habitual patterns that may perpetuate depression symptoms (Segal et al., 2012). This allows the choice of different skillful responses to situations, feelings, or thoughts that they encounter. Acceptance of emotions has been negatively associated with development of depression symptoms (Berking et al., 2014). Furthermore, research has suggested that people who have experienced, and are vulnerable to, depression recurrence have less acceptance of negative emotions (Ehring et al., 2008).

Self-compassion may be protective for recurrent depression symptoms by enhancing acceptance of distress or negative feelings. Being able to acknowledge suffering is the first step toward showing compassion towards oneself (Neff, 2003a). By accepting that suffering is occurring, people can then relate in a different way to their depressive thoughts and feelings. For example, by choosing self-kindness over self-judgment. In addition, a number of authors have suggested that there are times when it is more adaptive to change the relationship towards inner experiences, including emotions, thoughts, and physical sensations as opposed to more traditional cognitive modification strategies (Ehring et al., 2008; Hayes et al., 2006; Teasdale, 1999). Within mindfulness approaches to treating depression, one key target is the non-judgmental acceptance of emotional experiences (Aldao & Nolen-Hoeksema, 2010), and self-compassion may foster a more mindful and accepting approach to negative emotions. Empirical research has suggested that people with higher self-compassion are more accepting of difficult experiences or emotional experiences than those with low self-compassion (Allen & Leary, 2010; Leary et al., 2007). However, a recent

study found that self-compassion was not mediated by acceptance (Diedrich et al., 2016b), thus this study seeks to examine this relation in a sample of people with recurrent depression.

The Present Study

The current study seeks to add to the existing literature by improving our understanding of how self-compassion is protective in the development of recurrent depression symptoms. I investigated the relations between self-compassion, adaptive and maladaptive emotion regulation strategies, and depression symptoms in a sample of people who have a history recurrent depression (at least two prior MDEs), to better understand these pathways. This study builds upon the literature on maladaptive emotion regulation strategies as mediators between self-compassion and recurrent depression, by examining rumination and experiential avoidance. Furthermore, it explores the role of adaptive emotion regulation strategies as potential mediators between self-compassion and recurrent depression symptoms, to add to our understanding about how these may be linked. Ultimately, the overarching goals of this study are to generate knowledge that will add to the understanding of pathways from self-compassion to depression recurrence. Better understanding of these pathways will facilitate improved counselling interventions that prevent depression recurrence. It may contribute evidence for the use or adaptation of specific compassion-focused psychological treatments such as Mindful Self-Compassion (MSC; Neff & Germer, 2013) or Compassion-Focused Therapy (CFT; Gilbert & Procter, 2006; Gilbert, 2014), or other emotion regulation interventions, in those at risk for recurrent depression.

Research Questions

The overarching research questions for the present study are: (1) Is self-compassion associated with depression symptom severity in people who have experienced recurrent depression? (2) Does brooding rumination mediate the relationship between self-compassion and depression

symptoms in people who have experienced recurrent depression? (3) Does experiential avoidance mediate the relationship between self-compassion and depression symptoms in people who have experienced recurrent depression? (4) Does cognitive reappraisal mediate the relationship between self-compassion and depression symptoms in people who have experienced recurrent depression? (5) Does acceptance mediate the relationship between self-compassion and depression symptoms in people who have experienced recurrent depression? (6) How much does each emotion regulation strategy predict the relationship between self-compassion and recurrent depression symptoms relative to the other emotion regulation strategies?

Hypotheses

The figure below outlines the mediation pathways that were examined in this study, with the predicted relationships between the variables. Overall, it was hypothesized that: (1) higher levels of self-compassion will predict less recurrent depressive symptomatology, (2) brooding rumination will mediate the relation between self-compassion and recurrent depression symptoms, (3) experiential avoidance will mediate the relation between self-compassion and recurrent depressive symptoms, (4) cognitive reappraisal will mediated the relation between self-compassion and recurrent depressive symptoms, (5) acceptance will mediate the relation between self-compassion and recurrent depressive symptoms, and (6) brooding rumination and experiential avoidance (maladaptive emotion regulation strategies) will be the most predictive mediators, compared to acceptance and cognitive reappraisal (adaptive emotion regulation strategies).

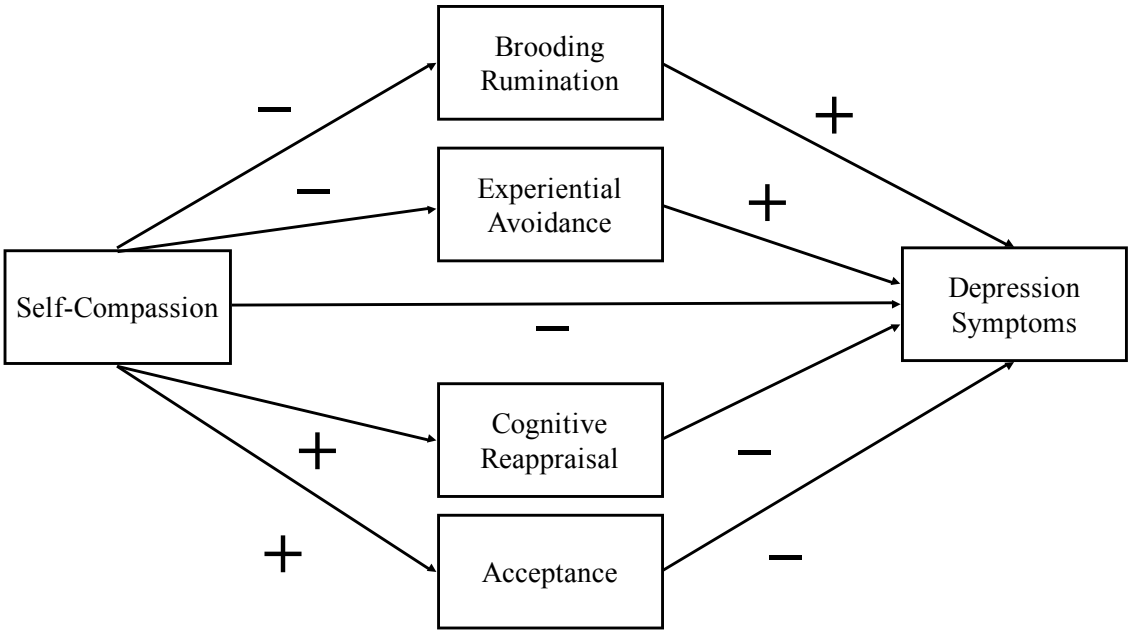

Figure 2. Hypotheses of the relations between variables.

Chapter 3: Method

Participants

A total of 887 people completed the initial screening questionnaire. Participants ($N = 105$) who met the inclusion and exclusion criteria were invited to participate in the full study. Five invitees chose not to participate. The final participants included in the study were 100 adults (70 women, 29 men, and one transgender person; see Figure 2 for flow of participants). The mean age of the sample was 38.55 years ($SD = 12.06$), with a range of 21 to 66. Reported number of depressive episodes ranged from two to greater than 10, with 50% of participants reporting two to three lifetime episodes. Demographic variables are listed in Table 1.

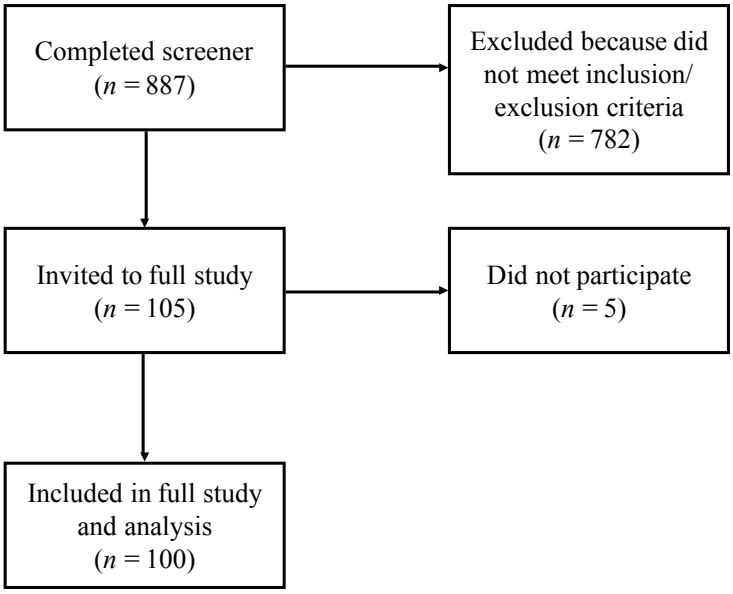

Figure 3. Flow of participants for recruitment for the study.

Table 1

Descriptive Statistics and Sample Characteristics

Characteristic	*n* (%)
Gender	
Male	29 (29%)
Female	70 (70%)
Transgender	1 (1%)
Age Group	
25 or less	13 (13%)
26 to 35	41 (41%)
36 to 45	16 (16%)
46 to 55	16 (16%)
56 to 65	12 (12%)
66 and up	2 (2%)
Race/ethnicity	
Caucasian/White	80 (80%)
Hispanic	7 (7%)
South Asian	1 (1%)
East Asian	7 (7%)
African American/Black	3 (3%)
Other	1 (1%)
Unknown	1 (1%)
Relationship status	
Married/common-law	41 (41%)
Divorced/separated	6 (6%)
Widowed	3 (3%)
Single	47 (47%)
Other	2 (2%)
Unknown	1 (1%)
Children	
Yes	38 (38%)
No	62 (62%)
Highest level of education	
High school or equivalent	3 (3%)
Some college or university	31 (31%)
College or university degree	49 (49%)
Graduate degree	17 (17%)
Employment	
Full-time	61 (61%)
Part-time or casually	18 (18%)
Unemployed	10 (10%)
Student	1 (1%)
Other	4 (4%)
Disability	2 (2%)
Retired	4 (4%)

Table 1 continued

Descriptive Statistics and Sample Characteristics

Characteristic	*n* (%)
Household income	
$19,999 or less	12 (12%)
$20,000 to $39,000	27 (27%)
$40,000 to $59,999	31 (31%)
$60,000 to $79,999	17 (17%)
$80,000 or more	13 (13%)
Lifetime episodes of depression	
2	26 (26%)
3	24 (24%)
4	9 (9%)
5	8 (8%)
6	2 (2%)
7	4 (4%)
8	1 (1%)
9	0 (0%)
>10	26 (26%)

Procedure

Participants were recruited from Amazon's Mechanical Turk (MTurk; https://www.mturk.com), an online crowdsourcing service through which people complete online research in exchange for monetary stipends. As a requester, researchers seek workers to complete online tasks, known as Human Intelligence Tasks or HITs. Within MTurk, the pool of workers is large and diverse, making it an appropriate and useful way to recruit a nonprobability sample (Paolacci & Chandler, 2014). A benefit of MTurk is that researchers can selectively recruit workers, and take steps to ensure that quality data is collected (Paolacci & Chandler, 2014). An additional advantage is access to hard to reach populations, including people with psychological concerns who may not have sought support from mental health professionals (Shapiro, Chandler, & Mueller, 2013). Research has indicated that studying clinical populations via MTurk is both useful and efficient (Shapiro et al., 2013; Chandler & Shapiro, 2016).

Following recommendations for clinical research using MTurk (e.g., Chandler & Shapiro, 2016), participants were recruited through a posting on MTurk with a vague description of the study, to avoid misrepresentation or malingering (see Appendix K). To participate, MTurk worker qualifications requirements were set to: US location, HIT approval rate at greater than 95%, and number of HITs approved greater than 1000. Upon completion of informed consent, participants were invited to complete the screening measures online through UBC's survey tool. Participants were paid $0.25 US for completion of the screener, which took less that 5 minutes. Once completed, each survey was reviewed for inclusion and exclusion criteria. Criteria for inclusion were: 19 years of age or older, at least two previous reported MDEs with a period remission of at least 2 months, and fluency in English. Exclusion criteria included: any indication of a previous episode of mania or hypomania, and/or any symptoms of psychosis (see Appendix C). All participants who met these criteria were invited to participate in the full study (see Appendix K).

Next, participants completed the informed consent for the full study, and completed the study measures online. Each participant was paid $3.00 US for completion of the full study. A debriefing page was provided at the end of the survey, containing resources for participants who may have felt that they needed additional support, information, or crisis intervention (see Appendix B). In order to assess for consistent reporting and truthfulness, participants were asked to report their location, and this information was cross referenced with IP address. Additionally, participants completed a simple mathematical problem to discourage spamming and check attention. Screening and full study questionnaires were checked to ensure that location, age, and MTurk ID matched.

Ethics approval was obtained from the UBC Behavioural Research Ethics Board prior to conducting the study.

Measures

Demographics questionnaire. Demographic information was collected from participants including age, gender, racial/ethnic background, relationship status, number of children, level of education, employment, and income level (see Appendix D).

PHQ-9 for lifetime depression. The Patient Health Questionnaire-9 (PHQ-9; Spitzer, Kroenke, Williams, & The Patient Health Questionnaire Primary Care Study Group, 1999) was used to determine whether the worst reported lifetime depressive episode met screening criteria for a MDE. The PHQ-9 is a self-report measure that asks respondents about the nine symptoms listed in DSM-V criterion A for an MDE, in order to screen for presence and severity. Each of the nine items was rated on a scale from 0 (*not at all*) to 4 (*nearly every day*). There was also a question to assess for criterion B for MDE: clinically significant impairment (*How difficult have these problems made it for you to do your work, take care of the things at home, or get along with other people?*). Typically, the PHQ-9 is used to screen for current depression symptoms (within the last 2 weeks), however, the PHQ-9 was validated for use as a brief assessment of lifetime measure of major depression, and was validated against lifetime depression diagnosis established by the Structured Clinical Interview for DSM–IV (SCID; First, Spitzer, Gibbon, & Williams, 2001). The instructions are changed to read: *For the 2 weeks in your life that you were the most blue, sad, or depressed, how often were you bothered by any of the following problems?* For items 1-8, using the threshold for a positive symptom of 2 (*more than half the days*) instead of 3 (*nearly every day*), has been found to significantly raise the sensitivity of the measure, while preserving a high specificity (Kroenke et al., 2001). Item 9 relates to suicidal ideation, and a score of 1 is categorized as a positive symptom (Cannon et al., 2007). These guidelines for scoring were used to determine if the participant met the cutoff criteria of at least 5 symptoms, including one of the 2 required symptoms

for a DSM-V diagnosis of a MDE (depressed mood or anhedonia). Cronbach's alpha of the lifetime depression PHQ-9 in the current study was .85.

Additional MDE screening questions. I included three additional questions to assess the MDE criteria not measured by the PHQ-9, criteria C, D, and E. These screening questions were drawn from the Composite International Diagnostic Interview (CIDI) and DSM-V criteria. DSM-V criterion C was screened for using the question: *Was the episode you just described due to the influence of medication, drugs, or alcohol, or another medical condition?* Criterion D, the possibility of psychosis or a psychotic disorder, was screened for using 3 questions (e.g., *Did you ever have a time when you felt that your mind was being taken over by others?).* One question assessed for possibility of hypomanic/manic episode, and addressed criterion E of the DSM-V diagnostic criteria. Lastly, one question assessed whether the episode was related to grief: *At the time of that episode, were you grieving for a person, or a pet, who had died in the past 2 months?*

The screening question for recurrence of depression, and lifetime number of episodes, was based upon the DSM-V criteria requiring a period of at least 2 months with no significant signs or symptoms of depression: *How many SEPARATE times (with at least 2 months in between with no significant signs and symptoms) in your life have you felt sad, empty, or depressed most of the day, nearly every day, for at least 2 weeks?*

Current depression symptoms. The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) was used to measure current depression symptoms. The BDI-II is a 21-item self-report measure of depressive symptom severity across domains of affect, behaviour, and cognition, and has been widely used in studies of depression. Items (e.g., sadness) are rated from 0 (*I do not feel sad*) to 3 (*I am so sad or unhappy that I can't stand it*), to best describe how respondents have been feeling during the past two-week period. Higher scores indicate greater depression symptom

severity. The BDI-II has been used extensively in clinical populations and has adequate psychometric properties across various samples (Van Dam, Sheppard, Forsyth, & Earleywine, 2011). The Cronbach's alpha for the present study was .92.

Self-compassion. The Self-Compassion Scale (SCS; Neff, 2003b) is a 26-item self-report measure of how self-compassionately respondents act towards themselves in times of difficulty. The SCS has six subscales that measure the three dimensions of self-compassion, which include self-kindness (e.g., *When I'm going through a very hard time, I give myself the caring and tenderness I need*), common humanity (e.g., *When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am*), mindfulness (e.g., *When I'm feeling down I try to approach my feelings with curiosity and openness*), self-judgment (e.g., *I'm disapproving and judgmental about my own flaws and inadequacies*), isolation (e.g., *When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world*), and over-identification (e.g., *When I'm feeling down I tend to obsess and fixate on everything that's wrong*). Items are rated on a 5-point scale from 1 (*almost never*) to 5 (*almost always*), and are scored by summing the item responses, using reverse scoring for negatively worded items (Neff, 2003b). The SCS can be used to examine the six subscales independently, or as an overall measure of self-compassion (Neff, 2003b; Neff, 2016). In the current study, the total self-compassion score was used. Strong psychometric support for the SCS has been found across several studies (Joeng & Turner, 2015; Krieger et al., 2013; Neff, Rude, & Kirkpatrick, 2007). The Cronbach's alpha for the overall score in the present study was .95.

Rumination. The Ruminative Responses Scale (RRS; Treynor et al., 2003) is a self-report measure of rumination. In the current study, the subscale for brooding rumination, the tendency to have repetitive negative or self-critical thoughts, was used as it is the rumination type most

associated with depression symptoms (Treynor et al., 2003). This subscale has 5 items to which respondents indicate how often they think or do things when they feel depressed (e.g., *Think: Why do I have problems other people don't have?),* with responses from 1 (*never*) to 4 (*always*). Higher score reflect higher levels of brooding rumination (Treynor et al., 2003). The RRS has demonstrated good psychometric properties in adults with mood and anxiety disorders (Desrosiers et al., 2013). The Cronbach's alpha for the present study was .77.

Experiential avoidance. The Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2013) is a 15-item self-report measure of experiential avoidance, the tendency to avoid distressing emotions, thoughts, or physical sensations (e.g., *I work hard to keep out upsetting feelings*). Items are rated by respondents from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating greater experiential avoidance. A recent alpha coefficient was .83 in a sample of psychiatric outpatients (Gámez et al., 2013). The Cronbach's alpha for the current study was .83.

Cognitive reappraisal. The cognitive reappraisal subscale of the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) was used to measure cognitive reappraisal: the ability to reframe distressing emotional experiences in a more positive way. This subscale consists of 6 items (e.g., *I control my emotions by changing the way I think about the situation I'm in).* Respondents indicated their agreement with each statement from 1 (*strongly disagree*) to 7 (*strongly agree*) to denote how much they use a specific strategy to manage their emotions. A higher score reflects greater use of cognitive reappraisal. A recent alpha coefficient for the cognitive reappraisal subscale was .91 in a sample of adult outpatients seeking treatment for mood and anxiety disorders (Desrosiers et al., 2013). Cronbach's alpha for the present study was .90.

Acceptance. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) 6-item subscale of non-acceptance of emotional responses was used to measure how accepting respondents were of their emotional experiences when experiencing negative emotions. The items (e.g., *When I'm upset, I feel ashamed at myself for feeling that way*) are measured on a scale of 1 (*almost never*) to 5 (*almost always*). Higher scores indicate greater difficulty with acceptance of emotion, and lower scores less difficulty, or more acceptance, of emotions. A recent alpha coefficient for the non-acceptance subscale was .85 sample of adult outpatients seeking treatment for mood and anxiety disorders (Desrosiers et al., 2013). Cronbach's alpha for the current study was .93.

Data Analyses

The statistical method described by Preacher and Hayes (2008) was used to investigate the mediation effects of rumination, experiential avoidance, cognitive reappraisal, and acceptance between self-compassion and recurrent depression symptoms. Data analyses were conducted using SPSS version 24.0, and PROCESS macro for SPSS (Hayes, 2013) model number 4. The direct effects of self-compassion on recurrent depression symptoms, self-compassion on each proposed mediator (i.e., rumination, experiential avoidance, acceptance, and cognitive reappraisal), and each proposed mediator on recurrent depression symptoms, were examined. Then, the indirect effects between self-compassion and recurrent depression symptoms through each mediating variable were tested separately. Each indirect effect indicated how recurrent depression symptoms are influenced by self-compassion through each separate emotion regulation strategy. A parallel multiple-mediator model examined the indirect effects of each mediating variable, while holding the other mediators constant (Hayes, 2013).

Bootstrapping was utilized in mediation analyses, which is a resampling procedure that does not force the assumption of normality for the sampling distribution of the indirect effect (Preacher & Hayes, 2008). Instead, it is constructed empirically. From this generated sampling distribution, 95% confidence intervals are constructed to test the indirect effects, which are considered to be significant if zero does not fall between the upper and lower confidence intervals (Preacher & Hayes, 2008). In this study, the bootstrapped confidence intervals for the indirect effects were based on 10,000 re-samples. The percent mediation was calculated for each indirect effect.

Chapter 4: Results

Preliminary Analyses

First, data was screened for missingness. Twenty-eight (0.35%) item responses were missing and imputed using the expectation maximization algorithm in SPSS (Tabachnick & Fidell, 2013). Next, the data were screened for univariate and multivariate outliers. Boxplots revealed 5 univariate outliers in the data. Additionally, one multivariate outlier was identified using Mahalanobis Distance. When outliers were examined, there was no evidence of differential or invalid responding. I ran all significance tests with and without outliers, and results were not notably different, thus all participants' data were retained. Next, univariate histograms were examined visually, and skewness and kurtosis statistics were checked to evaluate normality. All scales demonstrated normality. The assumption of homoscedasticity was checked by visual inspection of a scatterplot of the standardized residuals and the standardized predicted values for each case, which did not appear to vary systematically. The P-P plot was visually inspected and residuals were normally distributed. Bivariate correlations were run using total scores. The direct and indirect effects were standardized, using *z*-scores, to facilitate comparisons within and between the models tested.

Descriptive statistics and correlations for all study variables were explored and are presented in Table 2. All study variables significantly correlated with each other in the expected directions.

Table 2

Bivariate Correlations and Descriptive Statistics for Study Variables

Variable	1	2	3	4	5	6
1. Self-compassion	—					
2. Depression symptoms	-.565**	—				
3. Brooding rumination	-.435**	.538**	—			
4. Experiential avoidance	-.395**	.438**	.480**	—		
5. Cognitive reappraisal	.577**	-.406**	-.159	-.249*	—	
6. Acceptance	.442**	-.421**	-.488**	-.277**	.223*	—
M	69.72	18.74	11.71	52.59	27.07	20.19
SD	18.83	10.82	3.46	10.73	7.13	6.87
Alpha	.95	.92	.77	.83	.90	.93

*$p < .05$, **$p < .01$

Self-Compassion and Depression Symptoms

The hypothesis that self-compassion correlated with recurrent depression symptoms was supported (see Table 3). The total effect of self-compassion on depression symptoms was -.57, $p < .001$.

Simple Mediation Models

I ran four simple mediation models to test each individual proposed mediator for the relationship between self-compassion and recurrent depression symptoms (see Table 3 for a summary of the standardized regression coefficients).

Table 3

Standardized Coefficients for Simple Mediation Models Examining Association Between Self-Compassion and Depression Symptoms

Mediator (M)	Effect of IV on M (a)	Effect of M on DV (b)	Direct effect (c')	Indirect effect (a x b)	Indirect effect 95% CI	Total effect (c)
Brooding rumination	-.435***	.360***	-.408***	**-.157**	**-.297 - -.066**	-.565***
Experiential avoidance	-.395***	.255**	-.465***	**-.101**	**-.218 - -.028**	-.565***
Cognitive reappraisal	.577***	-.120	-.496***	-.069	-.208 - .033	-.565***
Acceptance	.443***	-.210*	-.472***	**-.093**	**-.202 - -.015**	-.565***

Note: IV = self-compassion; DV = depression symptoms; bolded confidence intervals do not include a zero, indicating a significant indirect effect.
*$p < .05$, **$p < .01$, ***$p < .001$.

Supporting hypothesis number two, rumination significantly mediated the relationship between self-compassion and depression symptoms, as illustrated in Figure 4. The bootstrapped standardized indirect effect was b = -.16, 95% CI [-.30, -.07]. The confidence interval did not straddle zero, thus was significant. Rumination accounted for 28% of the total effect in this model, P_M = .28.

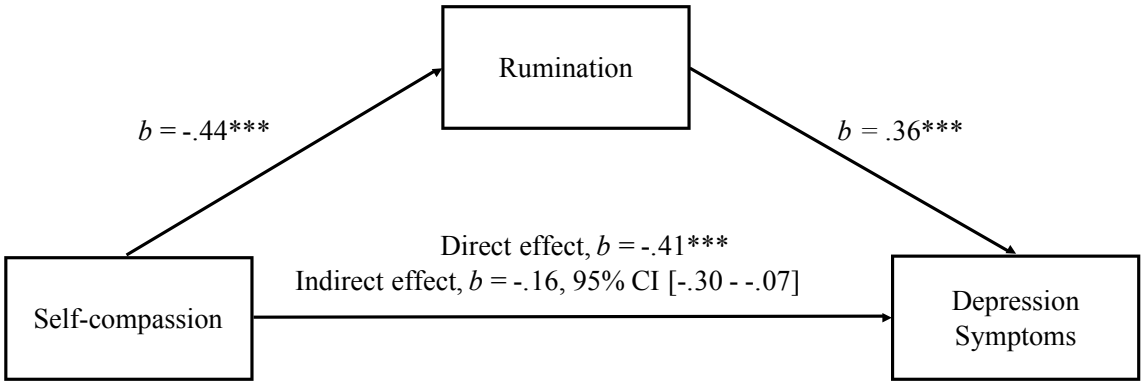

Figure 4. Model of self-compassion as a predictor of depression symptoms, mediated by rumination. The confidence interval for the indirect effect is a bootstrapped CI based on 10,000 samples. *$p < .05$, **$p < .01$, ***$p < .001$.

Supporting hypothesis number three, experiential avoidance mediated the relationship between self-compassion and depression symptoms, as illustrated in Figure 5. The bootstrapped standardized indirect effect was $b = -.10$, 95% CI [-.22, -.03]. The confidence interval did not straddle zero, thus was significant. Experiential avoidance accounted for 18% of the total effect in this model, $P_M = .18$.

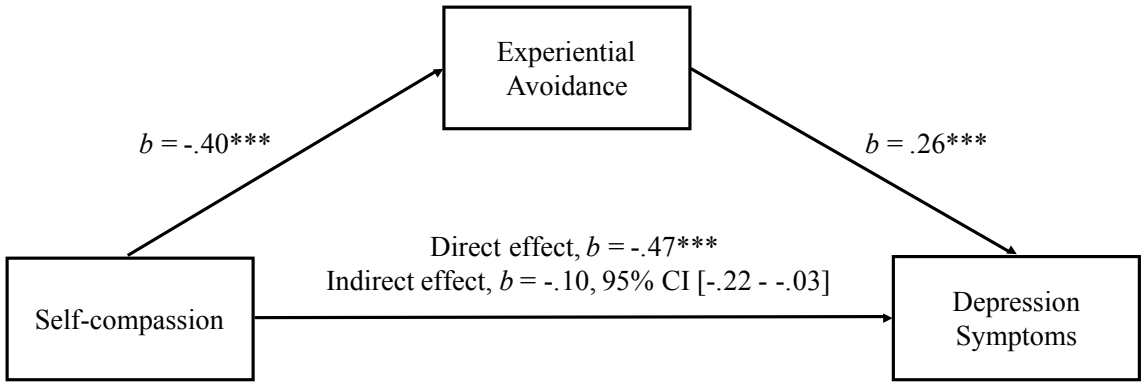

Figure 5. Model of self-compassion as a predictor of depression symptoms, mediated by experiential avoidance. The confidence interval for the indirect effect is a bootstrapped CI based on 10,000 samples. *$p < .05$, **$p < .01$, ***$p < .001$.

Inconsistent with hypothesis number four, cognitive reappraisal did not significantly mediate the relationship between self-compassion and depression symptoms, as illustrated in Figure 6. The

bootstrapped standardized indirect effect was b = -.10 with a 95% CI [-.22, -.03]. The confidence interval did straddle zero, thus was not significant.

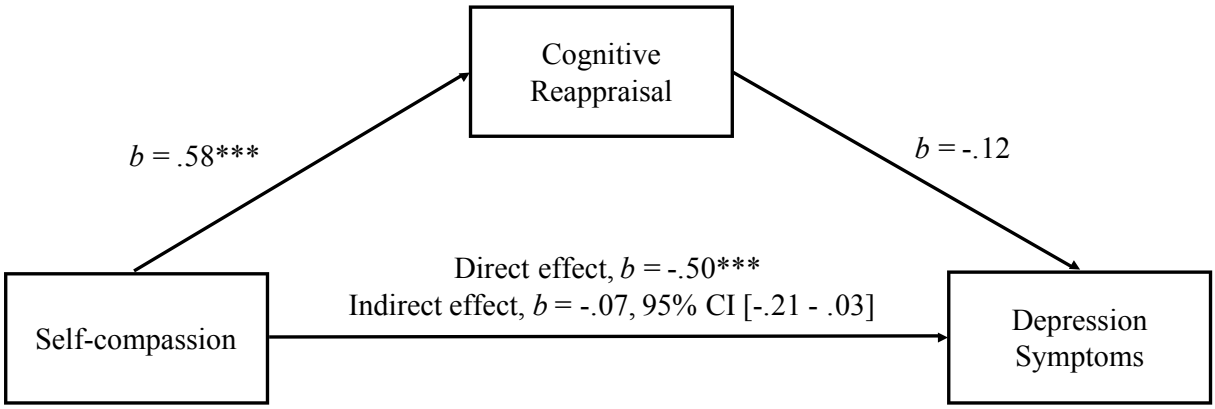

Figure 6. Model of self-compassion as a predictor of depression symptoms, mediated by cognitive reappraisal. The confidence interval for the indirect effect is a bootstrapped CI based on 10,000 samples. *p < .05, **p < .01, ***p < .001.

Lastly, consistent with hypothesis five, acceptance mediated the relationship between self-compassion and depression symptoms, as illustrated in Figure 7. The bootstrapped standardized indirect effect was b = -.09, 95% CI [-.20, -.02]. The confidence interval did not straddle zero, thus was significant. Acceptance accounted for 20% of the total effect in this model, P_M = .20.

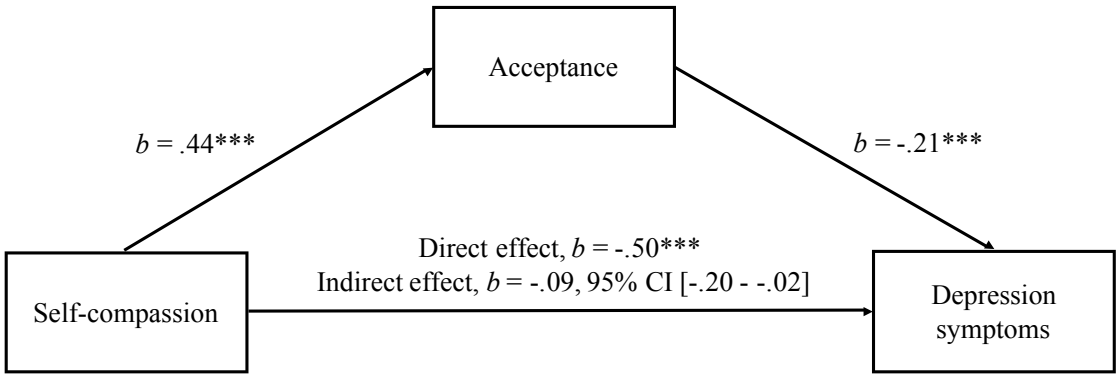

Figure 7. Model of self-compassion as a predictor of depression symptoms, mediated by acceptance. The confidence interval for the indirect effect is a bootstrapped CI based on 10,000 samples. *p < .05, **p < .01, ***p < .001.

Multiple Mediation Model

Because cognitive reappraisal did not mediate the relation between self-compassion and recurrent depression symptoms in the simple mediation model, cognitive reappraisal was not included in the multiple mediation model. The multiple mediation model is presented in Figure 7. The standardized regression coefficients are presented in Table 4. When rumination, experiential avoidance, and acceptance were included, only rumination was found to mediate the relationship between self-compassion and depression symptoms. The indirect effect was b = -.12 with a 95% CI [-.24, -.03]. The confidence interval does not straddle zero, and is therefore significant. In other words, self-compassion exerts an effect on depression symptoms through rumination when controlling for experiential avoidance, cognitive reappraisal, and acceptance. Brooding rumination accounted for 21% of the association between self-compassion and depression symptoms in this model, P_M = .21. Given that only indirect effects via rumination were significant, comparison in effect strengths were not conducted.

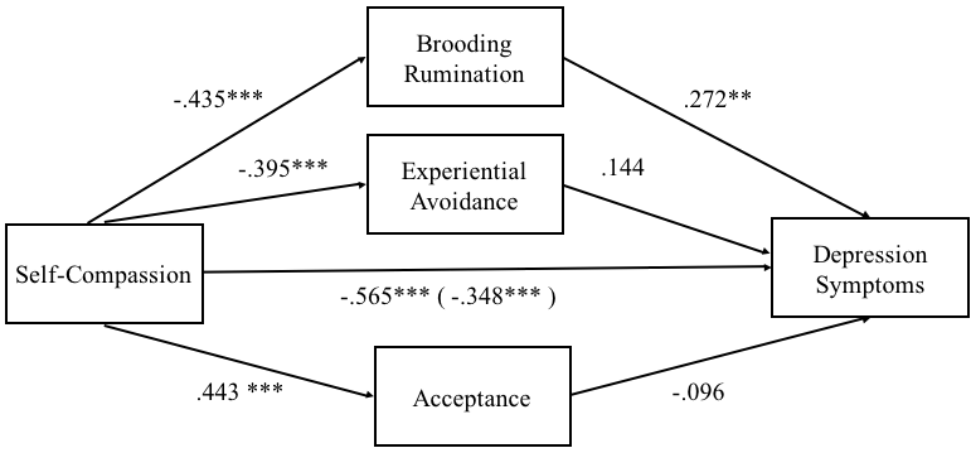

Figure 8. Multiple mediation model of self-compassion as a predictor of depression symptoms. *p < .05, **p < .01, ***p < .001.

Table 4

Standardized Coefficients for Emotion Regulation Strategies Mediating the Association of Self-Compassion with Depression Symptoms

Dependent variable (DV)	Mediator (M)	Effect of IV on M (a)	Effect of M on DV (b)	Direct effect (c')	Indirect effect (a x b)	Indirect effect 95% CI	Total effect (c)
Depression symptoms	Total effect			-.348***			-.565***
	Rumination	-.435***	.272**		**-.118**	**-.239 - -.033**	
	Experiential Avoidance	-.395***	.144		-.057	-.172 - .019	
	Acceptance	.443***	-.096		-.042	-.135 - .029	

Note: IV = self-compassion; bolded confidence intervals do not include a zero, indicating a significant indirect effect. *$p < .05$, **$p < .01$, ***$p < .001$.

Chapter 5: Discussion

Given the morbidity associated with recurrent MDD, the current research was undertaken to add to our understanding of how subsequent episodes of depression may be prevented or minimized through self-compassion. The overall aim of this study was to investigate the relationships between self-compassion, emotion regulation strategies, and depression symptoms in people who have experienced recurrent depression. Specifically, two maladaptive emotion regulation strategies, rumination and experiential avoidance, and two adaptive emotion regulation strategies, cognitive reappraisal and acceptance, were examined as mediators in the relation between self-compassion and recurrent depression symptoms. Each potential mediator was explored as an individual mechanism through simple mediation analyses, and, subsequently, a multiple mediation model explored the proposed mediators as a group, controlling for the influence of the other mediating variables.

In the simple mediation models, brooding rumination, experiential avoidance, and acceptance were each found to mediate the relation between self-compassion and recurrent depression symptoms. The multiple mediation model revealed that when controlling for the other mediators, the indirect effect of self-compassion on recurrent depression symptoms via brooding rumination was the only significant mediator. This suggests that having higher self-compassion reduces brooding rumination, a maladaptive emotion regulation strategy, which subsequently lessens depressive symptomatology.

Implications for Theory

Consistent with previous studies that have examined the relation between self-compassion and depression symptoms in clinical samples (e.g., Dietrich et al., 2016b; Ehret et al., 2015; Krieger et al., 2013; Krieger et al., 2016), self-compassion was negatively associated with symptoms of

depression. While prior research has pointed to decreased self-compassion in those with remitted depression (Ehret et al., 2015), the present study extends the literature by demonstrating that low levels of self-compassion are predictive of greater depressive symptomatology in those with recurrent depression symptoms.

The data from the current study provide support for self-compassion being a possible protective factor in those with recurrent depression. It seems that reduced self-compassion is an important vulnerability factor in MDD, in both people who have remitted depression (Ehret et al., 2015) and those who have recurrent symptoms. While the current findings are cross-sectional, previous work has supported the temporal order presented (Dietrich et al., 2016b; Krieger et al., 2016). However, it is still possible that depression itself further impacts people's ability to be self-compassionate, which subsequently puts them at increased risk, similar to scar theories of recurrent depression. Future research would be beneficial in further unpacking this relation, nevertheless, it seems clear that self-compassion plays a role in impacting depressive symptomatology, especially in those with recurrent depression.

My findings demonstrate that one way through which self-compassion impacts depressive symptomatology in people with recurrent depression is through its influence on emotion regulation strategies. The results build upon emerging clinical research, which suggest that self-compassion is protective in depression through its impact on people's ability to regulate negative affect (Kreiger et al., 2013; Dietrich et al., 2016b), and extend the literature by pointing to this important relation in those with recurrent depression symptoms. In addition, findings support the theory that an inability to regulate emotions effectively is a key mechanism through which depression-prone people experience worsening symptoms, or subsequent mood states (e.g. Nolen-Hoeksema et al., 2008; Teasdale, 1988). This fits with cognitive theories of depression, which posit that emotional

information is often processed through mood-congruent biases, and that people have difficulty in cognitive control, which impairs the effective use of emotion regulation strategies (Joorman & Siemer, 2014). Self-compassion appears to enhance certain adaptive emotion regulation strategies, while decreasing maladaptive ones, essentially improving people's capacity to regulate negative affect, thereby preventing or lessening depressive symptomatology.

In the present study, support was garnered for rumination, experiential avoidance, and acceptance as mediators in the relation between self-compassion and recurrent depression symptoms, when each mediator was tested individually. This is in line with previous research in a non-clinical sample examining brooding rumination as a mediator between self-compassion and depression symptoms (Raes, 2010). Furthermore, the data are consistent with a prior study of clinically depressed outpatients that identified symptom-focused rumination as a significant mediator in the relation between self-compassion and depression (Krieger et al., 2013). The current study extends the literature by demonstrating that brooding rumination mediates the impact of self-compassion on depressive symptoms in a sample of people with recurrent depression.

The finding that experiential avoidance significantly mediated the relation between self-compassion and recurrent depression symptoms is consistent with a prior study which demonstrated that cognitive and behavioural avoidance was a mechanism through which self-compassion influenced depressive symptoms in a clinically depressed sample (Krieger et al., 2013). Furthermore, findings from the current study add to the literature by indicating that overall avoidance of negative experiences, including emotional experiences, is a potentially important mechanism through which self-compassion impacts depressive symptoms. The current findings extend the literature by demonstrating that experiential avoidance meditates the effect of self-compassion on recurrent depression symptoms.

Finally, acceptance was found to mediate the relation between self-compassion and recurrent depression symptoms in this study. This is in line with a recent study, that demonstrated that adaptive emotion regulation skills, measured using the Emotion Regulation Skills Questionnaire (ERSQ), mediated the relation between self-compassion and depressive symptoms in a sample of patients with clinical depression (Dietrich et al., 2016b). However, in the aforementioned study, the acceptance subscale, when tested alone, was not significant. The finding from the current study adds to the literature by suggesting that self-compassion bolsters acceptance of difficult emotions, and through this mechanism, reduces depression symptoms in people with recurrent depression. This fits with the theory that a lack of acceptance of emotions is a vulnerability to depression (Aldao et al., 2010; Ehring et al., 2008), and suggests that self-compassion enhances people's ability to regulate negative affect through acceptance of these emotional experiences. Furthermore, it extends initial findings that bolstering adaptive emotion regulation strategies may be an important mechanism through which self-compassion impacts symptoms of depression in those with recurrent depression.

Taken together, in people with recurrent depression, self-compassion appears to reduce depressive symptoms by lessening the tendency to ruminate in the face of negative affect or difficulty, decreasing avoidance of emotional experiences, and bolstering an acceptance of negative emotions.

When emotion regulation strategies were examined together, brooding rumination was the primary emotion regulation strategy, of the proposed mediators, through which self-compassion exerted its influence on depressive symptoms in people with recurrent depression. Prior research has provided robust evidence suggesting that rumination in response to negative affect intensifies and lengthens depressed mood (Nolen-Hoeksema et al., 2008) and has pointed to rumination as a

major factor accounting for the onset and maintenance of depression (see Joormann & Siemer, 2014). Furthermore, rumination has been identified as an emotion regulation strategy that tends to be a more stable risk factor for MDD, even outside of acute episodes (D'Avanzato et al., 2013), making it a risk factor for recurrence. As such, self-compassion may be especially helpful in both prevention, as well as treatment, for those at risk for subsequent episodes. It seems that the tendency to utilize self-compassion in the face of stressors or negative affect offers a different way of responding, which may lower people's tendency to use brooding rumination. Given the key role that rumination plays in recurrent depression, self-compassion may be a very useful protective factor in people with recurrent depression.

Surprisingly, cognitive reappraisal was not a significant mediator in the relation between self-compassion and recurrent depression symptoms in the current study. This is inconsistent with recent experimental findings, which demonstrated that the precursory use of self-compassion enhanced the explicit use cognitive reappraisal to significantly reduce depressed mood in a sample of clinically depressed patients (Diedrich et al., 2016a). In the current study, the associations of self-compassion, cognitive reappraisal, and depression symptoms were in the hypothesized directions. Additionally, the pathway between self-compassion and cognitive reappraisal was significant, indicating that higher levels of self-compassion are associated with higher levels of cognitive reappraisal. Interestingly, the effect of cognitive reappraisal on recurrent depression symptoms was not significant in this study.

Some studies have suggested that compared to other emotion regulation strategies, cognitive reappraisal is more inconsistently linked to symptoms of depression (Aldao et al., 2010; Joormann & Siemer, 2014; Nezlek & Kuppens, 2008). One study proposed that cognitive reappraisal is more often effective when there is a tendency to utilize maladaptive strategies (Aldao et al., 2012),

however the current findings do not support this theory, given the use of both rumination and experiential avoidance in the current sample. My findings suggest that cognitive reappraisal may not play a large role in how self-compassion impacts depressive symptomatology in those with recurrent depression symptoms. However, given the strong correlation in the present study between cognitive reappraisal and self-compassion, and recent experimental findings suggesting that self-compassion facilitates the use of cognitive reappraisal to decrease depressed mood (Dietrich et al., 2016a), this warrants clarification through future research.

Practical Implications

Findings from this research have potential implications for clinical practice and psychological treatment approaches. The results add to the small, but emerging evidence, of the relationship between self-compassion and depression symptoms in those with MDD. This study provides evidence for the possible benefit of targeting self-compassion in those who may struggle with recurrent depression symptomatology. By specifically targeting self-compassion in psychological intervention, clients may have a greater ability to regulate negative emotions, thereby reducing depressive symptoms. Furthermore, by bolstering self-compassion in clients who have recovered from a depressive episode, and who may be vulnerable to recurrence, clinicians can strengthen emotion regulation capabilities to prevent further episodes. Self-compassion appears to improve clients' abilities to regulate emotions by decreasing the maladaptive strategies of rumination and experiential avoidance, and by augmenting the adaptive emotion regulation strategy of acceptance. Both maladaptive emotion regulation strategies were significant in the simple mediation analyses, supporting previous research that has pointed to the tendency to for those who struggle with depression to have a greater tendency to use maladaptive strategies more frequently (Joormann & Siemer, 2014). This seems especially true for those who struggle with recurrent

depression, who tend to more easily slip into maladaptive strategies in the face of stress or negative affect.

The findings suggest that self-compassion interventions may be especially effective for those who have a tendency to engage in brooding rumination, which has been found to be a particularly harmful response to negative affect (Joormann & Siemer, 2014). Targeting self-compassion in treatment may offer an alternate response to negative affect and stress, and can possibly reduce the use ruminative thinking. Since people with depression tend to be high in rumination, self-compassion may be a particularly valuable construct that clinicians can target in their treatment approaches.

There are a number of interventions that exist to foster self-compassion, such as Mindful Self-Compassion, and Compassion Focussed Therapy. Additionally, efficacious treatments for recurrent depression, such as Mindfulness-Based Cognitive Therapy, have found that increased self-compassion is an outcome and mechanism of treatment, but do not explicitly target self-compassion within the treatment sessions (Segal et al., 2012). It seems plausible that compassion-based approaches could be utilized more specifically in those with recurrent depression. Furthermore, adding components of explicit training in self-compassion in addition to, or as part of, other evidence-based techniques may improve outcomes for those who experience recurrent depression.

Limitations and Future Directions

The current study had several limitations that should be considered. Firstly, while MTurk has been used effectively for research with clinical populations (Chandler & Shapiro, 2016), it has a number of possible limitations which should be noted. In the current study, a disadvantage of online assessment was the inability to utilize a clinician-administered structured clinical diagnostic interview to verify that participants were interpreting the screening questions for recurrent

depression correctly. There is also the possibility for careless or distracted responding, misunderstanding or misinterpreting questions, and malingering when completing studies online. However, recent research has suggested that MTurk participants are typically as honest as those recruited using other methods (Chandler & Shapiro, 2016), and steps were taken in the current study to carefully set up research to ensure that these risks were minimized. Lastly, convenience sampling was utilized, thus data are not necessarily representative of the population, however, MTurk has been found to yield more diverse samples than are typically used in clinical research (Chandler & Shapiro, 2016). In the current study, the sample was predominantly female, Caucasian, and was limited to residents of the United States, therefore caution should be taken in generalizing the results.

Other limitations of the current study are the relatively small sample size, the sole use of self-report measures, and the cross-sectional design. The use of self-report measures is subject to response biases. Additionally, due to the cross-sectional nature of this study, directionality cannot be established. Although there is research evidence to support the directionality of the proposed model, future studies should utilize longitudinal and experimental studies to garner a better understanding of the temporal order of these relationships.

Despite the aforementioned limitations, future research is warranted based upon the findings of the present study. For example, replication of the study's theoretical model with clinician-assessed participants, and a longitudinal research design, would yield valuable insight into how self-compassion operates to influence emotion regulation and subsequent recurrent depression. Furthermore, it would aid in clarifying the temporal order of the study variables. Longitudinal designs may be especially important in order to examine recurrence of depressive episodes over

time. Future studies should also explore this model with a greater representation of gender, ethnic, and cultural diversity.

Given the mixed findings between self-compassion, cognitive reappraisal, and depression, more research is warranted to test these relations in those with recurrent MDD. Research investigating other emotion regulation strategies, or other mediators, in the relationship between self-compassion and recurrent depression would also aid in understanding the process further. Future studies may consider examining which components of self-compassion are most robust (e.g., mindfulness, common humanity, or self-kindness) in their relation to helping people regulate their emotions, and subsequently preventing or treating depressive episodes. This may add a more nuanced understanding of the mechanisms underlying these relationships.

Lastly, future research may yield important information in considering clinical interventions which bolster self-compassion for the prevention and treatment of MDD. For example, existing programs related to self-compassion, such as MSC, could be tested for efficacy in those with recurrent MDD. Furthermore, given the impact of self-compassion on emotion regulation, future research is warranted in examining these relations in other psychological disorders that are associated with difficulty in emotion regulation. Ultimately, it seems that self-compassion is an important component of mental health, and research that continues to uncover its use in treating psychological disorders, including recurrent depression, will likely be of great benefit.

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Appendix A

Consent for participation

Self-compassion: An adaptive way to prevent recurrent depression symptoms through emotion regulation

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Principal Investigator

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Co-Investigator

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Purpose of this study

The primary purpose of this research is to understand more fully the relationship between self-compassion, emotion and recurrent depression. Additional measures will assess other aspects of mental health (e.g., anxiety) in order to examine how self-compassion may be protective of overall mental health.

Procedure and Remuneration

This study consists of several survey questionnaires (e.g., measures of your mood) that will be administered in an online survey format. There will be brief screening questionnaire to ensure that participants meet the inclusion/exclusion criteria to participate in the study. Completion of the screening measure will take about 5 minutes and participants will receive an honorarium of $0.25. Participants who meet criteria for the full study will be invited to participate in a second survey, that will take approximately 20 minutes. Each participant will receive an honorarium in the amount of $3.00. Remuneration will not be dependent on completion of the project, but will be pro-rated for those that withdraw before completion.

Research Confidentiality

Only the investigators will have access to the MTurk account. Once data is collected, surveys will be assigned a participant number to ensure confidentiality. Once the participant number has been assigned, any possibly identifying information (e.g., MTurk unique identifiers) will be deleted. All

digital files of online surveys and backups of the surveys will be password protected and encrypted. Only people directly involved in the study will have access to these.

Potential Risks and Benefits of this Evaluation

While completing questionnaires, participants may experience physiological arousal (e.g., increased heart-rate) or heightened emotionality (e.g., feelings of sadness). While there is the possibility of some distress, informational resources will be provided for seeking support if this should occur. These resources will be listed at the end of the survey questionnaire. Should participants require them sooner, they can be accessed by going to the last page of the online survey.

Benefits of participating in this study include a greater understanding of how you relate to your emotional experience, and new insights related to psychological well-being while completing questionnaires. In addition, results generated from research may benefit those who suffer from depression.

Participants do not have to answer any questions they do not feel comfortable answering, and can withdraw from the study at any time without question. **Participation is completely voluntary.**

Contact for information about the study

If you have any questions or desire further information with respect to this study, you may contact Dr. Cox or Ms. Bakker at dan.cox@ubc.ca. If you would like to be sent results found from this study, you may let us know and we will send them to you once the study is complete.

Contact for concerns about the rights of research subjects

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at (604) 822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Consent

Self-compassion: An adaptive way to prevent recurrent depression symptoms through emotion regulation

I have read and fully understand the information contained in this document. Any and all questions I have regarding the contents of this document have been answered to my satisfaction and I would like to participate in this study.

By clicking the box below, you consent to participate in the study.

☐

Appendix B

Debriefing Form

Self-compassion: An adaptive way to prevent recurrent depression through emotion regulation

Depression is a common mood disorder that affects the way we feel, think and behave. It can cause many difficulties for those who suffer from it, including trouble with work, school, relationships, and life in general. Often times, those who have an episode of depression go on to have multiple episodes during their lifetime. Therefore, improving psychological treatments is imperative, and is why we are trying to understand what might be helpful through this current research study.

Self-compassion is having kindness towards oneself during times of difficulty or when suffering. People with low self-compassion are more likely to suffer from depression symptoms. Thus, improving people's ability to be self-compassionate when they are struggling, may be protective in recurrent depression symptoms.

Emotion regulation is how one relates to, and one's ability to adaptively modulate, difficult or challenging emotions. It involves specific strategies one might use, such as reframing the way you are thinking about a situation.

In this study, you completed a series of questionnaires. These questionnaires are intended to give us an understanding of your levels of depression symptoms, ways that you regulate your emotions, and how self-compassionate you are towards yourself.

The current study seeks to understand the ways in which self-compassion is protective in those who have experienced depression, and may be at risk for further depression symptoms. We expect to find that people with high levels of self-compassion are less likely to have as many recurrent depression symptoms, than those who have low levels of self-compassion. We believe that this might occur by helping people deal with their emotions in healthier ways, though changing the way you regulate your emotions.

New treatments for depression seek to help those who suffer from it are informed by research, such as this study. It is our hope that understanding the relationships between the self-compassion, emotion regulation and depression will inform improvement in both theory and practice, to ultimately improve outcomes for those who suffer from depression.

The most important thing to remember is that depression is treatable. If you think that you are depressed, seek help from a doctor, nurse practitioner, psychologist, counselor, or other health care professional.

ARE YOU IN CRISIS?
***** If you are in a medical emergency or suicidal crisis, please call 911.**

Please call 1-800-273-TALK to connect with a trained counselor at a crisis centre in your area 24/7 or visit the National Suicide Prevention Lifeline website for more information: http://www.suicidepreventionlifeline.org/

To learn more about depression, please visit the following websites:

The American Psychological Association:
http://www.apa.org/topics/depress/index.aspx

The American Psychiatric Association:
https://www.psychiatry.org/patients-families/depression

The National Alliance on Mental Illness:
http://www.nami.org/Learn-More/Mental-Health-Conditions/Depression

To learn more about self-compassion, please visit the following websites:

Self-compassion – Dr. Kristin Neff
http://self-compassion.org/

Mindful self-compassion – Dr. Christopher Germer
http://www.mindfulselfcompassion.org/

Appendix C

Inclusion/Exclusion Screening

PHQ-9 adaptation for Brief Assessment of Lifetime Major Depression

For the 2 weeks in your life that you were the most blue, sad, or depressed, how often were you bothered by any of the following problems?	**Not at all**	**Several Days**	**More than half the days**	**Nearly Every day**
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling asleep or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself- or that you are a failure or have let yourself or family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3

10. If you checked off any problems, how difficult was it for you to do your work, take care of the things at home, or get along with other people because of the episode?

1. Not difficult at all
2. Somewhat difficult
3. Very difficult
4. Extremely difficult

11. Was the episode you just described due to the influence of medication, drugs, or alcohol, or another medical condition?

1. Yes
2. No

12. At the time of that episode, were you grieving for a person, or a pet, who had died in the past 2 months?

1. Yes
2. No

13. Have you had a period of at **least 2 months after the episode** with no significant signs or symptoms of the time when you felt sad, empty, or depressed most of the day (episode of depression)?

1. Yes
2. No

14. How many separate times (with at least 2 months recovery in between) in your life have you felt sad, empty, or depressed most of the day nearly every day for at least 2 weeks?

1. _____

Hypomania/mania/psychosis screening questions

For the following questions, **answer yes ONLY if it happened when you were NOT dreaming, not half-asleep, and not under the influence of alcohol or drugs**.

15. Some people have periods of time lasting four days or longer when they feel much more excited and full of energy than usual. Their minds go too fast. They talk a lot. They are very restless or unable to sit still and they sometimes do things that are unusual for them, such as driving too fast or spending too much money. Have you ever had a period like this lasting several days or longer?

1. Yes
2. No

16. Have there been times, lasting at least a few days, when you felt the opposite of depressed, when you were very cheerful or happy and this felt different from your normal self?

1. Yes
2. No

17. Have you seen visions or other things that other people did not see?
    1. Yes
    2. No

18. Have you heard noises, sounds, or voices that other people did not hear?
    1. Yes
    2. No

19. Do you ever feel like people are following you or trying to hurt you in some way?
    1. Yes
    2. No

20. Have you ever felt you had special powers, such as reading other people's minds?
    1. Yes
    2. No

21. Have you ever been listening to the radio or TV and felt it was referring to you?
    1. Yes
    2. No

Appendix D

Demographic Questions

Please answer the questions below by selecting the number of the response that best applies, or filling in the blank.

1. Your Age: ____ years (19-99 years)

2. Your gender:
    1. Male
    2. Female
    3. Transgender
    4. Other: _____

3. Highest level of education you have completed:
    1. Less than 9th grade
    2. Completed grade 9, but less than 12th grade
    3. High School or Equivalent
    4. Some College/University
    5. College/university graduate (received degree)
    6. Graduate Degree (Masters or doctoral)
    7. Other: _____

4. Racial/Ethnic Background:
    1. Aboriginal/First Nations [Native American/American Indian]
    2. South Asian
    3. East Asian
    4. Middle Eastern
    5. African American/Black
    6. Hispanic
    7. Caucasian/White
    8. Other: _____

5. Are you currently:
    1. Married/common-law? If yes, number of years: _____
    2. Divorced/separated? If yes, number of years: _____
    3. Widowed? If yes, number of years: _____
    4. Single?
    5. Other: _____

6. Are you currently (you may pick more than one):
    1. Employed full-time
    2. Employed part-time or causally
    3. Unemployed

4. Student
5. Retired
6. Disability
7. Other: _____

7. Over the past 12 months, what was your household income?
    1. $19,999 or less
    2. $20,000 to $39,999
    3. $40,000 to $59,999
    4. $60,000 to $79,999
    5. $80,000 or more
    6. Prefer not to answer

8. Do you practice meditation or mindfulness?
    1. Yes
    2. No
    3. If yes, how often? ___

9. What is the answer to the following question? 2+6=____

10. From what state are you filling out this survey? ____

Appendix E

Self-Compassion Scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never **Almost always**

1---------- 2 ---------- 3 ---------- 4 ---------- 5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don't like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix F

Ruminative Responses Scale – Brooding Subscale

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. **Please indicate what you generally do, not what you think you should do.**

1 - almost never 2 – sometimes 3 – often 4 - almost always

5. Think "What am I doing to deserve this?"

10. Think "Why do I always react this way?"

13. Think about a recent situation, wishing it had gone better

15. Think "Why do I have problems other people don't have?"

16. Think "Why can't I handle things better?"

Appendix G

Brief Experiential Avoidance Questionnaire

Please indicate the extent to which you agree or disagree with each of the following statements

1 ----------	2 ----------	3 ----------	4 ----------	5 ----------	6
strongly disagree	**moderately disagree**	**slightly disagree**	**slightly agree**	**moderately agree**	**strongly agree**

1. ___ The key to a good life is never feeling any pain.
2. ___ I'm quick to leave any situation that makes me feel uneasy.
3. ___ When unpleasant memories come to me, I try to put them out of my mind.
4. ___ I feel disconnected from my emotions.
5. ___ I won't do something until I absolutely have to.
6. ___ Fear or anxiety won't stop me from doing something important.
7. ___ I would give up a lot not to feel bad.
8. ___ I rarely do something if there is a chance that it will upset me.
9. ___ It's hard for me to know what I'm feeling.
10. ___ I try to put off unpleasant tasks for as long as possible.
11. ___ I go out of my way to avoid uncomfortable situations.
12. ___ One of my big goals is to be free from painful emotions.
13. ___ I work hard to keep out upsetting feelings.
14. ___ If I have any doubts about doing something, I just won't do it.
15. ___ Pain always leads to suffering.

Note: To score, first reverse key Item 6 (i.e., subtract the value from 7), then sum all items.

Appendix H

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1	2	3	4	5
almost never (0-10%)	sometimes (11-35%)	about half the time (36-65%)	most of the time (66-90%)	almost always (91-100%)

_____ 11) When I'm upset, I become angry with myself for feeling that way.

_____ 12) When I'm upset, I become embarrassed for feeling that way.

_____ 21) When I'm upset, I feel ashamed at myself for feeling that way.

_____ 23) When I'm upset, I feel like I am weak.

_____ 25) When I'm upset, I feel guilty for feeling that way.

_____ 29) When I'm upset, I become irritated at myself for feeling that way.

SUBSCALE SCORING**:
1. Nonacceptance of emotional responses (NONACCEPT): 11, 12, 21, 23, 25, 29
Total score: sum of all subscales
** "R" indicates reverse scored item

Appendix I

Emotion Regulation Questionnaire (ERQ) – Cognitive Reappraisal Subscale

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1----------2----------3----------4----------5----------6----------7
strongly disagree **neutral** **strongly agree**

1. ____ When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.

3. ____ When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.

5. ____ When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.

7. ____ When I want to feel more positive emotion, I change the way I'm thinking about the situation.

8. ____ I control my emotions by changing the way I think about the situation I'm in.

10. ____ When I want to feel less negative emotion, I change the way I'm thinking about the situation.

Note
Do not change item order, as items 1 and 3 at the beginning of the questionnaire define the terms "positive emotion" and "negative emotion".
Scoring (no reversals) Reappraisal Items: 1, 3, 5, 7, 8, 10
Scoring is kept continuous. Each facet's scoring is kept separate.

Appendix J

Beck Depression Inventory-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully. And then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. **Sadness**
   - 0 I do not feel sad.
   - 1 I feel sad much of the time.
   - 2 I am sad all the time.
   - 3 I am so sad or unhappy that I can't stand it.

2. **Pessimism**
   - 0 I am not discouraged about my future.
   - 1 I feel more discouraged about my future than I used to be.
   - 2 I do not expect things to work out for me.
   - 3 I feel my future if hopeless and will only get worse.

3. **Past Failure**
   - 0 I do not feel like a failure.
   - 1 I have failed more than I should have.
   - 2 As I look back, I see a lot of failures.
   - 3 I feel I am a total failure as a person.

4. **Loss of Pleasure**
   - 0 I get as much pleasure as I ever did from the things I enjoy.
   - 1 I don't enjoy things as much as I used to.
   - 2 I get very little pleasure from the things I used to enjoy.
   - 3 I can't get any pleasure from the things I used to enjoy.

5. **Guilty Feelings**
   - 0 I don't feel particularly guilty.
   - 1 I feel guilty over many things I have done or should have done.
   - 2 I feel guilty most of the time.
   - 3 I feel guilty all of the time.

6. **Punishment Feelings**
   - 0 I don't feel I am being punished.
   - 1 I feel I may be punished.
   - 2 I expect to be punished.
   - 3 I feel like I am being punished.

7. **Self-Dislike**
   - 0 I feel the same about myself as ever.
   - 1 I have lost confidence in myself
   - 2 I am disappointed in myself.
   - 3 I dislike myself.

8. **Self-Criticalness**
   - 0 I don't criticize or blame myself more than usual.
   - 1 I am more critical of myself than I used to be.
   - 2 I criticize myself for all of my faults.
   - 3 I blame myself for everything bad that happens.

9. **Suicidal Thoughts or Wishes**
   - 0 I don't have any thoughts of killing myself.
   - 1 I have thoughts of killing myself, but I would not carry them out.
   - 2 I would like to kill myself.
   - 3 I would kill myself if I had the chance.

10. **Crying**
    - 0 I don't cry any more than I used to.
    - 1 I cry more than I used to.
    - 2 I cry over every little thing.
    - 3 I feel like crying, but I can't.

11. **Agitation**

0	I am no more restless or wound up than usual.
1	I feel more restless or wound up than usual
2	I am so restless or agitated that it's hard to stay still.
3	I am so restless or agitated that I have to keep moving or doing something.

12. **Loss of Interest**

0	I have not lost interest in other people or activities.
1	I am less interested in other people or things than before.
2	I have lost most of my interest in other people or things.
3	It's hard to get interested in anything.

13. **Indecisiveness**

0	I make decisions about as well as ever.
1	I find it more difficult to make decisions than usual.
2	I have much greater difficulty in making decisions than I used to.
3	I have trouble making any decisions.

14. **Worthlessness**

0	I do not feel I am worthless.
1	I don't consider myself as worthwhile and useful as I used to.
2	I feel more worthless compared with other people.
3	I feel utterly worthless.

15. **Loss of Energy**

0	I have as much energy as ever.
1	I have less energy than I used to have.
2	I don't have enough energy to do very much.
3	I don't have enough energy to do anything.

16. **Changes in Sleeping Pattern**

0	I have not experienced any change in my sleeping pattern.
1a	I sleep somewhat more than usual.
1b	I sleep somewhat less than usual.
2a	I sleep a lot more than usual.
2b	I sleep a lot less than usual.
3a	I sleep most of the day.
3b	I wake up 1-2 hours early and can't get back to sleep.

17. **Irritability**

0	I am no more irritable than usual.
1	I am more irritable than usual.
2	I am much more irritable than usual.
3	I am irritable all the time.

18. **Changes in Appetite**

0	I have not experienced any change in my appetite.
1a	My appetite is somewhat less than usual.
1b	My appetite is somewhat greater than usual.
2a	My appetite is much less than before.
2b	My appetite is much greater than usual.
3a	I have no appetite at all.
3b	I crave food all the time.

19. **Concentration Difficulty**

0	I can concentrate as well as ever.
1	I can't concentrate as well as usual.
2	It's hard to keep my mind on anything for very long.
3	I find I can't concentrate on anything.

20. **Tiredness and Fatigue**

0	I am no more tired or fatigued then usual.
1	I get more tired or fatigued more easily than usual.
2	I am too tired or fatigued to do a lot of the things I used to do.
3	I am too tired or fatigued to do most of the things I used to do.

21. **Loss of Interest in Sex**

0	I have not noticed any recent change in my interest in sex.
1	I am less interested in sex than I used to be.
2	I am much less interested in sex now.
3	I have lost interest in sex completely.

Appendix K

Mechanical Turk Recruitment Descriptions

Screener – Part 1

We are conducting an academic survey about emotion and what people do to manage difficult emotions. This is part 1 of 2 HITs. If you meet criteria for the second HIT, you will be assigned a unique qualifer, and will be invited to participate in HIT 2. To participate in this study, you must be 19 years or older, and a U.S. resident. Select the link below to complete the survey. It should take approximately 3-5 minutes to complete. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey. You will receive credit regardless of whether or not you meet criteria for HIT 2. Please DO NOT SELECT THIS HIT if you have already participated in this study.
Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

Survey – Part 2

We are conducting an academic survey about how emotion and what people to manage difficult emotions. This is the second HIT of the study. To participate in this study, you must be 19 years or older, and a U.S. resident. Select the link below to complete the survey. It should take approximately 20-30 minutes to complete. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey. PLEASE DO NOT SELECT THIS HIT IF YOU HAVE ALREADY PARTICIPATED.
Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the unique code into the box.