

Impact and Moderators of a Self-Compassion Manipulation on Perceived Risk of Disclosure

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

Disclosure of personal distress to others is linked to increased trust and intimacy between persons as well as to important psychological benefits for the individual such as reductions in stress and heightened life satisfaction (Laurenceau, Barrett, & Pietromonaco, 1998; Ward, Doherty, & Moran, 2007). Unfortunately, individuals who fear receiving compassion and expect negative consequences from self-disclosure may conceal their feelings, reducing their ability to garner support from others when needed. The current study aimed to determine whether, compared to two control conditions, inducing a self-compassionate mindset regarding a past negative experience would decrease perceived risks of disclosure and increase disclosure of the experience, especially among those high in fears of receiving compassion. Eighty-five female undergraduate students completed the Fears of Receiving Compassion scale (Gilbert, McEwan, Matos, & Ravis, 2011) online, and were subsequently invited into the lab and asked to recall a past negative experience. After completing measures of positive and negative affect, they were randomly assigned to write about their negative experience in one of three ways: a self-compassionate way, a self-esteem enhancing way, or a non-directive way (control condition). Participants completed post-manipulation affect measures, and were then informed they would have the chance to disclose their negative experience to another participant, in writing first and then in person. Participants rated how risky the disclosure felt, and then wrote a letter to another participant they presumed they would be meeting. Results indicated that writing about one's negative experience self-compassionately resulted in lower negative affect and shame, as well as greater calm and relaxed feelings as compared to the control condition. For participants in the self-esteem condition, changes on these variables were either equivalent to or marginally different from controls. Although participants in the three conditions did not differ in perceived risks of disclosure or degree of disclosure within their letters, a significant condition by fears of receiving compassion interaction emerged, where there was a positive relationship between fears of receiving compassion and perceived risk of disclosure for participants in the self-esteem and control conditions, but no such relationship in the self-compassion condition. Findings are the first to indicate that self-compassion may reduce the perceived risk of disclosure for individuals who tend to expect negative consequences from disclosure. Implications and directions for future research are discussed.

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Literature Review and General Introduction

Self-Compassion

Failure and disappointment are an inevitable part of life, but the degree of distress associated with such experiences is in part determined by an individual's interpretation of or reaction to that failure. It has long been recognized that some individuals tend to react to negative circumstances with intense self-blame and criticism, putting them at risk for a wide variety of psychological difficulties, such as increased stress, depression, social and general anxiety, and eating disorders, among others (Dunkley, Zuroff, & Blankstein, 2006; Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Gilbert et al., 2010; Kelly & Carter, 2013; Shahar, Doron, & Szepeswol, 2015). Furthermore, self-criticism is resistant to many psychological treatments (Kelly & Carter, 2013). Thus, much time and effort has been devoted to studying ways to encourage more adaptive reactions to distressing experiences. In the last two decades, an increasing amount of attention has been paid to a particularly promising way of relating to the self in the face of failure: self-compassion.

The concept of self-compassion as it is presented in the psychological literature was borrowed from Buddhism, and was largely popularized by two major proponents: Paul Gilbert and Kristen Neff. Both researchers suggest that self-compassion is a way of relating to the self that focuses on taking a non-judgmental, understanding stance towards one's own suffering. According to Paul Gilbert's conceptualization of the construct, to be self-compassionate, one must be able to recognize and understand one's thoughts and feelings without judgment when in distress, emotionally engage with one's suffering, find the strength to tolerate it, and be motivated to alleviate it (Gilbert, 2009; 2014).

Kristin Neff (2003) proposed that self-compassion is comprised of three subcomponents, each of which is countered by a negative, non-compassionate opponent process: (a) self-kindness vs. self-judgment, (b) mindfulness vs. overidentification, and (c) common humanity vs. isolation. Self-kindness is the face-valid component that most closely aligns with dictionary definitions of compassion, as it involves recognizing one's own worth and extending kindness, love, and understanding towards oneself (including one's feelings, thoughts, and behaviours) even in the face of personal flaws. In opposition to self-kindness is self-judgment, which involves being hostile and critical towards oneself in times of failure. As the second component of self-compassion, mindfulness requires an acknowledgment and understanding of one's distressing emotions without becoming caught up in them to a degree that coping becomes impossible (i.e., overidentification with one's feelings). However, avoiding or attempting to push away one's feelings also runs counter to self-compassion. Rather, mindfulness involves nonjudgmental recognition and acceptance of emotions, both negative and positive, in order to facilitate compassionate perspective-taking. Lastly, feelings of common humanity refer to the recognition that suffering is an inevitable part of being human, and as such it is not an inherently shameful experience. Whereas some individuals can feel alone or isolated in their suffering, being self-compassionate allows one to maintain feelings of connectedness to others and put one's difficulties into a larger perspective during times of distress.

Neff developed the Self-Compassion Scale (SCS; 2003) to measure overall trait levels of self-compassion using six subscales that each correspond to a sub-component or opponent process. Although each subscale can be examined individually, a total self-compassion score can be computed by reverse coding the negative components and taking the sum of all six subscales, and is the most frequently used measure of self-compassion.

Although Neff (2003) described the three elements of self-kindness, mindfulness, and common humanity as distinct components of self-compassion, she also noted that each element fosters the other two, suggesting all three components are important targets in their own right for increasing overall self-compassion. To date, very little research has been conducted to test this suggestion. One study demonstrated that a mindfulness intervention had the result of increasing overall levels of self-compassion from baseline to post-treatment, suggesting that mindfulness may also impact self-kindness and common humanity (Bluth, Roberson, & Gaylord, 2015). However, researchers have recently begun to debate the appropriateness of examining these three elements as belonging to a single-factor construct as the SCS total score suggests. Factor analyses of the SCS have repeatedly demonstrated the single factor hierarchical model does not provide the best fit for most data sets and that a correlated-six-factor-model may be more appropriate (Muris, Otgaar, & Petrocchi, 2016). Further research is needed to determine the best method of examining the SCS and to clarify the operational definition of self-compassion as it is currently measured.

Self-compassion and the tripartite model of affect regulation. Drawing from evolutionary psychology and neuroscientific research, Paul Gilbert (2009) posited a tripartite model of affect regulation to help conceptualize psychopathology and psychological vulnerability. The tripartite model helps illustrate the proposed mechanisms through which self-compassion exerts its positive effects.

According to this model, three affective systems operate and interact within the individual: (a) the threat system, (b) the drive system, and (c) the soothing system. The threat system evolved to detect threats in the environment and create feelings of anxiety, anger, or disgust to signal and motivate the individual to protect the self. The drive system orients the

individual to resources and rewards in the environment by energizing him or her to action via emotions like excitement and pleasure. The soothing system promotes feelings of social safeness, defined as the sense that one is secure in, connected to, and can be soothed by those in their social world (Gilbert, 2014). According to Gilbert, the soothing system evolved alongside attachment behaviour in humans, in which parental caregiving acts to soothe the infant's distress. Such attachment experiences stimulate the oxytocin-endorphin systems, which are physiologically soothing and reduce threat sensitivity in infants (Carter, 1998; Cozolino, 2007). Although the soothing and attachment systems are thought to overlap, inputs to the soothing system need not come from attachment figures; the system can activate in response to cues of warmth and care from peers, friends, and strangers.

Gilbert (2009) suggests that when the three affective systems are not properly balanced, psychological difficulties may emerge. For example, it has been proposed that the early experiences of people who are low in self-compassion affect their emotional development, where exposure to critical or abusive others and a lack of positive caregiving and affiliative experiences lead to an over-active threat system and underactive soothing system. In a previous study, we found that individuals who recalled experiencing more parental warmth were more self-compassionate, and that this relationship was mediated by increased feelings of social safeness (Kelly & Dupasquier, 2016). Though the study was methodologically limited by its reliance on self-report measures and retrospective recall, the findings supported Gilbert's model, suggesting that being raised in a warm and caring environment fosters a strong soothing system and facilitates caring self-attitudes in adulthood.

It is thought that self-compassion stimulates the soothing affective system just as social connection and affiliation does, encouraging feelings of security and being cared for within one's

social world (Gilbert, 2014). Thus, self-compassion involves using an affiliative mindset in relation to the self, stimulating the soothing system (i.e., upregulating positive affect) and quelling feelings of distress triggered by the threat system (i.e., downregulating negative affect).

Self-compassion as a state variable. Although self-compassion was originally conceptualized as being a cross-situational trait, and the majority of research to date has examined it as a stable characteristic, it is recognized that levels of self-compassion can vary considerably depending on contextual factors. For example, in a daily diary study, Kelly and Stephen (2016) found that within-persons levels of self-compassion tended to fluctuate on a day-to-day basis. Furthermore, brief experimental manipulations and interventions have been found to effectively increase state levels of self-compassion, suggesting a self-compassionate mindset can be induced. Breines and Chen (2013) discovered that asking participants to either imagine or actually provide support and compassion to another person through written advice effectively increased state self-compassion when compared to participants in control conditions. In a separate experiment, it was found that writing about a perceived personal weakness in a compassionate way versus either a self-esteem enhancing way or writing about an unrelated topic led to increased levels of state self-compassion (Breines & Chen, 2012). In sum, although levels of self-compassion may be stable over time to a certain degree (Neff, 2003), an individual's level of self-compassion may fluctuate around their personal average depending on situational factors.

Self-compassion and intrapersonal correlates and outcomes. The recent proliferation of research on self-compassion has demonstrated its numerous apparent benefits. A recent meta-analysis of 79 separate samples provided clear support for the relationship between self-compassion and well-being (Zessin, Dickhäuser & Garbade, 2015). Across all included studies,

the analysis found that self-compassion had the strongest relationship to psychological well-being (defined as self-fulfillment, optimal functioning, and life meaning; $r = .62$), followed by cognitive well-being (defined as a cognitive evaluation of life satisfaction; $r = .47$) as well as negative emotional well-being (defined as negative affect, $r = -.47$). Lastly, there was also a modest correlation between self-compassion and positive emotional well-being (defined as positive affect; $r = .39$).

The benefits of self-compassion for emotion regulation have been demonstrated through a number of experimental studies. After asking participants to recall a past negative experience, multiple research groups have demonstrated that directing participants to think or write about that experience in a self-compassionate way resulted in reduced negative affect as compared to participants who wrote about their experience in a self-deflecting or self-esteem enhancing way and those in undirected writing or non-writing control conditions (Arimitsu & Hofmann, 2015; Johnson & O'Brien, 2013; Leary, Tate, Allen, Adams, & Hancock, 2007). Odou and Brinker (2015) found that after a negative mood induction, participants who completed a self-compassion writing task versus a distraction task uniquely demonstrated increases in positive affect, although both groups demonstrated improvements in negative affect. One study also demonstrated that self-compassion was a particularly effective emotion regulatory strategy for individuals with more severely depressed mood when compared to traditional cognitive reappraisal methods (Diedrich, Grant, Hofmann, Hiller, & Berking, 2014).

It has also been theorized that self-compassion is particularly useful for reducing negative self-conscious feelings, such as shame (Gilbert, 2014). Keith, Gillanders, and Simpson (2009) define shame as “a sense of the self as being fundamentally flawed and defective, resulting in a desire to hide oneself.” As shame is thought to both drive and be reinforced by self-criticism,

Gilbert (2009) proposes that self-compassion increases one's ability to self-soothe and decreases the tendency to react to self-threatening events or circumstances in a self-critical way, thereby reducing shame. Using Neff's framework, the component of self-kindness helps to reduce the tendency to evaluate the self negatively, as shame involves a global negative self-evaluation (Barnard & Curry, 2011). Feelings of common humanity allow for recognition that withdrawal or isolation is unnecessary; if everyone experiences failure and is flawed, then there is no need to hide as others have shared in one's experience. Lastly, mindful awareness keeps one from suppressing negative emotions or seeing one's emotions as "wrong" or "bad", which can feed into shame.

Not only is self-compassion negatively correlated with shame, but research has supported the view of self-compassion as an antidote to shame (Gilbert, 2005; Kelly, Carter, & Borairi, 2014). In a small 12-week trial of six patients, Gilbert and Procter (2006) demonstrated that practicing compassion-focused therapy aimed at increasing self-compassion resulted in decreased shame and self-criticism from pre- to post-treatment. A self-soothing intervention based on self-compassionate imagery exercises was also found to lower shame for acne sufferers (Kelly, Zuroff, & Shapira, 2009). In a separate study, after writing about a shame-related experience in a self-compassionate manner, participants experienced less state shame than participants in a control writing condition (Johnson & O'Brien, 2013). At two-week follow up, only participants in the self-compassion condition had experienced a significant decrease in shame-proneness (i.e., trait levels of shame) from baseline. Taken together, these results suggest that self-compassion can effectively reduce feelings of shame both in the short and long-term.

The emotion regulatory benefits of self-compassion may, in part, be responsible for its ability to motivate self-improvement. Leary and colleagues (2007) found that a short self-

compassion writing intervention led not only to an increased ability to cope with negative life events, but also an increased capacity to take responsibility for personal failures as compared to participants in self-esteem enhancing or control conditions. Using a similar writing manipulation, Breines and Chen (2012) demonstrated that individuals induced into a self-compassionate mindset were more likely to believe that personal weaknesses were mutable with hard work and reported increased motivation to change. Participants in the self-compassion condition also reported putting more effort into self-improvement after an initial failure experience than those in control conditions. Thus, rather than focusing on failure and giving up, self-compassion may improve coping by promoting a mindset in which growth and change seem possible (Shimizu, Niiya, & Shigemasu, 2016). In a more applied framework, Sirois (2015) demonstrated that self-compassion predicted stronger intentions to increase health promoting behaviours, and that this relationship was in part mediated by reduced negative affect and heightened feelings of self-efficacy.

Self-compassion and interpersonal correlates and outcomes. Although self-compassion is an intrapersonal process, which involves directing kindness and understanding inward, researchers have begun to examine its relationship with interpersonal factors. There is evidence to suggest that self-compassion is related to positive interpersonal beliefs and reactions to social events. Specifically, in a survey of committed romantic couples, it was found that individuals who were higher in trait self-compassion were rated as being more caring and accepting by their partners, and received higher ratings of relationship autonomy (e.g., “gives me as much freedom as I want”) and relatedness (e.g., “talks over his/her problems with me”), all of which are important factors in fostering a healthy relationship (Neff & Beretvas, 2012). Neff, Kirkpatrick, and Rude (2007) found that positive changes in self-compassion occurring after

participants engaged in a clinical exercise (i.e., Gestalt two-chair exercise) were related to increased feelings of social connectedness. Other researchers have similarly found that self-compassion is correlated with feeling safe and secure within one's social world, and feeling that one is part of a larger community (Akin & Akin, 2015; Kelly, Carter, & Borairi, 2014; Kelly, Zuroff, Leybman, & Gilbert, 2012; Kelly, Zuroff, & Shapira, 2009). Thus, self-compassion appears to be directly related to a sense of belonging and connectedness with others.

If individuals who are highly self-compassionate tend to feel safer within their social worlds, it follows that self-compassion should have a negative relationship with social anxiety. Indeed, Werner and colleagues (2012) found that individuals with social anxiety disorder tended to have lower levels of self-compassion than healthy controls, and that low self-compassion predicted heightened fears of both negative and positive evaluation. Furthermore, individuals with heightened self-compassion tended to use fewer self-protective presentational strategies in the face of evaluation such as attempting to lower others' expectations (Petersen, 2014).

Experimental studies have supported self-compassion's protective role during experiences of social evaluation. In women, three days of self-compassion meditation training led to increased self-compassion and decreased stress responses (i.e., salivary alpha-amylase response, heart rate variability, subjective anxiety rating) after undergoing the Trier Social Stress Test (TSST) as compared to participants in two control conditions (Arch et al., 2014). Breines and colleagues (2015) demonstrated similar decreases in stress as indicated by salivary alpha-amylase responses after the TSST for participants high versus low in trait self-compassion. Taken together, it appears that self-compassion may act as a buffer for social fears.

Although self-compassion clearly impacts people's concerns regarding the way that others will react towards them, it is also related to how people feel about, evaluate, and act towards others. In a survey of both community and university-attending adults (Neff & Pommier, 2013), self-compassion was positively related to perspective taking and forgiveness for others' transgressions. Self-compassion was also related to empathic concern and altruism among community adults, but this was not true among undergraduate students.

Self-compassion in a clinical context. Given its salutary effects on emotion regulation, it is not surprising that self-compassion is also negatively related to decreased levels of depression, anxiety, and stress (Gilbert & Procter, 2006). For participants in a self-compassion condition, writing about a negative experience in a self-compassionate way led to a reduction in depressive symptoms (Johnson & O'Brien, 2013). Using a structural equation modeling framework, Arimitsu and Hofmann (2015) demonstrated that the impact of self-compassion on both depression and anxiety symptoms was mediated by an increase in positive automatic thoughts and a decrease in negative automatic thoughts, suggesting that being self-compassionate may exert some of its beneficial regulatory effects by influencing the spontaneous thoughts that come to one's mind. A separate study based on self-report measures demonstrated that self-compassion was linked to reduced rumination and decreased avoidance of threatening or challenging experiences, both of which helped to further explain its relationship to fewer depressive symptoms (Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013).

Self-compassion has also been linked to eating pathology (Breines, Toole, Tu & Chen, 2014; Kelly, Carter, Zuroff, & Borairi, 2013). For undergraduate women, it was found that body mass index was positively related to eating disorder pathology and negatively to acceptance and tolerance of negative body image (Kelly, Vimalakanthan, & Miller, 2014). However, this

relationship was attenuated for participants high in self-compassion, suggesting that self-compassion encourages body acceptance and reduces unhealthy eating related to weight concerns. Furthermore, individuals who are both low in self-compassion and have heightened fears of self-compassion have been found to have a worse prognosis in treatment for eating disorders (Kelly, Carter, Zuroff, & Borairi, 2013).

The negative relationship between self-compassion and psychopathology has encouraged the development of a number of treatment programs with the goal of fostering a compassionate mindset. For example, Gilbert's tripartite model of affect regulation forms the foundation for compassion-focused therapy (CFT), which aims to restore equilibrium between the three affective systems (Gilbert, 2009). For individuals low in self-compassion, this means developing an affiliative mindset towards the self that stimulates their soothing system and reduces their automatic tendency to respond to disappointments with self-threatening criticism. CFT helps people work towards building skills that are necessary to foster self-compassionate attributes and help alleviate or prevent suffering rather than reactions that exacerbate suffering such as self-criticism (Gilbert, 2009). In CFT, a number of strategies are used to teach compassionate skills, such as compassion-focused imagery exercises to stimulate feelings of safeness (e.g., visualizing a warm, caring other), exercises adopting compassionate body postures, stances, and facial expressions to engender the "compassionate self", and exposure work utilizing compassionate self-talk. Preliminary case studies suggest that CFT may be effective in increasing self-compassion and decreasing symptoms for individuals with social anxiety and eating disorders, and a phenomenological study of individuals' experiences of CFT for trauma suggest positive outcomes (Boersma, Hakansson, Salomonsson, & Johansson, 2015; Gale, Gilbert, Read, & Goss, 2014; Lawrence & Lee, 2014). However, rigorous RCTs are still required to establish its

efficacy. Research investigating the use of compassion-focused therapy for psychosis is currently underway (Braehler et al., 2013).

Kristin Neff has similarly developed a self-compassion meditation training program that has been found to be effective for reducing body dissatisfaction in women with body image concerns (Albertson, Neff, & Dill-Shackleford, 2015). Researchers have also begun to investigate the role that self-compassion might play in other behavioural therapies, such as acceptance and commitment therapy and mindfulness meditation (Luoma & Platt, 2015). It has been found that incorporating self-compassion strategies into cognitive behavioural therapy (CBT) as an emotion regulation strategy enhances the use of cognitive strategies such as reappraisal (Diedrich et al., 2014). Self-compassion may also help to facilitate treatment engagement. In one study, it was found that using a self-compassionate writing strategy as a prime helped increase engagement before a mindfulness meditation exercise as compared to neutral control or attachment-focused primes (Rowe, Shepstone, Carnelley, Cavanagh, & Millings, 2016).

Self-compassion versus self-esteem. A common question asked among researchers unfamiliar with the self-compassion literature relates to the distinction between the positive self-attitudes of self-compassion versus self-esteem. Self-esteem is conceptualized as one's overall self-evaluation, and is characterized by self-liking and perceived competence (Rosenberg, 1965; Tafarodi & Milne, 2006). Self-esteem is a construct closely related to self-compassion, as demonstrated by strong correlations (r 's = .56 to .68) between the two variables in research studies (Barnard & Curry, 2011). However, Gilbert suggests that each is linked to a separate affective system. As previously explained, self-compassion is linked to the soothing system; conversely, he notes that self-esteem should be more closely related to the drive system,

triggering positive activating forms of affect such as pride and excitement (Gilbert, 2014). Supporting this view, at least one neuropsychological study found that inducing compassion versus pride via emotion-laden pictures led to the stimulation of distinct parts of the brain (Simon-Thomas et al., 2012). Whereas compassion-inducing pictures led to activation of the midbrain periaqueductal gray area, a region that has been found to play a role in parental nurturance behaviours, the pride induction activated the posterior medial cortex, which is implicated in self-referential processing. This differential activation suggests that separate processes may indeed be at play when we focus on *competence* in relation to one's self-esteem versus *caring* in relation to one's self-compassion, which can lead to different consequences. For example, self-esteem is generally viewed as being contingent on external circumstances, and Neff and Vonk (2009) demonstrated that self-compassion is a better predictor of stable feelings of self-worth than is global self-esteem. Thus, in reaction to a failure or disappointment, self-esteem can often be negatively affected or can lead to defensive reactions such as denial of personal responsibility. Self-compassion by definition is the most useful in the face of failure in order to help regulate one's emotions and often leads to acceptance and a desire for self-improvement rather than denial (Breines & Chen, 2012; Leary et al., 2007).

Self-esteem and self-compassion also differentially predict certain self-referent constructs; self-esteem uniquely predicts narcissism, whereas self-compassion does not (Neff & Vonk, 2009). Furthermore, although both self-esteem and self-compassion share some correlates, it has also been demonstrated that self-compassion tends to contribute uniquely to overall variance in positive and negative affect, even when controlling for the effects of self-esteem (Leary et al., 2007; Neff & Vonk, 2009). Taken together, this evidence suggests that self-

compassion and self-esteem are distinct constructs that can result in different outcomes depending on the context.

Fears of Compassion

Although the benefits of cultivating self-compassion have consistently been demonstrated and are now widely recognized by researchers and clinicians alike, some individuals are reluctant to engage in self-compassion or to allow themselves to receive compassion from others for fear that it may have negative consequences. For these people, fears of receiving compassion from the self or from others are theorized to be linked to past attachment experiences during which affiliative feelings and behaviours, or an openness to compassion, were accompanied by negative outcomes such as experiences of abuse or neglect (Gilbert, McEwan, Matos & Rivis, 2011; Miron, Seligowski, Boykin & Orcutt, 2016). Together, these experiences are thought to foster insecure attachment. If a caregiver was sometimes warm and nurturing and other times critical or abusive, feelings of safeness may have been paired with shame or anxiety in the past. In such cases, positive soothing feelings may be perceived as threatening or harmful, activating the threat system and depriving them of the chance to experience affiliative emotions, which disrupts the development of the soothing system. This is supported by research demonstrating that fears of receiving compassion are related to decreased feelings of social safeness (Kelly & Dupasquier, 2016; Gilbert et al., 2012).

Aversive reactions to compassion can lead to avoidance and self-distancing from compassionate others, and individuals who fear receiving compassion tend to report decreased levels of social support (Kelly & Dupasquier, 2016). People who fear compassion are likely to experience anxiety or embarrassment when others show warmth or caring and develop beliefs

that others will withhold compassion or use compassion as a means of harm (Gilbert et al., 2011).

Individuals who fear receiving compassion also tend to be fearful of *self*-compassion, as they may be concerned it will make them weak or that they are undeserving and incapable of self-compassionate feelings (Gilbert et al., 2011). Furthermore, fears of compassion are related to increased levels of self-criticism, stress, depression, generalized anxiety, and social anxiety (Cunha, Pereira, Galhardo, Couto, & Massano-Cardosa, 2015; Gilbert et al., 2012). Interestingly, a cross-cultural study demonstrated that fears of receiving compassion from others moderated the impact of self-criticism on depressive symptoms (Hermanto et al., 2016). Self-criticism had a stronger relationship with depressive symptoms for those high in fears of receiving compassion than for individuals low in fears of compassion, suggesting that fears of receiving compassion put one at a heightened risk for psychopathology.

Taken together, research suggests that those who fear receiving compassion tend to be part of a highly vulnerable population that could benefit most from support and psychological intervention, but are some of the least likely to seek out help from others when needed. Therefore, it is important to find ways to encourage greater support-seeking among individuals high in fears of receiving compassion. One approach might be to help them feel more comfortable with, and less afraid of, disclosing their distressing experiences to others.

Self-Disclosure and Distress Disclosure

Just as self-compassion is an intrapersonal strategy used in times of distress, self-disclosure is an interpersonal strategy that can be used under similar circumstances. Self-disclosure is the process of verbally (orally or through writing) revealing private feelings,

thoughts, beliefs and attitudes to others, and, like self-compassion, can have positive outcomes both socially and psychologically (Vogel & Wester, 2003).

Self-disclosure leads to relationship development through increased feelings of liking from others as well as increased trust and intimacy between individuals (Collins & Miller, 1994; Falk & Wagner, 1985; Larzelere & Huston, 1980; Laurenceau, Barrett, & Pietromonaco, 1998). Disclosing emotional information about how one is feeling when distressed, referred to as distress disclosure, is related to important benefits such as heightened life satisfaction and subjective well-being through decreases in perceived stress and depressive symptoms (Kahn, Achter, & Shambaugh, 2001; Saxena & Mehrotra, 2010; Ward, Doherty, & Moran, 2007). These benefits are seen in disclosures to close others such as family, friends, or romantic partners as well as to mental health professionals such as counsellors and psychologists. Client self-disclosure positively predicted decreases in symptoms in those attending a brief course of psychotherapy, suggesting disclosure of feelings and experiences may be an important contributor to therapeutic success (Sloan & Kahn, 2005). Distress disclosure is also related to increased perceived social support, which plays an important role in buffering individuals from the negative effects of threat reactivity and psychosocial stress (Dunkley et al., 2006; Heinrichs, Baumgartner, Kirschbaum & Ehlert, 2003; Hyde, Gorka, Manuck, & Hariri, 2011; Kahn & Hessling, 2001). Although distress disclosure can sometimes have negative consequences if it is done inappropriately, such as in situations where highly intimate disclosure violates social norms, it can clearly result in important benefits when utilized appropriately (Collins & Miller, 1994).

Unfortunately, some individuals tend to avoid disclosing intimate information to others. For example, highly self-critical individuals tend to disclose less to significant others,

particularly when distressed (Besser, Flett & Davis, 2003; Richardson & Rice, 2015). Self-concealment leads to negative interpersonal outcomes, such as being liked less by conversational partners, making it difficult for others to get to know one's authentic self, discouraging relational development, and ultimately prolonging distress (Aiken, Human, Alden, & Biesanz, 2014; Human, Sandstrom, Biesanz, & Dunn, 2013; Meleshko & Alden, 1993; Moscovitch et al., 2013). Research has demonstrated that highly self-critical individuals tend to experience greater loneliness, which is mediated by their tendency to refrain from sharing their authentic thoughts and feelings (Besser et al., 2003). A desire to conceal distressing personal flaws and failures can also cause individuals to miss important opportunities for seeking out and receiving support from close others (Flett & Hewitt, 2013). Indeed, a heightened tendency to conceal private information from others predicts lower intentions for help-seeking both from professionals and loved ones (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995; Ward et al., 2007). At its most extreme, this desire to hide one's distress may increase the risk of suicide. Individuals who strive to present themselves as being perfect and without flaws to others (i.e., perfectionistic self-presentation) are likely to put up a façade to maintain the appearance of perfection even in the face of intense distress. It is believed that these individuals may be over-represented among those who attempt and complete suicide, as perfectionistic self-presentation shields warning signs from close others, making intervention difficult, if not impossible (Flett, Hewitt & Heisel, 2014). Increasing distress disclosure is thus an important goal, particularly for highly self-critical or perfectionistic individuals.

Omarzu's Disclosure Decision Model: What Influences Disclosure?

Although the topic of self-disclosure has been studied and written about extensively since the late 1960s, the context, goals, and findings of the research have been diverse. For decades,

findings on self-disclosure appeared disconnected as few researchers had attempted to construct a coherent underlying theory to unite the results. With the goal of rectifying this issue, Julia Omarzu (2000) developed her Disclosure Decision Model (see Figure 1) to help explain and tie together previous research, and identify the factors that impact self-disclosure.

Omarzu (2000) sought to explain influences on both the binary decision to disclose or not, as well as the three main dimensions or qualities of self-disclosure that had been identified in the literature: (a) breadth, or the number of topics or range of information covered, (b) duration, or the sheer amount disclosed, and (c) depth, or the level of intimacy characterizing the disclosure. More intimate forms of disclosure involve sharing regarding one's feelings/emotions, and negative feelings in particular (i.e., distress disclosure).

In the binary decision making process, Omarzu (2000) proposed that a particular goal would need to be salient to motivate disclosure. What goal is salient would depend both on contextual factors (e.g., what had occurred to the individual that day, social norms of the current situation) as well as on individual differences. For example, an individual who had just experienced a romantic rejection (situation) and who has difficulty regulating their own emotions (individual difference) may have the goal of relieving their distress through disclosure. If there was no apparent benefit to be had, the disclosure would not be made.

If a goal is salient, two additional conditions need to be satisfied for disclosure to occur: (a) an appropriate target must be present, and (b) disclosure must be viewed as an appropriate strategy to attain one's goal. Thus, if a person is able to reach their best friend on the phone (appropriate target) and they have previous experiences in which disclosure has helped relieve their distress (disclosure is an appropriate strategy), then disclosure would be likely to occur.

However, if no close others are available (no appropriate target) or the individual has strong fears of receiving compassion because they believe they are undeserving (disclosure is not an appropriate strategy to alleviate distress), then that person is not likely to disclose.

After the decision to disclose has been made, Omarzu (2000) proposed that different factors would impact disclosure depth (a quality of disclosure associated more closely with emotional consequences) versus breadth and duration (more surface-level characteristics of disclosure). In her model, the variable that is more likely to influence disclosure breadth and duration is its subjective utility. In other words, how valuable is the individual's goal and how rewarding will the experience be? For example, an individual who is extremely distressed will consider the goal of alleviating their own negative feelings to be more valuable than someone who is only mildly distressed. Thus, the individual who is more distressed would be expected to share more both in terms of length and range of information provided during their disclosure. Disclosure depth, however, is determined by the subjective risk of the disclosure or the possible negative consequences for disclosing. Omarzu suggested that rejection by the listener, fear of betrayal, and the possibility of hurting or embarrassing the listener were possible risks to be considered prior to disclosure, any of which could result in less intimate forms of disclosure.

Both subjective utility and risk of disclosure may be impacted by individual differences, situational cues, or target characteristics. For example, how helpful one would expect the disclosure to be could depend on whether their listener is too distracted at the moment to attend to the discloser's needs (target characteristic). Similarly, for someone who is highly socially anxious, self-disclosure may be perceived as being too risky due to a heightened sensitivity to the risk of rejection (individual difference). In sum, according to Omarzu's model, a myriad of factors may play a role in decisions to disclose and the quality of disclosures, and these factors

exert their effects on decision making through both conscious and non-conscious, automatic cognitive processes (Omarzu, 2000).

Empirical evidence supporting Omarzu's model. Although to the author's knowledge no research to date has set out specifically to test the validity of the Disclosure Decision Model, the results of previously conducted research support its tenets.

The importance of having an appropriate target for encouraging self-disclosure has been empirically supported, as the degree and depth with which participants are willing to disclose on any given topic depends on their relationship with their listener (see Cozby, 1973 for a review). The demonstrated impact of trust on disclosure to others illustrates why some individuals may be perceived as being better targets than others. For an individual to be perceived as an appropriate disclosure target, that person must usually be perceived as being trustworthy in the eyes of the discloser (Ignatius & Kokkonen, 2009). Correlationally, interpersonal trust in close relationships has been linked to increased intimacy of disclosure (Larzelere & Huston, 1980). In a study that sought to determine the impact of expected confidentiality as a component of trust, researchers investigated the impact that promising confidentiality had on the intimacy of participants' disclosures (Woods & McNemara, 1980). Participants who were promised confidentiality versus non-confidentiality were more open in their disclosures regarding intimate topics.

Apart from the specific relationship and context, some individuals may possess traits that make them better targets for disclosure than others. Generally, self-disclosure is more likely when the target of disclosure is perceived as being warm, friendly, accepting, and nurturing (Kelly & McKillop, 1996; Pederson & Higbee, 1969). Miller, Berg, and Archer (1983) created the Opener Scale to have individuals self-report on the degree to which others tend to disclose to

them. Individuals who scored higher on the Opener Scale (or “openers”) also tended to score higher on self-report measures of perspective taking and sociability. In a lab setting, openers did indeed elicit more disclosure from conversation partners who scored low on a measure of self-disclosure, but individuals who were high in self-disclosure tended to disclose equally to those who scored high or low on the Opener Scale. Thus, certain individuals may possess particular traits that make them better disclosure targets than others even to strangers, although individual differences may be more important for targets of disclosers who tend to be more self-concealing.

With respect to factors that contribute to the quality of disclosure, Vogel and Wester (2003) investigated the relationship between self-report measures of perceived risk, utility of disclosure and willingness to disclose personal distress in undergraduate students. It was found that perceived risk of disclosure was negatively related to willingness to share one’s distress with others, and utility of disclosure was positively related to willingness to disclose. In research supporting Stiles’ “fever model” of disclosure, it was found that individuals tend to disclose more when they are experiencing greater distress or negative affect, suggesting that greater need (i.e., greater perceived utility) drives more disclosure (Burchill & Stiles, 1988; Stiles, Shuster, & Harrigan, 1992). Alden and Bieling (1998) demonstrated how both individual differences in social anxiety and contextual factors can interact to impact risk of disclosure and disclosure tendencies. The researchers recruited both socially anxious and non-anxious participants and effectively manipulated risk of disclosure by either telling participants their conversation partner was similar to themselves (i.e., risk of being judged was low) or dissimilar (i.e., risk of being judged was high). Dissimilarity increased self-protection goals and decreased intimacy of disclosure in socially anxious participants, but protective goals were relatively low and intimacy of disclosure was relatively high for non-anxious participants regardless of how similar or

dissimilar they believed their conversation partner to be. Brunell, Pilkington, and Webster (2007) found that participants who believed intimacy in relationships was more risky and could lead to negative consequences reported that they were less willing to disclose emotional content to their romantic partner. Taken together, research suggests that both perceived utility and risks of disclosure appear to play roles in decisions to self-disclose.

Perceived risk of disclosure and shame. Distress disclosure by definition involves sharing sensitive and intimate information regarding negative emotions, and is thereby inherently a “deeper” form of disclosure. Omarzu’s (2000) model therefore suggests that subjective risk would need to be relatively low for any disclosure of this kind to be made. In order to encourage distress disclosure, it would therefore be necessary to target factors that might increase subjective risk and act as barriers to disclosure. Shame is one such factor that likely leads to increased perceived risk.

Unfortunately, many distressing events experienced in daily life, such as personal failures or rejection experiences, lead to feelings of shame. In Keith and colleagues’ (2009) definition outlined above on page 6, we see that a desire for self-concealment is in fact central to feelings of shame. Thus, it may be unsurprising that people avoid disclosing experiences of shame to others (Macdonald & Morley, 2001). Individuals who are more shame-prone tend to disclose less to mental health professionals regarding both their distressing experiences and psychological symptoms (Hook & Andrews, 2005; Pineles, Street, & Koenen, 2006; Swan & Andrews, 2003). Researchers investigating the relationship between shame and self-disclosure found that it was mediated by negative expectations regarding the outcome of a disclosure, including anticipated lack of support and risks of disclosure (DeLong & Kahn, 2014). In a phenomenological study of individuals attending psychotherapy, Macdonald and Morley (2001) found that participants did

not disclose 68% of their emotional experiences to others, and feelings of shame and fears of being judged, blamed, or misunderstood were frequently co-occurring reasons cited by participants for their non-disclosure. It appears that shameful experiences may be difficult to disclose due to the heightened risk involved in disclosing them to others.

Links between Self-Compassion and Distress Disclosure

Although the relationship between self-compassion and distress disclosure has not yet been investigated empirically, there are a number of reasons to suspect that self-compassion should encourage distress disclosure.

Given that the greatest barrier to distress disclosure, according to the Disclosure Decision Model, is the subjective risk of disclosure and that shame appears to be an important contributor to perceived risk, any intervention with the goal of reducing shame should consequently encourage more distress disclosure. Just as practicing self-compassion can effectively reduce shame, facilitating self-compassion should theoretically encourage one to share personal distress with others. If shame surrounding a negative experience is reduced, expectations that others will react with judgment and criticism should also decrease and expectations that others will be understanding and compassionate should increase.

In a recent study, we found that feeling secure in one's social environment was linked to individuals' levels of self-compassion and to their tendency to be open to receiving compassion from others (Kelly & Dupasquier, 2016). Additionally, a relative paucity in feeling safe and cared for in one's social world explained why individuals who lacked warmth in early caregiver relationships struggled to trust and expect compassion from others. In the absence of such warm early relationships, feelings of social safeness may be underdeveloped and one may not readily

recognize or expect compassion from others. Indeed, previous research suggests that individuals with avoidant childhood attachments characterized by feelings of mistrust tended to disclose less in later intimate relationships than individuals with secure attachments characterized by feelings of safeness (Mikulincer & Nachshon, 1991). Self-compassion may offer a valuable route to increasing feelings of safeness (Gilbert et al., 2008). Self-disclosure should therefore be more likely when individuals feel socially secure as well as expect and trust expressions of compassion from others, and self-compassion has been linked to both of these states.

In sum, if self-compassion can indeed help decrease negative, shameful feelings, stimulate positive affiliative feelings, and reduce the perceived risk of disclosure, then there is reason to believe that it should also facilitate sharing one's distress with others.

The Current Study

Self-disclosure – the process of revealing one’s private thoughts, feelings, beliefs and attitudes to others – is one of the most common ways to develop relationships with others, as it increases trust, intimacy, and liking between individuals when used appropriately (Collins & Miller, 1994; Falk & Wagner, 1985; Larzelere & Huston, 1980; Laurenceau et al., 1998).

Although self-disclosure results in positive interpersonal outcomes, it can also have important psychological benefits intrapersonally, particularly when it comes to disclosure of negative feelings. Engaging in distress disclosure – the disclosure of information regarding one’s own negative experiences and emotions – to close others or to mental health professionals is related to heightened life satisfaction and subjective well-being through decreases in perceived stress and depressive symptoms (Kahn, Achter, & Shambaugh, 2001; Saxena & Mehrotra, 2010; Ward, Doherty, & Moran, 2007). Distress disclosure is also related to perceived social support from others, which plays an important role in buffering the individual from psychosocial stress (Dunkley, Zuroff, & Blankstein, 2006; Heinrichs, Baumgartner, Kirschbaum & Ehlert, 2003; Hyde, Gorka, Manuck, & Hariri, 2011; Kahn & Hessling, 2001).

Despite these apparent benefits, some individuals tend to avoid disclosing their emotional distress to others. For example, highly self-critical individuals tend to disclose less to significant others, particularly when stressed, which leads to heightened feelings of loneliness (Besser, Flett & Davis, 2003; Richardson & Rice, 2015). Furthermore, the desire to conceal distress from others prohibits one from seeking out social support when needed (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995; Ward, Doherty, & Moran, 2007). Thus, encouraging distress disclosure, especially among those who disclose little, can improve and maintain psychological well-being.

Factors Influencing Self-Disclosure

In order to identify the barriers to distress disclosure, one must understand the factors that impact decisions to disclose emotional information. In 2000, Omarzu developed a model to explain when and how individuals will choose to self-disclose, which she titled the “Disclosure Decision Model”. Within this model, Omarzu identified three conditions which must be met in order for an individual to choose to disclose: (a) a goal must be salient, (b) disclosure must be an appropriate means to attain the salient goal, and (c) an appropriate listener must be present. Using this framework, the salient goal should be to reduce one’s own distress, and one must perceive that disclosure is an appropriate means of doing so in the case of distress disclosure. Some individuals do not believe that disclosure can have such positive benefits. For example, certain people fear receiving compassion and are likely to experience anxiety or embarrassment when others show warmth or caring, or may believe that others are likely to withhold compassion or use compassion as a means of harm (Gilbert et al., 2011). For these individuals, distress disclosure may be expected to make them feel worse rather than better, and thus disclosure would not be perceived to be an appropriate strategy for reducing distress. Last, there must also be an appropriate individual available to whom one can disclose. Although the discloser’s relationship with the listener is one component that determines whether a target is judged to be appropriate, individual differences also play a role. Good targets are generally individuals who are perceived by the discloser as being warm, friendly, accepting, and nurturing (Kelly & McKillop, 1996; Pederson & Higbee, 1969).

According to Omarzu (2000), if these three conditions are met, a disclosure is likely to be made, but two further factors will influence the quality of the disclosure: (a) the perceived utility of making a disclosure, which would impact disclosure breadth (i.e., the number of topics or

range of information covered) and duration (i.e., the sheer amount disclosed) and (b) the perceived risk of making a disclosure, which would impact disclosure depth (i.e., the level of intimacy or emotional content involved in the disclosure). In the case of distress disclosure, research has demonstrated that the greater one's distress, the more an individual will disclose (Burchill & Stiles, 1988; Stiles, Shuster, & Harrigan, 1992). Heightened distress increases the need to alleviate negative affect and the perceived utility of the disclosure.

The most important qualifier of distress disclosure, however, is thought to be perceived risk. Because distress disclosure is inherently a more intimate form of disclosure that involves revealing one's feelings and personal insecurities to others, it has been theorized that perceived risk must be relatively low in order for any distress disclosure to be made. Although a number of risks may potentially be at play, such as fear of embarrassing the listener or losing autonomy through reliance on others, the most prominent risk of distress disclosure tends to be the fear of judgment or criticism from others (Macdonald & Morley, 2001).

Unfortunately, distressing experiences such as personal failures or rejection experiences are often accompanied by feelings of shame, which are related to expectations of being judged or criticized (Goss, Gilbert, & Allan, 1994). In a phenomenological study of individuals attending psychotherapy, it was found that participants did not disclose 68% of their emotional experiences to others, and feelings of shame and fears of being judged, blamed, or misunderstood were frequently co-occurring reasons cited by participants for their non-disclosure (Macdonald & Morley, 2001). Furthermore, highly shame-prone individuals tend to disclose less to clinicians, and the negative relationship between shame and self-disclosure is mediated by negative expectations regarding the outcome of a disclosure, including anticipated lack of support and risks of disclosure (DeLong & Kahn, 2014; Hook & Andrews, 2005; Pineles, Street, & Koenen,

2006; Swan & Andrews, 2003). Thus, shame plays an important role in increasing perceived risk of distress disclosure, thereby serving as a barrier to revealing distress to others.

The Role of Self-Compassion

Given that one of the greatest barriers to distress disclosure, according to the Disclosure Decision Model, is the subjective risk of disclosure, and that shame appears to be an important contributor to perceived risk, interventions that target shame should consequently facilitate more distress disclosure. Interestingly, one therapeutic factor that has received increased interest over the past two decades has been proposed to be an “antidote” to shame: self-compassion (Gilbert, 2005).

Self-compassion is a Buddhist construct defined in the psychological literature as taking a caring stance toward the self in which one aims to understand and alleviate one’s own suffering without judgment (Gilbert, 2009; Neff, 2003). Kristin Neff (2003) proposed that self-compassion is comprised of three subcomponents, each of which is countered by a negative, non-compassionate opponent process. First, self-kindness is the face-valid component, as it involves recognizing one’s own worth and extending kindness, love, and understanding towards oneself (including one’s feelings, thoughts, and behaviours) even in the face of personal flaws. Its opponent process is self-judgment, characterized by hostility and self-criticism. Second, mindfulness requires an acknowledgment and understanding of one’s distressing emotions without becoming caught up in them to a degree that coping is impossible (i.e., overidentification with one’s feelings). Third, feelings of common humanity refer to the recognition that suffering is an inevitable part of being human, and as such it is not an inherently shameful experience. Whereas some individuals can feel alone or isolated in their suffering, being self-compassionate

allows one to maintain feelings of connectedness to others and put one's difficulties into a larger perspective during times of distress.

Although self-compassion was originally conceptualized as being a cross-situational trait, and the majority of research to date has examined it as a stable characteristic, it is recognized that levels of self-compassion can vary considerably depending on contextual factors. For example, in a daily diary study, Kelly and Stephen (2016) found that within-persons levels of self-compassion tended to fluctuate on a day-to-day basis. Furthermore, brief experimental manipulations and interventions have been found to effectively increase state levels of self-compassion, suggesting a self-compassionate mindset can be induced (Breines & Chen, 2012; 2013). Thus, although levels of self-compassion may be stable over time to a certain degree, an individual's self-compassion may fluctuate around their average level of self-compassion depending on situational factors.

Self-compassion and shame. Trait self-compassion is negatively correlated with shame, and a small number of experimental studies have demonstrated self-compassion's shame-reduction abilities (Kelly, Carter, & Borairi, 2014). For example, in a small 12-week trial of six patients by Gilbert and Procter (2006), they demonstrated that practicing compassion-focused therapy aimed at increasing self-compassion resulted in decreased shame and self-criticism from pre- to post-treatment. A self-soothing intervention based on compassionate imagery exercises was also found to lower shame for acne sufferers (Kelly, Zuroff, & Shapira, 2009). In a separate study, after writing about a shame-related experience self-compassionately, participants experienced less state shame than participants in a control writing condition (Johnson & O'Brien, 2013). At a two-week follow up, only participants in the self-compassion condition had experienced a significant decrease in shame-proneness (i.e., trait levels of shame) from baseline.

Taken together, these results suggest that self-compassion can effectively reduce feelings of shame both in the short and long-term. Thus, if self-compassion can indeed help decrease negative, shameful feelings, it should reduce the perceived risk of disclosure, and thereby facilitate sharing one's distress with others.

Study Objectives

The present study aimed to test the idea that inducing a self-compassionate mindset could encourage disclosure of negative experiences by reducing the perceived risk of disclosure. Following the recall of a distressing personal experience, we examined whether a writing exercise aimed at increasing self-compassion subsequently decreased the perceived risk of disclosure and, in turn, resulted in increased disclosure of the experience to another participant. Two control conditions were included: a self-esteem enhancing condition and a writing control condition.

Self-esteem is conceptualized as one's overall self-evaluation, and high self-esteem is characterized by self-liking and perceived competence (Rosenberg, 1965; Tatarodi & Milne, 2006). Although self-esteem is closely related to self-compassion, as demonstrated by strong correlations between the two constructs in research studies, empirical evidence has demonstrated repeatedly that these are two distinct constructs (Barnard & Curry, 2011). For example, self-esteem is generally viewed as being contingent on external circumstances, and Neff and Vonk (2009) demonstrated that self-compassion is a better predictor of stable feelings of self-worth than is global self-esteem. In reaction to a failure or disappointment, self-esteem can often be negatively affected or can lead to defensive reactions such as denial of personal responsibility. Self-compassion by definition is the most useful in the face of failure in order to help regulate

one's emotions and often leads to acceptance and a desire for self-improvement rather than denial (Breines & Chen, 2012; Leary, Tate, Allen, Adams, & Hancock, 2007). Despite these differences, the two constructs often co-vary. Therefore, to ensure that any observed effects were unique to self-compassion rather than a general increase in positive global feelings towards the self, we included a writing condition aimed at enhancing self-esteem. We also included a condition in which participants were asked to complete a less directive writing exercise to control for any effects of simply writing or thinking more about the experience.

First, we expected that our study would replicate previous findings demonstrating the benefits of self-compassion on affect regulation. Specifically, we hypothesized that (1) participants in the self-compassion condition would experience decreased negative feelings towards themselves regarding their negative experience, negative affect, and state shame as well as increased low-arousal positive affect after the writing exercise as compared to those assigned to the self-esteem and writing control conditions.

Furthermore, we hypothesized that (2) participants in the self-compassion condition would expect there to be less risk associated with disclosure of their negative experience as compared to participants in the self-esteem and writing control conditions.

Finally, we hypothesized that (3) participants in the self-compassion condition would disclose more and engage in more intimate disclosures as measured by word count and proportion of emotion-related words in their letters to other participants as compared to those in the self-esteem and writing control conditions.

Method

Overview of the Procedure

The present study was conducted in two parts, including one online session and one experimental session completed in-lab a minimum of two days later. The online session consisted of a set of self-report measures assessing trait variables to serve as covariates or moderator variables in analyses. In the experimental session, participants were asked to recall a past negative experience, and baseline positive and negative affect as well as state shame, state self-compassion, and state self-esteem were measured. Participants then completed a writing exercise to serve as our experimental manipulation in which they wrote about their negative experience in a self-compassionate (SC), self-esteem enhancing (SE), or undirected way (control condition). After participants wrote about their negative experience, we again measured their affect, state self-compassion, and state self-esteem, and participants were deceived into believing that they would be given the chance to disclose their negative experience to another participant and engage in a supportive discussion. After rating how risky making such a disclosure felt, participants were asked to write a letter to the other participant describing their negative experience. Finally, participants were fully debriefed and the study was terminated.

Participants

Participants were female undergraduate students recruited from the psychology subject pool of a large Canadian university. They received 1.5 experimental participation credits as remuneration, in addition to five Canadian dollars. Experimental sessions were conducted by one of three female researchers. Previous research has produced mixed findings regarding the effects of gender on self-disclosure. A meta-analysis demonstrated that women tend to disclose more

than men (Dindia, 2002), but gender of the disclosure partner may also interact with the gender of the discloser (see Ignatius & Kokkonen, 2007 for a review). To control for any effect of gender on self-disclosure, recruitment was restricted to female participants.

Ninety participants completed both the online questionnaires as well as the in-lab portion of the study. Of these, five participants were excluded from analyses: four due to suspicion of deception (see procedure section below for explanation of funnel debriefing procedure), and one due to an inability to select a negative experience appropriate for the study. The final sample consisted of 85 participants, ages 17-30 years old (Mean = 20.14, SD = 2.28; four participants did not report their age). Thirty-five (41.2%) participants identified themselves as Caucasian, 16 (18.8%) as East Asian, 14 (16.5%) as South Asian, five (5.9%) as Southeast Asian, two (2.4%) as West Indian/Caribbean, two (2.4%) as Middle Eastern, two (2.4%), as Black/African, one (1.2%) as Hispanic, and four participants (4.7%) did not identify an ethnic background.

Measures

All questionnaires were completed online using Qualtrics™, a US-based online survey tool.

Fears of receiving compassion. The Fears of Compassion Scales were developed by Gilbert and colleagues (2011) to assess three types of fears related to compassion: (a) fears of expressing compassion for others, (b) fears of receiving compassion from others, and (c) fears of self-compassion. Using a 5-point Likert scale, participants are asked to indicate the extent to which they agree with a set of compassion-related statements. The current study was only concerned with the 13-item scale assessing fears of compassion from others (e.g., “I fear that when I need people to be kind and understanding they won’t be”, “When people are kind and

compassionate towards me, I feel anxious or embarrassed”). Cronbach’s alpha was .90, indicating excellent internal consistency.

Positive and negative affect. State affect was measured using six visual analogue scale (VAS) items. Items were selected to reflect the tripartite model of affect regulation conceptualized by Gilbert (2005), consisting of three systems that each relate to separate affective responses: negative affect (NA; threat system), high-arousal positive affect (PA; drive system), and low-arousal PA (soothing system). Items were also selected due to their correspondence with facets of each affective system that were most likely to be triggered by the experimental procedure. Items representing NA included “upset” and “distressed”. Items representing high-arousal PA included “inspired” and “energetic”. Items representing low-arousal PA included “calm” and “relaxed”. On a scale represented by a slider ranging from 0 (“Very slightly or not at all”) to 100 (“Extremely”), participants were asked to indicate the degree to which they felt each listed emotion. Responses to each pair of items were averaged to create composite measures of the three affective responses. Affect was measured at three as opposed to two time points: (1) prior to negative experience recall, (2) at baseline after recalling their negative experience, and (3) post writing exercise. As the Pearson correlation has been found to be an inadequate measure of internal consistency for two-item composites, and Cronbach’s alpha tends to underestimate their true reliability, the Spearman-Brown coefficient tends to be the least biased measure of two-item reliability (Eisinga, te Grotenhuis & Pelzer, 2012). Spearman-Brown coefficients for NA items were .76 at baseline and .85 post-writing exercise. Spearman-Brown coefficients for high-arousal PA items were .71 at baseline and .75 post-writing exercise. Spearman-Brown coefficients for low-arousal PA items were .86 at baseline and .88 post-writing exercise.

Previous disclosure regarding the negative experience. To verify whether participants were selecting negative experiences that they had not previously disclosed in depth, they were asked to respond to a single item, “How much have you shared about your thoughts and feelings regarding this negative experience with others?”. Participants responded on a Likert-type scale from 1 (“I have very slightly shared my thoughts and feelings about this experience, or have not shared them at all”) to 5 (“I have shared my thoughts and feelings about this experience in full and complete detail”).

Feeling badly about self due to negative experience. To verify whether participants across groups were selecting negative experiences of similar severity, they were asked to respond to the question “Right at this moment, how badly does this experience make you feel about yourself?” on a visual analogue scale ranging from 0 (“Not at all”) to 100 (“Very badly”).

State shame. The State Shame and Guilt Scale (SSGS; Marschall, Saftner, & Tangney, 1994) is a measure of in-the-moment feelings of shame, guilt, and pride experiences. Participants rated the degree to which they were feeling the sentiment described by each item on a Likert-type scale ranging from 1 (“Not feeling this way at all”) to 5 (“Feeling this way very strongly”). Items correspond to one of three subscales: (1) shame, (2) guilt, and (3) pride. The current study was only concerned with the shame subscale (e.g., “I want to sink into the floor and disappear”, “I feel humiliated, disgraced”). Cronbach’s alpha was .82 for the shame scale at time 1 and .88 at time 2, indicating good internal consistency.

State self-compassion. Based on Neff’s 26-item measure of trait self-compassion (2003), Breines and Chen (2013) developed a revised version of the Self-Compassion Scale (SCS) to measure state-level variations in self-compassion. This 16-item scale directs participants to rate

their agreement with a series of statements regarding their current attitude toward themselves, given their reported negative experience (e.g., “I’m trying to be kind and reassuring to myself”, “I’m taking a balanced perspective on the situation”) on a Likert scale from 1 (“Strongly disagree”) to 7 (“Strongly agree”). Cronbach’s alpha for the scale was .87 for the SCS at baseline and .90 post-writing exercise.

State self-esteem. The Rosenberg Self-Esteem Scale (RSES; 1965) was used to measure state levels of self-esteem. The RSES is a widely used and well-validated measure of global self-esteem. Although it was originally developed to measure self-esteem at the trait level, previous research has demonstrated its usefulness in detecting fluctuations in self-esteem at the state level (Alessandri, Vecchione, Donnellan, & Tisak, 2013). After making minor alterations to the scale’s instructions, participants rated their degree of agreement with items of the RSES regarding their current, in-the-moment attitudes towards themselves (e.g., “I feel that I’m a person of worth, at least on an equal plane with others”, “I think I am no good at all” reverse scored) on a 4-point Likert scale ranging from 0 (“Strongly disagree”) to 3 (“Strongly agree”). Cronbach’s alpha was .90 for the RSES at baseline and .91 post-writing exercise.

Effort. As a manipulation check to ensure that participants were sufficiently engaged in the experimental manipulation, participants were asked to respond to a single item, “How much effort did you honestly apply to the written exercise?” on a 5-point Likert-type scale from 1 (“No effort/did not do it”) to 5 (“All of the effort that I was able to”).

Perceived risk. To measure the perceived risk of making a disclosure to the other participant in the study, participants were asked to respond to four Likert-style items (“How risky does it feel to disclose your negative experience to the other participant?”, “How difficult

will it be for you to disclose personal information to the other participant?”, “How vulnerable would you feel if you disclosed something very personal to the other participant?”, “To what extent are you worried about what the other participant will think when you disclose your negative experience to them?”) on a scale from 1 (“Not at all”) to 7 (“Very”). The average of these four items was used as a composite measure of perceived risk of disclosure. Cronbach’s alpha for the four items was .82, indicating good internal consistency.

Letter content (LIWC2015). As an objective measure of disclosure length and depth, Linguistic Inquiry and Word Count: 2015 (LIWC2015), a text analysis software program, was used to analyze the content of participants’ letters. LIWC2015 counts word appearances and can classify them into a range of different categories using dictionaries of approximately 6,400 words and word stems (Pennebaker, Boyd, Jordan & Blackburn, 2015). In addition to total word count, two linguistic categories were used to count emotion-related word appearances (positive emotion and negative emotion), which are calculated as a proportion of the total word count and have been used as measures of disclosure depth in previous research (Callaghan, Graff, & Davies, 2013; Houghton & Joinson, 2012).

Procedure

In order to test our hypothesis of the impact of self-compassion on disclosure to others, it was important that the main objective of the study would not be known to participants. Thus, deception was required. The description posted online for the research participation pool and information consent letters stated that the study was investigating “strategies for changing perceptions of and feelings toward past negative experiences.” All participants completed a

general recruitment battery on which they were required to affirm they read and spoke English proficiently, and were proficient at typing in order to be eligible to participate.

Prior to being invited into the lab for the experimental session, participants were emailed a link to complete the set of trait measures online. The amount of time elapsed between completion of trait measures and the experimental session ranged from 1.73 to 31.52 days (Mean = 5.09, SD = 3.46).

After providing their informed consent to participate upon arrival for the experiment, participants were prompted to select a negative experience that (a) occurred in the last five years, (b) made them feel badly about themselves at the time of their participation, (c) involved failure, humiliation, rejection, or a combination of these feelings, and (d) they had either not discussed or had discussed very little with anyone previously. Participants were also instructed not to select any experiences that involved criminal activity, abuse or neglect (physical or sexual), or traumatic events as defined by the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). Participants were provided with examples of experiences that would be suitable for the purposes of the study, but the experimenter emphasized that many other types of experiences would be appropriate and that they should select an experience that was personally meaningful to them.

Next, participants were asked a series of open-ended questions regarding their experience to ensure they had brought it to mind in sufficient depth (“What happened?”, “When did the experience happen?”, “What led up to this experience?”, “Who was there?”, “How did you feel and behave at the time?”). Participants were also asked to indicate how badly they currently felt about themselves due to the negative experience and the degree to which they had shared their

thoughts and feelings regarding the experience with others in the past. Then, participants were asked to complete the set of state measures, including PA and NA, SSGS, state SCS and RSES. These served as baseline measures.

Subsequently, an algorithm in Qualtrics™ randomly assigned participants to complete one of three writing exercises that served as the experimental manipulation: (a) a self-compassion exercise, (b) a self-esteem enhancing exercise, or (c) a writing control exercise, each modeled after the writing exercises used in previous research by Leary and colleagues (2007, study 5). Participants were told the aim of the writing exercise was to alleviate negative feelings regarding their negative experience. In each condition, they were asked to respond to three writing prompts.

Experimental manipulations. In the self-compassion condition, the prompts were designed to target feelings related to the three components of self-compassion as defined by Neff (2003): (a) common humanity (i.e., “...write down ways in which other people also experience events that are similar to the one you described”), (b) mindfulness (i.e., “...try to put psychological distance between yourself and your emotions, and write about the event in a detached, objective fashion”), and (c) self-kindness (i.e., “...write a paragraph expressing kindness, understanding, and concern toward yourself, much like you would write a supportive letter to a friend if this had happened to him or her”).

In the self-esteem condition, the prompts were designed to either boost or preserve the participant’s self-esteem by: (a) focusing on personal strengths (i.e., “...write down your positive characteristics and indications that you are competent and valuable”), (b) making defensive attributions (i.e., “...write a paragraph about the experience, explaining how what happened was

not your fault”), and (c) remembering past successes (i.e., “...write a paragraph about a time when you were in a similar situation and you did something that made things turn out better”).

The writing control condition prompts were designed to account for the impact that simply writing and thinking about the experience could have on participants’ feelings. In this condition, participants were instructed to “...really let go” and explore their deepest (a) thoughts, (b) feelings, and (c) beliefs about the experience.

After completing the writing prompts, all participants were asked to indicate the degree of effort they put into the writing exercise as well as the degree to which they currently felt badly about themselves due to the negative experience. Once again, participants were also asked to complete the same state measures that were completed at baseline (i.e., PA and NA, SSGS, state SCS, and RSES). These served as post-writing exercise measurements.

Deception. The researcher then informed the participants that, as another means of improving their feelings regarding their negative experience, they would have the chance to engage in a short, supportive discussion with another participant. Participants were told that prior to engaging in this conversation, they would be asked to write a letter to the other participant describing their own negative experience and that the other participant would have a chance to read their letter. They were told that they would also have the chance to read the other participant’s letter, and that afterwards, they would come together to discuss their experiences. Participants were told this procedure was necessary to ensure that neither participant would influence one another’s disclosures. Researchers emphasized that participants should only share what they were comfortable with the other participant knowing in their letter, that they could share as much or as little as they wished (including sharing nothing at all if desired), and that if

they personally knew the other participant, they would have the chance to withdraw from the letter exchange and subsequent conversation. This was done to control for the possibility that some participants might be concerned they would be asked to disclose to a peer they knew.

Prior to writing their letter, participants were asked to complete the four questions regarding the perceived risk of making a disclosure to the other participant. Then, participants completed their letter to the supposed other participant, after which the study was terminated. None of the letters were actually read by other participants, and no supportive conversation took place. The word count and proportion of positive and negative emotion words contained within the letters (as measured by the LIWC2015 program) were used as measures of disclosure duration and intimacy.

Researchers conducted a funnel debriefing procedure to probe for suspicion regarding deception and the purpose of the study. Researchers rated participants on a 3-point scale where “0” indicated no deception was suspected, “1” indicated the participant did not fully believe or fully doubt the deception, and “2” indicated the participant fully doubted the deception. Participants who were rated a “2” were excluded from analyses (see participant section above). Finally, participants were fully debriefed, provided informed consent to have their data used with complete awareness of the true purposes of the study, and were given the opportunity to raise any questions or concerns.

Results

All analyses were conducted in IBM SPSS Statistics 20 using mixed factorial analysis of variance (ANOVA), Poisson regression, or hierarchical multiple regression. The main independent variables in most analyses were condition (writing about one's negative experience in a self-compassionate (SC), self-esteem enhancing (SE), or in an undirected manner) and time. Follow-up analyses to mixed factorial ANOVAs were conducted when a significant interaction was present, which included paired *t*-tests within conditions and independent *t*-tests comparing post-writing exercise scores, controlling for baseline scores, between conditions. In cases where measures were taken at a single time point, the independent variable was condition only. The main dependent variables were negative feelings towards the self regarding the experience, NA, high-arousal PA, low-arousal PA, state shame, state self-compassion, state self-esteem, perceived risk of disclosure, and word count as well as proportion of positive and negative emotion words used in participants' letters (as measured by LIWC2015).

Data Integrity and Preliminary Analyses

Missing data for individual items were imputed using the expectation-maximization method for each measure separately. Missing data were not imputed when a participant did not complete the majority of a particular scale. Overall, the percentage of data imputed across measures was less than .01% for the Fears of Receiving Compassion scale, and 0% for all state measures administered during the experimental session in-lab. Little's MCAR tests for fears of receiving compassion ($\chi^2(12) = 6.00, p = .916$) was non-significant, suggesting the data were missing completely at random (Little, 1988). When data are missing completely at random and

less than 5% of data is missing, a single imputation using expectation-maximization provides unbiased parameter estimates while improving power of analyses (Enders, 2001; Scheffer, 2002).

Data were screened for extreme outliers, and several potential univariate outliers (> 3 SDs above or below the mean) were identified. One individual was an outlier on baseline positive high-arousal affect, and one individual was an outlier on post-writing exercise NA. Two individuals were outliers on the proportion of positive emotion words contained within their letter, and one participant was an outlier on negative emotion words contained within their letter. As the extreme values in each case were within the plausible range, all data were retained and no changes were made prior to the main analyses. No multivariate outliers were found. In addition, after each analysis, studentized residuals were screened for extreme skew and kurtosis, as well as influential cases. Any significant outliers or violations of normality are discussed and addressed below.

Equivalence of Groups

Of the 85 participants included in the analyses, 29 were assigned to the SC condition, 30 were assigned to the SE condition, and 26 were assigned to the control condition. One-way ANOVAs were conducted on key variables to test for possible baseline group differences between participants assigned to each experimental condition. There were no significant differences between participants in the SC, SE, or control conditions for mean age ($F(2, 78) = .20, p = .82$), fears of receiving compassion ($F(2, 82) = .84, p = .44$), or to what degree they had previously disclosed about their negative experience to others ($F(2, 82) = .62, p = .54$). The overall mean for the amount participants had previously disclosed their negative experience was

2.20 (SD = 1.08) out of 5, suggesting that participants across conditions were selecting experiences they had not fully shared with others previously.

At baseline, groups did not significantly differ on how badly they felt about their negative experience ($F(2, 82) = .615, p = .54$), NA ($F(2, 82) = 1.13, p = .33$), high-arousal PA ($F(2, 82) = 1.58, p = .21$), low-arousal PA ($F(2, 82) = 1.54, p = .22$), state shame ($F(2, 82) = .76, p = .47$), state self-compassion ($F(2, 82) = .20, p = .82$), or state self-esteem ($F(2, 82) = .119, p = .89$).

Zero-Order Correlations

Zero-order correlations were calculated to examine relationships between proposed moderator and outcome variables (at baseline, when applicable; see Table 1). Results demonstrated that individuals with heightened fears of receiving compassion had lower levels of state self-compassion and state self-esteem at baseline, and heightened NA and shame. Although both state self-compassion and state self-esteem at baseline were positively related to low-arousal PA and negatively related to NA and shame, only self-compassion was significantly related to high-arousal PA. Indeed, the correlation between self-compassion and high-arousal PA was significantly greater than the correlation between self-esteem and high-arousal PA ($Z = 2.27, p = .02$). State self-compassion at baseline had a significant negative relationship with perceived risk of disclosure, and although the negative relationship between state self-esteem and perceived risk was only marginally significant, these two correlations did not differ significantly from one another ($Z = -.10, p = .32$). Perceived risk of disclosure was also positively related to how badly participants felt about themselves regarding the event, state NA, and state shame. Letter word count was negatively related to perceived risk of disclosure. Lastly, whereas proportion of positive affect words contained within participants' letters was unrelated to any other variable,

participants whose letters contained a higher proportion of NA words reported less low-arousal PA at baseline and composed shorter letters overall. They also perceived disclosure of their negative experience to be riskier. Proportion of negative words also showed a trending negative relationship with self-compassion at baseline.

Manipulation Checks

Affect pre- to post-negative experience recall. The writing exercises were designed to be contingent upon participants recalling a past distressing experience that had a negative personal impact at the time of their participation. To examine whether participants were emotionally engaged during the recall, a repeated measures ANOVA was conducted to examine changes in PA and NA before and after bringing their negative experience to mind. Analyses revealed that NA increased ($F(1, 82) = 103.82, p < .001, \eta_p^2 = .56$), and high- and low-arousal PA decreased ($F(1, 82) = 61.02, p < .001, \eta_p^2 = .43$; $F(1, 82) = 84.64, p < .001, \eta_p^2 = .51$, respectively) from pre- to post-recall. No significant time by condition interactions were found (p 's > .05). These results suggest that participants were engaged in the recall activity, as recalling their past experience had a negative impact on mood across conditions.

Effort applied in writing exercise. To verify that participants were engaged in the writing exercise that served as our experimental manipulation, mean scores on the single measure of effort were examined. A one-way ANOVA indicated there was no difference in self-reported effort applied across conditions ($F(1, 82) = .82, p = .44$). The overall mean rating of effort applied during the writing exercise was 3.65 out of 5 (SD = .84), suggesting that participants applied themselves reasonably well to the writing exercise.

State self-compassion. To verify whether the SC condition successfully manipulated state SC, we examined whether it resulted in a significantly larger increase in state self-compassion as compared to the other two conditions. A 2 x 3 mixed factorial ANOVA was conducted on state self-compassion where condition served as a between subjects factor and time served as a within subjects factor. Results revealed a significant main effect of time ($F(1, 82) = 79.64, p < .001, \eta_p^2 = .49$) but no significant time by condition interaction ($F(2, 82) = 1.13, p = .11, \eta_p^2 = .05$), suggesting that state self-compassion increased equally across all three conditions.

State self-esteem. To verify whether the SE condition successfully manipulated state SE, we examined whether the SE condition resulted in a significantly larger increase in state self-esteem as compared to the other two conditions. A 2 x 3 mixed factorial ANOVA was conducted on state self-esteem pre- and post-writing exercise where time acted as the within subjects factor and condition acted as the between subjects factor. Results revealed a significant main effect of time ($F(1, 82) = 42.87, p < .001, \eta_p^2 = .34$), but no time by condition interaction ($F(1, 82) = 1.39, p = .26, \eta_p^2 = .03$), suggesting an overall increase in state self-esteem from baseline across conditions.

Effect of Condition on State Measures

Feeling badly about self. To assess the impact of the three writing exercises (between subjects factor) on how badly the negative experience made participants feel about themselves, a 2 x 3 mixed factorial ANOVA was conducted on the single item pre- and post-writing exercise where time was the within-subjects factor. Overall, feeling badly about oneself declined significantly from baseline ($F(1, 82) = 94.93, p < .001, \eta_p^2 = .54$), and this main effect of time

was qualified by a marginally significant interaction between time and condition ($F(2, 82) = 2.90, p = .06, \eta_p^2 = .07$). Paired sample t -tests revealed that feeling badly about oneself due to the negative experience declined from baseline to post-writing exercise across all conditions (SC: $t(28) = 5.89, p < .001, SE: t(29) = 7.15, p < .001$, control: $t(25) = 3.98, p = .001$). Post-writing event-related negative self-feelings were regressed on baseline self-feelings and post-writing residuals from this analysis were computed. A series of follow-up t -tests were conducted on the residuals to investigate differences in post-writing negative self-feelings between groups controlling for their baseline scores. T -tests revealed a trend in which participants in the SC and SE conditions experienced less event-related negative self-feelings after the writing exercise than participants in the control condition when controlling for their feelings at baseline ($t(53) = -1.86, p = .07; t(54) = -1.95, p = .06$, respectively). Residual scores for participants in the SC and SE conditions did not differ ($t(57) = -.05; p = .96$).

Affect. Three separate 2 x 3 mixed factorial ANOVAs were used to evaluate the impact of condition on NA, high-arousal PA, and low-arousal PA, from baseline to post-writing exercise.

For NA, a significant main effect of time was found ($F(1, 82) = 47.38, p < .001, \eta_p^2 = .37$), which was qualified by a time by condition interaction ($F(2, 82) = 3.56, p = .03, \eta_p^2 = .08$). Paired sample t -tests revealed that NA decreased significantly across all conditions (SC: $t(28) = 5.15, p < .001, SE: t(29) = 4.36, p < .001$, control: $t(25) = 2.30, p = .03$). T -tests of residuals obtained from regressing post-writing scores on pre-writing scores revealed that post-writing NA was significantly lower in the SC condition as compared to the control condition when controlling for baseline NA ($t(53) = -2.12, p = .04$), but did not differ from post-writing NA in

the SE condition ($t(57) = -.99, p = .32$). Post-writing NA in the SE and control conditions did not differ significantly from one another ($t(54) = -1.39, p = .17$).

A significant main effect of time was found for high-arousal PA ($F(1, 82) = 36.26, p < .001, \eta_p^2 = .31$) without a significant time by condition interaction ($F(2, 82) = 2.19, p = .12, \eta_p^2 = .05$).

Results revealed a significant main effect of time for low-arousal PA ($F(1, 82) = 16.17, p < .001, \eta_p^2 = .17$), which was qualified by a time by condition interaction ($F(2, 82) = 3.61, p = .03, \eta_p^2 = .08$). Paired sample t -tests revealed that low-arousal PA increased from baseline to post-writing exercise in both the SC and SE conditions ($t(28) = 3.92, p = .001, t(29) = 2.49, p = .02$, respectively), but not in the control condition ($t(25) = .23, p = .82$). T -tests of residuals obtained from regressing post-writing scores on pre-writing scores were conducted to assess whether differences in low-arousal PA existed between groups post-writing exercise controlling for their baseline scores. No significant difference in residuals was found between the SC and SE conditions ($t(57) = .33, p = .74$). However, post-writing low-arousal PA was significantly greater for participants in the SC condition than those in the control condition when controlling for baseline scores ($t(53) = 2.50, p = .02$), and participants in the SE condition had marginally greater post-writing scores than those in the control condition ($t(54) = 1.79, p = .08$).

State shame. An initial 2 x 3 mixed factorial ANOVA was conducted to evaluate the impact of condition on state shame scores pre- to post-writing exercise. A significant main effect of time was found ($F(1, 82) = 70.98, p < .001, \eta_p^2 = .46$), which was qualified by a time by condition interaction ($F(2, 82) = 3.93, p = .02, \eta_p^2 = .09$). However, studentized residuals for post-writing exercise shame scores were significantly positively skewed (skewness = 1.47, $SE =$

.26). Thus, a base-10 log transformation was conducted on both baseline and post-state shame scores. This resulted in skewness values within the normal range for both baseline (skewness = -.28) and post-writing exercise (skewness = .70) residuals. When an identical mixed factorial ANOVA was performed on the transformed data, the same pattern emerged with a significant main effect of time ($F(1, 82) = 93.54, p < .001, \eta_p^2 = .53$), qualified by a time by condition interaction ($F(2, 82) = 3.66, p = .03, \eta_p^2 = .08$). Paired sample *t*-tests revealed that state shame decreased significantly across all conditions (SC: $t(28) = -6.58, p < .001, SE: t(29) = -5.89, p < .001$, control: $t(25) = -4.32, p < .001$). However, follow-up *t*-tests of residuals obtained from regressing post-writing scores on pre-writing scores revealed that post-writing exercise state shame in the SC condition was significantly lower than in the control condition when controlling for baseline scores ($t(53) = -2.52, p = .02$). State shame for participants in the SE condition was marginally lower than for those in the control condition ($t(54) = -1.88, p = .07$). The SC and SE conditions did not differ significantly from one another ($t(57) = -.79, p = .43$).

Effect of Condition on Perceived Risk of Disclosure and Letter Content

Perceived risk of disclosure. To test the hypothesis that participants in the SC condition would perceive disclosing their negative experience to another participant to be less risky than those in the SE and control conditions, a one-way ANOVA was conducted. Results indicated that there was no main effect of condition on perceived risk of disclosure ($F(2, 82) = .45, p = .64, \eta_p^2 = .01$).

LIWC2015. To test the hypothesis that participants in the SC condition would provide lengthier and more intimate disclosures in their letters as compared to those in the SE and control

conditions, three separate one-way ANOVAs were conducted on letter word count, proportion of positive affect words, and proportion of negative affect words contained within their letters.

Although some researchers suggest count variables should be analyzed using Poisson regression, when letter word count was entered as the dependent variable and condition was entered as the independent variable in a Poisson regression, model fit was poor ($\chi^2(82) = 3194.73$), suggesting significant overdispersion and an increased chance of making a Type I error. Because letter word count approximated a normal distribution rather than a Poisson distribution, a one-way ANOVA was used. Where letter word count was the dependent variable and condition was entered as a between subjects factor, no significant main effect of condition was found ($F(2, 82) = .197, p = .82, \eta_p^2 = .005$). One participant chose to share nothing in her letter, and was excluded from subsequent letter analyses.

When proportion of positive affect words contained within participants' letters was entered as the dependent variable, no significant main effect of condition was found ($F(2, 81) = .18, p = .84, \eta_p^2 = .004$). However, an examination of the studentized residuals revealed a significant positive skew (skewness = 1.11, $SE = .26$). Thus, a square root transformation was conducted on proportion of positive affect words. When the same analysis was conducted on the transformed variable, skewness of the residuals was within the normal range (skewness = -.43). This analysis resulted in no significant main effect of condition ($F(2, 81) = .23, p = .79, \eta_p^2 = .006$).

When proportion of negative affect words contained within participants' letters was entered as the dependent variable, no significant main effect of condition was found ($F(2, 81) = 1.74, p = .18, \eta_p^2 = .04$). However, an examination of the studentized residuals revealed a

significant positive skew (skewness = 1.24, $SE = .26$). Thus, a square root transformation was conducted on proportion of negative affect words. When the same analysis was conducted on the transformed variable, skewness of the residuals was within the normal range (skewness = $-.04$). This analysis revealed a marginally significant main effect of condition ($F(2, 81) = 2.82, p = .06, \eta_p^2 = .06$). Follow-up t -tests revealed that participants in the SC condition used a smaller proportion of negative affect words than participants in the control condition ($t(52) = -2.26, p = .03$). Participants in the SE condition did not differ significantly from those in the SC or control conditions ($t(56) = -1.45, p = .15; t(28) = -.96, p = .34$, respectively).

Fears of Receiving Compassion as a Moderator of Condition Effect

Given that there was no significant effect of condition on the disclosure-related outcome variables, we considered the possibility that the impact of the writing exercise on perceived risk of disclosure or letter content might depend on an individual's attitudes towards receiving care and support from others. Thus, we investigated whether fears of receiving compassion might moderate the impact of condition.

Perceived risk. A hierarchical linear regression analysis was performed (see Table 2) in which perceived risk of disclosure was entered as the dependent variable. At the first step, fear of receiving compassion was entered (grand mean centered), followed by two dummy-coded variables at the second step representing the effect of condition (D1: SC = 0, SE = 1, control = 0; D2: SC = 0, SE = 0, control = 1). Finally, two interaction terms were entered at the third step to represent the condition by fear of receiving compassion interaction. Through an examination of leverage values, two potentially risky influential cases were identified (leverage values $.25$ and $.28$). As excluding these cases from the analysis did not substantially change the results, the

cases were retained. Results indicated that although there was no significant main effect of condition, there was a significant interaction between condition and fear of receiving compassion, accounting for an additional 7.4% of the variance in risk of disclosure (see ΔR^2 for step 3). The slope for fear of receiving compassion predicting perceived risk in the SC condition was significantly different from the slopes for participants in the SE and control conditions (as indicated by the tests of both interaction terms entered in step 3). An identical analysis using a third dummy code to replace D1 (D3: SC = 1, SE = 0, control = 0) verified that the slopes of the SE and control conditions did not differ significantly from one another ($B = -.01$, $SEB = .17$, $\beta = -.01$, $t = -.07$, $p = .94$). An examination of the simple slopes revealed a trending positive relationship between fears of receiving compassion and perceived risk of disclosure in the SE and control conditions ($\beta = .35$, $p = .06$; $\beta = .33$, $p = .10$, respectively), but no such relationship was found in the SC condition (see Table 3 and Figure 2).

LIWC2015. Separate hierarchical linear regressions were conducted on each of the three disclosure outcome variables to test the same moderation model outlined above. No significant condition by fears of compassion interaction was found for letter word count (step 3 $\Delta R^2 = .01$, $\Delta F = .39$, $p = .68$), square root transformed proportion of positive affect words (step 3 $\Delta R^2 = .00$, $\Delta F = .01$, $p = .99$), or square root transformed proportion of negative affect words (step 3 $\Delta R^2 = .001$, $\Delta F = .03$, $p = .97$).

Negative affect. We performed an additional hierarchical linear regression analysis to examine whether the same pattern was apparent for post-writing exercise NA controlling for baseline NA (see Table 2). Individuals with heightened fears of receiving compassion may generally benefit more from the self-compassion condition, as Gilbert's (2009) tripartite model

of affect regulation would predict they would have an underactive soothing system and thus be more prone to negative affectivity.

Residual scores obtained from regressing post-writing NA on pre-writing NA were entered as the dependent variable in the same moderation model outlined above. Results indicated the main effect of condition was qualified by a significant interaction between condition and fear of receiving compassion, accounting for an additional 10.3% of the variance in residuals of post-writing NA (see ΔR^2 for step 3). The slope for fear of receiving compassion predicting NA in the SC condition was significantly different from the slopes for participants in the SE and control conditions (as indicated by the tests of the two interaction terms entered in step 3). An identical analysis using a third dummy code to replace D1 (D3: SC = 1, SE = 0, control = 0) revealed that the slopes of the SE and control conditions did not differ significantly from one another ($B = .23$, $SEB = .53$, $\beta = .07$, $t = .44$, $p = .66$). An examination of the simple slopes revealed that although there was a positive relationship between NA post-writing exercise and fears of receiving compassion in the SE and control conditions, no such relationship was found in the SC condition (see Table 3 and Figure 3).

Discussion

The current study set out to test whether writing about a distressing experience self-compassionately would impact participants' willingness to disclose their experience to others. Although not all previously outlined hypotheses were supported by the data, the study yielded a number of interesting findings.

First, in our manipulation check examining the differential impact of the self-compassion and self-esteem writing interventions, we found that the self-compassion condition did not have a unique impact on overall state self-compassion as compared to the other two conditions, and, similarly, the self-esteem writing intervention did not uniquely impact state self-esteem.

The writing interventions used in the current study have been utilized in numerous other studies, and the SC and SE conditions have been found to target state self-compassion and self-esteem scores, respectively (Breines & Chen, 2012, 2013; Leary et al., 2007). However, in previous studies, manipulation checks have been done on post-writing intervention scores using only trait levels of self-compassion and self-esteem as covariates. As it has been demonstrated that state self-compassion can fluctuate on a daily basis, covarying out trait self-compassion scores may not always be an appropriate way to control for an individual's current levels of self-compassion, particularly when an individual is experiencing a greater degree of negative affect (Kelly & Stephen, 2016). Thus, a repeated measures design such as the one used in the present study may be considered a more rigorous way to assess for baseline state self-compassion and self-esteem and examine how they change over time pre- to post-intervention. The current study calls into question the specificity of the writing interventions in changing state levels of their

targeted construct (i.e., self-compassion in the SC condition, and self-esteem in the SE condition), although further research is needed to replicate these findings.

Regarding our specific hypotheses, hypothesis 1 was partially supported by the results of the current study. Participants in the self-compassion condition experienced lower NA, greater low-arousal PA, and lower shame after completing the writing exercise than participants in the control condition when controlling for baseline levels of these variables. Post-writing exercise scores for participants in the self-esteem condition were equivalent to or marginally different from those in the control condition. Taken together, these results suggest that individuals who wrote about their negative experience in a self-compassionate manner made the greatest gains on measures of affect. However, both participants in the self-compassion and self-esteem conditions experienced equivalent decreases in negative feelings about themselves due to their reported negative experience. Overall, results replicate findings from previous studies that self-compassion has a significant affect-regulatory effect, and that its regulatory benefits were not always equivalent to the impact of general increases in global positive feelings towards the self as in self-esteem enhancing interventions (Arimitsu & Hofmann, 2015; Johnson & O'Brien, 2013; Leary et al., 2007; Zessin, Dickhäuser & Garbade, 2015).

Despite the important conceptual distinctions between the two variables (see p.12), in the current study, state self-compassion and self-esteem were highly correlated, which is consistent with findings from previous research demonstrating the close relationship between trait self-compassion and self-esteem (Barnard & Curry, 2011). The two variables shared approximately 57% of their variance, suggesting that while they overlap, they are not identical constructs. We also found that self-compassion and self-esteem manipulations performed similarly across many of the dependent variables assessed in the present study. This equivalence may be attributable to

the role that self-compassion can play in enhancing self-esteem. Self-compassion is bound to foster heightened self-esteem, because it buffers the individual from the negative impact of failure and thereby serves to maintain a positive self-evaluation even in the face of disappointment (Neff & Vonk, 2009). Consequently, the SC and SE writing exercises might have had a similar impact on participants' self-views. This covariation may have obscured the unique contributions of the self-compassion and self-esteem interventions to some outcomes. However, we also found that the SC writing exercise had a distinctive impact for participants with heightened fears of receiving compassion from others, suggesting that the SC and SE interventions performed different functions for certain individuals despite similarities in outcomes when examining main effects.

As there was no effect of condition on perceived risk of disclosure, letter word count, or proportion of positive affect-laden words in participants' letters, hypotheses 2 and 3 were not supported. Contrary to initial hypotheses, participants in the self-compassion condition used a smaller proportion of negative affect laden words in their letters than those in the control condition. As participants in the self-compassion condition experienced the least negative affect post-writing exercise, they might have felt less need to disclose regarding negative emotions. As noted in the discussion of Omarzu's Distress Disclosure Model, decisions to disclose and quality of disclosures depend on both the perceived risk of disclosure and utility of making a disclosure. It is possible that, by engaging in the writing intervention after recalling their negative experience, the reduction in distress that participants experienced also led to a relative reduction in the perceived utility of making a disclosure (i.e., if one is less distressed, further reduction of distress through disclosure may be unnecessary). Furthermore, for individuals who are generally more open to sharing with others, perceived risk of disclosure may have been relatively low

regardless of their level of distress, which would leave little room for the writing intervention to make an impact. Indeed, the pattern that only individuals who tend to perceive disclosure as being more risky are affected by manipulations of risk has been demonstrated in previous studies (Alden & Bieling, 1998; Miller, Berg, & Archer, 1983). These issues might have obscured any effect of condition on disclosure-related outcomes. Thus, we sought to examine whether the effect of condition was moderated by fear of receiving compassion, which could theoretically impact both the perceived risk of disclosure and the utility of disclosure.

As self-compassion is thought to be an especially effective intervention for individuals whose affiliative systems are underdeveloped, there is also reason to believe it may be most helpful for those who have avoided compassion not only due to fears of being judged, but due to fears of the impact of compassion itself. Fears of receiving compassion may prevent certain individuals from believing in the utility of distress disclosure. Their expectations might be that receiving compassion will make them feel worse rather than better. Practicing self-compassion to stimulate the affiliative system and experiencing its emotional benefits may lead these individuals to feel safer, less threatened, and thereby become more trusting of others, decreasing risk and facilitating disclosure. On a conscious level, practicing self-compassion might trigger the realization that compassion – whether the source be from themselves or from others – is a positive and helpful experience, encouraging disclosure to others in order to garner further compassion.

Individuals who fear receiving compassion tend to experience more distress than others (Cunha et al., 2015; Gilbert et al., 2012). Consistent with this, in our sample, we found that fears of receiving compassion were positively correlated with negative affect and shame at baseline. Thus, these individuals would be expected to benefit most from interventions aimed at regulating

affect. To this end, we found a significant interaction between fears of receiving compassion and condition on NA, where participants in the SE and control conditions with heightened fears of receiving compassion also experienced greater NA after the writing exercise. For participants in the SC condition, however, fears of receiving compassion were unrelated to post-writing NA, suggesting that writing about their past experience self-compassionately attenuated the negative impact of such fears. Furthermore, individuals who had stronger fears of receiving compassion would be expected to perceive more risk in disclosing their negative experiences to others. When we examined the interaction between fears of receiving compassion and condition on perceived risk of disclosure, we found that there was a trending positive association between perceived risk of disclosure and fears of receiving compassion in the self-esteem and control conditions, but this trend was absent in the self-compassion condition, suggesting that individuals who were highly fearful of receiving compassion were not more likely to perceive heightened risks of disclosing. Thus, it appears that the self-compassion intervention resulted in the best outcomes for people with heightened fears of receiving compassion. Although we did not assess for possible mechanisms underlying these associations, a number of plausible explanations exist. According to Gilbert's tripartite theory of affect regulation, individuals who fear receiving compassion are likely to have an under-active soothing system and may have received fewer chances to learn how to be compassionate from others or that they are deserving of compassion, thus making it difficult for them to be self-compassionate (Gilbert et al., 2011; Kelly & Dupasquier, 2016). Therefore, the unusual experience of being self-compassionate that was offered by the writing intervention might have enabled participants with heightened fears of receiving compassion to feel or recognize the benefits of practicing compassion for emotion regulation. After this experience, the risk of disclosing to others might have been reduced as they

may have felt more open to the experience of compassion not just from themselves, but from others as well.

Interestingly, the interaction between condition and fear of receiving compassion had no effect on our measures of actual disclosure. One possible explanation for this is that priming self-compassion does not facilitate distress disclosure. However, it is perhaps more likely that using objective disclosure measures such as word count or proportion of emotional words used is not the most accurate way of assessing degree of disclosure within the current context. Although word count provides a good estimate of the length of participants' communications, and proportion of emotion-laden words estimates to what degree participants discussed emotions, these measures provide very little information about the actual content of participants' letters. Rather, coding the letters for global level of intimacy might be more informative. Indeed, there are elements of intimacy that the LIWC measures would not capture. For example, word count does not distinguish between an admission such as "I do not feel comfortable talking to you about this" and "I could not get over this for a long time". Thus, coding responses for level of intimacy could lend us more information on the impact of self-compassion and perceived risk of disclosure in the future.

Implications and Applications of Findings

The observed impact of condition on perceived risk of disclosure for individuals with heightened fears of receiving compassion suggests that self-compassion interventions may be most useful for this group in particular. As fears of receiving compassion are related both to heightened psychological distress and decreased social support, these individuals may avoid seeking help for their difficulties due to a fear of negative consequences (Cunha et al., 2015;

Gilbert et al., 2012; Kelly & Dupasquier, 2016). The current results suggest that encouraging these individuals to become more self-compassionate could reduce the risks associated with opening up to close others. Further research is needed to determine whether this approach might encourage more outward help-seeking behavior, such as calling a friend for support or making an appointment to see a therapist. Although not supported in the current study, if future research demonstrates that self-compassion manipulations or interventions can in fact increase self-disclosure of distressing events, there could be valuable clinical applications. As in-session disclosure has been found to be a predictor of therapeutic success, encouraging self-concealing clients to share their feelings and experiences more openly through self-compassion-based interventions may contribute to their recovery (Sloan & Kahn, 2005). Additionally, encouraging individuals who are not yet in treatment to practice self-compassion could help facilitate gains once they enter into therapy.

Limitations and Future Directions

As an initial investigation into the impact of self-compassion on distress disclosure, the present study has a number of limitations. First, our sample was restricted to female undergraduate participants only. Thus, we have little information on the generalizability of the current findings to other populations. Future studies should seek to replicate findings with community and male participants as well as mixed-gender dyads. Furthermore, pre-selecting participants with heightened fears of receiving compassion or self-concealment could have helped to provide more insight into the specific impact of practicing self-compassion and the mechanisms through which it exerts its effects. Indeed, it is these individuals who are most in need of compassion and who, from the results of the present study, may benefit most.

Second, the current study's design put fairly strict constraints on the types of events participants could select both in order to ensure they were choosing comparable experiences and to minimize possible harm caused to participants by recalling such experiences. Although the instructions encouraged participants to select a negative experience that was personally meaningful to them, it is possible that experiences participants desired to conceal most from others or that involved more intense distress were excluded by our instructions, such as traumatic experiences or experiences of abuse. In fact, these are the types of experiences that individuals might benefit most from disclosing to loved ones, clinicians, or other professionals. Thus, future research should aim to investigate whether the present results generalize to more intense or threatening experiences such as trauma or abuse.

Third, the design of the current study placed participants in a highly contrived disclosure situation, which could have lowered ecological validity. The processes at play in this experimental context may not be generalizable to more naturalistic settings. Future studies should look at the relationship between trait self-compassion and daily disclosure of distressing events to verify whether those higher in self-compassion also tend to disclose more within the naturalistic context of their actual life.

Furthermore, as discussed above, it is possible that the writing intervention might have reduced some participants' distress to a degree that disclosure may no longer have been viewed as helpful or useful, thus decreasing the motivation to disclose. To circumvent this issue, a careful consideration of the timing of a self-compassion intervention must be made when designing future studies. The study also entailed a very brief intervention with no follow-up on its longer term impact. Thus, future intervention studies should aim to implement a longer-term self-compassion intervention such as compassionate imagery training, and examine its impact on

daily disclosure of negative events over a subsequent number of weeks. In this way, not only could the longer-term impact of the intervention be examined, but the issue of immediate distress reduction would be avoided by examining disclosure of new negative events occurring *after* the self-compassion intervention is implemented rather than having the intervention directly target a specific experience.

Conclusions

Results replicate previous findings that self-compassion strategies are effective at regulating negative affect. The present study is also the first to suggest that learning to be self-compassionate may be an important first step for reducing the perceived risk of self-disclosure for more reticent or self-concealing individuals. Further research is needed to investigate potential mechanisms for this effect, and to determine whether self-compassion interventions can also encourage them to seek out help when needed and actively share their experiences of distress with others as a form of healthy coping.

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Figures

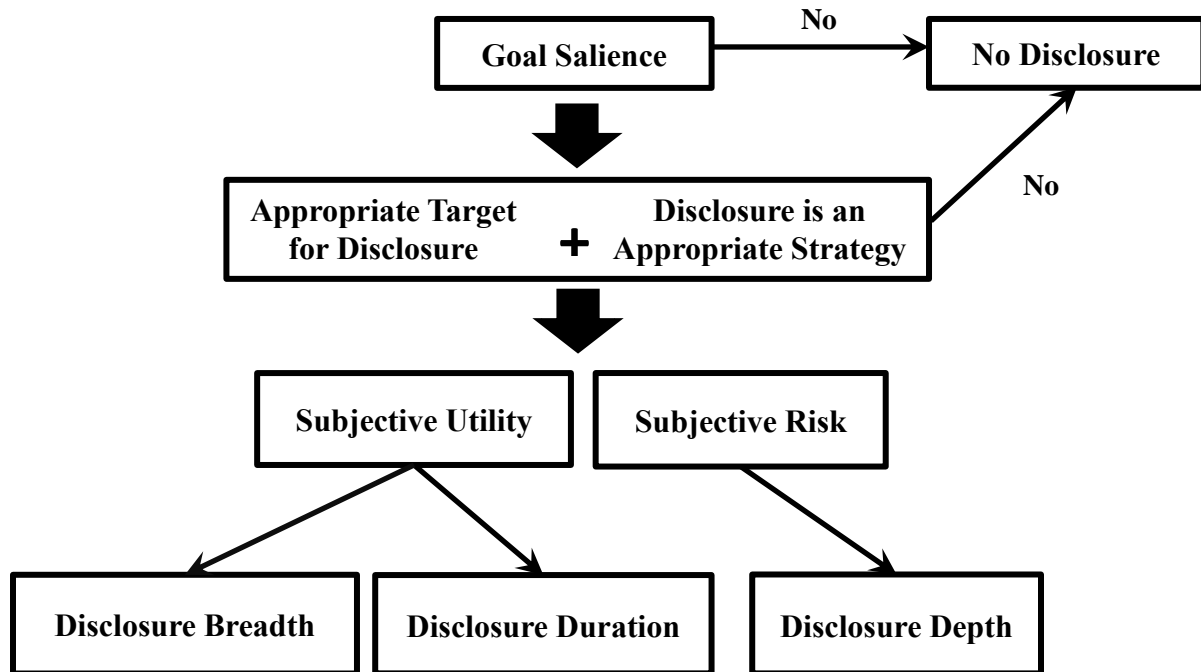


Figure 1. Omarzu's (2000) Disclosure Decision Model

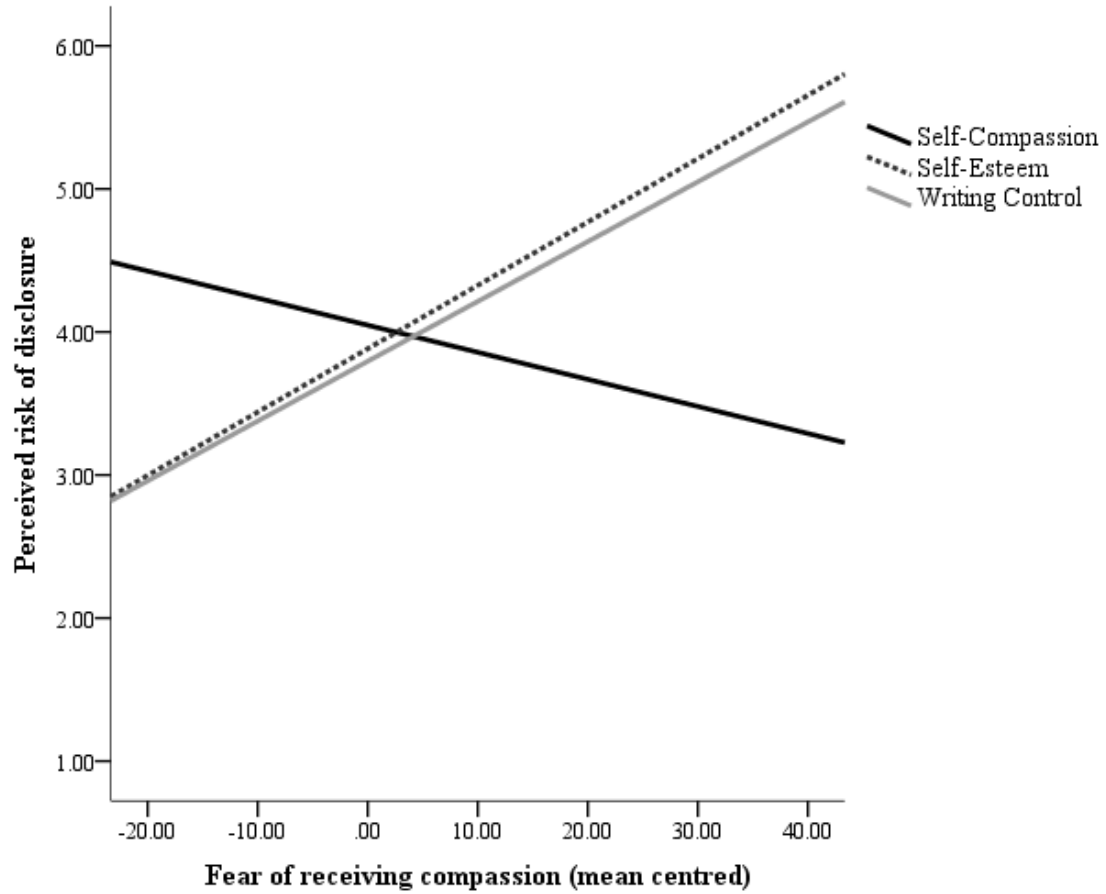


Figure 2. Within-condition simple slopes of fear of receiving compassion predicting perceived risk of disclosure

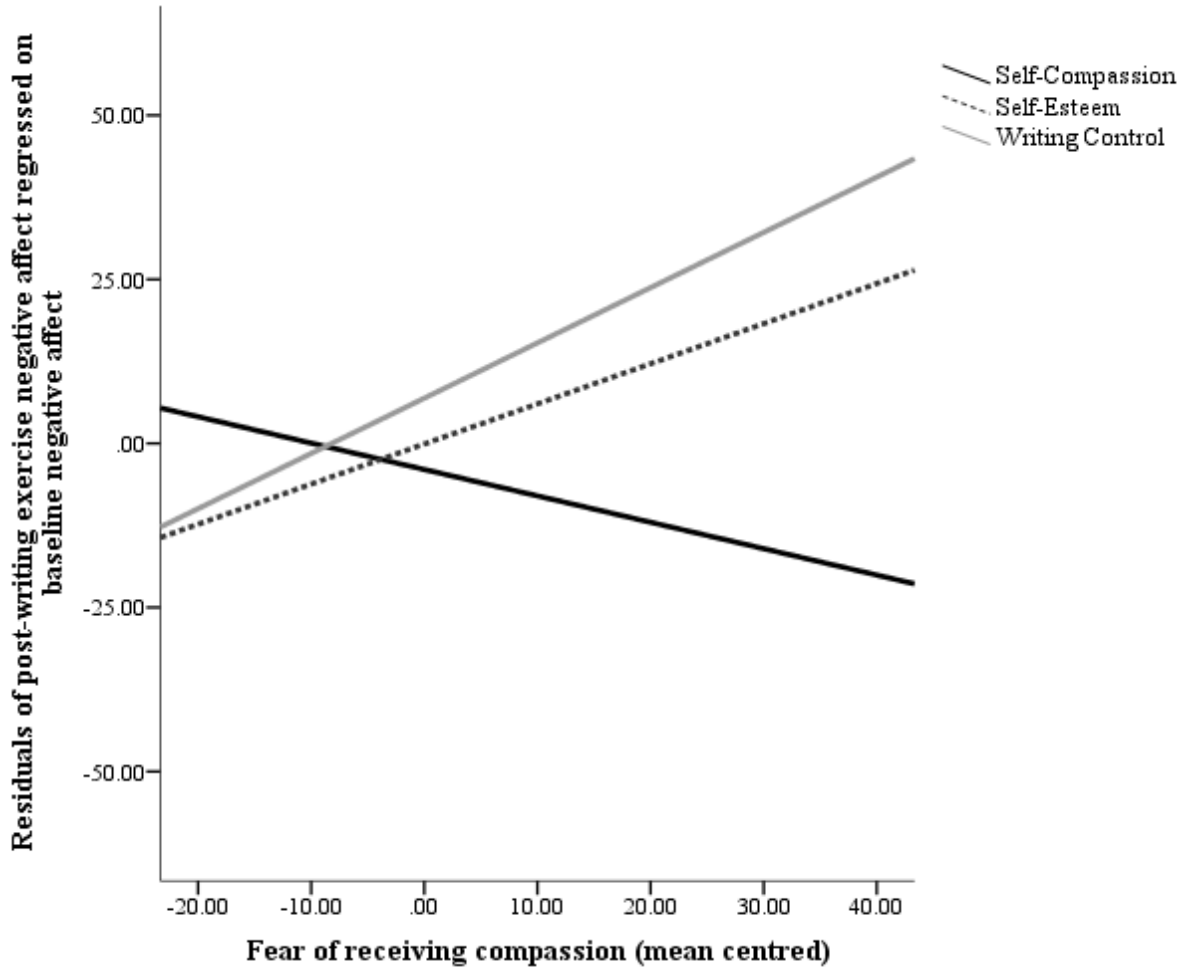


Figure 3. Within-condition simple slopes of fear of receiving compassion predicting negative affect post-writing exercise controlling for baseline negative affect

Tables

Table 1

Zero-order correlations between outcome and moderator variables

	1	2	3	4	5	6	7	8	9	10	11
1. Fear of receiving compassion	1										
2. State self-compassion (baseline)	-.350**	1									
3. State self-esteem (baseline)	-.606**	.754**	1								
4. Event-related negative self-feelings (baseline)	.224*	-.525**	-.436**	1							
5. NA (baseline)	.291**	-.468**	-.445**	.551**	1						
6. High-arousal PA (baseline)	-.058	.358**	.191†	-.153	-.135	1					
7. Low-arousal PA (baseline)	-.170	.398**	.303**	-.377**	-.446**	.563**	1				
8. State shame (baseline)	.421**	-.668**	-.686**	.477**	.584**	-.259*	-.463**	1			
9. Perceived risk of disclosure	.112	-.266*	-.191†	.223*	.230*	-.026	-.176	.364**	1		
10. Letter word count	.203†	-.098	-.082	.085	.016	-.068	.047	-.063	-.243*	1	
11. Proportion of positive affect words in letter	-.029	.001	.04	.068	.108	-.048	-.091	-.092	-.037	-.063	1
12. Proportion of negative affect words in letter	.031	-.194†	-.098	.148	.052	-.105	-.219*	.128	.233*	-.243*	-.175

† $p < .10$, * $p < .05$, ** $p < .01$

Table 2

Hierarchical linear regression predicting risk of disclosure and negative affect post-writing exercise controlling for baseline negative affect from interaction between fear of receiving compassion and condition

	Perceived risk of disclosure					Negative affect				
	<i>B</i>	<i>SE(B)</i>	β	ΔR^2	ΔF	<i>B</i>	<i>SE(B)</i>	β	ΔR^2	ΔF
Step 1				.013	1.062				.002	.207
Fear of receiving compassion	.063	.061	.112			.088	.194	.050		
Step 2				.008	.332				.063	2.727†
Fear of receiving compassion	.056	.062	.100			.150	.192	.085		
D1	-.614	1.445	-.054			4.702	4.433	.131		
D2	-1.227	1.507	-.104			10.782	4.622	.290*		
Step 3				.074	3.242**				.103	4.883*
Fear of receiving compassion	-.095	.085	-.168			-.402	.256	-.228		
D1	-.821	1.410	-.072			3.892	4.243	.109		
D2	-1.259	1.473	-.106			10.874	4.433	.293*		
D1x Fear of receiving compassion	.316	.152	-.270*			1.014	.456	.275*		
D2x Fear of receiving compassion	.304	.148	-.271*			1.244	.445	.354*		

Note: Contrasts were dummy coded, where D1: SC = 0, SE = 1, control = 0 and D2: SC = 0, SE = 0, control = 1

† $p < .10$, * $p < .05$, ** $p < .01$

Table 3

Within-condition simple slopes of fear of receiving compassion predicting perceiving risk of disclosure and negative affect post-writing exercise controlling for baseline negative affect

	Perceived risk of disclosure				Negative affect			
	<i>B</i>	<i>SE(B)</i>	β	<i>p-value</i>	<i>B</i>	<i>SE(B)</i>	β	<i>p-value</i>
SC	-.095	.092	-.195	.312	-.402	.292	-.256	.180
SE	.221	.114	.345	.062	.611	.334	.327	.078
WC	.209	.122	.330	.100	.842	.349	.442	.024