Mindfulness, Self-Compassion, Self-Efficacy, and Locus of Control: Examining Relationships between Four Distinct but Theoretically Related Concepts

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Abstract
The benefits of mindfulness have been well established in psychological literature. The theoretically related construct of self-compassion also offers a number of psychological benefits. Self-compassion consists of self-kindness, connection to humanity, and mindfulness. This study examined the relationship between trait mindfulness and various components of self-compassion. Correlations between mindfulness, self-compassion, and two other constructs related to positive psychological functioning, general self-efficacy, and internal locus of control, were also examined. The sample consisted of 151 graduate students of a university in the Pacific Northwest. Self-report scales were used to measure the constructs. All of the correlations between constructs were significant, and were medium to strong in size. Mindfulness under adverse conditions was correlated with trait mindfulness. When the state mindfulness component was removed from the self-compassion scale, self-compassion was still correlated with trait mindfulness. This study offers empirical support to the theoretical relationship between mindfulness and self-compassion. Given the strength of the relationship between these two constructs, mindfulness will likely be an important aspect of interventions aimed at increasing self-compassion.

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MINDFULNESS, SELF-COMPASSION, SELF-EFFICACY, AND LOCUS OF CONTROL:
EXAMINING RELATIONSHIPS BETWEEN FOUR DISTINCT BUT THEORETICALLY
RELATED CONCEPTS

A THESIS
SUBMITTED TO THE FACULTY
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OF
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Abstract

The benefits of mindfulness have been well established in psychological literature. The theoretically related construct of self-compassion also offers a number of psychological benefits. Self-compassion consists of self-kindness, connection to humanity, and mindfulness. This study examined the relationship between trait mindfulness and various components of self-compassion. Correlations between mindfulness, self-compassion, and two other constructs related to positive psychological functioning, general self-efficacy, and internal locus of control, were also examined. The sample consisted of 151 graduate students of a university in the Pacific Northwest. Self-report scales were used to measure the constructs. All of the correlations between constructs were significant, and were medium to strong in size. Mindfulness under adverse conditions was correlated with trait mindfulness. When the state mindfulness component was removed from the self-compassion scale, self-compassion was still correlated with trait mindfulness. This study offers empirical support to the theoretical relationship between mindfulness and self-compassion. Given the strength of the relationship between these two constructs, mindfulness will likely be an important aspect of interventions aimed at increasing self-compassion.

Keywords: mindfulness, self-compassion, self-efficacy, locus of control
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Introduction

The construct of mindfulness has received considerable attention in the psychological community over the past thirty years. Mindfulness involves maintaining one’s attention to the present moment in a nonjudgmental manner, and is a central component of some eastern spiritual traditions, particularly Buddhism. A state of mindfulness is traditionally cultivated through a regular mindfulness-meditation practice (Bishop et al., 2004).

A number of researchers have attempted to define and quantify the construct of mindfulness. Similarities and differences have emerged in these attempts. Mindfulness can be conceptualized as a mode or state (Bishop et al., 2004), a trait (Brown & Ryan, 2004), or a set of skills (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Some researchers view mindfulness as a unidimensional construct (Brown & Ryan), whereas others view it as consisting of multiple facets (Baer et al.). Bishop et al. outlined a two-component model of mindfulness consisting of the self-regulation of attention towards one’s immediate experience and a curious, open, accepting orientation towards one’s present moment. Baer et al. identified five factors of mindfulness: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. While definitions and quantifications of this construct may differ, the benefits of mindfulness have been well documented in a number of empirical studies. Mindfulness is positively correlated with positive psychological functioning, and is now a fundamental component of a number of psychological interventions (Baer, 2003; Dalrymple & Herbert, 2007; Kabat-Zinn, 1982, 1990; Linehan, 1993a, 1993b).

Another fundamental component of Buddhist tradition, but one that has received far less attention from the psychological community, is self-compassion. Neff (2003) conceptualizes self-compassion as (a) the act of extending kindness and understanding, as opposed to judgment
and criticism, to oneself in times of suffering; (b) perceiving one’s situation within the context of the larger human experience; and (c) being mindful of, but not over-identifying with, one’s uncomfortable thoughts and feelings. Self-compassion, as operationalized by Neff, is measured by the Self-Compassion Scale (SCS; 2003). Studies using the SCS have illustrated a positive correlation between self-compassion and mental health (Neff, 2004; Neff, Kirkpatrick, & Rude, 2007; Neff, Rude, & Kirkpatrick, 2007).

The constructs of mindfulness and self-compassion are theoretically related. Mindfulness is one of the three components of the SCS. Neff (2004) explains that mindfulness provides the appropriate amount of distance from our emotions, allowing us to be aware of and connected to our thoughts and feelings without over-identifying with them. It would seem difficult to be self-compassionate, that is, to be truly aware of and yet not carried away by one’s own pain, if one lacks some level of mindfulness. As previously mentioned, mindfulness is already a component of various psychological interventions. While self-compassion has been less integrated into clinical psychology, it is still present in some interventions. For example, Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982, 1990), while primarily focusing on mindfulness skills, does include meditations aimed at developing self-compassion.

Given the correlations between self-compassion and positive psychological functioning, the development of self-compassion may be an important consideration for the future of clinical psychology. Given that mindfulness involves the acceptance of difficult emotions in a non-judgmental manner, mindfulness practices will likely be a major part of a successful technique for developing self-compassion. Thus, a greater understanding of the relationship between mindfulness and self-compassion is necessary. The primary purpose of this study was to gain a better understanding of how these two constructs are related.
In addition to examining correlations between mindfulness and self-compassion, I also examined correlations between these constructs and two other related constructs that have important implications for positive psychological functioning: locus of control and general self-efficacy. Locus of control refers to the extent to which a person perceives occurrences in one’s life to be within his or her own control. It is characterized as being either internal or external. A person with an internal locus of control believes that reinforcement is based upon his or her own actions. In contrast, a person with an external locus of control believes that reinforcement is based upon outside influences such as chance, luck, or other, more powerful people.

Self-efficacy refers to the extent to which a person believes that he or she is capable of accomplishing a given task. As Bandura (1997) explains, a person’s self-efficacy will likely differ in various areas of their lives. However, for the purpose of this study, I examined general self-efficacy.

The constructs of locus of control and self-efficacy have been extensively researched for decades, thus my review of the literature in these areas will be brief. By contrast, self-compassion and mindfulness are newer concepts in the field of clinical psychology. Therefore, my review of the literature in these areas, as well as the theoretical relationship between the two, will be more extensively discussed.
Mindfulness

Meditation

As previously stated, mindfulness is a construct that involves maintaining one’s attention to the present moment in a nonjudgmental manner, and it is typically cultivated through a regular meditation practice (Bishop et al., 2004). Mindfulness meditation typically involves a participant sitting, either on the floor or in a chair. The person tries to maintain attention on a particular “anchor,” typically the sensations of his or her own breath. Inevitably, thoughts and feelings arise, which distract the person from the present reality. When the person notices that his or her attention has strayed, the person redirects his or her attention back to the breath. This process is repeated throughout the duration of the meditation. The person attempts to notice any thoughts and feelings that arise, without judging, elaborating, or acting on these thoughts and feelings (Kabat-Zinn, 1990; Segal, Williams, & Teasdale, 2002). The person performs this task with the idea of cultivating a more mindful state that can be beneficial outside of meditation. While meditation is typically considered the primary method through which mindfulness is cultivated, it must be noted that mindfulness is a naturally occurring phenomena. Research has indicated that there is significant variance within the general population (most of whom lack formal meditation training or experience) with regard to mindfulness (Brown & Ryan, 2003; Carlson & Brown, 2003; Levesque & Brown, 2003). Scores on some mindfulness measures have indicated significant, positive correlations with meditation experience, whereas others have not (Baer et al., 2006).

Proposed Definitions

Although mindfulness is often referred to in psychological literature, there is no one, agreed-upon definition. Thus, in order to gain a better understanding of the construct, I will
examine some of the different proposed definitions. As previously noted, Bishop et al. (2004),
proposed a two-component definition of mindfulness. The first component is self-regulation of
attention. This component involves a number of qualities: sustained attention, the ability to
maintain attention on an object for a prolonged period; switching, a flexibility of mind which
allows a person to direct one’s focus from one object to another; and an awareness and
observation of, as opposed to rumination about, the direct experiences of the mind and body.
The second component in this model is orientation to experience, which involves a commitment
to be curious about the activity of one’s mind and an acceptance of one’s moment-by-moment
experience. It should be noted that this two-component definition represents the consensus of a
number of leading researchers in the area of mindfulness. However, many critical commentaries
were published in response to the Bishop et al. definition, including a response by Brown and

Brown and Ryan (2004) differentiate between attention and awareness, with awareness
referring to one’s subjective experience of internal and external stimuli. Attention, by contrast,
refers to the focusing of one’s awareness. Brown and Ryan also discuss a contradiction within
Bishop et al’s (2004) definition: How can mindfulness involve deliberate attention on a
particular focus (such as one’s breath), and at the same time involve a nonjudgmental acceptance
of and curiosity towards whatever the mind does? They address this contradiction by
differentiating between two different types of meditation: concentration meditation, which
involves focused attention on an internal or external object; and awareness/insight attention,
which involves awareness of internal and external present experience. Brown and Ryan also
suggest that the second component of the Bishop et al. model, acceptance, is redundant, stating
that implicit within the act of maintaining attention and awareness towards one’s present
experience is the ability to be accepting of that experience. They explain that without acceptance of the experience, the person is likely to limit his or her awareness and redirect his or her attention from the experience. Brown and Ryan also de-emphasize meditation, explaining that mindfulness benefits may be particularly relevant outside of meditative practice.

As illustrated from the two different understandings of mindfulness summarized above, there are some fundamental differences in how mindfulness is conceptualized. These differences can create difficulties in quantifying mindfulness. Other problems in quantifying the construct include differing semantic understanding of self-report scale items and inaccurate self-ratings (Grossman, 2008). Despite these difficulties, a number of researchers have attempted to quantify mindfulness by constructing self-report scales. These scales, as well as their similarities and differences, are discussed below.

**Measures of Mindfulness**

The Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001) is a unidimensional 30-item self-report measure developed using a sample of individuals attending intensive meditation retreats. Items are scored using a 4-point Likert scale. It is primarily designed for use with experienced meditators. Buchheld, Grossman, and Walach questioned whether mindfulness as measured by their study is more state-like or trait-like, illustrating the difficulty in distinguishing one from the other. The authors reported internal consistencies of .93 and .94 for measurements taken before and after the meditation retreats. A 14-item short form was later designed, which can be used with subjects lacking meditation experience (Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006).

The Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) is a four-factor, 39-item self-report measure scored using a 5-point Likert scale. The four factors are
observing, describing, acting with awareness, and accepting without judgment. No total mindfulness score is provided. The KIMS is based primarily upon the dialectical behavior therapy (DBT; Linehan, 1993a) concept of mindfulness. That is, it measures mindfulness as a set of skills, and focuses more on behavior as opposed to internal experience. The authors reported internal consistencies of the four factors from .76 to .91.

The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) is a five-factor, 39-item self-report measure scored using a 5-point Likert scale. Four of the factors are the same as the factors of the KIMS. The fifth factor is a non-reactive attitude towards internal experience. Like the KIMS, it measures a person’s tendency to be mindful in daily life, and does not require meditation experience. Mindfulness within the context of this measure is seen as a state and a set of skills. Baer et al. reported internal consistency for the five facets ranging from .72 to .92.

The trait Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a unidimensional, 15-item self-report measure scored using a 6-point Likert scale. It measures day-to-day awareness and attentiveness. Mindfulness as measured by the MAAS is seen as a trait. The MAAS was used to measure trait mindfulness in this study. Brown and Ryan also developed a shorter, modified version of the MAAS that was designed to measure state mindfulness. However, for the purposes of this study, I was interested in measuring trait mindfulness. The authors reported internal consistencies of .86 and .87 for the MAAS using two samples. More detail on the trait MAAS is provided in the Method section of this paper.

**Related Constructs and Mindfulness Interventions**

Scores on mindfulness measures have been found to be significantly and positively correlated with emotional intelligence, openness to experience, and self-compassion (Baer et al., 2006). Results of the same study indicated significant, negative correlations with psychological
symptoms, neuroticism, thought suppression, difficulties in emotion regulation, alexithymia, 
dissociation, experimental avoidance, and absent-mindedness.

Having gained a level of acceptance in the field of psychology, mindfulness is now a 
fundamental component of a number of evidence-based psychological interventions. In 
acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999), mindfulness and 
acceptance strategies are taught with the aims of increasing psychological flexibility and 
positive, value-based behavior. Studies have yielded positive results for ACT in the treatment of 
obsessive-compulsive disorder (Twohig, Hayes, & Masuda, 2006), social anxiety disorder 
(Dalrymple & Herbert, 2007), depression and anxiety symptoms (Forman, Herbert, Moitra, 
Yeomans, & Geller, 2007), chromic pain (Wicksell, Melin, & Olsson, 2007), and a number of 
other psychological issues.

Dialectical behavior therapy (DBT; Linehan, 1993a, 1993b) is a group and individual 
skills-based intervention with a heavy mindfulness component. DBT has been successfully used 
primarily in the treatment of borderline personality disorder (McMain et al., 2009). Other 
mindfulness interventions include MBSR (Kabat-Zinn, 1982, 1990), which has been shown to 
decrease stress, anxiety, and depressive symptoms (Segal, Williams, & Teasdale, 2002), and 
mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), which is used 
primarily in the treatment of depression. Mindfulness practices are also used in relapse 

**Self-Compassion**

Like mindfulness, self-compassion is also a fundamental component of Buddhist 
philosophy. However, compared to mindfulness, self-compassion has received far less attention 
from the psychological community. Neff (2003) explains that compassion is allowing oneself to
be touched by the pain of another, while taking an open-minded, nonjudgmental attitude. Through this act, Neff explains, the person recognizes his or her shared humanity with the object of compassion. Self-compassion, Neff explains, consists of applying these concepts to ourselves.

Neff (2004) conceptualizes three main components of self-compassion. The first is extending kindness and understanding to the self when faced with pain or failure. This is in contrast with harsh judgment and criticism that a person might extend to oneself in times of adversity. The second component involves understanding one’s experience in context: seeing the experience as part of the overall human experience. Thus, the experience connects the person to the human race, instead of separating and isolating the person from it. The third component involves mindfulness. More specifically, it involves being mindfully aware of painful thoughts and feelings, as opposed to over-identifying with them.

**Contrasting Constructs**

Neff (2003) discriminates self-compassion from other, seemingly related constructs. For example, she explains the difference between self-compassion and self-indulgence. Self-compassion, as Neff explains, provides the emotional safety necessary to see oneself clearly and identify areas needing improvement. By contrast, self-indulgence involves letting oneself get away with anything, and not seeing oneself honestly. Neff also discusses self-pity, which involves rumination in one’s own problems, and promotes separateness from others, as opposed to connectedness.

Neff (2003) also differentiates self-compassion from self-esteem. While self-compassion involves people caring for themselves because they belong to the human race, self-esteem generally refers to one’s sense of self-worth, and is often related to how one compares to and is different from others. While sources of self-compassion are generally static (one will always be
a part of humanity), sources of self-esteem are less stable (one cannot always win at everything). Not surprisingly, interventions designed to increase self-esteem are rarely effective (Swaan, 1996). High self-esteem may also have negative consequences, such as narcissism, self-absorption, self-centeredness, and lack of empathy (Baumeister, Bushman, & Campbell, 2000).

**Self-Compassion Scale (SCS)**

The three components of self-compassion as defined by Neff (2003) are addressed by the six subscales of the SCS. Self-kindness is measured by the self-kindness and self-judgment subscales; the contextual component is measured by the common humanity and isolation subscales; and the mindfulness component is measured by the mindfulness and over-identification subscales. Three of these subscales (self-kindness, common humanity, and mindfulness) appear to be opposites of the other three (self-judgment, isolation, and over-identification). However, it should be noted that an overall model confirmatory factor analysis supported six separate but correlated factors. As Neff explained, self-kindness and self-judgment are not mutually exclusive. Nor are common humanity and isolation, or mindfulness and over-identification. The mere fact that a person does not judge himself does not mean that he will be kind to himself. Similarly, a person may not isolate himself in times of pain, but may also neglect to view the painful experience within the context of common humanity. And an absence of over-identification with negative thoughts and emotions does not automatically translate into mindful awareness. Neff also conducted a higher-order confirmatory factor analysis, which supported a single overarching factor of self-compassion.

**Empirical Support for Self-Compassion**

Studies using the SCS have illustrated a positive correlation between self-compassion and mental health (Neff, 2004). In a correlational study, Neff, Rude, & Kirkpatrick (2007) found
self-compassion to be related to happiness, optimism, curiosity, positive affect, and exploration. They also found that self-compassion can act as a buffer against anxiety during times of negative self-evaluation. They also found that participants who experienced an increase in self-compassion (through use of the Gestalt two-chair method) experienced an increase in social connectedness. The participants also experienced a decrease in self-criticism, depression, rumination, thought suppression, and anxiety. In a study examining motivation and procrastination in college undergraduates, Williams, Stark, and Foster (2008) found that students with higher levels of self-compassion reported lower levels of anxiety and less of a tendency to procrastinate.

Avoidance as a coping strategy appears to be negatively correlated with self-compassion. Neff, Hseih, and Dejitthirat, (2005) found that students with higher levels of self-compassion were less likely to use avoidance as a coping strategy when faced with academic failure. In a study of university students with posttraumatic stress symptoms, Thompson and Waltz (2008) found that subjects with greater self-compassion had fewer avoidance symptoms of posttraumatic stress. Thus, the current body of research suggests that self-compassion is positively correlated with positive emotions and negatively correlated with many negative emotions.

**Self-Efficacy**

The term *efficacy* refers to the ability to produce a desired result. The terms *Self-efficacy* and *perceived self-efficacy* are often used synonymously. Both are refer to a person’s belief that he or she is capable of performing successfully in a given area. Self-efficacy is one of the core aspects of Bandura’s social-cognitive theory (Bandura, 1977). A person with high self-efficacy believes that they are able to produce desired effects, and that they have some level of control
over their environment. Thus, self-efficacy, though different, is often seen as being related to locus of control. Self-efficacy and locus of control are two of the four components of the higher order construct of positive self-concept (Judge, Locke, & Durham, 1997), and the two constructs are often studied together (Koing, Debus, Hausler, Lendenmann, & Kleinmann, 2010; Iskender & Akin, 2010). Self-efficacy is sometimes perceived as domain specific (e.g., occupational, academic, and health self-efficacy), and sometimes viewed in a more general sense (Sherer & Maddux, 1982; Skinner Chapman, & Baltes, 1988). In this study, I examined general self-efficacy.

Studies have indicated that high self-efficacy is related to a number of positive physical, social, and psychological outcomes. In a study of 174 patients undergoing heart surgery, Schroder, Schwarzer, and Konertz (1988) found that higher levels of general self-efficacy were related to better recovery a week after surgery and better quality of life a year and a half after surgery. Schwarzer, Hahn, and Jerusalem (1993) found that East German refugees with higher general self-efficacy were healthier, more integrated socially, and more likely to be employed two years after being relocated than those with low self-efficacy. In a seven-year longitudinal study of 390 adolescents, Caprara, Gerbino, Paciello, Di Giunta, and Pastorelli (2010) found that emotional self-efficacy (the perceived ability to handle negative emotions and express positive emotions) was directly and significantly related to lower levels of depression and delinquency. In a study of 113 college students and individuals with social phobia, Thomasson and Psouni (2010) found that the severity of social anxiety and its related social impairment were greater in participants with low self-efficacy.
**Locus of Control**

The concept of locus of control originated as a central component of Rotter's social learning theory of personality (Rotter, 1954). Locus of control addresses the extent to which a person believes that reinforcement is dependent upon his or her own behavior or personal qualities. People with high perceived internal locus of control believe that they will receive reinforcement based upon their own actions. By contrast, people with high external locus of control believe that regardless of their own actions, their fate rests in the hands of luck, fate, or other, more powerful entities (Rotter, 1966). The construct of locus of control is often viewed in relation to specific domains. A person may perceive high internal locus of control in one area of life, such as social relationships, but high external locus of control in another area, such as career advancement. Within this study however, locus of control was measured as a general trait.

The large body of research into locus of control indicates that internal locus of control is related to positive functioning in a number of areas. Judge and Bono (2001) conducted a meta-analysis of 216 studies and found that internal locus of control was positively correlated with job satisfaction and job performance. In their meta-analysis of 97 studies examining the relationship between depression and locus of control, Benassi, Sweeney, and Dufour (1988) found a medium effect size of .31, indicating that higher levels of depression are related to a more externalized perception of control. In a study of 514 Turkish university students, Arslan, Dilmac, and Hamarta (2009) found that students with an internal locus of control had significantly lower trait anxiety scores than those with an internal locus of control. The researchers also found that participants with an internal locus of control were more likely to use problem-focused coping skills, in which the person attempts to change his or her relationship with the environment in
order to feel better. These results support the logical assumption that people who believe that they have the ability to change negative situations are more likely to try to do so.

**Relationships Among Constructs**

As previously stated, the constructs of mindfulness and self-compassion are theoretically related. There is already some empirical support for this relationship as well. Baer et al (2006) found positive correlations between the SCS and five different mindfulness questionnaires. The MAAS and the SCS were found to have a correlation of .36.

In a study with 390 participants from a university in Turkey, Iskender (2009) found that self-compassion (as measured by the SCS) had small, insignificant correlations with self-efficacy and locus of control as measured by subscales of the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1993). In this study, locus of control and self-efficacy were measured not as general constructs, but were viewed as they specifically apply to learning. I was interested to see if the results of my study, in which I measured more general traits of self-efficacy and locus of control, would differ.

Leary, Tate, Adams, Allen, and Hancock (2007) conducted a study designed to induce a self-compassionate state and examine how self-compassion moderates reactions to painful memories. The authors found that participants in an induced self-compassionate state were more likely to accept responsibility for their roles in negative events. This finding supports Neff’s (2003) declaration that self-compassion differs from self-pity. It also suggests that there may be a positive correlation between self-compassion and internal locus of control.

Locus of control and self-efficacy are also theoretically related, as they are two of the four components of the higher order construct of *positive self-concept* (Judge, Locke, & Durham, 1997). Judge, Erez, Bono, and Thoresen, (2002) conducted a meta-analysis and found high
correlations between general self-efficacy and internal locus of control. Furthermore, the researchers constructed a multitrait-multimethod matrix, and found poor discriminant validity between measures of locus of control and general self-efficacy (it should be noted that Judge et al. used different measures than those that I used in the present study), causing the researchers to ask if the two constructs (along with neuroticism and self-esteem) are indicators of a higher order construct. Thus I was interested to see if these two constructs would be correlated in the present study.

**Hypotheses**

Self-compassion and mindfulness are theoretically related constructs that are both associated with positive psychological functioning (Baer et al., 2006; Neff et al., 2007). While mindfulness has been extensively researched over the past 30 years, research into self-compassion and the role it plays in mental health is still relatively new. As previously stated, the primary purpose of this study was to gain a better understanding of how these two constructs are related. Two other constructs related to positive psychological functioning, general self-efficacy and locus of control, were also examined. To measure these four constructs, the following self-report measures were used in this study: the SCS to measure self-compassion, the MAAS to measure mindfulness, the Internal Control Index (ICI; Duttweiler, 1984) to measure locus of control, and the General Self-Efficacy Scale (GSE; Schwarzer & Jerusalem, 1995) to measure general self-efficacy. Given the positive correlations between these constructs and mental health, it is important to understand the extent to which the constructs are related. To gain this understanding, the following correlations were examined: (a) self-compassion and trait mindfulness, (b) trait mindfulness and mindfulness in times of adversity, (c) self-compassion without the mindfulness component and trait mindfulness, (d) self-compassion and internal locus
of control, (e) self compassion and general self-efficacy, (f) trait mindfulness and internal locus of control, (g) trait mindfulness and general self-efficacy, and (h) general self-efficacy and internal locus of control.

I hypothesized that a number of correlations, all in the positive direction, would be found. (a) I believed that given the theoretical relationship between mindfulness and self-compassion as discussed by Neff (2003), there would be a correlation between self-compassion and trait mindfulness. (b) I also hypothesized that I would find a correlation between mindfulness in times of adversity and trait mindfulness. I believed that a person who is mindful on a daily basis would likely be mindful when experiencing adversity. (c) I hypothesized that self-compassion without the mindfulness component would also correlate with trait mindfulness. My rationale was that a person’s tendency to be mindful in daily life would increase the tendency to be kind to oneself and to acknowledge one’s shared humanity, thus affecting the other two components of self-compassion. (d) I hypothesized that self-compassion would be correlated with internal locus of control and general self-efficacy. My rationale was that although general self-efficacy and locus of control are not theoretically tied to self-compassion to the extent that mindfulness is, self-compassion, general self-efficacy, and locus of control are all related to positive psychological functioning. In a similar study in Turkey, Iskender (2009) found that the SCS had small, insignificant correlations with internal locus of control and self-efficacy. However, Iskender’s study has limited generalizability to the current study, given that he measured self-efficacy and locus of control specifically as they relate to learning, and used different measures than the ICI and GSE. (e) I also hypothesized that trait mindfulness would be correlated with general self-efficacy and internal locus of control. My rationale was the same as my rationale for the previously stated hypothesis: Mindfulness, general self-efficacy, and internal locus of control
are all correlated with positive psychological functioning. (f) Finally, I hypothesized that general self-efficacy and internal locus of control would be correlated. My rationale was based upon the facts that both constructs are part of the higher order construct of positive self-concept (Judge, Locke, & Durham, 1997), and that previous research has shown the two constructs to be correlated (Judge, Erez, Bono, and Thoresen, 2002).

I also made a number of hypotheses with regard to the relative sizes of the correlations. (a) I believed that all of the various correlations between mindfulness and self-compassion would be higher than correlations between either of these two constructs and locus of control and general self-efficacy. My rationale was that strong theoretical and statistical relationships between mindfulness and self-compassion have already been illustrated. (b) I also hypothesized that the correlation between trait mindfulness and mindfulness under adversity would be the strongest out of all the correlations. (c) I believed that the correlation between total self-compassion and trait mindfulness would be higher than the correlation between self-compassion without the mindfulness component and trait mindfulness. It seems logical that removing the mindfulness component from self-compassion would decrease the size of the correlation between these two constructs. (d) Finally, I hypothesized that the correlation between general self-efficacy and locus of control would be stronger than correlations between these constructs and mindfulness or self-compassion. Given that general self-efficacy and locus of control are both components of positive self-concept, I believed that these constructs would be more related to each other than to self-compassion or mindfulness.
Method

Participants and Procedure

One hundred and fifty-one participants were recruited using a convenience sampling method. All participants were graduate students of a university located in the Pacific Northwest, and were invited to participate in the study by email (Appendix A). Being over the age of 18 and students of the university were the only exclusionary criteria. Demographic information was not collected. As compensation for participation, I offered participants the opportunity to enter (via email, Appendix B) a raffle for two $50 cash prizes. People who accepted the invitation to the study were directed to click a link that took them to the online study at the website www.surveymonkey.com. Participants were presented with the informed consent form (Appendix C), and were able to provide consent by clicking a button. The participants were then presented with the four self-report measures: SCS, MAAS, GSE, and ICI. After completing the measures, the participants were thanked and provided with an email address where they could register for the $50 cash-prize raffle.

Measures

Self-Compassion Scale

The SCS is a 26-item self-report measure that is scored on a 5-point Likert scale. Questions involve the theme of how the subject acts towards himself or herself in difficult times. Responses range from “almost never” to “almost always.” The SCS yields a total self-compassion score, as well as the following six subscale scores: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Subscale scores are calculated by taking the mean of each subscale total. The total self-compassion score is
calculated by reverse scoring the self-judgment, isolation, and over-identification items, totaling the subscale scores, and then calculating a total mean.

Neff (2003) reported an internal consistency of .92 for the SCS. She also reported that the measure was not significantly correlated with social desirability. Regarding relationships between the subscales, Neff’s research indicated the following: The positive subscales (self-kindness, common humanity, and mindfulness) were all found to be positively correlated with each other; the three negative subscales (self-judgment, isolation, and over-identification) were found to be positively correlated with each other; and all of the positive subscales were found to be negatively correlated with all of the negative subscales. Neff also found that SCS scores were negatively correlated with depression, $r = -.51, p < .01$, and anxiety, $r = .65, p < .01$. Furthermore, she reported that the SCS was positively correlated with life satisfaction, $r = .45, p < .01$. The SCS is include in Appendix D.

**Mindful Attention Awareness Scale**

The MAAS is a unidimensional, 15-item self-report measure scored using a 6-point Likert scale. It measures day-to-day awareness and attentiveness. Subjects are asked to indicate how often they have various experiences that are related to awareness, with responses ranging from “almost always” to “almost never.” The MAAS is scored by calculating the mean of the 15 items.

Brown & Ryan (2003) reported internal consistencies of .86 and .87 for two samples. They also reported modest, significant ($p < .0001$) positive correlations with the constructs of clarity (.37 to .46 for three samples) and attention (.45 to .50 for three samples). Furthermore, they reported significant ($p < .0001$) negative correlations with rumination (-.39, -.29, and -.38 for three samples), a construct that theoretically conflicts with mindfulness, and is often
associated with depression. Bear et al. (2006) reported significant \((p < .05)\) positive correlations between the MAAS and openness to experience and emotional intelligence. They reported significant \((p < .01)\) negative correlations between the MAAS and neuroticism, thought suppression, experiential avoidance, and a number of other constructs that theoretically conflict with mindfulness. Chadwick et al. (2008) reported a positive correlation of \(.61, p < .001\), between the MAAS and the Southampton Mindfulness Questionnaire, another measure of mindfulness. The MAAS is included in Appendix E.

**General Self-Efficacy Scale**

The GSE is a unidimensional, 10-item self-report scale scored using a four-point Likert scale. It measures a sense of perceived self-efficacy. The items are all positive statements that relate to how people cope with daily obstacles and how they adapt to stressful life events. Subjects are asked how true the items are for them, with responses ranging from “not at all true” to “exactly true.” The responses are totaled to yield a total score.

Luszczynska, Scholz, and Schwarzer (2005) reported internal consistency reliabilities of .94 and .89 for two groups of participants from Germany, .90 and .87 for two groups of participants from Poland, and .86 for a group of participants from South Korea. Scholz, Dona, Sud, and Schwarzer (2002) reported GSE internal consistency reliability of .87 for a sample of 1,594 participants from the U.S.A. The same study, which included 19,120 participants from 25 countries, indicated that the GSE measures a unidimensional construct which is universal across cultures. In a sample of 1,933 participants from Germany, Poland, and South Korea, Scholz et al. (2002) found the GSE to have significant correlations of -.39 with depressive symptoms, .24 with global quality of life, .19 with social functioning quality of life, .32 with emotional functioning quality of life, .22 with cognitive functioning quality of life, .27 with active coping,
.22 with information seeking, .33 with planning, and .32 with positive reframing (p values of .05 and .01). The GSE is included in Appendix F.

**Internal Control Index**

The ICI is a 28-item self-report scale scored using a five-point Likert scale. Items measure the extent to which a person endorses an internal or external locus of control. Responses range from “rarely, less than 10% of the time” to “usually, more than 90% of the time.” The questions are structured so that a person with a highly internal locus of control would answer half of the items at the “usually” end of the scale and half of the items at the “rarely” end of the scale. Thus, half of the items are reverse scored. The item responses are added together to yield one total score. A high score indicates a high internal locus of control.

Duttweiler (1984) reported internal consistency reliabilities of .84 and .85 for two samples of 684 and 133 participants respectively when constructing the scale. It should be noted that after the analysis, five of the items were reworded for the final version of the measure in order to strengthen locus of control direction or remove ambiguity. In a study of 85 university students, Jacobs (1993) reported an internal consistence reliability of .82. Duttweiler (1984) found the ICI to have a significant (p < .0001) moderate negative correlation of .385 with the Rotter I-E Scale (Mirels, 1970), a scale that measures external locus of control. An item analysis by Jacobs (1993) supported the unidimensional structure of the ICI. The ICI is presented in Appendix F.

**Analysis**

This study was intended to examine ten specific correlations between the following variables: (a) self-compassion, as measured by the SCS; (b) mindfulness during times of pain and adversity, as measured by the mindfulness subscale (SCSM) of the SCS; (c) mindfulness...
during times of pain and adversity, as measured by subtracting the overidentification subscale from the mindfulness subscale (SCSMO) of the SCS; (d) self-compassion without the mindfulness components, as measured by subtracting the SCSM and SCSMO from the SCS (SCS-SCSM and SCS-SCSMO); trait mindfulness, as measured by the MAAS; locus of control, as measured by the ICI; and general self-efficacy, as measured by the GSE. Using these measures, the following correlations were analyzed: (a) SCS and MAAS, (b) SCSM and MAAS, (c) SCSMO and MAAS, (d) SCS-SCSM and MAAS, (e) SCS-SCSMO and MAAS, (f) SCS and ICI, (g) SCS and GSE, (h) MAAS and ICI, (i) MAAS and GSE, and (j) GSE and ICI. I hypothesized that all of the correlations would be positive and significant.

I also hypothesized that certain correlations would be larger than others. (a) I hypothesized that all of the correlations involving the MAAS and any variation of the SCS would be higher than correlations between either of these two measures and the ICI or GSE. (b) I expected that the correlations between the MAAS and the two measures of mindfulness under adversity, the SCSM and the SCSMO, would be among the strongest correlations. (c) I hypothesized that the correlation between the SCS and the MAAS would be higher than the following two correlations: the SCS-SCSM and the MAAS, the SCS-SCSMO and the MAAS. (d) I hypothesized that the correlation between the ICI and the GSE would be the strongest of the correlations that involved either of these measures.
Results

This study was intended to examine ten specific correlations between the following variables: SCS, SCSM, SCSMO, SCS-SCSM, SCS-SCSMO, MAAS, GSE, and ICI. The data was collected over a two-month period. One hundred and fifty-one participants began taking the survey, but not all participants completed all of the surveys. I utilized pairwise deletion, resulting in different sample sizes for the different correlations. Sample sizes for the four measures ranged from 110 to 126. Sample sizes, means, standard deviations, skewness statistics and kurtosis statistics are presented in Table 1.

Table 1
Sample sizes, means, standard deviations, skewness, and kurtosis

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Skewness Standard Error</th>
<th>Kurtosis</th>
<th>Kurtosis Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SCS</td>
<td>110</td>
<td>3.163</td>
<td>.664</td>
<td>-.078</td>
<td>.230</td>
<td>-.436</td>
<td>.457</td>
</tr>
<tr>
<td>2. SCSM</td>
<td>125</td>
<td>3.508</td>
<td>.711</td>
<td>.036</td>
<td>.217</td>
<td>-.700</td>
<td>.480</td>
</tr>
<tr>
<td>3. SCSMO</td>
<td>122</td>
<td>3.316</td>
<td>.717</td>
<td>-.085</td>
<td>.219</td>
<td>-.486</td>
<td>.435</td>
</tr>
<tr>
<td>4. SCS - SCSM</td>
<td>110</td>
<td>3.103</td>
<td>.683</td>
<td>-.096</td>
<td>.230</td>
<td>-.360</td>
<td>.457</td>
</tr>
<tr>
<td>5. SCS - SCSMO</td>
<td>110</td>
<td>3.098</td>
<td>.684</td>
<td>.001</td>
<td>.230</td>
<td>-.385</td>
<td>.457</td>
</tr>
<tr>
<td>6. MAAS</td>
<td>124</td>
<td>3.689</td>
<td>.777</td>
<td>-.197</td>
<td>.217</td>
<td>.218</td>
<td>.431</td>
</tr>
<tr>
<td>7. GSE</td>
<td>126</td>
<td>32.889</td>
<td>3.620</td>
<td>-.136</td>
<td>.216</td>
<td>.088</td>
<td>.428</td>
</tr>
<tr>
<td>8. ICI</td>
<td>116</td>
<td>103.647</td>
<td>12.362</td>
<td>-.482</td>
<td>.225</td>
<td>1.028</td>
<td>.446</td>
</tr>
</tbody>
</table>

Normality

I assessed for univariate normality using both graphical and statistical methods. Histograms and Q-Q plots are provided in Appendices H and I, respectively. Visual inspections of these graphs suggested somewhat, but not perfectly normal distributions. Statistically, I considered any distribution to be non-normal if the absolute value of the skewness statistic was greater than twice the value of the standard error of the skewness statistic. Similarly, I considered any distribution to be non-normal if the absolute value of the kurtosis statistic was greater than twice the value of the standard error of the kurtosis statistic. Based upon these
criteria, I found one variable, the ICI, to have a non-normal distribution. The ICI distribution was both negatively skewed and leptokurtic to the point of being non-normal.

I assessed for bivariate normality by examining scatterplots (Appendix J) of all targeted correlations. The scatterplots all represented linear relationships between variables, indicating bivariate normality. No curvilinear relationships between variables were found.

**Independence**

The assumption of independence states the cases represent a random sample from the population and scores from one case are independent from scores on another case. I used convenience sampling for this study, as opposed to random sampling, thus the independence assumption was violated, raising issues of generalizability to the greater population.

**Internal Consistency Reliability**

As reported in the method section, all four of the measures used in this study had reported internal consistencies ranging from .82 to .92. Internal consistency correlations for the current study ranged from .72 to .93. The complete internal consistency correlations are provided in Table 2.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SCS</td>
<td>.93</td>
</tr>
<tr>
<td>2. SCSM</td>
<td>.72</td>
</tr>
<tr>
<td>3. SCSMO</td>
<td>.82</td>
</tr>
<tr>
<td>4. SCS - SCSM</td>
<td>.92</td>
</tr>
<tr>
<td>5. SCS – SCSMO</td>
<td>.90</td>
</tr>
<tr>
<td>6. MAAS</td>
<td>.89</td>
</tr>
<tr>
<td>7. GSE</td>
<td>.84</td>
</tr>
<tr>
<td>8. ICI</td>
<td>.86</td>
</tr>
</tbody>
</table>
Correlations

Pearson Product Moment Correlations were calculated between all variables. I calculated confidence intervals for all correlations targeted for the current study. The Bonferroni adjustment was used to decrease the chance of Type I error by accounting for the ten correlations that were examined. The resulting significance value was $p < .005$. I also calculated the Bonferroni Adjustment to account for all 28 correlations yielded by this study. The resulting significance value in this case was $p < .002$. As illustrated in Table 3, all of the correlations, including those not intended for analysis in this study, were found to be positive and significant based upon this more stringent significance value. Furthermore, all correlations were in the size range of medium to large (Cohen, 1992).

**Self-Compassion and Mindfulness.**

The results indicated a large correlation, $r(106) = .58$, CI 95% [.44, .70], between the SCS and the MAAS, indicating a sizeable correlation between self-compassion and trait mindfulness. The MAAS and the SCSM were also strongly related, $r(120) = .54$, CI 95% [.40, .67], as were the MAAS and the SCSMO, $r(117) = .61$, CI 95% [.49, .72]. These two correlations suggest that (a) mindfulness in difficult or painful situations is related to general trait mindfulness and (b) the MAAS and SCSM measure constructs that are related, but somewhat distinct.

When the SCSM was removed from the SCS total, there was still a strong correlation between the SCS and the MAAS, $r(106) = .56$, CI 95% [.42, .68]. A large, but slightly smaller correlation was found between the MAAS and the SCS when both the mindfulness and overidentification subscales (SCSMO) were removed from the SCS, $r(106) = .52$, CI 95% [.37, .65]. These findings indicate that the correlations between self-compassion and trait mindfulness cannot be completely accounted for by the presence of the mindfulness and overidentification subscales.
subscales of the SCS. The implication is that the presence of trait mindfulness is in some way related to self-kindness and a sense of common humanity.

**Locus of Control and General Self-Efficacy.**

The results indicated a medium sized correlation between the SCS and the ICI, $r(101) = .44$, CI 95% [.27, .59], indicating that self-compassion is separate but related to locus of control. Participants with higher self-compassion were more likely to maintain an internal locus of control. A larger correlation was found between the SCS and the GSE, $r(108) = .63$, CI 95% [.50, .74], indicating that participants with greater levels of self-compassion also perceive greater levels of self-efficacy. The MAAS had medium correlations with the ICI, $r(112) = .48$, CI 95% [.33, .62], and with the GSE, $r(121) = .49$, CI 95% [.35, .62], indicating that trait mindfulness is related to, but different from self-efficacy and locus of control. The ICI was strongly correlated with the GSE, $r(114) = .54$, CI 95% [.40, .67].

Table 3
**Correlations among variables. (Bold font indicates correlations targeted in this study.)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SCS</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. SCSM</td>
<td>* .816</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. SCSMO</td>
<td>* .894</td>
<td>* .882</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SCS - SCSM</td>
<td>* .994</td>
<td>* .747</td>
<td>* .858</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SCS - SCSMO</td>
<td>* .977</td>
<td>* .722</td>
<td>* .778</td>
<td>* .985</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. MAAS</td>
<td>* .577</td>
<td>* .538</td>
<td>* .609</td>
<td>* .560</td>
<td>* .521</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. GSE</td>
<td>* .625</td>
<td>* .589</td>
<td>* .639</td>
<td>* .602</td>
<td>* .560</td>
<td>* .485</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>8. ICI</td>
<td>* .444</td>
<td>* .412</td>
<td>* .514</td>
<td>* .425</td>
<td>* .374</td>
<td>* .477</td>
<td>* .536</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .002
Discussion

This study was designed to examine correlations between four constructs: self-compassion, mindfulness, general self-efficacy, and locus of control. I posed two main types of hypotheses: hypotheses regarding what significant correlations would be found, and hypotheses regarding the relative sizes of the correlations. All of my hypotheses regarding the existence of significant correlations between the constructs were confirmed. Some of my hypotheses regarding the relative sizes of the correlations were confirmed, while others were not.

**Significant Correlation Hypotheses**

**Self-Compassion and Mindfulness.**

A large correlation was found between self-compassion and trait mindfulness. This finding should not be surprising, given that mindfulness is theoretically related to self-compassion (Neff, 2003). However, mindful awareness of one’s emotions during times of adversity is different than mindfulness as a trait, thus this correlation can be seen as an important finding. While these two types of mindfulness are not the same, they were found to be strongly correlated with each other in the present study. One logical assumption is that a person with a high level of trait mindfulness is likely, but not guaranteed, to exhibit mindful awareness of his emotions during times of pain. One interesting question, however, may be, “does such a person begin with mindfulness as a trait, which is exhibited as a state in specific instances, or does someone develop mindfulness skills until it becomes more trait-like?”

Trait mindfulness and self-compassion are related, both theoretically (Neff, 2003) and empirically, as illustrated in the present study. However, this study also illustrated that the correlation between these two constructs cannot completely be accounted for by the mindfulness component of self-compassion. When the mindfulness component was removed from the SCS, a
strong correlation was still found to exist between self-compassion and trait mindfulness. The other two components of self-compassion are attitude towards self (self-kindness vs. self-judgment) and understanding of context (understanding the painful experience as part of the overall human experience vs. self-isolation). The results of this study indicate that there is a relationship between one or both of these constructs, and trait mindfulness. It may be that trait mindfulness, and a tendency to not be overcome by one’s emotions, aids in the facilitation of self-kindness. It may also be that a lack of trait mindfulness, and a tendency to over-identify with one’s emotions blocks or impedes a person’s ability to be kind to oneself. Similar hypotheses may be appropriate for possible correlations between trait mindfulness and understanding of context. A more mindful person may be able to see the simple truth, that the painful experience is indeed a normal part of the human experience. And a lack of trait mindfulness may impede such a discovery.

**Locus of Control and General Self-Efficacy.**

A medium-sized correlation was found to exist between self-compassion and internal locus of control. The results indicated that these two constructs are distinct but related. This correlation is not surprising, given that both of these constructs are related to positive psychological functioning. How exactly these two constructs are related cannot be gleaned from the current study. It may be that one of these constructs acts as a causal factor for the other, or they may both be affected by other constructs not examined in the current study.

A large correlation was found between self-compassion and general self-efficacy. Again, both of these constructs are related to positive mental health, thus a significant correlation is not surprising. While the specific explanations for this correlation cannot be gleaned from this study, the self-kindness component of self-compassion may play a role. A person who practices
self-kindness instead of self-judgment will be less likely to tell himself things such as, “You’re not good enough, why try, you won’t succeed.” Also, a person who sees adversity in the context of the human experience may be more likely to understand that she is just as capable as any other person, and that difficulty does not imply lack of ability. And finally, a person who is mindfully aware of her feelings and not over-identified with them can be more clear and objective about her capabilities.

I found trait mindfulness and internal locus of control to have a medium-sized correlation. It may be that a more mindful person is likely to focus attention and effort on areas where he does in fact have some level of control. Or, perhaps a mindful person is less likely to ruminate on and be carried away by thoughts of lacking control. It could also be that people who endorse a more internal locus of control are more likely to perceive some level of control over how much they allow their emotions to affect and drive them.

There was a medium-sized correlation between trait mindfulness and general self-efficacy. Again, this correlation makes sense given that both constructs are associated with positive psychological functioning. It may be that a more mindful person is less likely to be carried-away by the irrational or pessimistic thinking that can contribute to a lack of self-efficacy.

General self-efficacy and internal locus of control were strongly correlated in this study. As previously mentioned, both constructs are part of the higher order construct of positive self-concept, and thus their correlation is not surprising. Furthermore, a correlation between these constructs may be more prevalent in the current sample. People of higher educational levels have already demonstrated efficacy in getting to such a level. Such people are also likely to
perceive greater internal locus of control, given the opportunities and power that education often affords.

**Relative-Size of Correlation Hypotheses**

I also made a number of hypotheses related to the relative sizes of the correlations. First, I hypothesized that the correlations between trait mindfulness and self-compassion would be larger than correlations involving either of these two constructs and general self-efficacy or internal locus of control. This hypothesis was disconfirmed. While the correlation between trait mindfulness and self-compassion was larger than most of the other correlations involved in this hypothesis, the correlation between self-compassion and general self-efficacy was larger, suggesting a strong relationship between self-compassion and general self-efficacy. I found it interesting that while a stronger theoretical relationship exists between self-compassion and trait mindfulness, a greater empirical relationship in this case was found between self-compassion and general self-efficacy. It is not surprising, however, that a person high in self-compassion might be more likely than others to believe that he has the ability to accomplish a given task. Such a person, through the execution of self-kindness, likely offers himself the necessary emotional support to build and maintain self-efficacy.

I also hypothesized that the correlations between trait mindfulness and mindfulness under adversity would be among the strongest correlations found. This hypothesis was moderately confirmed, although the following correlations were higher than those between trait mindfulness and mindfulness under adversity: self-compassion and trait mindfulness, and self-compassion and general self-efficacy. This finding reinforces the idea that while trait mindfulness and state mindfulness are strongly related, they are in fact two, distinct constructs.
I hypothesized that the correlation between self-compassion and trait mindfulness would be stronger than the correlation between trait mindfulness and self-compassion with the mindfulness component removed. This hypothesis was confirmed, indicating that part of the correlation between self-compassion and trait mindfulness is accounted for by the *mindfulness under adversity* component of self-compassion.

Finally, I hypothesized that the correlation between internal locus of control and general self-efficacy would be stronger than any of the other correlations that involved either of these two constructs. This hypothesis was disconfirmed. However, there was only one correlation (self-compassion and general self-efficacy) that violated this hypothesis, providing more empirical support to the strong theoretical relationship between locus of control and general self-efficacy.

**Limitations**

There are a number of limitations of the current study that need to be addressed. One such limitation is the use of self-report measures. Given the private, internal nature of psychological constructs, researchers often have little choice but to rely upon self-report measures. However, such measures are subject to a number of potential problems. Participants may have a difficult time giving honest, objective answers to some of the questions. For example, a person may lack the mindful awareness to realize how uncompassionate he is towards himself. In such a case, the participant might incorrectly endorse items indicating high levels of mindfulness and self-compassion. The question then becomes, “To what extent can a person lacking mindfulness, be aware that he is lacking mindfulness?” Some people may lack mindful awareness, but still have the meta-cognitive capacity to realize such a deficit. Others however, may not. Also, although Neff (2003) reported that her SCS was not confounded by social
desirability, this possibility should still be considered with the SCS and the other measures, particularly with the current sample. Graduate students may feel internal pressure to believe and report that they do in fact have the positive qualities that this study attempted to measure.

One other issue regarding the measures themselves relates to two of the questionnaires: the MAAS and the GSE. All of the MAAS items are posed in the negative direction. All of the GSE items are posed in the positive direction. Neither of these measures have any items that are reverse-scored. Thus, the possibility of a participant getting an extremely high or low score based on an all high or all low response set is introduced.

Another limitation of this study is the sample itself. Convenience sampling, as opposed to random sampling, was used. All participants were graduate students, and all of them attended one particular university in the Pacific Northwest. Thus the independence assumption was violated, range restriction is an issue, and any generalization of these results to other populations should be done with extreme caution. It may be that these constructs have higher or lower correlations within the population of graduate students than with other populations. The region of the country may also have an impact. Activities such as meditation and yoga, which may increase mindfulness and self-compassion, are more popular and accepted in this region than in many others.

Another limitation relates to the issue of normality. As stated in the Results section, the results of the ICI yielded a non-normal distribution. This distribution was sufficiently leptokurtic and negatively skewed to the point of being non-normal. Thus, I cannot be confident that any of the correlations involving the ICI are valid.
Conclusion

Through this study, I sought to clarify the relationships between four distinct constructs that all have important implications for positive psychological functioning: self-compassion, mindfulness, general self-efficacy, and internal locus of control. Medium-to-strong correlations were found among all of the constructs.

Causal relationships between these constructs cannot be gleaned from the current study, and this is one area that researchers should pursue in the future. Given the correlations between these constructs, it would be interesting to learn if an increase in one construct yields an increase in the others. For example, would an increase in mindfulness and self-compassion yielded through a psychological intervention bring about an increase in internal locus of control and general self-efficacy?

As previously stated, there are a number of positive benefits to self-compassion. Thus, increasing self-compassion in patients may become a more common goal of therapists as we gain a greater understanding of this construct. Given the strong relationship between mindfulness and self-compassion illustrated by this study, mindfulness-based interventions, particularly those that also emphasize self-compassionate states and thereby increase self-kindness, connection to humanity, and mindful awareness of uncomfortable emotions, may be useful interventions for patients who are suffering from a lack of self-compassion.
References


doi: 10.1093/clippsy/bpg015


doi: 10.1177/1073191104268029

doi: 10.1111/1467-8721.00053

doi: 10.1037/0021-843X.97.3.357


doi: 10.1027//1015-5759.18.3.242


Appendix A

Email Invitation

Subject Heading: Request for participation in research study

Hello,

My name is Leland St. Charles. I am a Master’s candidate in the professional psychology department of Pacific University in Hillsboro, Oregon. I would like to invite you to participate in a study I am conducting in which I am investigating relationships between four distinct but theoretically related constructs: mindfulness, self-compassion, locus of control, and self-efficacy. Mindfulness involves maintaining one’s attention to the present moment in a nonjudgmental manner. Self-compassion involves extending kindness and understanding to oneself during times of pain or adversity. Locus of control refers to the extent to which a person perceives occurrences in one’s life to be within his or her own control. Self-efficacy refers to the extent to which a person believes that he or she is capable of accomplishing a given task. The results of this study may help to clarify the relationships between these four theoretically related ideas.

Participation in the study involves filling out four questionnaires (a total of 79 items). You must be 18 years old or older, and an undergraduate or graduate student at Pacific University to participate. Your participation should take no longer than 25 minutes. As a token of appreciation for participating in my study, at the end of the study you will be directed to send your name and contact information to an email address for entry into a raffle for two $50 cash prizes. Participation in the raffle is optional.

If you would like to participate in this study, please click the following link to begin: LINK

Thank you for your consideration,

Leland St. Charles
M.S. Candidate
Pacific University
School of Professional Psychology
Appendix B

Statement Appearing After the Final Survey

Thank you for participating in this study! If you would like your name to be entered into a raffle for one of two $50 cash prizes to be drawn upon the completion of data collection, please send an email containing your name and email address to selfcompassionstudy@yahoo.com. Also, if you would like to receive a summary of the results after the study is completed, please send a request to the same email address, selfcompassionstudy@yahoo.com.

Sincerely,

Leland St. Charles
M.S. Candidate
Pacific University
School of Professional Psychology
Appendix C

Informed Consent

1. Study Title:

Mindfulness, self-compassion, self-efficacy, and locus of control: examining relationships between four distinct but theoretically related concepts.

2. Study Personnel:

Faculty Advisor
Dr. James Lane
Pacific University
School of Professional Psychology
lanejb@pacificu.edu
503-352-7323

Principal Investigator
Leland St. Charles
Pacific University
School of Professional Psychology
stch6132@pacificu.edu
415-710-6141

3. Study Location and Dates:

Study Location: www.surveymonkey.com
Study Dates: February through April of 2010

4. Study Invitation and Purpose:

You are invited to participate in a study that examines the relationship between mindfulness, self-compassion, locus of control, and self-efficacy. Mindfulness involves maintaining one’s
attention to the present moment in a nonjudgmental manner. Self-compassion involves extending kindness and understanding to oneself during times of pain or adversity. Locus of control refers to the extent to which a person perceives occurrences in one’s life to be within his or her own control. Self-efficacy refers to the extent to which a person believes that he or she is capable of accomplishing a given task. The results of this study may help to clarify the relationship between these four distinct but theoretically related ideas.

5. Study Materials and Procedures:

As a participant of this study, you will be asked to complete four surveys. In total, participating in this survey should take less than 25 minutes. Please answer all questions. While you are participating in this study, you may navigate back to previous sections and change your answers. However, the questions must all be answered in one session. Once you exit this study, you will not be able to re-enter the study and change your answers.

6. Participant Characteristics and Exclusionary Criteria:

In order to participate you must be 18 years old or older, an undergraduate or graduate student at Pacific University, and living in the United States.

7. Anticipated Risks and Steps Taken to Avoid Them:

This study poses minimal risks to participants. There will be no physical, economic, or social risks associated with this study. There may, however, be minor emotional risks involved with the study. Reflecting on issues regarding mindfulness, self-compassion, locus of control, and self-efficacy may be difficult for some people. If you begin to experience emotional discomfort while participating in this survey, you may take a break or terminate your participation at any time.

8. Anticipated Direct Benefits to Participants:

There are no direct benefits to the participants of this study.
9. Participant Payment:

As a token of appreciation for participating in my study, at the end of the survey you will be directed to send your name and contact information to an email address for entry into a raffle for two $50 cash prizes. Participation in the raffle is optional.

10. Medical Care and Compensation in the Event of Accidental Injury:

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving complete mental health care as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

11. Adverse Event Reporting Plan:

If you experience an adverse emotional effect due to participation in this survey, you may contact the Primary Investigator (indicated above on this form), who can refer you to an appropriate mental health agency for assistance. In the case of a minor adverse reaction reasonably attributable to participation in the study (e.g. minor emotional distress), the investigators will notify the IRB by the next normal working day. In the case of more serious adverse events that occur during or for a reasonable period following the study (e.g. more severe emotional distress), the investigators will notify the IRB within 24 hours.

12. Promise of Privacy:

Participation will be anonymous. No personal information (name, contact information) will be collected. No information other than your responses will be collected. For example, information such as IP addresses and time stamps will not be collected. The website www.surveymonkey.com will be used to house the study data. Surveymonkey uses multiple levels of security, and employs a third party to conduct daily audits of their security. Once all of the data is collected, the primary investigator will download the data, and keep it in a password-protected file on a password-protected hard drive. No one except for the primary investigator and
faculty advisor will have access to the data. Despite these safeguards, it must be noted that there are inherent risks involved with transmitting data over the Internet, and your privacy cannot be guaranteed.

13. Voluntary Nature of the Study:

Your decision whether or not to participate will not affect your current or future relations with Pacific University. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. If you withdraw early, you will not be eligible for the cash prize raffle.

14. Contacts and Questions:

The researchers will be happy to answer any questions you may have at any time during the course of the study. Complete contact information for the researchers is noted on this form. If the study in question is a student project, please contact the faculty advisor. If you are not satisfied with the answers you receive, please call Pacific University’s Institutional Review Board, at (503) 352 – 1478 to discuss your questions or concerns further. All concerns and questions will be kept in confidence. You may print out a copy of this form for your records.

*I have read and understand the above. All my questions have been answered. I am 18 years of age or over. By clicking this box, I agree to participate in the study. I have been offered a copy of this form to keep for my records.
Appendix D

Self-Compassion Scale (Neff, 2003)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

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

<table>
<thead>
<tr>
<th>Almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Almost always</th>
<th>5</th>
</tr>
</thead>
</table>

_____ 1. I’m disapproving and judgmental about my own flaws and inadequacies.
_____ 2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.
_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
_____ 5. I try to be loving towards myself when I’m feeling emotional pain.
_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
_____ 7. When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am.
_____ 8. When times are really difficult, I tend to be tough on myself.
_____ 9. When something upsets me I try to keep my emotions in balance.
_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
_____ 11. I’m intolerant and impatient towards those aspects of my personality I don’t like.
_____ 12. When I’m going through a very hard time, I give myself the caring and tenderness I need.
_____ 13. When I’m feeling down, I tend to feel like most other people are probably happier than I am.
_____ 14. When something painful happens I try to take a balanced view of the situation.
15. I try to see my failings as part of the human condition.

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

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

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

19. I’m kind to myself when I’m experiencing suffering.

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

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

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

23. I’m tolerant of my own flaws and inadequacies.

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

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

26. I try to be understanding and patient towards those aspects of my personality I don’t like.
Appendix E

Mindful Attention Awareness Scale (Brown & Ryan, 2003)

Day-to-Day Experiences

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Always</td>
<td>Very Frequently</td>
<td>Somewhat Frequently</td>
<td>Somewhat Infrequently</td>
<td>Very Infrequently</td>
<td>Almost Never</td>
</tr>
</tbody>
</table>

I could be experiencing some emotion and not be conscious of it until some time later. 1 2 3 4 5 6

I break or spill things because of carelessness, not paying attention, or thinking of something else. 1 2 3 4 5 6

I find it difficult to stay focused on what’s happening in the present. 1 2 3 4 5 6

I tend to walk quickly to get where I’m going without paying attention to what I experience along the way. 1 2 3 4 5 6

I tend not to notice feelings of physical tension or discomfort until they really grab my attention. 1 2 3 4 5 6

I forget a person’s name almost as soon as I’ve been told it for the first time. 1 2 3 4 5 6

It seems I am “running on automatic,” without much awareness of what I’m doing. 1 2 3 4 5 6

I rush through activities without being really attentive to them. 1 2 3 4 5 6

I get so focused on the goal I want to achieve that I lose touch with what I’m doing right now to get there. 1 2 3 4 5 6

I do jobs or tasks automatically, without being aware of what I’m doing. 1 2 3 4 5 6
I find myself listening to someone with one ear, doing something else at the same time.

I drive places on ‘automatic pilot’ and then wonder why I went there.

I find myself preoccupied with the future or the past.

I find myself doing things without paying attention.

I snack without being aware that I’m eating.
Appendix F

General Self-Efficacy Scale (Jerusalem & Schwarzer, 1979)

Read each statement, and indicate how true the statement is for you.

Response Format  
1 = Not at all true  
2 = Hardly true  
3 = Moderately true  
4 = Exactly true

1 I can always manage to solve difficult problems if I try hard enough.
2 If someone opposes me, I can find the means and ways to get what I want.
3 It is easy for me to stick to my aims and accomplish my goals.
4 I am confident that I could deal efficiently with unexpected events.
5 Thanks to my resourcefulness, I know how to handle unforeseen situations.
6 I can solve most problems if I invest the necessary effort.
7 I can remain calm when facing difficulties because I can rely on my coping abilities.
8 When I am confronted with a problem, I can usually find several solutions.
9 If I am in trouble, I can usually think of a solution.
10 I can usually handle whatever comes my way.
Appendix G

Internal Control Index (Duttweiler, 1984)

Read each statement. Where there is a blank indicate what your usual attitude, feeling or behavior would be.

A = Rarely (less than 10% of the time) B = Occasionally (30% of the time) C = Sometimes (50% of the time) D = Frequently (70% of time) E = Usually (+90% of time)

1. When faced with a problem I _____ try to forget it.
2. I ____ need frequent encouragement from others to keep working at a difficult task.
3. I ____ like jobs where I can make decisions and be responsible for my own work.
4. I______ change my opinion when someone I admire disagrees with me.
5. If I want something I _____ work hard to get it.
6. I _____prefer to learn facts about something from someone else rather than have to dig them out for myself.
7. I will_____ accept jobs that require me to supervise others.
8. I_____ have a hard time saying "no" when someone tries to sell me something.
9. I_____ like to have a say in any decisions made by any group I'm in.
10. I _____consider the different sides of an issue before making a decision.
11. What other people think_____ has a great influence on my behaviour.
12. Whenever something good happens to me I _____ feel it is because I earned it.
13. I ____ enjoy being in a position of leadership.
14. I ____need someone else to praise my work before I am satisfied with what I've done.
15. I am _____ sure enough of my opinions to try to influence others.
16. When something is going to affect me I _____ learn as much as I can about it.
17. I_____decide to do things on the spur of the moment.
18. For me, knowing I've done something well is______ more important than being praised by someone else.
19. I_____let other people's demands keep me from doing things I want to do.
20. I _____stick to my opinions when someone disagrees with me.
21. I_____ do what I feel like doing, not what other people think I ought to do.
22. I_____get discouraged when doing something that takes a long time to achieve results.
23. When part of a group I ____ prefer to let other people make all the decisions.
24. When I have a problem I_____follow the advice of friends or relatives.
25. I______ enjoy trying to do difficult tasks more than I enjoy doing easy tasks.
26. I_____prefer situations where I can depend on someone else's ability rather than my own.
27. Having someone important tell me I did a good job is________ more important to me than feeling I've done a good job.
28. When I am involved in something I ____try to find out all I can about what is going on, even when someone else is in charge.
SCSM

Mean = 3.51
Std. Dev. = 0.711
N = 122
SCS-SCSMC

Mean = 3.10
Std. Dev. = 0.684
N = 119
MAAS

Mean = 3.89
Std. Dev. = 0.777
N = 124

Frequency

1.00 2.00 3.00 4.00 5.00 6.00
GSE

Mean = 32.88
Std. Dev. = 3.62
N = 126
Appendix I

Normal Q-Q Plot of SCS
Normal Q-Q Plot of SCS-SCSMO

Expected Normal Value

Observed Value
Appendix J

MAAS and SCS

MAAS

SCS