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Addressing Self-Reported Depression, Anxiety, and Stress in College Students via Web-Based Self-Compassionate Journaling

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Addressing Self-Reported Depression, Anxiety, and Stress in College Students via Web-Based

Self-Compassionate Journaling

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ABSTRACT

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Depression, anxiety, and stress in the college undergraduate population have been steadily rising over the past decade. Trait self-compassion has been shown to be significantly and negatively related to perceptions of stress and symptoms of depression and anxiety. Research has indicated that self-compassion inductions are effective in increasing state self-compassion. In general, self-compassion inductions are designed to be easily self-administered. Current research on Internet-based interventions indicates that self-administered therapeutic techniques are effective in reducing self-reported depression, anxiety, and stress. The goal of the current study was to compare the effects of self-compassionate journaling, narrative journaling, and a true control group on depression, anxiety, stress, and self-compassion. There was not a significant time x induction interaction, nor did time or condition have a significant effect on outcomes.

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CHAPTER 1

INTRODUCTION

College is potentially a major, life-altering experience that requires a transition from childhood into young adulthood (Kadison & DiGeronimo, 2004). Traditional college students (young adults) are presented with a newfound freedom and independence. Many may find themselves moving away from home for the first time and living on their own with relatively little parental guidance. College students are faced with many uncertainties and stressors such as trying to make new friends, financial worries as well as possibly supporting families of their own (Pascarella & Terenzini, 2005; Pittman & Richmond, 2008).

Because college students face many novel and drastic changes (and are sometimes relatively alone in doing so), theirs is a population particularly vulnerable to depression, anxiety, and stress (Lambert, McCarthy, Gilbert, Sebree, & Steinley-Bumgarner, 2006). However, there are many perceived barriers among students when seeking help. For example, many students new to college do not know what mental healthcare resources are available and how much these resources cost. Some also report not having enough time to make and keep appointments for in-person meetings (Marsh, 2012; Yorgason, Linville, & Zitzman, 2008). Because in-person appointments with counselors may be intimidating or not fit students' busy schedules, it seems beneficial to offer Web-based components as part of existing programs on college campuses designed to address depression, anxiety, and stress in the student population.

Online therapeutic inductions have been found to be efficacious in addressing symptoms of self-reported depression in college students (Haas et al., 2008). Incoming generations at colleges and universities are generally very knowledgeable about the internet and using technology. Providing more information online about options available for mental health care at

one's campus or online self-administered inductions to address mental health care issues may be an ideal way to reach out to students. A Web-based component designed to address depressive symptoms may be beneficial for students who do not have time to seek help. Online mediums for inductions designed to address self-reported symptoms depression may also be beneficial for students who experience anxiety surrounding in-person meetings because they remove the component of having to meet face-to-face, which could be valuable for those afraid of stigma. They may also prompt students to eventually seek out in-person counseling (Haas et al., 2008).

Self-compassion – a construct that is comprised of mindfulness, common humanity, and self-kindness – has recently been shown in a meta-analysis of trait studies to share a significant and negative relationship with depression, anxiety, and stress (MacBeth & Gumley, 2012). Currently, however, no research has been conducted to assess the ability of repeated Web-based self-compassionate journaling to address self-reported depression, anxiety, and stress in college students. In the current study self-compassionate journaling was compared to narrative journaling, as well as to a control group that completed mood measures, over a period of 5 weeks. Baseline measures were obtained during the first week and follow-up measures were obtained during the fifth week after 4 weeks of journaling.

Depression, Anxiety, and Stress in College Undergraduates

College students (especially freshmen) report high levels of stress (DeRosier, Frank, Scwartz, & Leary, 2013). According to the Diathesis Stress Model of depression, life stressors may potentially trigger negative symptoms in individuals who are vulnerable to developing certain mental disorders (Eberhart, Auerbach, Bigda-Peyton, & Abela, 2011; Ingram & Luxton, 2005). It is during the traditional or typical college age (e.g., 22) that most individuals experience the onset of lifetime mental disorders (Kessler, Berglund, Demler, Merikangas, &

Walters, 2005). The novel challenges students face early in their college careers may trigger or exacerbate depressive symptoms in those predisposed to depression. Furthermore, chronic distress may increase anxiety, which is often found to increase alongside depressive symptoms (Bjornsson et al., 2010; Blalock & Joiner, 2000). Depression, anxiety, and stress share an interdependent relationship and have the potential to negatively affect academic outcomes for students (Day, McGrath, & Wojitowicz, 2013).

Depression is one of the most prevalent disorders in the U.S., affecting 6.7% of the population (National Institute of Mental Health; NIMH, 2012). According to the *Diagnostic and Statistical Manual of Mental Disorders* 5th ed. (*DSM-V;* American Psychiatric Association [APA], 2013), depression is characterized by low mood and loss of interest or pleasure in nearly all activities with a plethora of co-occurring problems such as comorbid anxiety disorders and suicidal ideation. Even when one is able to overcome or adequately cope with depression and anxiety, improvement in life circumstances and well-being is not guaranteed. For example, college students who overcome depression and anxiety and who are able to complete their degree may still face difficulties using their achievement to develop a career, resulting in lower employment rates (ranging between 11%-30%) compared to those without a psychiatric illness (Collins & Mowbray, 2005). In addition to being commonly cited as a prevalent problem for which students seek help, rates of depression among college students have also been rising steadily over the past decade (American College Health Association-National College Health Assessment [ACHA-NCHA], 2009; Hunt & Eisenberg, 2010; Moreno et al., 2011).

A 2008 study examining over 80,000 students from 106 postsecondary education institutions found that approximately one third of students had reported being diagnosed with depression within the past year (with a 15% lifetime prevalence), though only around 25% of

these students were actually seeking treatment for depression (ACHA-NCHA, 2009; Buchanan, 2012). Over half of the students in the survey reported feelings of hopelessness and around 40% indicated that, at least once during the school year, they felt so depressed that they could not function. One out of every nine students indicated having contemplated suicide (ACHA-NCHA, 2009). Between the years 1990 and 2004, over 1,400 college students died by suicide (Schwartz, 2006). Less than a quarter of these students had previously sought out mental health resources (Schwartz, 2006).

Anxiety often co-occurs in college students who report experiencing depression (Krumrei, Newton, & Kim, 2010; Rawson, Bloomer, & Kendall, 1994). Anxiety can occur as a result of specific situations (e.g., social situations, phobias) or it can be generalized and maintained without acute or specific stressors (APA, 2013). Anxiety is characterized by nervousness, physiological arousal, and a sense of worry (Spielberger & Sydeman, 1994). As much as 15.6% of undergraduates report experiencing anxiety and depression (Eisenberg, Gollust, Golberstein, & Hefner, 2007). Some research shows that college-aged students (18-29 year olds) experience a greater prevalence of anxiety compared to the general population (Kessler et al., 2005). One major source of anxiety for first-semester college students includes separation anxiety, which roughly 21% of students in past research have reported experiencing (Seligman & Wuyek, 2007). Anxiety has been found to be a mediator on depressed mood (Zawadzki, Graham, & Gerin, 2013). When comorbid with depression, anxiety is also related to sleep disturbance and poor cognitive functioning in college students (Nyer et al. 2013).

Stress exacerbates depression and anxiety. Furthermore, depression and anxiety can exacerbate stress Arguably, college can be considered among the most stressful of life events an individual can experience. Stress is a natural and generally adaptive response to a challenging or

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overwhelming situation (McEwan, 2009; Sinha & Jastreboff, 2013). Stress can result from emotional, psychological, and physiological factors. Increases in allostatic load (the number of stressors an individual faces) can become maladaptive and result in a gradual degradation of one's ability to adapt to and regulate stress over time (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997). Past research indicates that college students, particularly freshmen, report high levels of stress (DeRosier et al., 2013). More than 40% of college students report having felt greater than what they perceive to be the average or normal amount of stress within the past year (National Alliance on Mental Health Issues [NAMI], 2014). Students also report engaging in maladaptive behaviors to cope with stress, such as excessive alcohol consumption (NAMI, 2014).

There appear to be many perceived barriers for students when it comes to seeking out help for problems with depression, anxiety, and stress. Barriers reported by students in past research include time constraints, living off campus, having fewer years of college (not having been in college very long), lack of knowledge of available resources, stigma, and lack of knowledge about cost of resources (Marsh, 2012; Yorgason et al., 2008). Because of these perceived barriers, students may avoid actively seeking counseling or may not have the time or ability to receive counseling. Lambert et al. (1996) found that, with in-person therapy, 80% of student clients who were treated for two or more sessions experienced better outcomes for problems addressed during therapy compared to students who were randomized to a waitlist control group. Conceivably, students may have to wait for available counselors at school counseling centers, or may not have a schedule that permits counseling during standard hours, which could be a potential barrier to returning to the center. With Web-based treatments, students may not face the same discouragements of having to wait to see a counselor or receive

treatment. Such self-administered treatments may be beneficial to those wishing to address nonclinical levels of depression, anxiety, and stress.

Internet-Based Treatments

With more than 370 million people in North America having access to the Internet (Internet World Stats, 2012), Web-based interventions are a promising avenue for depression outreach as well as delivery of therapeutic methods designed to address self-reported depression, especially among college students (Luxton et al., 2011). For example, Haas et al. (2008) created an online screening and outreach program (2002 – 2005) at two different universities in which students were invited to be screened for depression via an online questionnaire. After being screened, students received a personalized assessment and were offered the opportunity to speak anonymously with a clinical counselor online. Students considered to be 'at-risk' were urged to talk to a counselor in person. Over 1,000 students filled out the online screening assessment and 84% of these students were designated as being at a moderate to high risk (with about 19% of the at-risk students attending an in-person meeting with a counselor). Results indicated that students who talked to counselors online were three times more likely to actually go to the counseling center for in-person evaluation and treatment than students who were not contacted online.

In terms of Internet-based treatments, recent research (Ferrer, Christensen, Griffiths, & Mackinnon, 2011) has used telephone tracking to assess the effectiveness of a 6-week Web-based Cognitive Behavior Therapy (CBT) delivered through BluePages and MoodGYM (two free-to-user programs). Both BluePages and MoodGYM have been shown to reduce depressive symptoms in community users (Christensen, Griffiths, & Jorm, 2004). The program is divided into five modules that focus on aspects such as cognitive restructuring, how thoughts and feelings are related, behavioral activation, relaxation, and problem-solving (Farrer et al., 2011).

Additionally, MoodGYM contains interactive exercises and quizzes. Participants completing the online CBT induction were divided into four groups: 1) Those who only completed the online program, 2) those who completed the online program and received a weekly 10-minute phone call from a telephone counselor who addressed any issues with participants' experiences with the online program, 3) those who completed the program and received a weekly 10-minute phone call from a counselor who focused on various environmental and lifestyle factors related to depression, or 4) a control condition in which participants received no phone call and did not engage in the Web-based therapy. Results indicated that depression was lower in participants who received the Web-based intervention whether or not they received a telephone call compared to the nonintervention condition both at post-intervention and at a 6-month follow-up (Farrer et al. 2011).

Understandably, one may question the efficacy of self-administered treatments when compared to therapist-assisted treatments in reducing depression. Richards, Timulak, and Hevey (2012) compared the efficacy of online CBT treatment to therapist-assisted E-mail CBT treatment (administered over 8 weeks) in university students. Following treatment, both groups exhibited significantly large effect sizes when comparing pretreatment scores to posttreatment scores at both 16 and 32 weeks after completion of the study (Richards et al., 2012). However, there were no significant differences in depression outcomes between self-administered Web-based CBT and therapist-assisted Web-based CBT (Richards et al., 2012). Both at posttreatment and follow-up, each group equally exhibited improved general functioning and reductions in depression (Richards et al., 2012). The authors suggest that the study indicates that, in a university sample, self-administered Web-based CBT may address shortcomings of universities to meet increasing demands that college health services face (Richards et al., 2012).

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In another study Richards and Timulak (2012) discuss client satisfaction for those who self-administered CBT via a Web-based induction vs. those who received Web-based therapist-assisted CBT. Results indicated that both groups were satisfied with using online treatments and that they appreciated having control over their treatment (Richards & Timulak, 2012). Not having to meet a therapist face-to-face and perceiving to have anonymity was important for the therapist-assisted Web-based CBT group (Richards & Timulak, 2012). The self-administered CBT group found the Web-based treatment to be user-friendly and engaging (Richards & Timulak, 2012). Moreover, when reviewing literature of Web-based treatments compared to face-to-face treatments, Richards and Vigano (2013) found that online counseling has the capability of replicating the facilitative conditions of face-to-face therapy.

A recent meta-analysis (Richards & Richardson, 2012) examining various types of online therapies (not just CBT) found that therapies delivered online are, overall, effective in reducing self-reported depression. Across diverse settings and in different populations, many interventions were associated with positive outcomes and impressive client retention (Richards & Richardson, 2012). Findings also indicated that online inductions result in significant clinical improvement on posttreatment measures (Richards & Richardson, 2012).

Therapeutic interventions offered online might have several benefits over in-person interventions. Individuals with social anxiety may feel more comfortable initially seeking help online rather than face-to-face (Farrer et al., 2011; Luxton et al., 2011). In areas where mental illness and seeking help for mental health issues are stigmatized – such as rural areas – Web-based treatments designed to decrease depression may be a benefit to individuals facing the stress of having others know of their need for mental healthcare (Luxton et al., 2011; Robinson et al., 2012). In-person therapy sessions may be difficult to obtain and maintain for lower-income

individuals who may have to miss work, whereas online therapy is less likely to incur scheduling conflicts. Transportation to in-person therapy sessions may also be an issue for lower-income individuals, especially for those who live in more rural areas. People can engage the online resources from home any time as needed to fit their schedule, which may be beneficial to college students who may have sporadic schedules due to both coursework and working to support themselves financially (Luxton et al., 2011).

Many existing self-compassion inductions are available online in detailed handouts for individuals who wish to increase self-compassion (Neff, 2009). Because of the ease of accessibility of these inductions, Web-based self-compassion inductions may be a valuable resource for college students in addressing nonclinical levels of self-reported symptoms of depression, anxiety, and stress.

Self-Compassion

The construct of self-compassion is derived from Eastern (primarily Buddhist) beliefs and has gained momentum as a topic of research over the past decade (Neff, 2003b). Self-compassion is a trait comprised of six components (or three pairs of competing components): Self-Kindness vs. Self-Judgment; Common Humanity vs. Isolation; and Mindfulness vs. Over-Identification.

The term 'compassion' is not an unfamiliar construct in Western psychology (Neff, 2003b). Generally conceptualized as a feeling we reserve for others, compassion involves being open to, moved by, and desiring to alleviate the suffering of others (Neff, 2003b). Those who are compassionate toward others generally practice kindness and understanding (rather than engaging in judgmental behavior) in addition to realizing that all people make mistakes (Neff, 2003b). Self-compassion operates on the same principles, taking the compassionate mindset one

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step further by directing feelings of kindness in an objective and nonjudgmental manner toward oneself in much the same way one would do so toward other people (Neff, 2003a, 2003b).

When acknowledging to the self (in much the same way one would assure and comfort others) that one's mistakes and shortcomings are part of the human condition, one gains a sense of common humanity and connectedness with other people rather than making oneself feel isolated in his or her painful experience (Neff, 2003b). The common humanity aspect of self-compassion is directly connected with compassion for others, meaning that being compassionate toward the self is not the result of being selfish, self-centered, or putting oneself above others because one is aware that suffering is a common human experience, and therefore our interconnectedness is salient (Neff, 2003b).

The mindfulness component of self-compassion distinguishes it from self-pity, which generally involves exaggerating one's pain (over-identification). Although the mindfulness component of self-compassion entails not exaggerating one's suffering, it also prevents one from downplaying his or her pain (Neff, 2003b, Neff, 2011). When practicing mindfulness in self-compassion, one views one's pain objectively and in a more realistic manner rather than being consumed by it or, alternatively, avoiding it.

Self-compassion has been linked to several positive outcomes, such as greater life satisfaction, higher levels of emotional intelligence, more social connectedness, and positive affect (Neff, 2009). Trait self-compassion is also negatively related to depression, anxiety, stress, and rumination (MacBeth & Gumley, 2012; Van Dam, Sheppard, Forsyth, & Earleywine, 2010). The self-judgment and isolation subscales of the Self-Compassion Scale (SCS; Neff, 2003b) were found to be particularly strong predictors of depressive symptoms (Van Dam et al., 2010). The majority of studies examining self-compassion in relation to depression, anxiety, and stress

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have been on the trait level and have taken place in college student populations (see MacBeth & Gumley, 2012).

Self-compassion inductions. Early self-compassion research examining the benefits of self-compassion inductions relied on writing exercises that could be either self-administered or administered by an experimenter. The benefits of these inductions were largely examined after a single use within the laboratory without examining the effects of repeated inductions. Self-compassion research has recently expanded to examine the benefits of self-compassion in a therapeutic setting using the Mindful Self-Compassion (MSC) program with the intention of addressing depression through repeated meetings (Neff & Germer, 2013). Both self-administered writing exercises and the benefits of self-compassion in a therapeutic context are discussed. Inducing state self-compassion has been linked many immediate, positive outcomes. For example, inducing self-compassion in restricted eaters has been linked to reduced stress and attenuated eating following a high caloric preload (Adams & Leary, 2007). Self-compassion inductions are also linked to increased motivation (Breines & Chen, 2012). Studies examining self-compassion inductions and how they affect one's immediate state generally show that participants asked to practice self-compassion when compared to participants asked to practice alternative methods not involving self-compassion experience more positive outcomes. Repeated exposure to self-compassion and self-compassion inductions over a period of 8 weeks has also been shown to increase trait self-compassion long-term (up to 1 year; Neff & Germer, 2013).

Writing exercises. Neff (2009) lists several different exercises that are designed to foster and promote self-compassion. Many of the inductions involve writing exercises created to increase self-compassion by having individuals engage in mindfulness, self-kindness, and acknowledgment of common humanity. Before self-compassion was a heavily studied construct,

similar writing exercises were used mainly to increase mindfulness (though not always with the specific intention of also increasing self-kindness and common humanity).

For example, narrative writing has been theorized to enhance and operate on the same mechanisms as mindfulness (Brody & Park, 2004). Narrative writing involves increased awareness when participants engage in autobiographical writing (Brody & Park, 2004). When an individual engaging in narrative writing is focusing on a past event, he or she is actually incorporating present feelings of said event into his or her writing and, in a way, re-experiencing the event while recalling it (Brody & Park, 2004). Brody and Park (2004) suggest that narrative writing is similar to mindfulness inductions in that both include normalization and acceptance of negative thoughts and feelings. Narrative writing may be especially beneficial in the aforementioned process when one conceptualizes the intended (imaginary or real) audience as accepting and nonjudgmental of the writer (Brody & Park, 2004). Many self-compassion inductions involve writing about negative events or disliked personal traits or actions while imagining that an accepting and nonjudgmental friend is writing or speaking in a kind manner to the individual recalling the event. Some self-compassion exercises bypass imagining an outsider being kind to the self and focus on the explicit intent of the individual directly being accepting and nonjudgmental of him- or herself.

When having participants recall and write about traumatic events (vs. neutral events) to increase mindfulness and decrease depression, Moore, Brody, and Dierberger (2009) found that narrative writing actually did *not* increase mindfulness nor decrease depression when comparing baseline to follow-up scores. Perplexingly, individuals in the control condition, who instead wrote unemotional daily events narratives, actually showed an increase in the nonjudgmental acceptance aspect of the Kentucky Inventory of Mindfulness Scale (KIMS; Baer, Smith, & Allen,

2004) when compared to the experimental condition. However, subsequent research found that level of security in attachment could be considered a confounding variable in narrative journaling studies, especially in those examining traumatic vs. neutral events (Wilson, 2012).

Research seems to be ambivalent regarding the effectiveness of narrative writing (at least in terms of writing about traumatic events) in increasing self-reported mindfulness and decreasing self-reported depression. Currently there are several self-compassion inductions, all of which are designed to be easily self-administered (Neff, 2009). Many of the techniques involve writing exercises (Neff, 2009). All of the techniques are designed to prompt individuals to recognize when they are engaging in harsh self-criticism to halt this harmful thought process, be objective and mindful about their pain (rather than exaggerate or downplay their suffering), show kindness to themselves in the face of hardship, and remember that they are not alone in their suffering (Neff, 2009). Not all of the self-compassion inductions have been empirically tested, however. Research to date has mainly used the "Exploring Self-Compassion Through Writing" (e.g., Adams & Leary, 2007; Breines & Chen, 2012; Leary, Tate, Allen, Adams, & Hancock, 2007) and "The Criticizer, the Criticized, and the Compassionate Observer" (modeled after Gestalt's two-chair dialogue). The current study uses the self-compassionate journaling technique which, to my knowledge, has not yet been explored as a means to address depression, anxiety, and stress.

Self-compassion journal. The "Self-Compassion Journal" is based on the premise that journaling is an effective way of exploring and enhancing emotions in addition to enhancing physical and mental well-being. It suggests writing as often as one can (preferably daily). The goal is to write about things that make one feel bad, anything that an individual might judge

oneself for and that has caused one pain. Instructions mention addressing feelings of shame and embarrassment with mindfulness, kindness, and a sense of common humanity.

First, journalers are explicitly told to practice mindfulness by being aware of the painful emotions that their judgmental thoughts are causing. They are then told to write about how they feel ashamed, frustrated, sad, etc. Writers are advised to be objective when recalling the experience without exaggerating what happened yet to also avoid belittling the situation and their feelings. Neff (2009) gives an example of being late for an appointment and snapping at a waitress who was slow in bringing the bill for lunch.

The second part of the journaling exercise is to practice common humanity. Individuals are told to write about how their experience is connected to the larger human experience. This includes writing about how no one is perfect and that all people do things that embarrass themselves or make them feel ashamed from time to time. It also inspires the act of introspection by asking the writer to consider possible underlying causes that contributed to a behavior (e.g., the fact that one had been late for an appointment was a reason that he or she snapped at a waitress for taking too long to bring his or her check). Contemplating factors that contributed to one's undesirable reaction in the embarrassing situation may prompt one to realize that had the circumstances been different (e.g., had one not had an appointment for which one was late), he or she would have reacted differently to having to wait a long time for a check at lunch.

The final aspect of the self-compassionate journaling exercise is relating to oneself in a kind manner. One does this by writing to oneself in an understanding, nonjudgmental, and comforting manner. The writer expresses how much he or she cares about him- or herself and reassures that, even though he or she messed up, it is not the end of the world. This reinforces the concept that one is not a "bad" person but simply was going through a stressful time and perhaps

reacted inappropriately. Although one's behavior was regrettable, one can accept that it happened, learn from it, realize it is part of being human, and attempt to react more appropriately the next time something similar happens.

A benefit of self-compassion inductions is that many of them already provide detailed written instructions that guide an individual in how to enhance compassion for him- or herself. As with mindfulness and narrative writing exercises, individuals wishing to enhance self-compassion are not required to attend weekly meetings or sessions. Self-compassion exercises can be done at any time with as much or little detail as an individual feels he or she needs to incorporate into the exercise. Furthermore, these exercises are designed to restructure maladaptive thought processes into more objective and realistic patterns of thought; therefore, self-compassion exercises instill a valuable skill of self-relation that may enhance well-being and improve quality of life. Self-compassionate journaling may be effective in teaching students to deal with stress in that it promotes objectivity via mindfulness, enabling one to avoid exaggerating or downplaying stressful experiences. The mindfulness component prompts individuals to override an emotional response with the intent to view a stressful or painful situation as realistically and unemotionally as possible, therefore requiring an individual to cognitively reinterpret a previously emotionally-laden experience.

Although research on the influence of narrative writing on the reduction of self-reported depressive symptoms seems inconclusive, self-compassionate journaling may be a more promising avenue for addressing self-reported depression, anxiety, and stress compared to narrative journaling. Self-compassionate writing exercises incorporate components such as self-kindness and common humanity in addition to mindfulness, which narrative writing exercises solely designed to increase mindfulness do not necessarily use. Although they may naturally

have the ability to use mindfulness, narrative journaling exercises do not explicitly encourage participants to engage in self-kindness and common humanity, which are addressed in self-compassionate journaling.

Increasing trait self-compassion. As stated previously, much research on self-compassion inductions thus far has examined trait self-compassion in conjunction with other traits or mental health outcomes. Research involving self-compassion inductions tends to focus on how inducing state self-compassion immediately affects positive and negative outcomes. Most past research on inductions, however, fails to examine the long-term benefits of inducing self-compassion.

Personality theorists have, in the past, suggested that traits are stable patterns of thoughts, feelings, and behaviors that are generally unchanging and consistent (McCrae & Costa, 2008). However, more current research and theory has proposed that traits can be considered malleable and may be modified through intervention (Jackson, Hill, & Roberts, 2010; Magidson, Roberts, Collado-Rodriguez, & Lejuez, 2014). For example, past research has shown that CBT when used to treat depression also resulted in changes to traits such as extraversion and neuroticism (Clark et al., 2003). In the case of mindfulness-based interventions (which is relevant for the current study), mindfulness interventions have been related to changes in traits of conscientiousness, emotional stability, empathy, and agreeableness (Krasner et al., 2009). Theoretically, personality operates both on trait and state levels with state-level changes and the environment having the potential to shape traits over time (Magidson et al., 2014). It is conceivable that self-compassion as a trait has the potential to increase over time following repeated inductions designed to instill thoughts and behaviors related to self-compassion.

Neff and Germer (2013) went beyond the simple single-time administration of self-compassion inductions to create therapeutic intervention modeled after Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002). The program teaches mindfulness skills, which are considered crucial for developing self-compassionate behaviors (Neff & Germer, 2013), making it similar to MBSR and MBCT. Also like MBSR and MBCT, MSC is an 8-week therapy that involves meeting 2 – 2.5 hours a week, also including a half-day meditation retreat. The program focuses more on helping participants to develop self-compassion than mindfulness, however, with only one session being devoted to mindfulness skills (Neff & Germer, 2013).

MSC teaches sitting meditation and daily life self-compassion exercises. The program also includes discussion periods in each session, experiential exercises, and homework assignments that foster self-kindness (Neff & Germer, 2013). Each session focuses on a specific topic. Participants start out with a general overview of the program and foundational knowledge of mindfulness, as well as the application of self-compassion in life. The program also focuses on developing a compassionate inner voice and core values of self-compassion. Participants also receive sessions on compassion in both intrapersonal and interpersonal circumstances, including dealing with difficult emotions and challenging relationships. Finally, participants are taught how to relate to and be appreciative of positive aspects of oneself (Neff & Germer, 2013). MSC is considered a resource-building course rather than a group therapy. Neff and Germer (2013) consider the MSC program a hybrid program in the sense that it is applicable to both the general public and to clinical populations.

Results from two studies indicated that, overall, the MSC program was effective in reducing depression, anxiety, and stress in participants from baseline to follow-up compared to a

control group (Neff & Germer, 2013). There were also significant gains in self-compassion and mindfulness from baseline to follow-up. Results indicated that gains in self-compassion were maintained at 6-month and 1-year follow-ups. Based on a pilot study of the MSC program, repeated self-compassion exposure appears to have the potential to reduce depression, anxiety, and stress and has the ability to increase self-compassion trait self-compassion.

Self-compassion and existing therapies. There are existing therapies that share similarities with and would benefit greatly from self-compassion inductions, such as Cognitive-Behavioral Therapy (CBT; Beck, 1975), MBCT (Segal et al., 2002), and MBSR (Kabat-Zinn, 1982), as self-compassion may act as a promising supplement to therapies designed to address maladaptive cognitions. These types of therapies address maladaptive thought processes with the intention of elevating mood and promoting healthy self-relational behaviors. As with self-compassion inductions, CBT, MBCT, and MBSR encourage individuals to recognize and stop maladaptive thoughts while relating to themselves in a kinder manner rather than to engage in harsh, unjust self-criticisms. Self-compassion involves an element of introspection and objective self-examination that could potentially enhance the effects of these therapies. Furthermore, the added components of self-kindness and common humanity have the potential to instill a healthy form of self-relation that logically follows the understanding that one's maladaptive thoughts are unhealthy (Furlong & Oei, 2002).

Self-compassion has also been found to have the potential to enhance the Gestalt Empty Chair technique (Kirkpatrick, 2006; Shahar et al., 2012). This particular exercise involves exploring the relationships one has with oneself and others by addressing an empty chair as if it were either a separate person or an aspect(s) of one's own personality. One can add a component of self-compassion by adding a third chair, thus providing a role for the "Compassionate

Observer" (Kirkpatrick, 2006; Neff, 2009). The added component of self-compassion provides reinforcement in halting and addressing harsh self-criticisms with the goal of addressing negative self-talk and depressive symptoms.

Self-compassion also has the potential to work well with Acceptance and Commitment Therapy (ACT; Neff & Tirch, 2013). ACT encourages individuals to restructure negative thought processes to create a more realistic and healthy relationship between emotions and cognitions. Self-compassion and ACT both require individuals to objectively assess negative thoughts and engage in self-acceptance. ACT encourages the assessments, exploration, and acceptance of feelings, especially negative ones. Self-compassion is similar in that it encourages one to approach one's pain with openness and curiosity and to accept one's pain without exaggerating or downplaying pain (Neff & Tirch, 2013).

However, it should be noted that not everyone has time for lengthy weekly meetings (e.g., 2 – 2.5 hours in length), which are common for programs such as MBCT, CBT, and MBSR (as these may last 8-10 weeks). The MSC program (Neff & Germer, 2013) offered insight into the ability of self-compassion inductions to reduce depression, but such extensive and involved methods may not be feasible, desirable, or even necessary for those who wish to practice self-compassion with the goal of addressing maladaptive processes such as self-reported depression, anxiety, and stress. Therefore, it is important to examine methods of self-compassion inductions that can be easily self-administered and are more cost-effective in terms of time and money.

Present Study

Currently, self-compassion has been found (on a trait level) to be significantly and negatively related to depression (MacBeth & Gumley, 2012). Relatively few studies, however, have used self-compassion inductions with the explicit intention of reducing self-reported

symptoms of depression, anxiety, and stress or with the goal of examining its efficacy in preventing the worsening of the aforementioned symptoms when compared to narrative journaling or to participants who do not journal. Pilot studies examining the efficacy of a newly-created MSC (Neff & Germer, 2013) do suggest that self-compassion inductions, when practiced over 8 weeks, have the potential to induce long-term (at both 6-month and 1-year follow-ups) changes in trait self-compassion and still maintain a significant and negative relationship with depression. However, the MSC program is modeled after a lengthy and expensive program (MBSR) comprised of 2-hour weekly in-person meetings over an 8-week time span, in addition to a half-day retreat, which may not be practical for everyone. To my knowledge, no studies have examined the effects of repeated Web-based self-compassionate journaling on depression, anxiety, and stress.

In the current study I sought to induce self-compassion over a span of 4 weeks to reduce self-reported depression, anxiety, and stress and to increase self-reported self-compassion in a sample of college students via weekly Web-based self-compassionate journaling. Self-compassionate journaling was compared to a narrative journaling control group in which participants also wrote journal entries for 4 weeks. This comparison was done to ascertain whether the act of simply writing about negative experiences has the ability to reduce depression, anxiety, and stress with the same magnitude as self-compassionate journaling. These groups were also compared to a true control group, the participants of which completed a mood measure twice a week for 4 weeks. After completing 4 weeks of tasks, participants completed follow-up measures during the 5th week. I hypothesized that there would be a significant time x induction interaction resulting in the decrease of depression, anxiety, and stress, and a significant increase in self-compassion from Time 1 (baseline during week 1) to Time 2 (follow-up during week 5)

for the journaling groups compared to the true control group. I further hypothesized that the self-compassion group would experience the largest decrease in depression, anxiety, and stress and increase in self-compassion when compared to all others.

CHAPTER 2

METHOD

Participants

Participants were recruited from the student sample at East Tennessee State University (ETSU) through SONA systems. Students signing up through SONA at ETSU were offered credit for participating in the study. Students were informed that they would receive one credit for each week they participated in the inductions of the study (4 weeks of inductions) and two additional credits for completing the follow-up measures during the fifth week. In total, participants received six SONA credits for participating in all 5 weeks of the study.

Initially, 358 participants signed up for the study. However, 170 participants did not complete the study. There were 188 participants who completed the study (Females = 147, Males = 41; Mage = 22.3, SD = 7.39). There were 66 completers (55% completion rate) in the SCJ Group, 65 completers (45% completion rate) in the NJ Group, and 57 completers (67% completion rate) in the TC group. The mean number of entries for the SCJ group was 5.6, while the NJ group had a mean number of 5.3 entries per participant. Participants in the TC group completed their task an average of 6.3 times during the course of their participation.

Of completers reporting sexual orientation, 87.8% were heterosexual, 3.7% were homosexual, 6.4% were bisexual, .5% were asexual, .5% were pansexual, .5% were other ("reformed homosexual"), and .5% declined to answer. Fifty percent of participants were freshmen, 20.2% were sophomores, 12.2% were juniors, and 17.6% were seniors. In terms of self-identified ethnicity, 88.8% of students were White, 3.7% were Black, 2.1% were Hispanic, 1.6% were Native American, .5% were Asian, and the remaining 3.2% identified as "other."

Chi-Square tests were performed to determine whether the SCJ, NJ, and TC groups significantly differed from one another on demographic variables. Groups did not significantly differ in grade level, $\chi^2(6, N = 188) = 2.58, p = .86$. They also did not significantly differ in gender $\chi^2(2, N = 188) = 4.61, p = .10$ or ethnicity $\chi^2(10, N = 188) = 11.26, p = .34$. Groups did not differ in sexual orientation, $\chi^2(10, N = 188) = 13.51, p = .20$

Mental health information. Roughly 38% of participants indicated that they had received counseling for mental health issues in the past. When asked whether a participant was currently (at the beginning of the study) receiving counseling, 5% of participants indicated that they were. When asked whether participants experienced any mental illness, 8.5% indicated they struggled with depression, 3.7% indicated that anxiety was a problem, 3.2% indicated that they experienced both depression and anxiety, and 2.7% listed other issues (e.g., ADHD). Chi-Square tests indicated that SCJ, NJ, and TC groups did not differ in past diagnoses of mental illness $\chi^2(2, N = 188) = .83, p = .66$. Groups also did not differ in type of diagnosis $\chi^2(10, N = 188) = 9.15, p = .52$. Finally, groups did not differ in whether they received counseling in the past $\chi^2[2, N = 188] = .48, p = .79$ or if they were currently receiving counseling ($\chi^2[2, N = 188] = .16, p = .92$)

Demographic Differences Between Completers and Noncompleters

Data of participants who did not complete the study were removed from analyses. This occurred for 170 participants. Late entries were allowed if participants submitted their entries within 2 days of the Friday deadline. Participants were allowed to continue in the study if they made only one entry a week, though they were encouraged to complete their task at least twice a week.

Differences between completers and noncompleters concerning demographic information were examined using the Pearson Chi-Square test. Completers and noncompleters did not differ significantly in gender $\chi^2(1, N = 358) = 1.97$, $p = .10$. Groups also did not differ significantly when examining whether or not they had been diagnosed with mental illness in the past $\chi^2(1, N = 358) = 2.34$, $p = .08$. Groups did not differ significantly in whether they received counseling in the present ($\chi^2[1, N = 358] = 1.27$, $p = .18$) or the past ($\chi^2[1, N = 358] = .92$, $p = .50$). They also did not differ in composition of grade level ($\chi^2[3, N = 358] = 2.90$, $p = .41$). There was also no differences in religious breakdown ($\chi^2[1, N = 358] = 2.26$, $p = .69$). Completers and noncompleters did differ when ethnicity was examined, however, $\chi^2(5, N = 358) = 12.27$, $p = 03$. In general, noncompleters had more minorities.

Measures

Depression, Anxiety, and Stress Scale (DASS**;** Lovibond & Lovibond, 1995a). Because depression, anxiety, and stress often influence one another (Hammen, 1991; Kessler, Chiu, Demler, & Walters, 2005; Lovibond & Lovibond, 1995a), all three constructs were examined in relation to self-compassion. The DASS is a 42-item measure that consists of three self-report scales designed to measure symptoms of depression, anxiety, and stress that have occurred over the past week. Each of the three scales consists of 14 items divided into subscales containing 2-5 items with similar content (Lovibond & Lovibond, 1995a). All items are scored on a 4-point Likert scale, which asks participants to rate the extent to which they have experienced each state over the past week (0 = *did not at apply to me at all* to 3 = *applied to me very much, or most of the time*). Higher scores indicate greater levels of self-reported depression, anxiety, and stress.

The depression scale is designed to assess feelings of dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest, lack of involvement, anhedonia, and inertia

(Lovibond & Lovibond, 1995a). Example items of the depression scale include, "*I couldn't seem to experience any positive feeling at all,*" and "*I felt that I had lost interest in just about everything.*" The anxiety scale measures one's self-reports of physiological symptoms such as autonomic arousal and skeletal muscle effects in addition to situation-based anxiety and subjective experience of anxious affect (Lovibond & Lovibond, 1995a). Example items of the anxiety scale include, "*I had a feeling of shakiness (e.g., legs going to give way),*" and "*I felt scared without any good reason.*" The stress scale assesses levels of chronic nonspecific arousal as well as difficulty relaxing, nervous arousal, the ease with which one is agitated, how irritable one is, the propensity to overreact, and impatience (Lovibond & Lovibond, 1995a). Examples of items on the stress scale include, "*I found myself getting upset by quite trivial things,*" and "*I tended to over-react to situations.*"

Psychometric properties of the DASS have been assessed using both nonclinical and clinical samples (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Korotitsch, Chorpita, & Barlow, 1997; Crawford & Henry, 2003; Lovibond & Lovibond, 1995a, 1995b). Cronbach's alpha for the Depression, Anxiety, and Stress subscales have been shown to be .97, .92, and .95 respectively (Antony et al., 1998). DASS subscale reliability scores have been shown to be generally large for Depression (.94 to .96), Anxiety (.88 to .89), and Stress (.89 to .93) in individuals who experience mood disorders (Antony et al., 1998; Brown, et al., 1997). In nonclinical samples, Cronbach's alpha measurements for the DASS Anxiety, Depression, and Stress subscales have been shown to be .89, .94, and .93 respectively (Crawford & Henry, 2003). For the current study Cronbach's alphas for the depression, anxiety, and stress subscales of the DASS were α = .94, .88, and .92 at Time 1, and α = .95, .90, and .94 respectively at Time 2.

The depression and anxiety subscales of the DASS are consistently highly correlated with two widely used measures of depression and anxiety – the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988; Antony et al., 1998; Brown et al, 1997; Lovibond & Lovibond, 1995b). The BDI is highly correlated with DASS Depression ($r = .75$ and $.77$), Anxiety ($r = .49$ and $.57$), and Stress subscales ($r = .61$ and $.62$; Antony et al., 1998, Brown et al., 1997). BAI scores are also highly correlated with DASS Depression ($r = .40$ and $.42$), Anxiety ($r = .83$ and $.84$), and Stress subscales ($r = .58$ and $.64$; Antony et al., 1998, Brown et al., 1997). Normative means and standard deviations for the depression, anxiety, and stress subscales from a sample of 2,914 adults were 6.34 (6.97), 4.7 (4.91), and 10.11 (7.91) respectively (Lovibond & Lovibond, 1995). When examined in a clinical sample, means and standard deviations were 10.65 (9.3), 10.90 (8.12), and 21.1 (11.15) for depression, anxiety, and stress.

Self-Compassion Scale (SCS; Neff, 2003b). The original SCS consists of 26 items scored on a 5-point Likert scale (1 = *almost never* to 5 = *almost always*). The 26 items encompass six subscales or three competing pairs of subscales. These subscales include self-kindness (e.g., *I try to be loving toward myself when I'm feeling emotional pain)* vs. self-judgment (e.g., *I'm disapproving and judgmental about my own flaws and inadequacies*); mindfulness (e.g., *When something upsets me I try to keep my emotions in balance*) vs. over-identification (e.g., *When I'm feeling down I tend to obsess and fixate on everything that's wrong*); and common humanity (e.g., *When things are going badly for me, I see the difficulties as part of life that everyone goes through*) vs. isolation (e.g., *When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world*). The test-retest reliability score for the overall SCS has been shown to be .93. The scores for the subscales have

been shown to be: Self-Kindness: .88; Self-Judgment: .88; Common Humanity: .80; Isolation: .85; Mindfulness: .85; and Over-Identification: .88 (Neff, 2003b). For the current study the Cronbach's alphas were assessed for the subscales and total scale. For Time 1 scores were as follows: Self-Kindness ($\alpha = .84$), Self-Judgment ($\alpha = .86$), Common Humanity ($\alpha = .82$), Isolation ($\alpha = .83$), Over-Identification ($\alpha = .80$), Mindfulness ($\alpha = .77$), and total Self-Compassion ($\alpha = .80$). For Time 2, scores were: Self-Kindness ($\alpha = .85$), Self-Judgment ($\alpha = .88$), Common Humanity ($\alpha = .84$), Isolation ($\alpha = .82$), Over-Identification ($\alpha = .83$), Mindfulness ($\alpha = .85$), and total Self-Compassion ($\alpha = .94$).

Positive and Negative Affect Schedule – Extended (PANAS-X; Watson & Clark, 1994). The PANAS-X assesses specific affective emotional states that are drawn from more general aspects of positive and negative emotional experiences. The PANAS-X is a 60-item expanded version of the PANAS. In addition to the original two higher order scales, the PANAS-X measures 11 aspects of affect including fear, sadness, guilt, hostility, shyness, fatigue, surprise, joviality, self-assurance, attentiveness, and serenity. The PANAS-X is scored on a 5-point Likert scale (1 = *very slightly or not at all*, 5 = *extremely*). The internal consistency for positive and negative affect is generally $\alpha = .83$. Items ask participants to indicate to what extent in the past few weeks they have felt various emotions such as energetic, loathing, scared. The PANAS-X was specifically used for the control group (see below). The PANAS-X was not examined but instead was used as a control induction for the True Control group.

Demographic variables. During the first phase of the study students were asked their age, sex, ethnicity, and sexual orientation. Students were asked their grade level as research indicates that freshmen experience increased anxiety and stress and report homesickness, leading to depressive symptoms (Fisher, 1989; Seligman & Wuyek, 2007; Terry, Leary, & Mehta, 2012).

To control for existing or previous diagnoses of mental disorders, students were asked if they had

ever been diagnosed with any psychological disorder. If answering yes, students were asked to

indicate their diagnosis. Students were asked to indicate if they were currently in or have ever

used mental health care services to control for the possibility that previous treatment might

influence susceptibility to the self-compassion inductions (Coelho, Canter, & Ernst, 2007).

Religious affiliation was also assessed.

Self-compassion journal (SCJ) instructions. The present study employed the self-

compassionate journaling technique provided on Neff's website (Neff, 2009). Self-

compassionate journaling was used because it is designed to be applied to daily situations and

both explicitly and coherently outlines how to increase mindfulness, self-kindness, and common

humanity (Neff, 2009).

Self-Compassion Journaling Instructions

Try keeping a journal with at least two entries a week. You may turn in your journal entries at any point during the week, but we ask that you turn in your entries by Friday. You will receive 1 credit for each week you turn in your journal entries. During the 5th week, we will send a link asking you to complete a few measures and answer few questions about your experience. You will receive 2 credits for the final part of this study. In total, the study is worth 6 credits.

Journaling is an effective way to express emotions, and has been found to enhance both mental and physical well-being. Each week, review a recent event. In your journal, write down anything that you felt bad about, anything you judged yourself for, or any difficult experience that caused you pain. (For instance, perhaps you got angry at a waitress at lunch because she took forever to bring the check. You made a rude comment and stormed off without leaving a tip. Afterwards, you felt ashamed and embarrassed.) For each event, use mindfulness, a sense of common humanity, and kindness to process the event in a self-compassionate way.

Mindfulness. This will mainly involve bring awareness to the painful emotions that arose due to your self-judgment or difficult circumstances. Write about how you felt: sad, ashamed, frightened, stressed, and so on. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic. (For example, "I was frustrated because she was being so slow. I got angry, over-reacted, and felt foolish afterwards.")

Common Humanity. Write down the ways in which your experience was connected to the larger human experience. This might include acknowledging that being human means being imperfect, and that all people have these sorts of painful experiences. ("Everyone over-reacts sometimes, it's only human.") You might also want to think about the various causes and

conditions underlying the painful event. ("My frustration was exacerbated by the fact that I was late for my doctor's appointment across town and there was a lot of traffic that day. If the circumstances had been different my reaction probably would have been different.")

Self-Kindness. Write yourself some kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone. (It's okay. You messed up but it wasn't the end of the world. I understand how frustrated you were and you just lost it. Maybe you can try being extra patient and generous to any wait-staff this week…")

Practicing the three components of self-compassion with this writing exercise will help organize your thoughts and emotions, while helping to encode them in your memory. If you keep a journal regularly, your self-compassion practice will become even stronger and translate more easily into daily life.

Narrative journal (NJ) instructions. The narrative journaling induction is similar to the self-compassionate journaling induction in that participants were asked to think of negative events in terms of embarrassment, shame, or pain and write about them. However, participants in the narrative journaling group were not given further instructions on writing to induce mindfulness, common humanity, and self-kindness. The goal of using narrative journaling as a comparison group was to determine whether simply writing about negative experiences has the same effect on depression, anxiety, and stress as does writing about negative experience in a self-compassionate manner.

Narrative Journaling Instructions

Try keeping a journal with at least two entries a week. You may turn in your journal entries at any point during the week, but we ask that you turn in your entries by Friday. You will receive 1 credit for each week you turn in your journal entries. During the 5th week, we will send a link asking you to complete a few measures and answer few questions about your experience. You will receive 2 credits for the final part of this study. In total, the study is worth 6 credits.

Journaling is an effective way to express emotions, and has been found to enhance both mental and physical well-being. Each week, review a recent event. In your journal, write down anything that you felt bad about, anything you judged yourself for, or any difficult experience that caused you pain. (For instance, perhaps you got angry at a waitress at lunch because she took forever to bring the check. You made a rude comment and stormed off without leaving a tip. Afterwards, you felt ashamed and embarrassed.)

Describe the negative event itself and how you feel about the event in detail.

True control (TC) group. The TC group completed the 60-item PANAS-X twice a week for 4 weeks. Participants filled out follow-up measures during the fifth week of the study. The purpose of this group was to determine whether improvements in self-reported depression, anxiety, stress, and self-compassion occur on their own over a span of 4 weeks or whether improvements can actually be attributed to journaling techniques (specifically, self-compassionate journaling).

Procedure

The study was advertised on SONA as a 5-week study to assess mood over time. After consenting to participate in the study, students completed baseline measurements, which included the DASS, the SCS, PANAS-X, and demographic questions. Participants were then randomly assigned to either the SCJ group, the NJ group, or the TC group. This was done using block randomization with students being assigned on a first-come, first-served basis. The database was checked each night for new sign-ups. Following this, participants were contacted through SONA with group-specific instructions and provided a link for their task. They were informed that they were to complete their task at least twice a week (starting with one entry the day they signed up for the study) for 4 weeks, with both tasks to be submitted by Friday of every week. Participants were sent a general reminder on Wednesday and Friday each week to complete their task by Friday. On the fifth week participants completed the follow-up measures.

CHAPTER 3

RESULTS

The study was a multivariate mixed factorial design with condition (self-compassionate journaling, narrative journaling, and true control group) as a between subjects factor. Baseline and follow-up scores on the DASS and SCS were the within-subjects factors. G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was used to determine the number of participants needed for a mixed factorial MANOVA. Setting the desired power at .95 with an effect size of $\eta_p^2 = .20$ and $\alpha = .05$, it was determined that 171 participants would be required for a mixed factorial MANOVA ($V = .11$, F [6, 171] = 2.13).

Completer Vs. Noncompleter Differences

Concerned about the high dropout rate, differences in depression, anxiety, stress, and self-compassion between completers (those who went through the entire study; $N = 188$) and noncompleters (those who did not complete the study; $N = 170$) were assessed. Levene's Test of Equality of Error Variances showed significant effects for depression, $F(1, 356) = 6.30$, $p = .01$. To address the violations of the assumption of homogeneity of variance, data were transformed using the log transformation (lg10*variable* + 1; Field, 2009). Because a log transformation cannot be performed on values of 0, '1' was added as DASS subscales contain values of 0. Following the transformation, depression became nonsignficant ($p = .08$). The results of the MANOVA indicated that, overall, there was no significant difference in outcome variables between completers and noncompleters ($V = .01$, F [4,353] = 1.20, $p = .31$, $\eta_p^2 = .01$).

Correlational Analyses

Bivariate correlational analyses (see Table 1) indicate that the depression, anxiety, and stress subscales of the DASS were significantly and positively correlated with one another at

Time 2 ($p < .05$). The only self-compassion subscale significantly correlated with depression was over-identification. Perplexingly, the two shared a negative correlation. Depression was nonsignficant in its negative correlation with total self-compassion scores. Anxiety showed a similar pattern of being negatively correlated with all subscales of self-compassion (as well as the total self-compassion score). The only self-compassion subscale with which anxiety was significantly correlated was mindfulness, however. Stress was negatively correlated with all self-compassion subscales and with the total self-compassion score, though none of these correlations were significant.

Table 1

Correlations between Depression, Anxiety, Stress, Self-Compassion, and Self-Compassion Subscales at Time 2

	1	2	3	4	5	6	7	8	9
1. Depression	--								
2. Anxiety	.79*	--							
3. Stress	.79*	.62*	--						
4. Mindfulness	-.11	-.14*	-.04	--					
5. Over-identification	-.16*	-.10	-.13	-.39*	--				
6. Self-Kindness	-.03	-.09	-.02	.78*	-.43*	--			
7. Self-judgment	-.13	-.05	-.10	-.41*	.79*	-.54*	--		
8. Common Humanity	-.001	-.04	-.01	.69*	-.23*	.71*	-.25*	--	
9. Isolation	-.07	-.04	-.01	-.42*	.78*	.43*	.78*	-.29*	--
10. Self-Compassion Total	-.03	-.12	.02	.78*	-.76*	.83*	-.81*	.67*	-.76*

*$p < .05$

Of the self-compassion subscales, the positive subscales (mindfulness, self-kindness, and common humanity) were significantly and positively correlated with one another as well as with overall self-compassion. The positive subscales were significantly and negatively correlated with the negative subscales (over-identification, self-judgment, and isolation). Finally, the negative subscales were significantly and positively correlated with one another in addition to being significantly and negatively correlated with overall self-compassion.

Differences Between Conditions at Baseline in Completers

Because there was some concern over the fact that participants in the NJ group appeared to have lower baseline levels of self-compassion, baseline scores on variables were compared across all three groups for participants who completed the study. A MANOVA was used to compare differences with depression, anxiety, stress, and self-compassion as the dependent variables. Results indicated that the SCJ, NJ, and TC groups were not significantly different from one another in depression, anxiety, stress, and self-compassion at Time 1 ($V = .021$, F [8, 366] $= .475$, $p = .87$, $\eta_p^2 = .01$). To be certain that lower baseline levels of self-compassion for the NJ group did not affect outcomes, a MANCOVA was performed with self-compassion entered as a covariate. Results were still not significant for condition ($V = .017$, F [6, 366] $= .519$, $p = .79$, $\eta_p^2 = .01$) or self-compassion ($V = .001$, F [3, 366] $= .046$, $p = .99$, $\eta_p^2 = .00$).

Mixed Factorial MANOVA

Levene's Test of Equality of Error Variances showed significant effects for depression at Time 1 (F [2, 185] $= 3.81$, $p = .02$) and stress at Time 2 (F [2, 185] $= 5.11$. $p = .01$). The data were positively skewed. To address the violations of the assumption of homogeneity of variance, data were transformed using the log transformation (e.g., lg10*variable* + 1; Field, 2009). Time 2 depression and Time 1 stress were also transformed despite not violating assumptions of homogeneity of variance in order to avoid inflating the difference between baseline and follow-up scores An addition of '1' was added as DASS subscales contain values of 0. A log transformation cannot be performed on values of 0; therefore, a number must be added. Following the transformation, all variables were nonsignficant, meaning that assumptions of homogeneity of variance were no longer violated.

Interaction effect. A mixed factorial MANOVA was conducted to test the hypothesis that journaling would reduce depression, anxiety, stress, and increase self-compassion from Time 1 to Time 2 (e.g., a significant time x induction interaction). Journaling groups should experience significant outcomes compared to the true control group. Specifically, the SCJ group should experience the greatest decrease in depression, anxiety, and stress and increase in self-compassion from Time 1 to Time 2. There was not a significant interaction between time and condition before (F [8,366] = 1.67, p = .10, η_p^2 = .04) or after performing the appropriate log transformations (V = .04, F [8, 366] = .904, p = .51, η_p^2 = .02).

Main effects of condition and time. There was also not a significant effect for condition (V = .03, F [8, 366] = .582, p = .79, η_p^2 = .01). In general, the group to which participants were randomly assigned did not have a significant effect on depression, anxiety, stress, or self-compassion from baseline to follow-up. The hypothesis that journaling would result in a decrease in negative outcomes and an increase in self-compassion from Time 1 to Time 2 was therefore not supported. See Table 2. There were no significant main effect for time before (V =.04, F [4,182] = 1.73, p = .15, η_p^2 = .04) or after (V = .04, F [4,182] = 1.99, p <.10, η_p^2 = .04) performing a log correction on depression and stress.

Table 2

Means and Standard Deviations for Variables Within SCJ, NJ, and TC groups at Times 1 and 2.

Variable	SCJ (*N* = 66)		NJ (*N* = 65)		TC (*N* = 57)		Overall		*p*
	T1	T2	T1	T2	T1	T2	T1	T2	
Depression	.72	.77	.74	.70	.67	.70	.71	.72	.72
	(.37)	(.43)	(.45)	(.41)	(.38)	(.44)	(.40)	(.42)	
Anxiety	7.10	7.30	7.12	6.27	6.96	6.78	7.07	6.79	.63
	(6.28)	(6.87)	(6.92)	(5.29)	(6.13)	(8.15)	(6.44)	(6.79)	
Stress	1.07	1.03	1.05	.98	.99	1.01	1.04	1.01	.40
	(.3)	(.36)	(.33)	(.34)	(.33)	(.38)	(.33)	(.36)	
Self-Compassion	76.92	80.28	74.58	74.91	77.76	81.76	76.61	78.88	.02
	(18.23)	(18.81)	(17.81)	(19.29)	(18.28)	(19.81)	(17.73)	(19.63)	

Note: *p* values indicate significant changes in variables from Time 1 to Time 2. Means and standard deviations reflect log transformation

Self-Compassion Journal Entries

Because no significant interaction or main effects for time and condition were found, journal entries for the self-compassion group were examined to determine whether there may have been a problem with induction compliance. Entries for the SCJ condition were coded by a single coder (the primary investigator) on a yes or no system based on 1) Whether participants wrote about a negative event, 2) whether the event made the participant feel bad about him- or herself (mindfulness), 3) whether the participant expressed a sense of common humanity, and 4) whether the participant wrote to him- or herself in a kind and comforting manner.

There were 446 journal entries for the 66 participants in the SCJ group. The mean number of

journal entries was 5.6. The range was 1-17 entries. Only 174 (39%) of the entries were about

events that made participants feel bad about themselves (not just a negative event in general).

Although the directions instructed participants to write about an event in which they felt shame

or disappointment in themselves, participants (406 entries) often wrote only about negative

events in general (e.g., "I couldn't find parking.") or about events that hurt them but did not

explicitly indicate that the events made them feel bad about themselves (e.g., "I'm sad that I was

yelled at"). Recognizing one's common humanity only occurred in 205 (46%) entries.

Participants often reiterated what had upset them rather than discussing how their experience

could be related to the overall human experience or even exploring underlying causes for

behavior. Many participants, however, were able to express self-kindness, as participants wrote

to themselves in a kind and comforting manner in 358 (80%) of the entries.

CHAPTER 4

DISCUSSION

The goal of the current study was to examine the benefits of repeated, Web-based self-administered self-compassionate journaling in addressing depression, anxiety, and stress and in increasing self-compassion in college students. Participants completed baseline measures of depression, anxiety, stress, and self-compassion and were randomly assigned to one of three conditions: 1) writing self-compassionate journal entries in which they were to focus on a recent event that made them feel bad about themselves while expressing common humanity, mindfulness, and self-kindness; 2) writing narrative journaling entries in which participants were also asked to write about events that made them feel bad about themselves but were not asked to practice mindfulness, self-kindness, or common humanity; or 3) completing a mood measure.

I hypothesized that there would be a significant time x induction interaction resulting in the decrease of depression, anxiety, and stress and a significant increase in self-compassion from Time 1 (baseline during week 1) to Time 2 (follow-up during week 5) for the journaling groups compared to the true control group. Furthermore, I predicted that the self-compassion group would experience the largest decrease in depression, anxiety, and stress and increase in self-compassion compared to all other groups. Results show that neither self-compassionate nor narrative journaling appeared to have an effect on self-compassion, depression, anxiety, or stress. Contradictory to the hypothesis that there would be a significant time x induction interaction, there were no significant differences in outcomes from baseline to follow-up between groups (SCJ, NJ, and TC). Time also did not have a significant effect on outcomes.

Previously identified barriers for students seeking out campus counseling services include time constraints in keeping appointments, having to wait for appointments, and anxiety

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surrounding in-person meetings (Lambert et al., 1997; Marsh, 2012; Yorgason et al., 2008).

Previous research suggested that Internet-based tutorials in self-compassionate journaling to address symptoms of self-reported depression, anxiety, and stress may be beneficial to college students campus because students can work at their own pace from home while taking immediate action for their mental health without having to wait for an appointment.

Trait self-compassion has been found to be significantly and negatively related to depression, anxiety, and stress (MacBeth & Gumley, 2012). Repeated self-compassion inductions in the past have been to be found efficacious in addressing negative outcomes such as depression (Neff & Germer, 2013). However, repeated self-compassionate journaling did not fare as well in the current study when it came to addressing depression, anxiety, and stress in college students. In addition, trait self-compassion at follow-up was not significantly and negatively correlated to depression, anxiety, and stress in the current study. The same was true when examining correlations at baseline. The lack of significant results could be related to the self-compassionate journaling induction itself, use of the DASS, the ease with which self-compassion inductions are self-administered, too much time passing between self-administered inductions and follow-up measures, or the possibility that 4 weeks of inductions is not a significant enough amount of time to have lasting effects on depression, anxiety, stress, and self-compassion. Possible explanations are explored below.

Possible Explanations for Results

  Relationships between variables. Trait self-compassion and the self-compassion subscales were not significantly correlated with the DASS at baseline or at follow-up. The nonsignificant correlations may perhaps be due to the DASS itself. The DASS is designed to assess various nuances of depression, anxiety, and stress as reported as having been experienced

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in the past week, such as physiological arousal, agitation, nonspecific arousal, etc. It is highly correlated with the BDI (Antony et al., 1998, Brown et al., 1997), which is often used in clinical assessment of depression. Perhaps the DASS was not sensitive enough to detect very low levels of baseline depression. Furthermore, there could have been an issue with power for the current study (further addressed below), which may have contributed to the lack of significant findings. Future research should examine the differences between depression, anxiety, and stress measures in relationship to self-compassion and perhaps use measures more sensitive to changes within nonclinical populations.

Self-compassionate journaling. To determine why self-compassionate journaling may have failed, journal entries for the SCJ group were examined to assess whether participants were writing about negative events that made them feel ashamed or embarrassed. In general, people in the SCJ group completed their task with roughly the same frequency as people in the NJ group with participants making an average of between four and five entries for both groups. The NJ and SCJ groups had a similar dropout rate, though both were less successful in terms of retaining participants compared to the TC group. This perhaps indicates that exercises requiring journaling in general may be viewed as more strenuous for participants compared to completing simple mood measures. Another reason the SCJ induction may not have been successful may have to do with difficulty in understanding self-compassionate journaling instructions. Although almost all entries of participants in the SCJ group were about negative events in general, many (nearly half of all entries) failed to write about events related to the self that caused shame or embarrassment. The purpose of self-compassion is to provide comfort or reassurance to oneself in the face of difficulty, particularly in situations for which one feels responsible for negative events or negative aspects of the self. There is an aspect of forgiveness and acceptance – therefore, it was

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important for participants to write about self-related or agentic events rather than just negative events in general.

Participants also seemed to have trouble understanding or writing about the component of common humanity, as fewer than half the entries coded expressed common humanity. Often, participants would use this portion of the exercise to reiterate the situation rather than trying to identify with other people or explain how other people often experience similar circumstances. The component participants seemed able to adhere to the most was exercising self-kindness. Participants seemed able to grasp writing to themselves in a kind, consoling manner more easily than writing about shameful or embarrassing personal events and aspects of common humanity. Although self-compassion inductions are postulated as being easily self-administered (Neff, 2009), this claim has not necessarily been tested in general or with specific types of self-compassion inductions. The type of induction used in the present study (self-compassionate journaling) has never, to my knowledge, been used in a previous study. It may be that the induction took too long to read. Perhaps not enough emphasis was placed on the importance of choosing a negative event that made one feel bad about oneself rather than a negative event in general.

Future research should examine the ease of self-administration and compliance with not only self-compassionate journaling, but also with other self-compassion inductions. It may be prudent to also examine adherence to instructions of self-compassion manipulations in self-administered methods versus experimenter-administered methods. If a difference is found between self-administration versus experimenter-administration, future research could work on modifying self-compassion inductions to make them more easily understood and self-administered. Perhaps more emphasis should be placed on focusing on shameful negative events

rather than negative events in general. It appears that more explanation of what common humanity is and how to induce feelings of it is also warranted.

Journaling may increase depression. Another possibility for why journaling (and condition in general) did not have a significant effect on outcome is that writing about negative events twice a week for 4 weeks may increase the salience of negative aspects of one's life, thereby possibly increasing depression. In fact, past research has shown that asking participants to engage in ruminative self-focus can increase rumination and pessimism in dysphoric and ruminative individuals (Lyubomirsky & Nolen-Hoeksema, 1995). This could prevent a decrease or perhaps facilitate an increase in self-reported depression, especially if participants are not properly following up their recall of a negative event with aspects of common humanity and self-kindness. Unfortunately, rumination was not assessed in the current study to examine whether ruminative behaviors increased throughout the semester either as a result of the progression of time or in association with journaling.

Time spent on and between entries. Time spent in the study, time spent practicing self-compassion, and time elapsing between when the event occurred and when entries were made may have played a role in why journaling was not successful. First, 4 weeks of inductions may not have been enough time to get the full benefits of a self-compassion induction. Current research on repeated self-compassion based inductions, such as the Mindful Self-Compassion Program (Neff & Germer, 2013), has shown that self-compassion inductions effectively reduce depression and increase self-compassion at the end of the 8-week program. Furthermore, the decrease in depression and increase in self-compassion was maintained at a 6-month and 1-year follow-up (Neff & Germer, 2013). In this way, it seems that self-compassion (as a trait) can be increased through repeated state inductions and maintain long-term benefits. Perhaps if

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journaling had lasted 8 weeks rather than 4, participants would have seen greater benefits. In the current study, a length of 4 (rather than 8) weeks was used in hopes of retaining student participants by reducing the level of difficulty and effort. Eight weeks would have taken up a significant portion of the semester and there was a concern about participant retention. As it was, attrition was already quite high during the 4-week study with only a little more than 50% of participants completing the study.

There is also a difference in time spent each week on self-compassion between the current study and the MSC program. Participants were not asked to spend a specific amount of time on journaling in the current study, whereas participants in the MSC program spent 2 or 2.5 hours a week on self-compassion exercises and inductions. It is estimated that if a participant in the SCJ group only made one entry a week, he or she likely spent no more than 15 minutes practicing self-compassion. It may be that self-compassionate journaling as executed in the current study simply does not give participants enough practice with self-compassion to increase trait self-compassion or to lower stress, anxiety, or depression. It is often not practical for most people (especially college students), however, to attend weekly meetings that lasting 2 – 2.5 hours each to practice self-compassion. It is also not practical for most individuals (especially college students) to attend a weekend-long retreat during the course of 8 weeks. Future research should focus on determining what is considered both a necessary yet reasonable amount of time one needs to practice self-compassion in order to experience benefits.

The amount of time that transpired between a negative event occurring and a journal entry about that negative event may also have been a factor in why there was not a significant time x induction interaction and why there were no differences between experimental groups. That is, the amount of time between the occurrence of a negative event and when participants

wrote about the negative event may have varied between and within participants. These events may have occurred days before participants wrote their entries. Participants were allowed to upload entries at any time and did not have to specify the dates of the events they were writing about. As a result the amount of time that passed between the event and the posting of the journal entry was not controlled for. Past research has shown that time can affect the recall of events (Hassan, 2005). Waiting a substantial amount of time between an event and the recall of an event may result in retrospective bias (Iida, Shrout, Leaurenceau, & Bolger, 2012).

Deciding at what interval participants should write entries is one of the biggest challenges of studies which use journals (Iida et al., 2012). The frequency and consistency of journaling should depend on what is being recorded. Emotional states, which are subject to degradation, rumination, or even aggrandization over time, may be best processed via journal entries at shorter intervals (Gollob & Reichardt, 1987; Iida et al., 2012). Furthermore, Neff's exercise suggests journaling every day. Although participants in the current study were encouraged to journal every day, they were encouraged to enter only two entries per week, yet required to enter only one entry per week. This requirement was done in an attempt to retain participants by making the task less time-intensive (as opposed to daily journaling).

Perhaps journaling every day would have had a greater impact on self-compassion. Future research should examine the benefits of delayed versus immediate administration of self-compassion techniques following a perceived negative event to determine whether there is a greater benefit in writing immediately after an event versus writing after an extended amount of time has passed. Perhaps establishing stricter journaling guidelines would provide insight into why the narrative journaling group did not experience benefits.

In addition, when examining the benefits of Web-based self-compassion inductions, future research should also examine long-term effects at different time points following the conclusion of the study to determine whether such inductions are beneficial as lifelong learning tools. Perhaps future research could also extend the number of weeks for self-compassionate journaling. Making it explicit that participants should spend a certain amount of time on each entry or at least recording time from start of entry to finish might also provide insight into the amount of time and effort spent on journaling that is necessary to receive a benefit from self-compassionate journaling.

Study sample. Possible explanations for lack of change in outcome variables could be related to the sample used, which was comprised of undergraduate college students. There could be issues with difficulty adjusting in the face of change during one's freshmen semester, self-esteem (either high or low), motivation (both for completing the study in general and engaging in self-compassion specifically), and in demographic differences between the current study and past, successful self-compassion inductions.

Differences between completers and noncompleters. Almost half of the participants who signed up for the study dropped out before completing the study. MANOVA results indicated that there were no significant differences between completers and noncompleters on outcome variables at baseline. In terms of demographics, however, Chi-Square results indicated that ethnicity was the only variable on which completers and noncompleters significantly differed (with more racial minorities being in the noncompleter group). Some researchers in the past have theorized that minority status can affect participation in research (Ofstedal & Weir, 2011). For example, it has been proposed that minorities in research may feel marginalized (Ofstedal &

Weir, 2011). Conceivably, feeling as though one's responses are not valued may prevent minority participants from feeling motivated to continue in a lengthy study.

   Depression, anxiety, and stress maintained in undergraduates. A possible explanation for the lack of change in depression is that levels of depression experienced by students, especially freshmen (who comprised 50% of the sample), maintained their already normal levels of depressive symptoms. Research has shown that the first semester of college tends to be quite harrowing for first-time college students (Terry et al., 2012). Students experience an increase in homesickness and depressive symptoms. Also, because the study was a 5-week study, many participants may have been ending their participation during midterms (for those joining at the beginning of the semester) or finals (those joining at the end). Perhaps their initial levels of stress and anxiety at the beginning of the study were elevated in the face of new situations, just beginning college, living away from home for the first time, etc. Although not experiencing more severe levels of negative outcomes, participants' current (normal) levels may have been maintained (as opposed to decreasing) either because their levels were already so low or because they maintained the same or similar amount of depression, anxiety, and stress throughout the semester.

   One reason for this finding is that perhaps this particular sample was very low across groups in mean scores of depression, anxiety, and stress. The means for these variables across groups were within the "normal" range at baseline and follow-up according to DASS scoring instructions. A floor effect could have occurred, and the fact that data for depression, anxiety, and stress scales were positively skewed lends support to this suggestion. If a floor effect did occur, this would mean not only that scores for depression, anxiety, and stress were too low to detect changes from baseline to follow-up.

Self-esteem in undergraduates. A possible explanation for there not being significant differences between the journaling groups and true control groups may lie in self-compassion's similarity to self-esteem. Although self-compassion and self-esteem are separate constructs, they are generally highly correlated and share many similarities (Neff & Vonk, 2009). Both are also often significantly and positively correlated with positive affect, optimism, and happiness (Neff & Vonk, 2009). High self-esteem and self-compassion are also related to psychological well-being (Neff, 2011; Neff & Vonk, 2009). However, self-esteem is seen as less stable, more reliant on external contingencies and validation, and related to ego-defensiveness and narcissism when compared to self-compassion (Neff, 2011). High self-esteem involves a driving need to evaluate oneself positively most of the time and often facilitates an idea that one is 'above average' (Neff, 2011). Self-esteem also tends to decrease over time for first-semester college students (Besser & Zeigler-Hill, 2014). In addition to being a major life change, first-semester college students may find the difficulty of college courses (compared to high school courses) to be a threat to self-esteem. Although past research (Terry et al., 2012) examined self-compassion as a predictor of homesickness and depression in college students, changes in self-compassion throughout the course of a semester were not focused on. However, Besser and Zeigler-Hill (2014) found that self-esteem in first-semester students starts to drop 3 weeks into school. Furthermore, distress also begins to increase and has the potential to result in deterioration of positive functioning. Because self-compassion and self-esteem are highly correlated, it is conceivable that the hardships faced by students during their first semester of college may result in a decrease of self-compassion in much the same way past research has shown a decrease in self-esteem, especially when not provided with opportunities to practice self-compassion.

Alternatively, research also shows that rates of narcissism (related to high, unstable self-esteem) are on the rise in student samples (Twenge, 2013; Twenge, Konrath, Foster, Campbell, & Bushman, 2008) and are greater compared to narcissism rates of past college student generations (Westerman, Bergman, Bergman, & Daly, 2012). Perhaps students writing about negative situations did not feel motivated to exercise self-compassion as they may have felt that they did nothing wrong. This could also explain why students may have written about negative events in general rather than about more agentic negative events, meaning events for which they feel they are to blame. Someone high in narcissism is likely to avoid engaging in negative self-focus (Uji, Nagata, & Kitamura, 2012). Unfortunately, narcissism was not assessed in the current study in order to correlate it with self-compassion.

The act of reliving negative events without also practicing common humanity and self-kindness (as many participants in the current study did) may have led to an inability to significantly increase in self-compassion, especially if participants experienced difficulty understanding and following directions. It could be that ruminative behaviors that are not followed up by positive self-relation may pose a threat to self-compassion. Furthermore, the true control group may have not been significantly different from other groups as they were not asked to relive and write about recent negative events but instead simply fill out mood measures. Not having recent negative events made salient to them may have resulted in less rumination and, therefore, less of a need to practice common humanity and self-kindness. Future research should examine factors that can be considered threats to self-compassion. Resilience of self-compassion in the face of repeated or long-term threats to the ego should also be examined. Much of the current self-compassion research focuses on its benefits and how to foster it, but there appears to be no focus on threats to self-compassion.

Demographic differences between the current and previous studies. It is important to note that participant samples in the current study and in the Neff and Germer (2013) study differed in several ways. Although the MSC program had long-term benefits, those benefits may have been due to the type of sample used, which would explain why the current study was not successful. Both studies conducted by Neff and Germer when piloting the MSC program used older volunteer participants ($M_{age} = 51$). These participants were referred by therapists, meditation teachers, and a yoga studio. Participants also paid to join the study (though they received a discount), which may have influenced their desire to maintain participation. Furthermore, 78%-81% of these participants reported having prior experience with mindfulness inductions in the form of meditation in both studies. In the second study, 74% of participants had a graduate degree. In the current study, participants were undergraduate students who signed up for the study for course credit. Introduction to Psychology students in the participant pool were required to participate in psychological studies as part of their grade. Student volunteers in other psychology courses often receive extra credit for their psychology courses for participating in research. Over 50% of participants in the current study were college freshmen.

Because student volunteers may have been participating as a means to pass a course or for extra credit, susceptibility to the self-compassion induction may not have been as in-depth compared similar past studies (Neff & Germer, 2013) in which participants actively sought out self-compassion inductions, volunteered, and even paid to undergo such inductions. The Neff and Germer sample was also older and more highly educated. Previous experience with mindfulness-based inductions may have also influenced results. Unfortunately, previous experiences with mindfulness-based inductions (e.g., meditation, yoga) were not recorded in the current study. I had also considered the possibility that religious affiliation might have played a

role in dropout rates, as those who consider themselves very religious may be uncomfortable with the idea of practicing exercises often associated with Eastern religious and spiritual practices. However, completers and noncompleters were not significantly different in their self-described religious affiliation.

Future research could examine the differences in benefits of self-compassionate journaling between college students who are actually seeking out help versus those participating mainly for mandatory course credit. Perhaps conducting the study on a volunteer basis (rather than offering course credit or payment) while marketing it as a free self-help program might improve retention, motivation, and compliance among college students. More insight into the benefits of repeated self-compassion inductions could be found if only students who were seeking self-help programs signed up for the study. Unless a program such as the MSC program is offered to students for free or at a significantly reduced price, students are not likely to attend such programs because they may not be able to afford them. Future research should continue to study the benefits of repeated self-compassion inductions with a focus on easily self-administered inductions. Future research should also examine previous experience with mindfulness-based techniques such as yoga or meditation to determine whether past experience may affect susceptibility to and adherence with self-compassion inductions. Typical demographic variables such as age and education level should continue to be studied.

Lack of experimenter-participant communication. Previous research on a Web-based self-help program has shown that choosing to interact with a coach via phone or e-mail predicted an increased likelihood of retention for the program (Wojtowicz, Day, & McGrath, 2013). Interactions between participants and study personnel for the current study were limited to twice-weekly reminders to complete journal entries. Participants were offered no encouragement or

guidance through the inductions in the current study. With self-compassion inductions in general, some past research has been successful in fostering positive outcomes using single inductions administered orally by a researcher (Adams & Leary, 2007).

Perhaps creating a video or sound clip describing the self-compassion induction that participants can watch or listen to when completing Web-based self-help tasks would be beneficial in helping participants to both understand the task and receive an interpersonal component. Assessing participants on knowledge of the instructions on self-compassion exercises before going on to complete the induction may be beneficial as well. This could be done by having participants repeat the instructions to determine whether they fully understand what they have read or been told. Making researchers explicitly available for participants to talk to or requiring participants to check in online on a weekly basis may promote retention, compliance, and understanding of tasks should this study be replicated in the future. Examining the differences in program satisfaction and retention among those who participate in completely self-administered versus interactive Web-based programs would be beneficial as well.

Major Limitations

There are several factors discussed that could be considered limitations. Perhaps the journaling instructions were too difficult to read and/or understand for study participants. Future research should explore the differences between self-administered and experimenter-administered (in-person and via video) self-compassion inductions. A lack of interpersonal interaction could have been a limitation as well. Future research should include more interaction and encouragement from study staff.

Time between when the event occurred and when the journal entry was made could have been an issue. Future research should set stricter guidelines of when entries should be made or

how long after an event they should be made. Motivation of participants could have also played a role in the current study. Studying self-compassionate journaling in individuals who wish to learn self-compassion may present different outcomes. Finally, mindfulness may have been conceptualized differently in the current study compared to mindfulness research in general, or perhaps there was not enough power to adequately observe an effect of self-compassionate journaling. These latter two possibilities are discussed in greater detail below.

Conceptualization of mindfulness. The coding scheme for the journal entries was, itself, a limitation. Although it is easier to code for whether participants are practicing common humanity and self-kindness in their entries, it is difficult to code for mindfulness. Mindfulness is an internal process that is difficult to assess via journal entries. Furthermore, in the current study, the mindfulness portion of the induction was loosely defined as the act of writing about an experience in an objective manner. In mindfulness research, the construct is generally defined as the act of objectively viewing and attending to one's present emotions, surroundings, and physiological cues, in addition to practicing complete awareness of the here and now (Kabat-Zinn, 2003). Mindfulness in the current study may have been conceptualized differently when compared to general mindfulness research. Perhaps the fact that participants were asked to recall rather than re-experience feelings of a past event in the current exercise is part of the reason the self-compassion induction failed in the current study. Recalling rather than immersing themselves in the feelings or re-experiencing their feelings may have weakened the self-compassion induction. It could be that mindfulness best works on current emotions and feelings; therefore, not asking participants to re-experience emotions felt at the time of the event could be a limitation.

Low power. Another limitation could lie in the possibility that there was not enough power in the study. Perhaps the suggested effect size used in G*Power was too large and a smaller effect size should have been used instead. This would mean that more participants would be needed. Furthermore, the fact that homogeneity of variance was violated for certain variables at certain time points indicates that perhaps more data needs to be collected in the future. When going through levels of one variable, the variance of the other variables should not change and should remain stable at all levels for all variables (Field, 2009). Although the *F*-test is generally considered robust, a small sample size coupled with unequal group sizes may have contributed to nonsignificant results. Adjusting the effect size and gathering data from more participants may result in a significant effect in the future.

Conclusion

Increases in depression, anxiety, and stress are a growing issue for young adults, with college students being particularly vulnerable. Web-based self-help regimens involving self-compassion may be a helpful resource for existing programs and as a means of self-help for those with lower levels of depression and anxiety. The current study did not find a difference in the effects of self-compassionate journaling, narrative journaling, and simply completing mood measures over a span of 4 weeks on outcomes of depression, anxiety, stress, and self-compassion. There were several limitations of the current study, however, making the implications unclear. Based on coding of journal entries, the current study implies that self-compassion inductions may be best delivered in an interactive manner to increase participant understanding and compliance with directions.

Web-based self-compassion inductions could be especially helpful for those who perceive time, transportation, and face-to-face interactions to be barriers to seeking help.

Because trait self-compassion and self-compassion inductions have been linked to lower depression, anxiety, and stress in the past, future research should continue to examine the efficacy of self-compassion in addressing negative mental health outcomes. Self-compassion is a relatively young field of research with many of the exercises proposed by Neff (2009) remaining untested in terms of ease of self-administration and efficacy in addressing negative experiences such as depression, anxiety, and stress. Special attention should be paid to differences in both self-administered and experimenter-administered self-compassion inductions with the goal of assessing the understanding of and compliance with inductions in order to maximize the benefits of Web-based self-compassion inductions. Interpersonal components for Web-based inductions should be considered as a means to foster retention as well.

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Depression, Anxiety, and Stress Scale

Depression Anxiety Stress Scale

Name: *Date:*

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

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0 2	1 3
2	I was aware of dryness of my mouth	0 2	1 3
3	I couldn't seem to experience any positive feeling at all	0 2	1 3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0 2	1 3
5	I just couldn't seem to get going	0 2	1 3
6	I tended to over-react to situations	0 2	1 3
7	I had a feeling of shakiness (eg, legs going to give way)	0 2	1 3
8	I found it difficult to relax	0 2	1 3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0 2	1 3

1 0	I felt that I had nothing to look forward to	0 2	1 3
1 1	I found myself getting upset rather easily	0 2	1 3
1 2	I felt that I was using a lot of nervous energy	0 2	1 3
1 3	I felt sad and depressed	0 2	1 3
1 4	I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)	0 2	1 3
1 5	I had a feeling of faintness	0 2	1 3
1 6	I felt that I had lost interest in just about everything	0 2	1 3
1 7	I felt I wasn't worth much as a person	0 2	1 3
1 8	I felt that I was rather touchy	0 2	1 3
1 9	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0 2	1 3
2 0	I felt scared without any good reason	0 2	1 3
2 1	I felt that life wasn't worthwhile	0 2	1 3
2 2	I found it hard to wind down	0 2	1 3
2 3	I had difficulty in swallowing	0 2	1 3
2 4	I couldn't seem to get any enjoyment out of the things I did	0 2	1 3
2 5	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0 2	1 3
2 6	I felt down-hearted and blue	0 2	1 3
2 7	I found that I was very irritable	0 2	1 3
2 8	I felt I was close to panic	0 2	1 3

29	I found it hard to calm down after something upset me	0 2	1 3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0 2	1 3
31	I was unable to become enthusiastic about anything	0 2	1 3
32	I found it difficult to tolerate interruptions to what I was doing	0 2	1 3
33	I was in a state of nervous tension	0 2	1 3
34	I felt I was pretty worthless	0 2	1 3
35	I was intolerant of anything that kept me from getting on with what I was doing	0 2	1 3
36	I felt terrified	0 2	1 3
37	I could see nothing in the future to be hopeful about	0 2	1 3
38	I felt that life was meaningless	0 2	1 3
39	I found myself getting agitated	0 2	1 3
40	I was worried about situations in which I might panic and make a fool of myself	0 2	1 3
41	I experienced trembling (eg, in the hands)	0 2	1 3
42	I found it difficult to work up the initiative to do things	0 2	1 3

Scoring:
Scores of Depression, Anxiety and Stress are calculated by summing the scores for the relevant items. The depression scale items are 3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42. The anxiety scale items are 2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, 41. The stress scale items are 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39.

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25

| Severe | 21-27 | 15-19 | 26-33 |
| Extremely Severe | 28+ | 20+ | 34+ |

Norms: Normative data are available on a number of Australian samples. From a sample of 2914 adults the means (and standard deviations) were 6.34 (6.97), 4.7 (4.91), and 10.11 (7.91) for the depression, anxiety, and stress scales, respectively. A clinical sample reported means (and standard deviations) of 10.65 (9.3), 10.90 (8.12), and 21.1 (11.15) for the three measures.

Self-Compassion Scale

Reference:
Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity, 2, 223-250.*

Coding Key:
Self-Kindness Items: 5, 12, 19, 23, 26
Self-Judgment Items: 1, 8, 11, 16, 21
Common Humanity Items: 3, 7, 10, 15
Isolation Items: 4, 13, 18, 25
Mindfulness Items: 9, 14, 17, 22
Over-identified Items: 2, 6, 20, 24

Subscale scores are computed by calculating the mean of subscale item responses. To compute a total self-compassion score, reverse score the negative subscale items - self-judgment, isolation, and over-identification (i.e., 1 = 5, 2 = 4, 3 = 3. 4 = 2, 5 = 1) - then compute a total mean.

(This method of calculating the total score is slightly different than that used in the article referenced above, in which each subscale was added together. However, I find it is easier to interpret the scores if the total mean is used.)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

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

Almost never				**Almost always**
1	**2**	**3**	**4**	**5**

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

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

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

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

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

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

inadequacy.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX C

Positive and Negative Affect Schedule – Extended

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now. Use the following scale to record your answers:

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

1. _____ cheerful

2. _____ disgusted

3. _____ attentive

4. _____ bashful

5. _____ sluggish

6. _____ daring

7. _____ surprised

8. _____ strong

9. _____ scornful

10. _____ relaxed

11. _____ irritable

12. _____ delighted

13. _____ inspired

14. _____ fearless

15. _____ disgusted with self

16. _____ sad

17. _____ calm

18. _____ afraid

19. _____ tired

20. _____ amazed

21. _____ shaky

22. _____ happy

23. _____ timid

24. _____ alone

25. _____ alert

26. _____ upset

27. _____ angry

28. _____ bold

29. _____ blue

30. _____ shy

31. _____ active

32. _____ guilty

33. _____ joyful

34. _____ nervous

35. _____ lonely

36. _____ sleepy

37. _____ excited

38. _____ hostile

39. _____ proud

40. _____ jittery

41. _____ lively

42. _____ ashamed

43. _____ at ease

44. _____ scared

45. _____ drowsy

46. _____ angry at self

47. _____ enthusiastic

48. _____ downhearted

49. _____ sheepish

50. _____ distressed

51. _____ blameworthy

52. _____ determined

53. _____ frightened

54. _____ astonished

55. _____ interested

56. _____ loathing

57. _____ confident

58. _____ energetic

59. _____ concentrating

60. _____ dissatisfied with self

APPENDIX D

Self-Compassion Journaling Instructions

Try keeping a journal with at least two entries a week. You may turn in your journal entries at any point during the week, but we ask that you turn in your entries by Friday. You will receive 1 credit for each week you turn in your journal entries. During the 5th week, we will send a link asking you to complete a few measures and answer few questions about your experience. You will receive 2 credits for the final part of this study. In total, the study is worth 6 credits.

Journaling is an effective way to express emotions, and has been found to enhance both mental and physical well-being. Each week, review a recent event. In your journal, write down anything that you felt bad about, anything you judged yourself for, or any difficult experience that caused you pain. (For instance, perhaps you got angry at a waitress at lunch because she took forever to bring the check. You made a rude comment and stormed off without leaving a tip. Afterwards, you felt ashamed and embarrassed.) For each event, use mindfulness, a sense of common humanity, and kindness to process the event in a self-compassionate way.

Mindfulness. This will mainly involve bring awareness to the painful emotions that arose due to your self-judgment or difficult circumstances. Write about how you felt: sad, ashamed, frightened, stressed, and so on. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic. (For example, "I was frustrated because she was being so slow. I got angry, over-reacted, and felt foolish afterwards.")

Common Humanity. Write down the ways in which your experience was connected to the larger human experience. This might include acknowledging that being human means being imperfect, and that all people have these sorts of painful experiences. ("Everyone over-reacts sometimes, it's only human.") You might also want to think about the various causes and conditions underlying the painful event. ("My frustration was exacerbated by the fact that I was late for my doctor's appointment across town and there was a lot of traffic that day. If the circumstances had been different my reaction probably would have been different.")

Self-Kindness. Write yourself some kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone. (It's okay. You messed up but it wasn't the end of the world. I understand how frustrated you were and you just lost it. Maybe you can try being extra patient and generous to any wait-staff this week…")

Practicing the three components of self-compassion with this writing exercise will help organize your thoughts and emotions, while helping to encode them in your memory. If you keep a journal regularly, your self-compassion practice will become even stronger and translate more easily into daily life.

APPENDIX E

Narrative Journaling Instructions

Try keeping a journal with at least two entries a week. You may turn in your journal entries at any point during the week, but we ask that you turn in your entries by Friday. You will receive 1 credit for each week you turn in your journal entries. During the 5th week, we will send a link asking you to complete a few measures and answer few questions about your experience. You will receive 2 credits for the final part of this study. In total, the study is worth 6 credits.

Journaling is an effective way to express emotions, and has been found to enhance both mental and physical well-being. Each week, review a recent event. In your journal, write down anything that you felt bad about, anything you judged yourself for, or any difficult experience that caused you pain. (For instance, perhaps you got angry at a waitress at lunch because she took forever to bring the check. You made a rude comment and stormed off without leaving a tip. Afterwards, you felt ashamed and embarrassed.)

Describe the negative event itself and how you feel about the event in detail.

APPENDIX F

Demographics

Are you a: Freshman Sophomore Junior Senior Other

Age:

Sex:

Ethnicity:

Which of the following best describes you at the present time? (Check one)

       _____ Atheist   - I do not believe in God.
       _____ Agnostic   - I believe we can't really know about God.
       _____ Unsure   - I don't know what to believe about God.
       _____ Spiritual   - I believe in God, but I'm not religious.
       _____ Religious   - I believe in God and practice religion.

Sexual orientation:

Are you currently or have you ever been diagnosed with any psychological disorder (e.g., depression, generalized anxiety)? If yes, what is your diagnosis?

Are you currently participating in or have ever participated in therapy or counseling?

FOR FOLLOW UP DATA COLLECTION:

After joining the study, did you seek out counseling or therapy services for any mental disorder (e.g., depression, anxiety, etc.)? If so, please indicate what you sought help for?

<p style="text-align:center">VITA
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Education	Ph.D. Psychology with a concentration in Experimental Psychology, East Tennessee State University, Johnson City, Tennessee, 2014
	M.A. Experimental Psychology, East Tennessee State University, Johnson City, Tennessee, 2011
	B.A. Cognitive Psychology, East Tennessee State University, Johnson City, Tennessee, 2009
Professional Experience	Adjunct/Student Instructor, East Tennessee State University, 2010 - 2014
Publications	Blackhart, G.C., Fitzpatrick, J., & Williamson, J. (manuscript accepted for publication). Dispositional Factors Predicting Use of Online Dating Sites and Behaviors Related to Online Dating. *Computers in Human Behavior*.
Select Conference Presentation and Experience	**Conference Organizing Responsibilities:** Chair for symposium titled "Self-Compassion and Well-Being" for the 2013 annual meeting of Society of Social Psychologists Conference, Augusta, GA. **Individual Talks:** Williamson, J.R., & Blackhart, G.C. (2013, November). *Mindfulness, self-compassion, and depression: A meta-analytic review*. Talk presented at Society of Southeastern Social Psychologists Conference, Augusta, GA. Williamson, J.R. & Blackhart, G.C. (2012, October). *Self-compassion and coping with trauma: An online study examining attitudes towards the self in individuals who have experienced a traumatic event*. Talk presented at Society of Southeastern Social Psychologists Conference, Gainesville, FL
Honors and Awards	Research featured in Illuminated Magazine Fall 2012 (ETSU research-oriented magazine)