MECANISMOS ADAPTATIVOS DE LA AUTOCOMPASIÓN EN LA PREDICCIÓN DE SÍNTOMAS DE DEPRESIÓN

ADAPTIVE MECHANISMS OF SELF-COMPASSION IN PREDICTING DEPRESSION SYMPTOMS

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RESUMEN: La investigación ha demostrado que la autocompasión, una forma positiva de verse a uno mismo, está fuertemente asociada con resultados positivos de salud mental, incluida la disminución de la depresión.

ABSTRACT: Research has shown that self-compassion, a positive way of viewing oneself, is strongly associated with positive mental health outcomes, including lessened depression. Self-compassion interventions

Las intervenciones de autocompasión también son medios poderosos para reducir el estado de ánimo deprimido. Sin embargo, la investigación existente no ha podido examinar los medios adaptativos por los cuales la autocompasión puede reducir los síntomas depresivos. La presente investigación investigó si la autocompasión disminuye los síntomas depresivos al fomentar conductas adaptativas, incluido el autocuidado. Esta hipótesis fue probada en una muestra de 120 estudiantes, quienes completaron medidas de autocompasión, síntomas de depresión y autocuidado. Los resultados encontraron que el autocuidado, el interés y el compromiso en la gratitud, y la búsqueda de comentarios positivos mediaban la relación entre la autocompasión y los síntomas depresivos. La autocompasión predijo cada uno de estos comportamientos, y estos comportamientos fueron responsables de algunas de las relaciones entre la autocompasión y los síntomas depresivos. La autocompasión puede reducir los síntomas depresivos fomentando comportamientos de autocuidado. Se proporcionan implicaciones y sugerencias para futuras investigaciones.

are also powerful means by which to reduce depressed mood. However, the extant research has failed to examine the adaptive means by which self-compassion may reduce symptoms of depression. The present research investigated whether self-compassion lessens depressive symptoms by encouraging adaptive behaviors, including self-care. This hypothesis was tested in a sample of 120 students, who completed measures of self-compassion, depression symptoms, and self-care. The results found that self-care agency, interest and engagement in gratitude journaling, and positive feedback seeking mediated the relationship between self-compassion and depressive symptoms. Self-compassion predicted each of these behaviors, and these behaviors were responsible for some of the relationship between self-compassion and depressive symptoms. Self-compassion may reduce symptoms of depression by encouraging self-care behaviors. Implications and suggestions for further research are provided.

Palabras clave: autocompasión, compasión, depresión, gratitud, autocuidado.

Keywords: self-compassion, compassion, depression, gratitude, self-care.

I. INTRODUCTION

1. DEPRESSIVE SYMPTOMS

Major Depressive Disorder is a highly recurrent, disabling disorder causing significant personal, social, and occupational impairment (Wells *et al.*, 1989). Depression and subclinical depression symptoms have consistently been correlated with lifetime anxiety (Sartorius, Bedirhan, Lecrubier, &

Wittchen, 1996), alcohol and drug dependence (Davis, Uezato, Newell, & Frazier, 2008), eating disorders (Braun, Sunday, & Halmi, 1994), post-traumatic stress disorder (National Collaborating Centre for Mental Health (UK), 2005), and cardiovascular disease (Hare, Toukhsati, Johansson, & Jaarsma, 2014). In addition, depression symptoms are associated with substantial impairments in social and role functioning, including performance at work (Ornel *et al.*, 1993; Wells *et al.*, 1989; Wells *et al.*, 1992).

While individuals who experience subthreshold depressive symptoms have better outcomes than those who are diagnosed with Major Depressive Disorder, 25% of these individuals will go on to develop the disorder in the next 2 years (Wells *et al.*, 1992). Indeed, individuals with subclinical depressive symptoms are 4.4 times as likely to develop Major Depressive Disorder as compared to non-symptomatic individuals (Horwath, Johnson, Klerman, & Weisman, 1994). Individuals with subclinical depression are still at elevated risk for suicidal ideation and suicide (Cukrowicz *et al.*, 2011). Furthermore, research shows that individuals with sub-diagnostic depression symptoms do not differ significantly from diagnosed individuals in psychosocial deficits (Gotlib, Lewinsohn, & Seeley, 1995) or early mortality (Cuijpers & Smit, 2002).

Given its significant deleterious effects, research into the prevention, development, and treatment of depressive symptoms is critical. The purpose of the current study is to explore the prevention of symptoms of depression through self-compassion, gratitude, self-care behaviors, and positive feedback seeking.

2. SELF-COMPASSION

The etiology of depressive symptoms is widely considered to be multifactorial, drawing from psychosocial, biological, and environmental influences (Sjoholm, Lavebratt, & Forsell, 2009). While this literature is extensive, one promising area of study is in coping and protective factors, including self-compassion. Self-compassion is a construct that emerged from the Buddhist tradition and involves offering the same care, understanding, and compassion to oneself that is offered to loved ones, despite flaws or failures (Neff, 2003). Self-compassion is a positive attitude toward oneself that involves being kind to oneself, viewing one's experiences as part of the overall human experience, and being mindful of negative emotions rather than over-identifying with them (Neff, 2003). Self-kindness is especially relevant and potentially useful during difficult life events. Engaging in self-kindness, individuals nurture and comfort themselves with a warm tone and are concerned with the alleviation of their own suffering, in contrast to using judgment and self-criticism. Self-compassion also involves seeing one's experience as part of the human

experience, instead of isolating oneself and seeing oneself as alone in their suffering. Finally, self-compassion is characterized by mindfulness, the ability to be with present with unpleasant things in the moment and avoid over-identifying with painful feelings. Self-compassion means meeting one's feelings of suffering and inadequacy with insight, understanding, and kindness (Neff, 2009). In contrast to self-esteem, self-compassion involves a focus on internally valuing the self rather than being dependent upon external circumstances and temporary successes.

3. SELF-COMPASSION AND DEPRESSION

Researchers have found that high self-compassion can protect against negative psychological health, including depression. Research on trait self-compassion, for example, has found it is associated with reduced symptomatology following serious negative life events, including divorce (Sbarra, Smith, & Mehl, 2012), HIV diagnosis (Brion, Leary, & Drabkin, 2014), diabetes (Friis, Consedine, & Johnson, 2015), and combat trauma (Hiraoka *et al.*, 2015). Moreover, trait self-compassion is a negative predictor of depression, anxiety, and other forms of psychopathology (see MacBeth & Gumley, 2012 and Zessin, Dickhäuser, & Garbade, 2015 for meta-analytic reviews). Experimental research has found that engendering a self-compassionate mood reduces negative emotions (Arimitsu & Hofmann, 2015; Leary, Tate, Adams, Allen, & Hancock, 2007; Odou & Brinker, 2015), decreases depressed mood among people with major depressive disorder (Diedrich, Grant, Hofmann, Hiller, & Berking, 2014), and reduces depressive symptoms in shame-prone individuals (Johnson & O'Brien, 2013).

Interventions designed to increase self-compassion appear to have a similar impact on negative mood-states. For instance, Shapira and Mongrain (2010) found that writing a self-compassionate letter to oneself once a day for seven days decreased depression for 3 months. Arch *et al.* (2014) found that brief self-compassion training reduced anxiety and maladaptive physiological response to social threat. Neff and Germer (2013) found that participation in an eight-week intervention designed to increase self-compassion reduced depression and anxiety for at least a year.

The wide body of literature on depression and depressive symptoms indicates several ways depression may be linked with self-compassion. Kindness to oneself, a key component of self-compassion, stands counter to punitiveness and self-criticism, which have both been connected to depression (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Carver & Ganellen, 1983). The second component of self-compassion, seeing experiences as part of the human condition, conflicts with the isolation and loneliness that precede depressive periods (Cacioppo, Hawkley, & Thisted, 2010).

The third major component of self-compassion, mindfulness of negative states, is also connected to depressive outcomes. A wide and growing body of literature has explored the connection between mindfulness and recovery from depression (see Grossman, Niemann, Schmidt, & Walach, 2004, for a meta-analytic review). Mindfulness can counter the rumination and overidentification with negative thoughts that are typical of depression (Williams, 2008) and form a critical intervention for individuals who experience depression. One structured therapy has been developed that makes use of mindfulness as an intervention for depression and other physical, psychosomatic, and psychiatric disorders: Mindfulness-Based Cognitive Therapy (MBCT; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000). Growing research in this field shows that MBCT can reduce relapse and recurrence of depressive symptoms. Compared to treatment as usual, MBCT leads to significantly fewer relapses in individuals who have experienced three or more episodes of depression (Teasdale *et al.*, 2000), including those who are being treated with antidepressant medication (Kuyken *et al.*, 2008). MBCT can also reduce depression symptoms in treatment-resistant individuals (Eisendrath *et al.*, 2016). Self-compassion may capture the same facets of mindfulness that improve recovery from depression. Indeed, studies of MBCT find that self-compassion grows during mindfulness-based interventions (Kuyken *et al.*, 2010).

On the whole, the experience of self-compassion engenders positive mind-states (Neff, 2003b; Van Dam, Sheppard, Forsyth, & Earleywine, 2011); and research shows that depressed individuals benefit from increased positive emotions, which can speed recovery from the physiological effects of negative emotions (Fredrickson & Levenson, 1998; Tugade & Fredrickson, 2004) and improve coping skills (Fredrickson & Joiner, 2002). Taken together, previous research suggests a directional, predictive model in which higher self-compassion is associated with lower depression.

Still, at this point, research has not examined the positive mechanisms by which self-compassion plays a protective role in coping with distress. In the current study, we sought to better understand whether high self-compassion is associated with protective behaviors relevant to depression. These include preventative self-care, help-seeking attitudes, gratitude practices, and positive feedback seeking. We also explored whether these sorts of adaptive behaviors would be associated with reductions in depressive symptoms. These components are briefly reviewed below.

4. ADAPTIVE BEHAVIORS

Preventative self-care and help-seeking attitudes are critical to depression outcomes, as research reflects a strongly inverse relationship between these

behaviors and depression (e.g. Ludman *et al.*, 2003). Core aspects of self-compassion likely inform self-care behaviors, and a possible link may connect self-compassion to depression. Self-care is critical to maintaining or regaining physical and mental well-being, or well-functioning (Coster & Schwebel, 1997). Ongoing self-care is necessary to remaining free from illness and managing illness and disease (for example, diabetes; Lin *et al.*, 2004), and it is considered an «ethical imperative» in the field of psychology (Barnett, Johnston, & Hillard, 2006). The practice of self-care includes a number of everyday behaviors, such as feeding oneself, sleeping regularly, and maintaining hygiene; physical behaviors like exercising, seeking information about one's illness, and making adjustments to one's health as needed; and behaviors that protect mental health like being in contact with others and journaling (World Health Organization, 1983). In addition, self-care involves seeing a doctor, seeking help or information as needed, and changing one's lifestyle as needed to return to physical and mental well-being (WHO, 1983).

5. GRATITUDE JOURNALING

Traditional and nontraditional forms of self-care are critical to physical and psychological health. In the medical setting, disease self-care is strongly associated with rates of depression (Freedland, Carney, Rich, Steinmeyer, & Rubin, 2015; Lin *et al.*, 2004). Outside the medical setting, too, self-care behaviors are linked directly to lessened depression. For example, keeping a gratitude journal, a behavior that protects and enhances mental health, leads to well-being, happiness, life satisfaction, and lessened depression (McCullough, Emmons, & Tsang, 2002; Watkins, Woodward, Stone, & Kolts, 2003; Wood, Froh, & Geraghty, 2010). Gratitude journaling is a practice in which individuals write about «items, people, or events for which [they] are particularly grateful» (Rash, Matsuba, & Prkachin, 2011). Rash, Matusba, and Prkachin (2011) studied the impact of participants who journaled twice a week over a four-week period. Participants listed things for which they were grateful and then used purposeful contemplation to «experience and maintain the sincere heart-felt feelings of gratitude.» The experimenters found that the practice of gratitude journaling increased satisfaction with life, self-esteem, daily satisfaction, mood, and, notably, trait gratitude.

Given gratitude's potential connection with mental health outcomes, including depression, gratitude journaling may be an effective self-care intervention. Indeed, gratitude interventions are related to reduced depression (Emmons & McCullough, 2003**;** McCullough, Emmons, & Tsang, 2002; Seligman, Steen, Park, & Peterson, 2005**;** Watkins, Woodward, Stone, & Kolts, 2003; Wood, Froh, & Geraghty, 2010). The self-care behavior of gratitude

journaling may be an important link between self-compassion and health outcomes, including depression.

6. POSITIVE FEEDBACK SEEKING

A further self-care behavior associated with depression is seeking positive feedback from others. Considerable research supports the notion that people experiencing depression seek negative feedback to confirm their feelings about themselves (e.g. Cassidy, Ziv, Mehta, & Feeney, 2003; Pettit & Joiner, 2001), while people with positive self-perceptions and higher global self-worth tend to seek more positive feedback (Cassidy, Ziv, Mehta, & Feeney, 2003). Generally, less depression is associated with more positive feedback seeking (Pineles, Mineka, & Zinbarg, 2008). Positive feedback seeking may be an additional self-care behavior that buffers against depression.

7. STUDY GOALS

Collectively, self-care behaviors, including traditional behaviors, gratitude journaling, and positive feedback seeking, could interfere with the development of depressive symptoms. With the practice of regular self-care, increasing gratitude through journaling, help-seeking, and seeking positive feedback, depression may be prevented or mitigated.

In addressing these research areas, our primary goal was to explore whether these positive behaviors serve as partial mechanisms by which self-compassion impacts depression symptoms. We hypothesized that these behaviors would mediate the relationship between self-compassion and these symptoms. To address this hypothesis, we studied the role of these adaptive behaviors in the relationship between depression symptoms and self-compassion. Next, we investigated the question of whether keeping a gratitude journal after learning about gratitude and the benefits of journaling affects this relationship.

II. METHOD

1. PARTICIPANTS

One hundred twenty undergraduate students at a large public university in the Southwest participated in the study. Assuming 80% power and 0.05 significance, this sample size could detect an effect of the hypothesized mediation of $f^2 = 0.07$, a small-to-medium effect size. The sample was primarily women (70.8%) with a mean age of 21.58 (SD = 4.02). The racial and ethnic composition was 61.7% Caucasian, 15.8% Asian or Pacific Islander, 12.5% Hispanic or Latino, 7.5% Black or African American, 0.8% Native American,

and 1.7% of an ethnicity not previously listed. Participants were primarily heterosexual (89.2%), with 1.7% and 9.2% identifying as gay and bisexual, respectively.

2. PROCEDURE

The sample was recruited for this study through an educational psychology subject pool at a large Southwestern university and received course credit for participation. Participants were informed that the researchers were interested in how various aspects of personality affect mental health. After providing consent, participants first completed a demographic questionnaire including sex, age, year in college, relationship status, sexual orientation, ethnicity, and geographical origin. They then responded to measures of self-care agency (ASAS-R) and attitudes toward seeking help (ATSPPH-SF). These measures were administered before the Self-Compassion Scale in order to prevent priming self-compassionate responding, a procedure used in other research on self-compassion (e.g. Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). Participants next completed the Self-Compassion Scale. Following this scale, participants completed a measure of positive feedback seeking (FSQ), followed by the scale for depression (CES-D 10). Administration of a depression scale following a self-compassion scale is also typical in the extant literature (e.g. Krieger *et al.*, 2013; Van Dam, Sheppard, Forsyth, & Earleywine, 2011), and depression symptom endorsements are not significantly affected by order effects (Björgvinsson, Kertz, Bigda-Peyton, McCoy, & Aderka, 2013; Caracciolo & Giaquinto, 2002). Throughout these questionnaires, participants encountered four attention checks. Specifically, they were asked to affirm that they were completing a study for their department and to select specific items. We also confirmed that participants were responding consistently on Likert type scales.

Two weeks later, participants who indicated a likelihood of trying a gratitude journal were invited to complete the follow-up survey. In the follow-up survey, the participants were asked if they had tried the gratitude journal and for how long. Their responses were linked with their responses from the original survey.

3. MEASURES

Self-compassion. Self-compassion was measured with the Self-Compassion Scale – Short Form (SCS-SF; Raes, Pommier, Neff, & Gucht, 2010). Below the heading «How I Typically Act Towards Myself in Difficult Times,» the scale asks participants to indicate their agreement with 12 statements

on a Likert type scale (0 = «Almost Never,» 5 = «Almost Always»). Items reflect the three core components of self-compassion and include «I try to be understanding and patient towards those aspects of my personality I don't like» and «I try to remind myself that feelings of inadequacy are shared by most people.» The Self-Compassion Scale – Short Form correlates almost perfectly with the original Self-Compassion Scale (Raes, Pommier, Neff, & Van Gucht, 2011). The SCS exhibits strong test-retest reliability (Neff, 2003b), inter-rater reliability (Neff & Beretvas, 2013), and criterion validity (Leary *et al.*, 2007). The short form also exhibits good internal consistency (Cronbach's α =.86). Reliability of the SCS-SF in this study was supported by internal consistency estimates of.85.

Self-care agency. Physical and psychological self-care was measured using the Appraisal of Self-Care Agency – Revised scale (ASAS-R; Sousa *et al.*, 2010), developed with the goal of assessing the capabilities of medical patients' self-management of chronic disease. The scale was formed using a sample of individuals from the general population and has been used extensively as a measure for general health maintenance (Sousa *et al.*, 2010). The measure was included to assess the relationship between self-compassion and all forms of caring for oneself, both medical and psychological. The scale includes measures of self-care behaviors including «mak[ing] the needed adjustments to stay healthy,» «obtain[ing] information about the side effects» of a new medication, and «tak[ing] time to care for» oneself. Participants indicated their identification with 15 statements on a Likert type scale (0 = «Totally agree,» 5 = «Totally disagree»). In extant research, the measure exhibits good internal consistency with an alpha of.90. In this study, the internal consistency estimates for the ASAS-R was.86.

Help-seeking attitudes. The Attitudes toward Seeking Professional Psychological Help – Short Form (ATSPPH-SF; Fischer & Farina, 1995) is a measure of mental health treatment attitudes associated with lower stigma and more willingness to seek psychological help. Seeking help is a critical aspect of physical and psychological self-care (WHO, 1983). The scale content expands on items from the ASAS-R which measure participants' likelihood to seek help as needed. A Likert type scale assesses the level of agreement with ten attitudes (0 = «Agree,» 4 = «Disagree»). For example, participants indicate the likelihood that «If I believed I was having a mental breakdown, my first inclination would be to get professional attention.» In its initial validation, the ATSPPH-SF exhibited good internal reliability, α =.84. In our study, the ATSPPH-SF internal consistency estimate was α =.83.

Interest in a self-care behavior. Self-care also includes following through on new ideas and recommendations for adaptive behaviors (WHO, 1983). To measure participants' interest and engagement in self-care behavior, we first

informed them of the benefits of gratitude, including reducing depression and increasing happiness and life satisfaction. We also discussed gratitude journals and their ability to assist in cultivating gratitude. The participants indicated the likelihood that they would keep a gratitude journal from «Very Unlikely» to «Very Likely.»

Gratitude journal follow-up. Two weeks later, participants who indicated that they were «Undecided,» «Likely,» or «Very Likely» to try a gratitude journal received a follow-up email inviting them to complete additional, optional questions (n = 79). Thirty-seven participants responded to this survey (46.84%). In the follow-up questionnaire, participants indicated whether they tried the gratitude journal exercise (No, Yes) and how many days for which they kept a journal, from one day to «More than 7 days.» Each participant's results were linked with their responses to the original survey.

Positive feedback seeking. The Feedback-Seeking Questionnaire (FSQ; Swann, Wenzlaff, Kurll, & Pelham, 1992) is a behavioral measure of feedback seeking that was included to assess a novel form of psychological self-care. Participants were asked to indicate five of eleven aspects of themselves about which they were most interested in seeking feedback from a classmate, and each aspect was presented in its negative and positive forms (e.g. «What do you see as your classmate's *most* physically attractive features?,» «What do you see as your classmate's *least* physically attractive features?;» italics added for emphasis). The participants' selections of positive feedback items were summed for a total positive feedback seeking score. In its initial validation, the FSQ exhibited good internal reliability, $\alpha = .63$. In this study, the internal reliability estimate for the FSQ was $\alpha = .62$.

Depression symptomatology. The Center for Epidemiological Studies – Depression 10 form (CES-D 10; Radloff, 1977) is a measure used to screen for depression in the general population. Capturing the medically defined symptoms of Major Depressive Disorder, the scale asks participants about the presence of ten symptoms over the last week, such as «I could not 'get going,'» on a scale from «Rarely or none of the time (less than 1 day)» to «All of the time (5-7 days).» In extant research, the measure exhibits good internal consistency with a Cronbach's alpha of .89, 95% CI [.878, .901] (Björgvinsson, Kertz, Bigda-Peyton, McCoy, & Aderka, 2013**)**. The measure also has excellent test-retest reliability with an intraclass correlation of .87, 95% CI [.790, .930] (Miller, Gaughan, & Pryor., 2008), adequate inter-rater reliability with a correlation of .60, 95% CI [.543, .651] (Bassett, Magaziner, & Hebel, 1990), and excellent criterion validity (Agrell & Dehlin, 1989; Caracciolo & Giaquinto, 2002). Evidence supporting the reliability of the CES-D 10 in this study is provided by a coefficient alpha of .83.

4. ANALYSIS METHODS

Using the data from the above questionnaires, the researchers determined scores for each scale and conducted mediation analyses using the Hayes PROCESS tool of ordinary least squares for estimating direct and indirect effects in mediation models (Hayes, 2013). This method can estimate the coefficients in a mediation model and estimate the indirect effects of the variables. It also uses a bootstrapping model to determine confidence intervals. Hayes' PROCESS model is widely used in existing literature and is considered a robust procedure for testing mediation (Hayes, 2012).

The Hayes PROCESS tool involves a number of steps to determine mediation effects. In the simple mediation model tested using PROCESS, an independent variable (self-compassion in the current study) causally influences both a mediator (the adaptive behaviors in this study) and a dependent variable (depression). In addition, the mediator causally influences the dependent variable (depression) and accounts for some of the relationship between the independent variable (self-compassion) and dependent variable (depression). The mediation tested in this study is presented in Figure 1.

The first step of the PROCESS analysis is a measurement of the coefficients of the regressions of the independent variable on the mediator and dependent variable. In particular, the model begins by estimating the direct effect of self-compassion on depression using ordinary least squares regression. Next, the tool estimates the indirect effect of self-compassion on depression through the hypothesized mediators. Finally, the model can estimate the total effect of self-compassion on depression. In the model, a mediator is considered significant when the indirect effects of self-compassion on depression through the mediator are significantly greater than the direct effects of self-compassion on depression.

Data analysis in the present study involved determining the direct effects, indirect effects, and mediation significance considering each of the hypothesized mediators in turn: self-care agency, help-seeking, gratitude journaling, and seeking positive feedback.

III. RESULTS

Intercorrelations for all variables included are presented in Table 1. All variables were significantly correlated in the predicted directions, with the exception of psychological help-seeking attitudes, which was not correlated with self-compassion. Self-compassion was positively correlated with self-care behaviors (ASAS-R), in that those with higher self-compassion were more likely to make adjustments to stay healthy and take care of their mental and physical well-being. Further, self-compassion was linked with

the likelihood of keeping a gratitude journal and actual gratitude journal behaviors, including having tried the exercise and the number of days on which gratitude was recorded. Self-compassion was also positively correlated with positive feedback seeking (FSQ). In support of the current literature, self-compassion was negatively correlated with depression symptoms (CES-D). Self-compassion was not correlated with any demographic variables except relationship status with greater self-compassion found in individuals in higher-commitment relationships.

Participants only indicated their experience with the gratitude journal if they completed the follow-up questionnaire, resulting in a smaller sample of 37 participants. In this reduced sample, correlations were calculated between self-compassion and whether participants tried the gratitude journal exercise. Further correlations between self-compassion and the number of days participants kept a journal were calculated, displayed in Table 1. These data reflect that self-compassion was positively correlated with each of these measures. As stated above, participants high in self-compassion expressed a greater likelihood of trying a gratitude journal. Amongst individuals who indicated this likelihood, participants who were especially high in self-compassion were more likely to keep a journal and kept a journal on more days than others who indicated interest in the exercise. Individuals with higher self-compassion indicated interest in gratitude journals, and the participants with the highest self-compassion kept a journal and did so on more days.

We used the Hayes PROCESS simple mediation model to test the mediation effects of our main factors of interest, self-care agency, likelihood of keeping a gratitude journal, having kept a gratitude journal, the number of days a participant tried a gratitude journal, and positive feedback seeking. Psychological help-seeking attitudes were excluded from this analysis given that initial analyses did not support their correlation with self-compassion.

To test these mediations, the PROCESS tool was used to determine the regression coefficients for the relationships between self-compassion and depression, between self-compassion and the proposed mediator, and between the proposed mediator and depression. Using these coefficients and a bootstrapping method involving 5,000 bootstrap samples, the model calculated the indirect effect of self-compassion on depression given the proposed mediator. Then, indirect effects were computed for each of 5,000 bootstrapped samples, and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. Results from these steps are reported in Table 2.

Mediation analyses revealed that most of the assessed factors significantly mediate the relationship between self-compassion and depression symptoms,

including self-care agency, likelihood of keeping a gratitude journal, trying a gratitude journal, and seeking positive feedback. The mediation analysis did not support the hypothesis that the number of days on which an individual kept a gratitude journal mediates the relationship between self-compassion and depression symptoms.

IV. DISCUSSION

The primary goal of the present research was to examine the role of self-compassion in depressive symptoms by exploring self-compassion's relationship with adaptive behaviors. Our first hypothesis suggested that self-compassion is associated with self-care agency, self-care behaviors, help-seeking attitudes, and positive feedback seeking. In support of this hypothesis, self-compassion was significantly associated with self-care, including self-care agency, interest and engagement in a self-care behavior, and positive feedback seeking. In addition, we found a relationship between a behavioral measure of gratitude journaling and self-compassion. Individuals who were high in self-compassion were more likely to keep a gratitude journal.

Interestingly, self-compassion was not associated with attitudes toward professional help-seeking. Several tentative explanations might account for this unanticipated result. First, the Attitudes Toward Seeking Professional Psychological Health – Short Form includes items related to experiencing a «mental breakdown,» being confident that «relief in psychotherapy» would help in an emotional crisis, and rejecting the notion that an individual should «work out his or her problems.» Given the nature of self-compassion, it is possible that individuals high in self-compassion see themselves as less in need of counseling. For example, they are likely to be more confident in their ability to resolve their own crises, given that trait self-compassion would have historically allowed them to be more adaptive in crisis situations. Individuals high in self-compassion may in reality be able to work out their own problems. Despite the insignificant correlation between self-compassion and attitudes toward seeking professional help, high self-compassion was still associated with physical and general self-care behavior. It is clear that self-compassion is still strongly correlated with adaptive behaviors.

Our second hypothesis concerned the relationship between self-compassion and symptoms of depression. Specifically, we hypothesized that the adaptive behaviors examined in this study partially mediate the relationship between self-compassion and depression symptoms. As hypothesized, we found that reported self-care behaviors, interest in a self-care exercise, engaging in a self-care exercise, and positive feedback seeking mediate the negative relationship between self-compassion and depression symptoms. Self-compassion is associated with higher self-care agency, interest and engagement in a self-

care practice, and positive feedback seeking, and those factors are partially responsible for the relationship between self-compassion and depression symptoms. These findings support the notion that these adaptive behaviors serve as partial mechanisms by which self-compassion could affect these symptoms. Overall, the results obtained in this study were largely consistent with the hypotheses.

The present research is the first to examine self-compassion's relationship with behaviorally measured self-care behaviors and positive feedback seeking; still, our results are consonant with the extant research that explores the relationship between self-compassion and depression. In support of previous research, self-compassion was significantly negatively correlated with experiences of depression (e.g. Diedrich, Grant, Hofmann, Hiller, & Berking, 2014; Johnson & O'Brien, 2013; MacBeth & Gumley, 2012; Zessin, Dickhäuser, & Garbade, 2015).

Our finding about physical and mental self-care as a mediator between self-compassion and positive outcomes is also consistent with extant literature. Research from Terry, Leary, Mehta, and Henderson (2013) examined the role of self-compassion in medical help-seeking following a health threat. As echoed in our present research, people high in self-compassion were more likely to seek medical help and did so sooner than those lower in self-compassion. Other research reflects that self-compassion is correlated with recovery and symptomatology following health diagnoses (e.g. HIV; Brion, Leary, & Drabkin, 2014). Our research builds on this finding by explicitly connecting self-compassion to depression through medical help-seeking behaviors, an exemplar of self-care. Support for our second hypothesis about the mediation effects of self-care and positive feedback seeking elaborates on this research by identifying concrete behaviors that further buffer this relationship.

These findings have several potential implications. First, our results suggest tentative pathways by which self-compassion may help individuals who are prone to depression: by increasing self-care and other adaptive behaviors. Clues as to how self-compassion acts on mental health outcomes are important in further learning about this relatively new construct. In addition, these adaptive behaviors can be themselves encouraged. Therefore, the results highlight some behaviors that can be learned in order to decrease depressive symptoms, no matter the level of an individual's self-compassion. For example, for an individual low in trait self-compassion, taking extra steps to take care of themselves or seek positive affirmations could be associated with reduced risk of depression. Conversely, an individual with high trait self-compassion could keep a gratitude journal to further bolster their mental health. Furthermore, these results highlight the importance of taking care of oneself, whether by looking up symptoms for a new medication or keeping a gratitude journal. The connection in the present research between self-

compassion, self-care, and depression symptoms may encourage practitioners to recommend that their patients engage in these behaviors. Continued research is needed to establish these connections and guide practitioners' work.

Collectively, our findings support the idea that self-compassion can affect depression symptoms through a number of specific adaptive behaviors. Within depression, the mechanisms of self-compassion as a predictor are important to resolve. People's self-care, help-seeking patterns, positive feedback seeking, and other adaptive behaviors may be the critical connections between this aspect of self-concept and the disabling symptoms of depression.

There are a number of limitations in the present study, outlining the need for further research. First, while the participants represented a sample of ethnic, sex, and sexual orientation diversity, they were gathered through a university subject pool. Thus, the study may not have been representative of the greater population. Undergraduate students may differ from the greater population in levels of depression, interest in psychological studies, education level, socioeconomic status, age, familiarity with self-care strategies, and social resources. Furthermore, the participants' compensation of research credit may have unfairly biased the sample selection and thoughtful responding.

Second, because most data were collected cross-sectionally, results cannot unequivocally support relationships in the predicted directions. It may be possible that some relationships indicated in the research actually exist in the opposite direction. For example, higher rates of depression could lead to lower self-compassion. Depression may lead individuals to take worse care of themselves, leading to lower identified rates of self-compassion. Further research using controlled interventions would be helpful in determining the direction of the relationships in this study. Still, despite that directionality was not causally determined, the results and implications of this study are in line with the large body of extant research on self-compassion and depression. Both theoretical (Neff, 2003) and experimental research (e.g. Neff, Kirkpatrick, & Rude, 2007; Raes, 2011; Van Dam, Sheppard, Forsyth, & Earleywine, 2011) support the predictive relationship of self-compassion on depression and the notion that differences in self-compassion lead to differences in depression, rather than the other way around.

One additional limitation is that the study relied on self-report measures. Self-report measures may be subject to socially desirable reporting and inflations of personal strengths. Depression symptoms were only assessed with one self-report measure, and a structured interview may have provided a more accurate and nuanced perspective on the participants' mental health.

Despite these limitations, the present study is the first to provide support for positive mechanisms of self-compassion in leading to reduced depression

symptoms. Following from research showing that self-compassion can be induced or learned (e.g., Gilbert & Procter, 2006; Liberzon, 2013; Neff & Germer, 2013), the results of this study indicate the potential for people to develop self-compassion in order to increase their self-care and help-seeking behaviors while minimizing maladaptive responses to depression. This would be a particularly promising intervention for those who habitually neglect self-care, who are reluctant to seek help, who are at risk for depression, and who experience recurrent or chronic depression.

The key aims for researchers and clinicians interested in self-compassion include further exploring the mechanisms of self-compassion, factors that influence individuals' levels of self-compassion, and methods by which to enhance self-compassion. The present study provides support for several hypotheses regarding self-compassion and depression, but mechanisms of self-compassion can be further studied in future research. Moving forward, research elaborating upon these findings will assist in developing a more nuanced understanding of self-compassion and its adaptive role in depression.

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Table 1. Correlations Between All Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Self-Compassion Scale															
2. ASAS-R	.29**														
3. ATSPPH-SF	.04	.24**													
4. Likelihood of trying a gratitude journal	.26**	.30**	.29**												
5. Tried the gratitude journal	.35*	.19	.49**	.49**											
6. Days of gratitude journaling	.39*	.12	.12	.46**	.59**										
7. FSQ	.32**	.26**	.04	.32**	.38*	.19									
8. CES-D	–.48**	–.35**	.01	–.30**	–.44**	–.16	–.41**								
9. Sex	.14	.29**	.30**	.30**	.25	.16	.21*	–.17							
10. Age	.01	–.03	.15	–.13	–.03	–.05	.04	.20*	–.07						
11. Current year in school	.10	.09	.09	–.09	–.17	–.17	–.11	.05	–.08	.41**					
12. Relationship status	.21*	.05	.16	.07	.00	.11	.07	–.17	.09	.31**	.21*				
13. Sexual orientation	–.09	–.14	–.08	.00	.18	.24	–.20*	.18*	–.03	–.05	–.05	–.02			
14. Ethnicity	.08	.04	–.34**	–.16	–.28	.15	–.13	–.06	–.03	–.15	–.06	–.04	.03		
15. Country of origin	.09	.18*	–.09	.10	–.18	.15	–.05	–.06	.01	–.09	–.10	–.05	–.10	.36**	

Note. Column headers refer to numbered variables. *ASAS-R* = Appraisal of Self-Care Agency – Revised. *ATSPPH-SF* = Attitudes toward Seeking Professional Psychological Help – Short Form. *CES-D* = Center for Epidemiologic Studies Short Depression Scale. *p <.05. **p <.01.

Table 2. Mediation Analyses Using Hayes PROCESS Model

Variable	Direct effect of SC on depression	Indirect effect of SC on depression	Significance of mediation effect	Bootstrapped 95% confidence interval
Self-care agency (ASAS-R)	–.27	–.04	p <.01	(–.10, –.01)
Likelihood of trying gratitude journal	–.28	–.03	p <.01	(–.10, –.02)
Trying a gratitude journal	–.23	–.13	p <.05	(–.36, –.03)
Number of days journaled	–.14	–.02	p =.30	(–.16,.07)
Positive feedback seeking (FSQ)	–.26	–.06	p <.01	(–.11, –.03)

Figure 1. Mediation model tested using the Hayes PROCESS tool