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Self-Compassion and Self-Forgiveness as Mediated by Rumination, Shame-Proneness, and
Experiential Avoidance: Implications for Mental and Physical Health

A dissertation
presented to
the faculty of the Department of Psychology
East Tennessee State University
In partial fulfillment
of the requirements for the degree
Doctor of Philosophy in Psychology with a Concentration in Clinical Psychology

by
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August, 2015

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ABSTRACT

Self-Compassion and Self-Forgiveness as Mediated by Rumination, Shame-Proneness, and

Experiential Avoidance: Implications for Mental and Physical Health

by

Elizabeth Conway Williams

Self-compassion and self-forgiveness appear to have much in common, as both relate to one's self-regard during challenging circumstances; however, their empirical relationship is largely yet to be explored. The present study examines theoretical and empirical areas of overlap and proposes a theory of their relationship, including its possible impact on health. Self-compassion and self-forgiveness were proposed to have a direct relationship that may be mediated by reduction in rumination, shame, and experiential avoidance. These factors together were also hypothesized to have a positive impact on health functioning. The current study tested these models in a sample of undergraduate students ($n = 199$). In parallel mediation analysis, self-compassion and self-forgiveness were related to one another and this association was partially mediated by shame, only. As such, neither rumination nor experiential avoidance were included in subsequent analyses. In serial mediation analyses, self-compassion, shame, and self-forgiveness were found to affect health outcomes in various ways. For psychological distress, the association of self-compassion was partially mediated by shame and self-forgiveness, in an indistinguishable fashion. For mental health status, self-compassion was found to have a significant direct effect, only. For both somatic symptoms (full mediation) and physical health status (indirect only effect), the association of self-compassion operated through self-forgiveness both alone and linked with shame. As these two emerging areas in the psychological literature continue to mature, researchers should prioritize both integration between and nuances within

these constructs in order to develop a more complete understanding of self-compassion, self-forgiveness, and their implications for health.

DEDICATION AND ACKNOWLEDGEMENTS

I dedicate my dissertation to each of my grandparents: Randy and Mary Lynn Conway, and Harry and Norene Trantham. Thank you for always believing in me, for being my biggest cheerleaders, for being exemplar models of how to live a life. I am here today because of each of you. I love you dearly and carry each of your legacies in my heart, always.

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CHAPTER 1

INTRODUCTION

Self-compassion and self-forgiveness are both growing areas of interest in the psychological literature. A PsycINFO search conducted in June 2014 found 290 hits for “self-compassion” since 2003, when Neff (Neff, 2003a, 2003b) published two seminal articles on the topic, including the Self-Compassion Scale, and only four publications on self-compassion published in the prior decade, from 1993-2002. Similarly, within the same time frame, “self-forgiveness” resulted in 122 hits since 2003, and only 19 hits for the previous decade. Not only are both of these constructs growing areas of interest in the psychological literature, but self-compassion and self-forgiveness also appear to have much in common. As will be described further, they are both conceptualized as pro-social, adaptive means of self-regulation that are related to but independent from spirituality (Mahoney & Graci, 1999; Neff, Hsieh, & Dejitterat, 2005; Witvliet, 2005). Both constructs appear to be related to health functioning (e.g., Maltby, Macaskill, & Day, 2001; Neff, 2003b), and may furthermore impact health through similar mechanisms (Conway-Williams, Bumgarner, & Webb, 2013). However, to date, the empirical association between self-compassion and self-forgiveness is yet to be explored. Gaining insight into the nature of the relationship between these constructs may be imperative to furthering our understanding of self-compassion and self-forgiveness individually. After defining each construct and reviewing the areas of overlap between the two, I will propose and test a model of the relationship between self-compassion and self-forgiveness within the context of their relationship with mental and physical health.

Self-Compassion

Self-compassion is a relatively new construct in the psychological literature that has garnered mounting attention in the last several years. Although the concept, central to Buddhist philosophy, has existed for centuries (Neff, 2003b), it has only come under the scrutiny of psychological researchers recently, largely prompted by the writings of Kristen Neff (Neff, 2003a, 2003b). Self-compassion is defined as a way of relating to oneself that is not reliant on evaluations of self-worth, characterized by three components that combine and interrelate with one another. These include being kind with oneself instead of judgmental in the face of hardship, recognizing that one's experience is common to humanity and thus not isolating or separating from others, and third, being mindfully aware of one's experience of pain instead of either denying it or over-identifying with it (Neff, 2003a, 2003b). Neff states that "feeling compassion for oneself is similar to feeling forgiveness for oneself" (Neff, 2003b, p. 87) because both experiences involves a sense of interconnectedness with others. Self-compassion has been proposed as an alternative to self-esteem as a healthy way of relating with oneself, especially in times of failure or hardship (Neff, 2003b). Although both self-compassion and self-esteem were found to equally predict happiness, optimism, and positive affect in a direct comparison of the two constructs, compared to self-esteem, self-compassion was found to be a greater predictor of stable, less contingent feelings of self-worth and to be more strongly negatively related to social comparison, public self-consciousness, self-rumination, anger, and need for cognitive closure (Neff & Vonk, 2009). Additionally, while self-esteem was observed to be positively associated with narcissism, self-compassion was not.

Self-Compassion and Health Outcomes

There is a growing body of evidence that self-compassion has favorable associations with a number of mental and physical health outcomes. Self-compassion has been linked favorably with psychological wellbeing and resiliency as indicated by a plethora of outcomes, including lower levels of anxiety, depression, and negative affect; positive characteristics such as greater social connectedness, life satisfaction, and well-being; greater emotional intelligence and use of adaptive coping strategies; greater motivation and performance; and better functioning in intimate relationships (see Barnard & Curry, 2011; Neff, 2009 for reviews). A meta-analytic review of the association between self-compassion and mental health tested the combined effects of 20 different samples from 14 published studies and found a large effect size for the relationship between self-compassion and psychopathology ($r = -0.54$; $p < .0001$) (MacBeth & Gumley, 2012).

Additionally, there is a smaller but growing body of literature that has begun to illustrate the potential effect of self-compassion for physical health outcomes, as self-compassion may enhance the likelihood of engaging in adaptive health behaviors, such as healthy eating, exercising, and abstaining from substance use (Terry & Leary, 2011). Self-compassion may protect against the effect of declining physical health taking a toll on well-being in later life (Allen, Goldwasser, & Leary, 2012). Besides general psychopathology, self-compassion has also been suggested to positively impact a broad range of other outcomes, for example: perfectionism, achievement of goals, eating habits, and body image (Adams & Leary, 2007; Mistler, 2011; Neff et al., 2005; Terry & Leary, 2011; Wasylkiw, MacKinnon, & MacLellan, 2012). Self-compassion is also a primary component in several interventions aimed to increase well-being, including Compassionate Mind Training, developing compassionate imagery, the

gestalt two-chair technique, and Mindfulness Based Stress Reduction (Barnard & Curry, 2011; Gilbert & Irons, 2005). Self-compassion is also involved in some of the third-wave CBT approaches, including Dialectal Behavior Therapy (DBT) and Acceptance and Commitment Therapy (ACT) (Barnard & Curry, 2011). Therefore, self-compassion is highly salient to health-related outcomes as evidenced both through correlational relationships and in its role in interventions.

Self-Forgiveness

Forgiveness can be understood to have a multipartite typology and to involve multiple methods, including offering, seeking, and feeling, and to apply to multiple recipients, including others, oneself, deity, society, and situations (Thompson et al., 2005; Toussaint & Webb, 2005). Self-forgiveness has previously been considered the “step-child of forgiveness research” (Hall & Fincham, 2005) as it has not received as much attention in the literature. However, this has recently begun to change with developments in self-forgiveness measurement (Wohl, DeShea, & Wahkinney, 2008) and interventions (Scherer, Worthington, Hook, & Campana, 2011).

Self-forgiveness is acknowledged to be a distinct part of forgiveness, but there has been a general lack of consensus in the literature on a single definition of self-forgiveness (Bumgarner, Conway-Williams, & Webb, 2013). However, self-forgiveness has been defined as “a willingness to abandon self-resentment in the face of one’s own acknowledged objective wrong, while fostering compassion, generosity, and love toward oneself,” (Enright, 1996, p. 115); further, it is “a set of motivational changes whereby one becomes decreasingly motivated to avoid stimuli associated with the offense, decreasingly motivated to retaliate against the self (e.g., punish the self, engage in self-destructive behaviors, etc.), and increasingly motivated to act benevolently toward the self,” (Hall & Fincham, 2005, p. 622). Similar to other dimensions

of forgiveness (e.g., forgiveness of others), self-forgiveness can be conceptualized in terms of a state, or response to a single event, and a trait, or a propensity to self-forgive over time (Toussaint & Webb, 2005). Self-forgiveness can be further distinguished between forgiveness of oneself for offenses that are intrapersonal (committed against oneself) or interpersonal (committed against another) in nature (Terzino, 2011).

The construct of forgiveness is frequently discussed without adequate consideration of its multipartite typology, such that dimensions of forgiveness are often grouped together. For example, forgiveness of self and of others are often found to be only moderately correlated (e.g., Thompson et al., 2005), and have been sometimes found to be statistically unrelated (Macaskill, Maltby, & Day, 2002). There are also several conceptual differences between interpersonal and intrapersonal forgiveness, including different sources of motivation, being unconditional (in the case of forgiveness of others) versus possibly conditional (for self-forgiveness), and having different implications for reconciliation (Hall & Fincham, 2008). Likewise, emerging research suggests that self-forgiveness may have even greater implications for mental health, physical health, and life satisfaction than other-forgiveness (Macaskill, 2012; Webb, Hirsch, Visser, & Brewer, 2013). Therefore, to the extent possible, it is important to explore the relationship of each dimension of forgiveness separately, rather than using one as a proxy for the other.

Models of Self-Forgiveness

There have been at least four models of self-forgiveness proposed in the literature. Hall and Fincham (2005) proposed a model of the development of state self-forgiveness in which one's attributions and the severity of the transgression contributed to the development of state shame and guilt. In addition to these variables directly impacting self-forgiveness, state guilt may foster empathy toward the victim. Finally, engaging in conciliatory behaviors toward the

victim or towards a higher power, combined with perceived forgiveness from these sources, may impede or enhance self-forgiveness. In a study designed to empirically test this model, the authors found that attributions, empathy, and shame were unrelated to self-forgiveness, and only transgression severity, guilt, conciliatory behaviors, and perceived forgiveness influenced the development of self-forgiveness beyond the effect of time (Hall & Fincham, 2008).

Ranganathan and Todorov (2010) tested Hall and Fincham's model of self-forgiveness using structural equation modeling and found it did not provide adequate fit for the data unless the covariance between shame and guilt was accounted for. The authors also proposed and tested their own model of self-forgiveness, in which guilt positively affects self-forgiveness via prompting both other-oriented empathy and conciliatory behavior, while shame negatively affects self-forgiveness, both individually and by increasing personal distress empathy, or the experience of self-oriented distress at the recognition of another's discomfort. The authors found that shame and personal distress, and not guilt and other-oriented empathy, were the critical variables in inhibiting the development of self-forgiveness. The authors found that the model they proposed was more parsimonious and provided a better fit for the data compared to Hall and Fincham's original model.

McConnell, Dixon, and Finch (2012) tested the original model proposed by Hall and Fincham, a revised version that accounted for the results of Hall and Fincham's 2008 study by removing attributions, empathy, and shame, as well as an alternative, *a priori* model. The authors found that the alternative model, which included severity of the offense, guilt, conciliatory behavior, and perceived forgiveness from the victim, best accounted for the variance in self-forgiveness with an adequate-to-good model fit. Furthermore, they found that guilt accounted for 47.61% of the variance of self-forgiveness. They also found that the effects of

transgression severity and conciliatory behaviors were mediated by guilt and perceived forgiveness from others. Their results were in contrast to those of Ranganathan and Todorov, who found in testing their model that shame, along with personal distress empathy, most strongly predicted self-forgiveness.

Most recently, McGaffin, Lyons, and Deane (2013) attempted to integrate the findings of Hall and Fincham (2005) and Ranganathan and Todorov to propose a modified model of self-forgiveness for substance abusers. They proposed that guilt-proneness would influence other-oriented empathy, conciliatory behaviors and acceptance, and shame-proneness would impact acceptance and personal distress empathy, all of which would predict self-forgiveness. Their model differed in that it distinguished between other-oriented empathy and personal distress empathy, and is also the first model of self-forgiveness to include acceptance as a predictor. In testing this model, they found that acceptance was the only significant mediator of the relationship of both shame-proneness and guilt-proneness with self-forgiveness, with shame-proneness being associated with less acceptance and less self-forgiveness, and guilt-proneness having the converse effect of greater acceptance and self-forgiveness (McGaffin et al., 2013).

Although there have been differences in the order and relative importance of each variable, there are several commonalities between all or most of these models, including the importance of transgression severity, shame, guilt, conciliatory behaviors, and perceived forgiveness from the victim. Although progress has been made in understanding the development of self-forgiveness, the number of models proposed within the last decade as well as the lack of empirical support for some of the proposed mediators (e.g., personal distress empathy) even in the most current models highlights that our understanding of the nature of self-forgiveness is far from solidified.

Self-Forgiveness and Health Outcomes

Forgiveness of self has been increasingly linked with positive health outcomes. For example, self-forgiveness has been found to be associated with lower levels of depression and anxiety in college students (Maltby et al., 2001) and, in an unpublished dissertation, was found to be correlated negatively with hostility, depression, anxiety, and physical symptoms and positively with self-esteem, well-being, close-relationships, self-activity, and social activity among female victims of domestic violence (Coates, 1997). Self-forgiveness was found to lead to less depression, which in turn led to less suicidal behavior in a diverse sample of college students (Hirsch, Webb, & Jeglic, 2011). In a study on the relationship between multiple dimensions of forgiveness and health, self-forgiveness was found to be related to all four measures of physical and/or mental health (specifically, the same health-related measures used in the present study, i.e., physical health status, somatic symptoms, mental health status, and psychological distress); an association that was either partially or fully mediated by health behaviors, social support, and/or interpersonal functioning (Webb, Hirsch, et al., 2013). Self-forgiveness was found to have an indirect effect on suicidal behavior through perceived burdensomeness, depression, and thwarted belongingness in an adult sample from a rural primary care clinic (Nsamenang, Webb, Cukrowicz, & Hirsch, 2013). In an unpublished dissertation, a lack of self-forgiveness was found to be associated with a greater tendency to engage in non-suicidal self-injury (NSSI) for multiple reasons (Westers, 2011). An unpublished dissertation found that self-forgiveness was associated with past alcohol and drug abuse and with greater correctional involvement, as well as with shame and guilt, in a sample of male prison inmates (Biron, 2007). Indeed, Webb, Hirsch and Toussaint (2011) concluded that forgiveness of self may be a critical dimension of forgiveness in the context of alcohol use and problems.

Forgiveness, including self-forgiveness, has been described as an elegant anecdote to anger, particularly in the context of Rational Emotive Behavior Therapy (Robb, 2007). In a study of recent divorcées, self-forgiveness was associated with trait anger, depression and divorce adjustment (Rohde-Brown & Rudestam, 2011).

Not only has self-forgiveness been associated with several positive health outcomes, but it has also been shown to be a factor in resiliency and coping. Self-forgiveness was found to be related to greater spirituality and quality of life and less self-blame and mood disturbance in women with breast cancer, suggesting that self-forgiveness may lead to greater adjustment to having breast cancer (Friedman et al., 2010). In an unpublished dissertation, self-forgiveness was found to have a protective effect against depression in adult children of alcoholics (Cornock, 2008). Further, in a study using qualitative interviews with older adults, Ingersoll-Dayton and Krause (2005) suggested that self-forgiveness may play a critical role during the life review process to remove guilt and develop self-acceptance toward the end of life. College freshman that forgave themselves for procrastinating on a previous exam had reduced levels of procrastination on a subsequent exam (Wohl, Pychyl, & Bennett, 2010). Forgiveness of self has therefore been shown not only to lead to lower levels of distress, but also to more adaptive coping and adjustment throughout the lifespan.

Self-forgiveness has been linked with a number of personality characteristics. In two unpublished studies that have investigated the association between self-forgiveness and the five-factor theory of personality, self-forgiveness was linked with lower levels of neuroticism and greater agreeableness (Biron, 2007; Butzen, 2009). Self-forgiveness has been related to lower levels of neuroticism in other contexts as well (Johnson & Butzen, 2008; Maltby et al., 2001). Similarly, individuals who place value on environmental mastery were found to be more likely to

be forgiving of both self and others (Hill & Allemand, 2010). The association between self-forgiveness and adaptive personality characteristics may be an additional means by which self-forgiveness has a salutary effect on health.

Problems with the Self-Forgiveness Construct

Although forgiveness of self has emerged as relevant for healthy functioning, its conceptualization and measurement has remained problematic (Bumgarner et al., 2013). These complexities emerged in some of the earliest studies to examine self-forgiveness. Self-forgiveness was found to be associated with a greater tendency to blame the victim, to justify their actions, and to characterize the victims as overreacting in narratives of real-life situations (Zechmeister & Romero, 2002). Tangney, Baumeister, and Boone (2004) found that individuals who were high in self-forgiveness were also likely to have low self-control and to be high in narcissism. Similarly, Tangney, Boone and Dearing (2005) found that being high in self-forgiveness as measured by the Multidimensional Forgiveness Inventory (MFI; Tangney, Boone, Fee, & Reinsmith, 1999) was associated negatively with self-evaluative concerns, positively with narcissism, with judging others' transgressions more harshly, with being less likely to forgive others, and with disordered personality patterns. Self-forgiveness was found to be associated with narcissism; however, this association disappeared when shame and self-esteem were accounted for (Strelan, 2007). Likewise, greater self-forgiveness was found to be associated with a decreased probability of advancing toward action in the stages of behavioral change in smokers (Wohl & Thompson, 2011).

These deleterious associations have led some researchers to reject the notion of self-forgiveness outright. Vitz and Meade (2011) argued that the concept of self-forgiveness is problematic because it promotes the psychodynamic splitting of oneself, involves a conflict of

interest, and encourages narcissism and self-isolation. The authors advocate for the development of self-acceptance as an alternative to self-forgiveness. However, more commonly, researchers have advocated for the distinction between genuine self-forgiveness and pseudo self-forgiveness or excusing and not taking responsibility for the offense (Hall & Fincham, 2005). Although this distinction has been made theoretically, distinguishing between genuine and pseudo self-forgiveness via self-forgiveness measures has proven to be a difficult task.

Fisher and Exline (2006) recognized the “fuzziness” surrounding the self-forgiveness construct and differentiated between self-condemnation, or a shame-based response to an offense, and remorse, a guilt-based response. They found that guilt, but not shame, was related to several positive responses to committing an offense, including effort to reduce negative emotions, repentance, and humbling change, thus demonstrating that some negative emotions, specifically guilt and remorse, may prompt pro-social outcomes. Furthermore, they found that none of the self-forgiveness measures used, including the Forgiveness of Self Scale (Mauger, Perry, Freeman, & Grove, 1992), the self-forgiveness dimension of the HFS (Thompson et al., 2005), and the MFS (Tangney et al., 1999), were able to differentiate between remorse and self-condemnation, and none of them required acceptance of responsibility nor were related to reconciliatory behaviors. As such, Fisher and Exline concluded that these measures of self-forgiveness are not likely able to distinguish between authentic self-forgiveness and excusing the offense. Therefore, it is likely that the associations found between self-forgiveness and undesirable characteristics are due to measurement failure to differentiate between pseudo- and genuine self-forgiveness, instead of being reflective of genuine self-forgiveness itself being problematic.

The role of accepting responsibility for one's actions as a prerequisite to genuine self-forgiveness was further explored by Wenzel, Woodyatt, and Hedrick (2012). These authors recognized that measures of self-forgiveness often focus just on the outcome of positive self-regard, instead of exploring the process by which this positive state was attained. They proposed that self-forgiveness be reconceptualized to underscore the critical role of acceptance of responsibility for one's actions while simultaneously reducing the negative implications of the offense for one's identity through reaffirming one's shared values. This proposed process was tested via two studies. The first study used a vignette paradigm in which participants were asked to imagine being the offender and either did or did not write out a confession to the victim, and the second measured responsibility acceptance, value affirmation, self-forgiveness, and self-esteem over a period of 11 days after participants committed a transgression. Findings were consistent across both research paradigms in that both studies found that participants who scored higher on self-forgiveness, as measured by the State Self-Forgiveness Scale (SFSS; Wohl et al., 2008) and a self-forgiveness measure developed by the researchers, accepted less responsibility for their offense, suggesting that these measures may tap pseudo self-forgiveness. Furthermore, an interaction effect was found in which reaffirmation of one's values attenuated the negative relationship between measures of self-forgiveness and acceptance of responsibility. The authors concluded that although both pseudo- and genuine self-forgiveness offenders regain positive self-regard, genuine self-forgiveness consists of accepting responsibility for one's offense while simultaneously engaging in activities that allow this acceptance not to diminish one's self-regard through reaffirming the violated values.

Self-Compassion and Self-Forgiveness

Although self-compassion and self-forgiveness have much in common, heretofore the potential association and distinction between self-forgiveness and self-compassion has been unaddressed in the published literature. Conway-Williams, Bumgarner, and Webb (2013) identified several areas of overlap between self-forgiveness and self-compassion that will be summarized here. Self-forgiveness and self-compassion appear to be related to one another in terms of how they are defined, in the components and processes that are involved in each construct, in how they are conceptualized regarding their role and contribution to psychological processes, and in their correlations with other psychosocial variables.

The relationship between self-forgiveness and self-compassion is evident in how these variables are defined. In an oft-cited definition of self-forgiveness, Enright (1996) defines it as “a willingness to abandon self-resentment in the face of one’s own acknowledged objective wrong, while *fostering compassion, generosity, and love toward oneself*,” (p. 115; italics added). The development of compassion is also seen as contributing significantly to the development of forgiveness (Enright, 1996; Worthington et al., 2005). In defining self-compassion, Neff (2003b) described it as similar to self-forgiveness because both acts involve recognizing one’s humanity. Furthermore, there is evidence that multipartite forgiveness, if not self-forgiveness, is related to each of the three components of self-compassion, including self-kindness (Enright, 2012; Gilbert & Irons, 2005; Hall & Fincham, 2005), common humanity (Barnard & Curry, 2011; Exline, Baumeister, Zell, Kraft, & Witvliet, 2008; Jacinto & Edwards, 2011), and mindfulness (Webb, Phillips, Bumgarner, & Conway-Williams, 2013). Self-forgiveness and self-compassion thus appear to be related both in terms of their definition and in their processes.

Self-compassion and self-forgiveness also appear to have similarities in how they are thought to affect broad psychological functioning. Specifically, both self-forgiveness and self-compassion are considered to be pro-social, positive virtues that are related to but independent from spirituality (Berry, Worthington, Wade, Witvliet, & Kiefer, 2005; Mahoney & Graci, 1999). Additionally, both forgiveness generally and self-compassion have been conceptualized as adaptive means of self-regulation and have been found empirically to be related to greater emotional regulation and better subsequent health functioning (Christensen, Padilla-Walker, Busby, Hardy, & Day, 2011; Neff et al., 2005; Vettese, Dyer, Li, & Wekerle, 2011; Witvliet, 2005). In sum, both self-compassion and forgiveness are conceptualized as pro-social virtues that are related to but independent from spirituality and are adaptive means of self-regulation.

Self-forgiveness and self-compassion also appear to relate to other psychosocial variables in similar directions. In two separate studies looking at the five factor model of personality and self-forgiveness and self-compassion, the constructs related in the same direction to four of the five factors (Neff, Rude, & Kirkpatrick, 2007; Ross, Kendall, Matters, Rye, & Wrobel, 2004); the only difference being that self-compassion was positively associated with agreeableness, while agreeableness was not related to self-forgiveness. In regard to the other factors, they were both positively correlated with extroversion and conscientiousness, negatively correlated with neuroticism, and were not related to openness to experience.

As described previously, self-compassion and self-forgiveness are both related to a wide variety of mental health constructs and may have implications for physical health functioning as well. Not only are they similarly related to health outcomes, but their effects may also occur via the same mediators. Engaging in healthy behaviors has been suggested to be a pathway by which overall (multipartite) forgiveness, forgiveness of self in particular, and self-compassion may

influence health outcomes (Temoshok & Chandra, 2001; Terry & Leary, 2011; Toussaint & Webb, 2005). Rumination has been found to be correlated with both self-compassion and self-forgiveness (Barnard & Curry, 2011; Terzino, 2011) and has been shown to mediate the effect of both forgiveness generally and self-compassion on health (Raes, 2010; Stoia-Caraballo et al., 2008; Ysseldyk, Matheson, & Anisman, 2007). Additionally, self-compassion and self-forgiveness are positively associated with social connectedness (Jacinto, 2009; Neff, Rude, et al., 2007) and this may in turn have implications for mental health functioning. Finally, similar clinical methods have been described to cultivate both self-compassion and self-forgiveness, including the empty-chair technique (Barnard & Curry, 2011; Jacinto & Edwards, 2011), and mindfulness-based interventions (Benn, Akiva, Arel, & Roeser, 2012; Moritz, Kelly, Xu, Toews, & Rickhi, 2011). In sum, not only are both self-forgiveness and self-compassion associated with better mental health outcomes, but this effect may occur through similar avenues, namely health behaviors, rumination, and social relationships, and these qualities may be enhanced through similar clinical means.

Evidence for the Self-Compassion/Self-Forgiveness Relationship

As discussed, there appear to be many areas of conceptual overlap between the constructs of self-compassion and self-forgiveness. However, there is a paucity of research literature examining the empirical association between these constructs. A June 2014 literature search of PsycINFO identified only three studies that reported correlation coefficients between self-compassion and self-forgiveness. Of these, two are unpublished dissertations and the association between self-forgiveness and self-compassion was not the primary topic of interest for any of the three manuscripts.

The only published article to include any data on the association between self-compassion and self-forgiveness reported a positive correlation between self-forgiveness as measured by the HFS (Thompson et al., 2005) and self-compassion ($r = .63, p < .01$) in a college student sample (Breen, Kashdan, Lenser, & Fincham, 2010). Forgiveness of others and of situations were also found to be associated with self-compassion. However, Breen et al.'s primary focus in this paper was on the association between gratitude and forgiveness; therefore, these self-compassion based correlations are not discussed within the text.

Two unpublished dissertations have also included correlation coefficients for self-compassion and self-forgiveness. Mistler (2011) found that self-compassion was a partial mediator between overall forgiveness (as measured by the HFS) and perfectionism in an online sample of the general population. Similar to the results of Breen and colleagues (2010), the author found that self-compassion and self-forgiveness were strongly correlated ($r = .72, p < .01$) and that self-compassion was also associated with overall HFS scores and with forgiveness of others and of situations. However, she did not explore the association between the HFS subscales (including self-forgiveness) and any of the study variables beyond bivariate analyses. Terizino (2011) explored the relationship of numerous correlates and forgiveness of self for either interpersonal or intrapersonal transgressions in a series of two studies. In the first study, self-compassion was correlated with self-forgiveness for both kinds of offenses. In the second study, self-compassion was related to intrapersonal, but not interpersonal self-forgiveness as measured by responses to hypothetical scenarios.

The minimal extant research alludes to the potential for a strong link between self-forgiveness and self-compassion. However, the association between the two constructs is yet to be intentionally explored. Furthermore, the small sampling of studies that do include self-

forgiveness and self-compassion have only used simplistic statistical methods (bivariate correlations) and therefore have only scratched the surface of determining the extent of their association.

Four additional studies, three of which are unpublished dissertations or theses, have explored the association between self-compassion and other measures of forgiveness. In the only published article of the four, Neff and Pommier (2013) examined the relationship between self-compassion and forgiveness of others in three samples: undergraduate students, older adults, and active meditators. They found that after controlling for social desirability, self-compassion was correlated with forgiveness of others in all three samples and was most strongly correlated in the sample of practicing meditators. Kyrimis (2007) reported a strong, positive correlation between overall forgiveness (as measured by the HFS) and self-compassion in a sample of individuals that practice mindfulness meditation, but did not report subscale correlations. Skoda (2011) found that forgiveness of a specific offender (state), but not forgiveness likelihood (trait), was correlated with self-compassion in a sample of college students. Finally, in a convenience sample of American Buddhists, Matsukyuki (2011) found that self-compassion and state forgiveness of others were positively correlated, that state forgiveness positively predicted self-compassion in a regression analysis, and finally, that self-compassion was a significant, partial mediator of the effect of state forgiveness on psychological wellbeing. In sum, although available research suggests that overall levels of forgiveness and self-forgiveness may be associated with self-compassion, the few attempts to explore this connection have been limited to unpublished graduate student work.

Theoretical Distinctions Between Self-Compassion and Self-Forgiveness

Considering both the multiple areas of definitional and theoretical overlap, and the preliminary empirical evidence suggesting a potentially high correlation between self-compassion and self-forgiveness (e.g., Breen et al., 2010), one may consider whether self-compassion and self-forgiveness are, indeed, the same construct and an area of redundancy in the psychological literature. However, although the distinctions have not been tested empirically, there appear to be critical differences between the two on a definitional level. Perhaps the most essential difference between self-compassion and self-forgiveness is that although self-forgiveness, by definition, occurs in the face of an acknowledged, objective wrongdoing, self-compassion develops in the context of any suffering, regardless of its cause (Conway-Williams et al., 2013). Additionally, although self-compassion may be evoked in response to events that are occurring presently, self-forgiveness is a process that, in order to be genuine, does not occur instantaneously but instead requires work and effort to develop (Wenzel et al., 2012).

The Nature of the Relationship Between Self-Compassion and Self-Forgiveness

As has been described, there is a clear theoretical rationale for a direct relationship between self-compassion and self-forgiveness (Conway-Williams et al., 2013). Although there has been little research on this relationship, the extant literature in this area also suggests that these concepts may be highly related. Further exploring the nature of the relationship between self-compassion and self-forgiveness may be important for the integration of these two areas of research, as well as for furthering our understanding of each of these constructs independently.

I propose that being self-compassionate may directly influence one's proclivity to forgive oneself. Because self-compassion is the more broadly relevant variable (i.e., relevant in any instance of suffering compared to after an offense), and because self-compassion is more likely

to be experienced immediately, while true self-forgiveness is a process, I propose that self-compassion generally leads to self-forgiveness, versus the alternate configuration. In addition to this proposed direct connection, there may be other factors that influence the strength or nature of this relationship. That is, being self-compassionate may influence how a person reacts in the face of committing an offense cognitively, emotionally, and experientially, all of which may have implications for the person's likelihood of self-forgiveness. Specifically, in the face of an offense, being self-compassionate may lead one to experience less rumination, shame, and experiential avoidance, all of which may facilitate self-forgiveness.

This series of responses may occur for a specific offense, but may also happen consistently over time and across situations, in a way that can be thought of as general tendencies. That is, although it may be difficult to conceptualize trait variables or dispositions as predicting one another in a causal fashion, these constructs are likely to be highly related to one another and to influence each other in a way that is consistent over time and across situations. In sum, the general tendency to be self-compassionate may influence the general tendency to be self-forgiving.

Rumination. Rumination has been conceptualized as a maladaptive emotion regulation strategy (Aldao, Nolen-Hoeksema, & Schweizer, 2010) and defined as a means of responding to distress that involves focusing on the symptoms and possible causes and outcomes of the distress in a repetitive, passive manner (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Rumination was found via meta-analysis to have a large effect size on psychopathology and was found to be positively related to depression, anxiety, eating, and substance-related psychopathology (Aldao et al., 2010). It has been studied most extensively in relation to depression, but has also been linked to other forms of psychopathology, including anxiety, binge eating, binge drinking, and

self-harm (Nolen-Hoeksema et al., 2008). Response styles theory has been proposed to explain the connection between rumination and distress, and posits that this association occurs because of several mechanisms, including: a) increased degree to which depressed mood biases thinking patterns, b) interfering with adaptive problem solving, and c) interfering with instrumental behavior (Nolen-Hoeksema, 1991).

Rumination has been characterized as a hallmark of unforgiveness (McCullough, 2001; Worthington, Berry, & Parrott, 2001) and a reduction in rumination has been theorized to be inherent to the forgiveness process, which may in turn have positive implications for mental health (Toussaint & Webb, 2005). The association between rumination and forgiveness generally, as well as with forgiveness of self, has also been empirically demonstrated. In a meta-analysis on correlates of forgiveness, Fehr, Gelfand, and Nag (2010) identified 7 studies published at the time that reported the correlation between rumination and interpersonal forgiveness (other-forgiveness), and reported that rumination had a medium-sized, negative correlation with forgiveness ($r = -.32$). Rumination has also been suggested as a mediator by which forgiveness generally leads to several health outcomes, including sleep quality, state anger, anger-related traits, stress, and revenge motivations (Berry, Worthington, O'Connor, Parrott, & Wade, 2005; Stoia-Caraballo et al., 2008; Suchday, Friedberg, & Almeida, 2006). Furthermore, several studies suggested that rumination may mediate the association between a preceding characteristic and forgiveness; for example; rumination was found to mediate the association between both executive functioning (Pronk, Karremans, Overbeek, Vermulst, & Wigboldus, 2010) and anxious attachment (Burnette, Davis, Green, Worthington, & Bradfield, 2009) and forgiveness. Therefore, rumination has been found to play a role in both the development, as well as the effects of interpersonal forgiveness. Notably, however, in a

longitudinal study on the association between rumination and forgiveness, McCullough, Bono and Root (2007) found greater support for the hypothesis that greater rumination precedes lower levels of forgiveness, as opposed to greater forgiveness leading to lower rumination. In regard to the directionality of the rumination-forgiveness association, there is theoretical support for rumination either preceding or following the experience of forgiveness. However, longitudinal research suggests the former arrangement.

A few studies have looked specifically at the association between rumination and self-forgiveness. Rumination was negatively correlated with self-forgiveness in two studies (Terzino, 2011; Thompson et al., 2005). Forgiveness of self was correlated with three of the four subscales of anger rumination given to a sample of undergraduates in the social sciences, although angry memories was the only subscale to account for unique variance in self-forgiveness in a regression analysis (Barber, Maltby, & Macaskill, 2005). However, researchers are yet to explore the nature of rumination and self-forgiveness beyond basic associations. Given the important role of rumination for the psychological outcomes of interpersonal forgiveness, this is an important area for future study.

Self-compassion has also been suggested, and to a limited extent supported, to have a buffering effect against rumination. Neff (2003b) suggests the mindfulness component of self-compassion as an alternate to rumination in her seminal theoretical article, and found that rumination was negatively correlated with the Self-Compassion Scale ($r = -.50, p \leq .01$) in her initial development of the measure with an undergraduate sample (Neff, 2003a). Neff and Vonk (2009) also found that self-rumination or rumination related to self-consciousness, was highly, negatively correlated with self-compassion ($r = -.52, p \leq .001$) and remained related in partial correlations that controlled for the effects of age, gender, and income on self-compassion.

Rumination has not only been found to be associated with self-compassion; but has also been demonstrated to mediate its effect on mental health. Neff, Kirkpatrick, and Rude (2007) found that increased self-compassion was associated with lower levels of rumination over a 1-month span ($r = -.40, p < .01$), an effect that remained trending toward significant ($p < .10$) after anxiety was controlled for. Raes (2010) found that self-compassion was more associated with brooding rumination, compared to the relatively more adaptive reflective rumination, in a sample of undergraduates. Furthermore, she found that brooding rumination partially mediated the associations between self-compassion and both depression and anxiety.

In addition, clinical studies of mindfulness-based therapies, such as Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive therapy, have found these interventions led to both increased self-compassion and lower levels of rumination (e.g., Rimes & Wingrove, 2011; Robins, Keng, Ekblad, & Brantley, 2012), possibly supporting a common mechanism between the two. In addition to rumination, it has been found that, being a self-regulation strategy, self-compassion is also negatively associated with other maladaptive cognitive patterns, such as thought suppression and avoidance, that may play a role in self-compassion's influence on affect (Barnard & Curry, 2011).

Shame-proneness. The role of self-directed negative emotions, specifically shame and guilt, has been recognized by several authors to influence the development of self-forgiveness. Both shame and guilt are self-conscious, moral emotions that arise in the face of a personal failure or transgression; however, guilt involves negatively judging a specific behavior, whereas shame involves the global negative evaluation of one's whole self (Tangney & Dearing, 2002).

The importance of shame and guilt for self-forgiveness is evident in that both processes are present in all current models of self-forgiveness, as described previously (Hall & Fincham,

2005; McConnell et al., 2012; McGaffin et al., 2013; Ranganathan & Todorov, 2010), and self-forgiveness has been conceptualized as the antidote to maladaptive shame and guilt (Fisher & Exline, 2010; Hall & Fincham, 2008; Scherer et al., 2011; Tangney et al., 2005). While shame has been recognized almost universally as a hindrance to self-forgiveness (Hall & Fincham, 2005; McGaffin et al., 2013; Strelan, 2007; Tangney et al., 2005), the nature of the effect of guilt on self-forgiving is less clear. Some research has found a negative association between guilt and self-forgiveness (Hall & Fincham, 2008; McConnell et al., 2012; Strelan, 2007; Zechmeister & Romero, 2002). However, other studies have found no relationship between guilt and self-forgiveness (Macaskill, 2012; Ranganathan & Todorov, 2010). Indeed, because self-forgiveness is acknowledged to be a process and not just the end product of positive self-regard (Wenzel et al., 2012), some authors have argued for an adaptive role of guilt for the ultimate development of self-forgiveness (Fisher & Exline, 2006; Fisher & Exline, 2010; Ranganathan & Todorov, 2010). Three studies have found a *positive* association between guilt and self-forgiveness, after statistically accounting for the role of shame (McCann, 2010; McGaffin et al., 2013; Webb, Colburn, Heisler, Call, & Chickering, 2008). In sum, the relationship between guilt and self-forgiveness appears to be complex and stage-dependent, and research findings are mixed in regard to the strength of their association. Therefore, in the context of considering what variables may mediate the relationship between dispositional self-compassion and self-forgiveness, shame-proneness (given a more straight-forward and clear association with self-forgiveness – see below) is predicted to be the more detrimental to the development of self-forgiveness and thus directly relevant of the two emotions, and will thus be included in the current study.

Beyond the single emotional experience of state shame, shame-proneness is the dispositional tendency to experience shame (Tangney, Wagner, & Gramzow, 1992). The tendency to experience shame has been associated with a number of negative outcomes. Shame-proneness has not only been linked with greater levels of psychopathology, but has also been shown to be a predictor in the development of emotional disorders, and its regulation may be a mechanism of therapeutic change (Candea & Szentagotai, 2013).

Shame has also been found to have strong implications for one's ability to forgive oneself. Several studies have found shame to be negatively correlated with self-forgiveness with a number of populations, including undergraduate students (Fisher & Exline, 2006; Macaskill, 2012; McCann, 2010; Webb et al., 2008), incarcerated females (King, 2010), individuals receiving residential substance abuse treatment (McGaffin et al., 2013), and LGBTQ adults (Greene & Britton, 2013). Shame has been negatively correlated with self-forgiveness for both inter- and intrapersonal offenses (Terzino, 2011). Shame was found to be least likely to lead to positive outcomes or to self-forgiveness compared to guilt, sorrow, or brokenness (Bassett et al., 2011). In studies employing regression analyses, shame has been negatively associated with self-forgiveness after accounting for variance due to self-esteem (Strelan, 2007), as well as trait anger and trait anxiety (Macaskill, 2012). In Ranganadhan and Todorov's (2010) SEM model, shame was a significant, negative contributor to a model of the development of self-forgiveness and accounted for over half of the variance in the model, which also included guilt, conciliatory behavior, personal distress empathy and other-oriented empathy. Furthermore, in mediation analyses the significant, negative main effect of shame was partially mediated by personal distress empathy (Ranganadhan & Todorov). Within a sample of individuals receiving residential treatment for substance abuse, McGaffin et al. (2013) found that shame-proneness

was associated with lower levels of self-forgiveness and this association was partially mediated by acceptance. In McGaffin et al.'s study, shame proneness was also associated with personal distress empathy; however, personal distress empathy and self-forgiveness were not associated.

The relationship between shame and self-forgiveness may additionally have implications for therapeutic outcomes. Two interventions that aimed to increase self-forgiveness have been found to lead to a reduction in shame, one with individuals receiving treatment for alcohol problems (Scherer et al., 2011), and one in an unpublished dissertation with incarcerated females (King, 2010). Shame has been found to moderate the relevance of self-forgiveness for alcohol misuse; that is, self-forgiveness was found to be negatively associated with misuse of alcohol, but only for people who were shame-prone in a sample of college students (Ianni, Hart, Hibbard, & Carroll, 2010). The experience of shame and subsequent lack of self-forgiveness may be an important therapeutic target, particularly for some subsets of substance abusers who may be more prone to experiencing shame.

Given the strong theoretical link between self-forgiveness and shame and guilt, it is perhaps surprising that more research has not been done in the area of relating self-compassion to these constructs, especially given the identified commonalities between self-compassion and self-forgiveness. Only two studies were identified that examined the relationship between shame and self-compassion. Along with healthy associations with self-evaluative outcomes, self-compassion was found to be negatively related to shame, guilt-free shame, and positively associated with shame-free guilt in a sample of female college athletes (Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011). Self-compassion was found to be negatively correlated with both components of shame (negative evaluation of the self and withdrawal), but was not correlated with either component of guilt (negative behavior evaluation or repair) in a study of

undergraduate students during the development of a new measure of guilt and shame (Cohen, Wolf, Panter, & Insko, 2011). The findings of both studies suggest that, similar to self-forgiveness, there may be a more direct and clear negative link between self-compassion and shame, as compared to guilt. Additionally, a Compassionate Mind Training (CMT) group intervention was found to lower self-criticism and the perception of others as shamers in individuals with high shame and self-criticism (Gilbert & Procter, 2006); however, a control group was not included in the study, and the authors did not examine the effect of the intervention on shame per se.

Although minimal research has explored the connection between shame or shame-proneness and self-compassion, there is a strong theoretical rationale for such a link. Self-compassion influences how one responds to oneself in the face of suffering. As previously described, a self-compassionate person will respond to an offense in a way that mindfully acknowledges what has occurred and the person's own shortcomings and limitations, while recognizing these shortcomings to be characteristic not of an idiosyncratic fatal flaw but instead a function of universal human nature. Therefore, being self-compassionate and mindful of one's experience may first help one to distinguish whether an offense has truly been committed, and to avoid either falsely excusing oneself for an offense, or to experience shame for an event that one did not truly have control over (and therefore does not need to forgive oneself for). If an offense has been committed, being high in self-compassion should be more likely to prompt a guilt-based response, which is behaviorally specific, compared to a shame-based response, which involves global, permanent evaluations of oneself (Tangney & Dearing, 2002). Responding in a guilt-based, compared to a shame-based, manner allows for the development over time of true self-forgiveness and healing, as someone who is more shame-prone may be more likely to either

excuse the offense and diminish its importance, or to ruminate on it excessively to the point that self-forgiveness is not possible. Therefore, individuals high in self-compassion should be less likely to experience shame, and therefore more likely to self-forgive. However, self-compassion would not necessarily impact the experience of guilt, and may even be positively associated with guilt initially after an offense, as guilt can be an adaptive response to acknowledging wrongdoing and does not necessarily have negative implications for self-forgiveness in the long term (Fisher & Exline, 2010; Wenzel et al., 2012). Instead, in the long term, self-compassion should lead not to the absence of guilt but instead to the optimal resolution of guilt, by which acceptance of responsibility, recommitment to values, reparative behaviors and improvement in character culminate in self-forgiveness and the absolution of guilt (Fisher & Exline, 2010; Wenzel et al., 2012).

Acceptance, experiential avoidance, and psychological flexibility. Although various forms of the concept of acceptance have been present in the psychological literature for some time (e.g., Pilisuk, 1963) interest in acceptance has grown with the advancement of Acceptance and Commitment Therapy (ACT). Enhancing the client's level of experiential acceptance is a central focus of ACT (Hayes, Strosahl, & Wilson, 2012). ACT is in the third wave of the cognitive-behavioral tradition and is built on Relational Frame Theory (Hayes, 2004). ACT asserts that one of the primary ways that human suffering is created is via experiential avoidance of the pain of living via humans' capacity for language (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 2012). Acceptance, on the other hand, is the antidote to avoidance and is defined as "the voluntary adoption of an intentionally open, receptive, flexible, and nonjudgmental posture with respect to moment-to-moment experience," (Hayes et al., 2012, p.

272). It is an active, ongoing process and values-based choice that is supported by one's willingness to come into contact with distressing events (Hayes et al., 2012).

Acceptance, or lack of acceptance in the form of experiential avoidance, has been demonstrated to play a central role in the development of psychopathology. In a review published in 2010, the authors identified 20 studies resulting in 23 correlations in which a version of the Acceptance and Action Questionnaire (AAQ), scored to measure experiential avoidance, was positively correlated with depression, for a total $r = .55$ (weighted), and 14 studies resulting in 16 correlations in which it was positively correlated with anxiety, with a weighted correlation across studies of $r = .52$ (Ruiz, 2010). Acceptance was also shown to have implications for a number of other outcomes, including chronic pain, functioning in work settings, responses to stress, future development of mental health symptoms after childhood abuse, and a wide range of other mental-health and functional outcomes (Ruiz, 2010).

Within the ACT tradition, acceptance is otherwise characterized as psychological flexibility or the inverse of experiential avoidance (Bond et al., 2011). Early in ACT's development, the term acceptance was widely used as the hallmark of psychological flexibility and as the answer to experiential avoidance. However, it is possible that even positive emotions may impede one's effectiveness; therefore, over time the developers of ACT came to emphasize having the psychological flexibility to engage in committed action toward one's values, of which acceptance of one's experience is a central part (Bond et al., 2011). Therefore, within the context of ACT, acceptance and psychological flexibility share a great deal of overlap, but psychological flexibility may be the broader term, although it is acceptable to use these terms interchangeably (Bond et al., 2011). The AAQ-II (used in this dissertation) is said to measure psychological flexibility or acceptance, or if reverse-scored, to measure experiential avoidance

(Bond, et al.). For the purposes of this study, the term “acceptance” will be used as it casts a broader theoretical net in regard to the concept’s relationship with other constructs, e.g., forgiveness. However, any available literature on psychological flexibility, experiential avoidance and the study variables will also be included in the current review.

Self-compassion and acceptance. Although the exact nature of the relation between self-compassion and acceptance remains to be explored, the importance of this link can be seen in the fact that Neff defines self-compassion as “a healthy form of self-acceptance” (Neff, Rude, et al., 2007, p. 908) that is built on a sense of common humanity (Neff, 2003b). Neff and Tirsch (2013) identified several means by which self-compassion is related to various components of ACT generally and acceptance specifically. Self-compassion is not a formalized component of ACT; however, it is ACT-consistent and frequently utilized by ACT clinicians and researchers alike. The concept of acceptance can be seen in each of the components of self-compassion. *Self-kindness* is characterized as “offer[ing] ourselves warmth and unconditional self-acceptance” instead of berating ourselves (Neff & Tirsch, 2013, p. 81), *common humanity* involves accepting oneself and one’s history as a fallible human being, and mindfulness helps to counter the human tendency to avoid painful internal experiences and involves acceptance of the present moment (Neff & Tirsch, 2013). Furthermore, self-compassion can be seen as being relevant to each of the six core processes in the ACT hexaflex (Hayes, 2008; Neff & Tirsch, 2013). Self-compassion is also theorized to be related to self-acceptance defined outside of the ACT tradition, including that of unconditional self-acceptance (Dryden, 2013).

Perhaps surprisingly given the apparent link between self-compassion and acceptance, the current literature review identified only three reports of studies that included data on the relationship between acceptance as measured by the AAQ-II and self-compassion. Neff & Tirsch

(2013) citing Neff's unpublished data, found a .65 zero-order correlation between the AAQ-II and the SCS in a sample of 51 parents of autistic children, indicating a strong relationship between the two measures. A study looking at factors contributing to psychological distress in a chronic pain population included self-compassion and experiential avoidance, as measured by reverse-scoring the AAQ-II (Costa & Pinto-Gouveia, 2013). These authors found that self-compassion and lack of acceptance were negatively correlated ($r = -.69, p < .001$). The authors did not further examine any association between these measures. Third, in a dissertation studying ACT-related principles in American Buddhists (Wendling, 2013), psychological flexibility as measured by the AAQ-II was positively correlated with self-compassion (as measured by the SCS- Short form; $r = .58, p < .001$). In addition, in a multiple regression analysis of psychological flexibility also including nonattachment, self-compassion, and hours per week and years of regular meditation practice, self-compassion was found to be a statistically significant predictor of greater scores on the AAQ-II, ($t = 714, p < .001$). This indicates that in this sample, for every unit increase on the SCS-SF, the AAQ-II also increased by (B) 3.52 units. Of the aforementioned predictors, self-compassion had the strongest impact on AAQ-II scores. Therefore, although little research has been conducted regarding the association between the AAQ-II and SCS measures, there is preliminary evidence that the two are strongly related.

In addition to the previously described literature, there have also been a few studies that examined the relationship between self-compassion and self-acceptance in relation to disordered eating and/or body image. In a sample of female undergraduate students, self-compassion (as measured by the SCS) was positively correlated with distress tolerance, as well as with body image acceptance, as measured by an ACT-consistent scale based on the AAQ (Schoenefeld & Webb, 2013). Furthermore, in this study greater levels of body image acceptance, but not

distress tolerance, positively mediated the effect of self-compassion on intuitive eating. In a study of binge-eating behavior in undergraduates, self-compassion was found to have an indirect effect on binge eating behavior via unconditional self-acceptance as defined from a rational emotive behavior therapy perspective, along with emotional tolerance (Webb & Forman, 2013). Together, these studies hint that the relationship of self-compassion with self-acceptance may have important clinical implications, particularly for eating-related health behaviors.

The directionality of the association between self-compassion and self-acceptance generally or as defined by the AAQ is generally not clear and has not been addressed in current theoretical discussions of the relationship between the two constructs (Hayes, 2008; Neff & Tirsch, 2013). Indeed, Neff and Tirsch identify teasing apart differences between the AAQ and the SCS and their underlying processes as an important area for future study. The only identified prior study to include these variables in a directional (mediational) analysis was an unpublished dissertation, that likewise had self-compassion leading to greater scores on the AAQ (Wendling, 2013). Furthermore, self-compassion can be thought of as including self-acceptance but also being a broader construct because it also incorporates aspects of common humanity (Barnard & Curry, 2011). Therefore, although future research should further explore directional processes between self-compassion and self-acceptance, there is sufficient theoretical rationale for the current model that involves self-compassion leading to greater levels of acceptance.

Self-forgiveness and acceptance. Self-forgiveness and acceptance have strong conceptual ties. Indeed, Hall and Fincham (2005) characterize self-forgiveness as involving “an internal acceptance of oneself” (p.622). Furthermore, in multiple theories of the development of forgiveness (Enright, 1996; Worthington et al., 2001), the first step in the process is acceptance of the pain and difficult emotions related to the offense (Orcutt, 2006). Forgiveness,

compassion, and acceptance have been described as among the “sisters of mindfulness,” that is, interconnected forms of mindfulness and mental strengths that are also tenets of Buddhist psychology (Rosenzweig, 2013, p. 793). The concept of forgiveness is consistent with acceptance-based interventions and may be thought of as a form of willingness (Zettle, Barner, & Gird, 2009). A lack of acceptance is conceptualized as being a barrier to forgiveness, and the arsenal of ACT techniques to develop cognitive defusion (i.e., getting “unstuck” from one’s thoughts) and acceptance (e.g., through enhancing mindfulness and willingness to experience the present moment) may be used to support the development of forgiveness. These authors propose a number of ACT techniques to address forgiveness of self specifically, including enhancing mindfulness and self-as-context (Zettle et al., 2009).

While self-forgiveness is largely established in the research literature as a valid and useful concept, some authors have gone so far as to argue that self-forgiveness is a flawed construct, and research and clinical practice should instead advocate for self-acceptance, as discussed previously (Meade, 2011; Vitz & Meade, 2011). It is argued that positive results related to increases in self-forgiveness are in actuality due to increased self-acceptance. While future research should further investigate distinctions between self-acceptance and self-forgiveness, the process of resolving anger, shame, and guilt after an offense appears to be a distinguishing characteristic of self-forgiveness. Nonetheless, it is clear that self-forgiveness and acceptance may have strong and mutual ties.

Although there is a clear theoretical connection between self-forgiveness and acceptance, surprisingly, only two studies were identified that investigated the association between self-forgiveness and acceptance in any form. In an unpublished dissertation examining individuals who regularly engage in mindfulness practice as part of a mindfulness meditation community,

self-compassion and overall forgiveness (as measured by the HFS) were both found to positively predict emotional acceptance via two measures, the Affective Control Scale and the Emotional Processing Scale (Kyrimis, 2007). Second, as previously described, McGaffin et al. (2013) proposed a model of self-forgiveness that includes acceptance as a means by which shame and guilt are both resolved and the process of self-forgiveness can occur. They found support for this model in their sample of substance abusers in residential treatment, as acceptance, as measured by a version of the AAQ tailored to substance abuse (AAQ-SA; Luoma, Drake, Kohlenberg, & Hayes, 2011), was the only significant mediator of the association of both shame- and guilt-proneness with self-forgiveness. McGaffin et al.'s study in particular suggests that acceptance, as conceptualized within the family of acceptance and action questionnaires (AAQ), may play a powerful role in the development of self-forgiveness. It also supports the direction of the proposed model used in the current study, in that McGaffin et al.'s model proposes that greater acceptance will lead to greater self-forgiveness.

There has been one additional study that reported zero-order correlations between the EFI (measuring forgiveness of others) and the AAQ, but did not further explore the association between these two constructs. Orcutt, Pickett, and Pope (2005) found in a sample of college students who had experienced a traumatic event that total forgiveness of others, as well as the three subscales (i.e., Feelings, Cognitions, and Behavior), were all negatively correlated with experiential avoidance as measured by scores on the original version of the AAQ. This finding, as well as those described previously, suggests that acceptance may play a vital role in understanding not only forgiveness of self, but other forms of forgiveness as well.

Present Study: Purpose and Hypotheses

The purpose of the current study is to test the proposed relationship between self-compassion and self-forgiveness both directly and as mediated by rumination, shame, and experiential avoidance in parallel (see Figure 1). Additionally, the connection between self-compassion, self-forgiveness, and physical and mental health will be explored within a multiple serial mediation model. I predict that self-compassion will lead to greater self-forgiveness both directly, and as mediated by lower rumination, shame-proneness, and experiential avoidance, and these associations will furthermore be linked with greater mental and physical health functioning (see Figure 2). In addition, I have five specific hypotheses about the nature of the relationships between study variables.

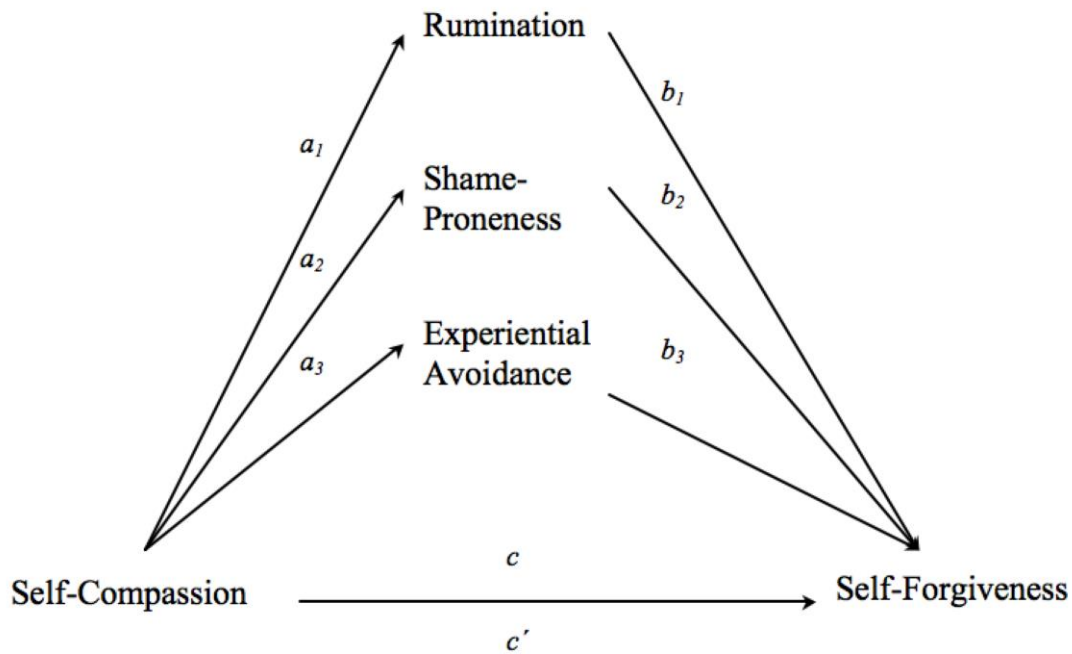


Figure 1. Proposed Parallel Multiple Mediation Model. Adapted from Preacher and Hayes (2008)

Hypothesis 1. After controlling for demographic characteristics, self-compassion will be directly related to self-forgiveness.

As described previously, self-compassion and self-forgiveness contain many areas of overlap, including that they share definitional components, they are both conceptualized as adaptive means of self-regulation that are related to but distinct from spirituality, and also appear to be similarly related to other psychological constructs (see Conway-Williams et al., 2013). Although there has been minimal research examining the association between self-compassion and self-forgiveness, the existing evidence suggests there may be a strong corollary link.

Hypothesis 2. Lower levels of rumination, shame-proneness, and experiential avoidance will be related to both greater levels of self-compassion and greater levels of self-forgiveness.

Although the amount of available empirical evidence regarding the relationship of the proposed mediators with both self-compassion and self-forgiveness varies, there is theoretical and empirical rationale to predict that higher levels of rumination, shame, and experiential avoidance will be associated with lower levels of self-compassion and self-forgiveness.

Hypothesis 3. Greater levels of self-compassion, and greater levels of self-forgiveness, will be associated with greater mental and physical health functioning.

Self-compassion and self-forgiveness have been independently linked with mental, and to a lesser extent with physical health as measured by myriad outcome measures. In the case of self-compassion, this effect may be direct, and/or it may be mediated through rumination, shame-proneness, experiential avoidance, and/or self-forgiveness.

Hypothesis 4. Rumination, shame-proneness, and experiential avoidance will, in parallel, mediate the relationship between self-compassion and self-forgiveness (see Figure 1).

The association between self-compassion and self-forgiveness is yet to be empirically explored in a published article. I predict that these constructs will not only be related directly, but their relationship will also be mediated by rumination, proneness to shame, and experiential avoidance.

Hypothesis 5. The proposed serial multiple mediation model of the relationship between self-compassion, self-forgiveness, and mental and physical health will be significant (see Figure 2).

Figure 2 represents the proposed model of the relationship between self-compassion, self-forgiveness, and their associations with health. I predict the model as a whole will be significant. That is, self-compassion will have a direct relationship with both self-forgiveness and health, but the relationship between self-compassion and self-forgiveness will also be mediated by tendency to ruminate, to be shame-prone, and to be experientially avoidant. The effect of self-compassion on health will also include indirect mechanisms through self-forgiveness and the above mediators.

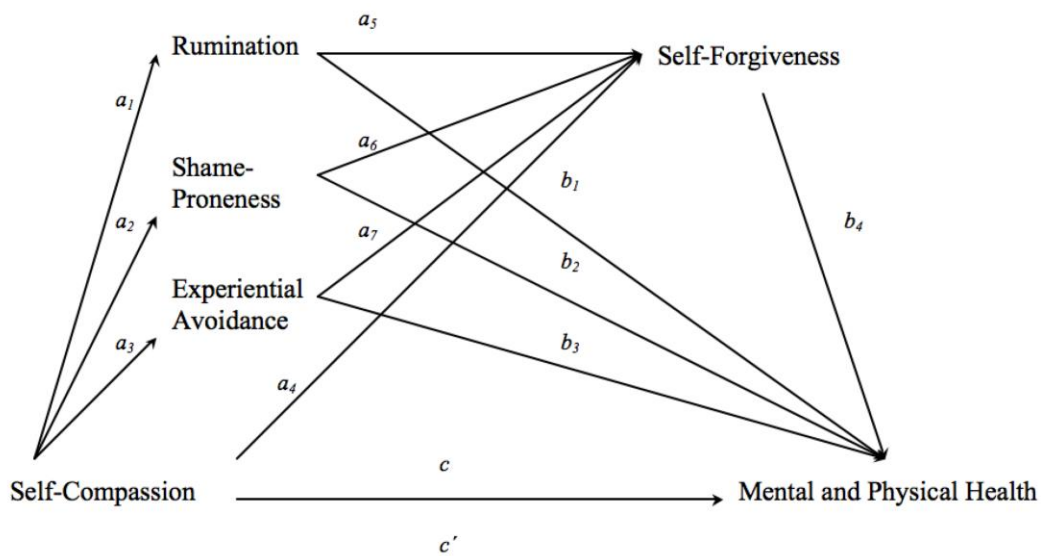


Figure 2. Proposed Serial Multiple Mediation Model. Adapted from Hayes (2013)

CHAPTER 2

METHOD

Participants

Participants for this cross-sectional study were undergraduates from a four-year regional university in a rural, Appalachian region in Eastern Tennessee. They completed the self-report measures anonymously for course credit via a secure, online system. The study was submitted and approved by the Institutional Review Board prior to beginning data collection. Data collection occurred between January and April 2014.

Statistical packages designed to estimate power (e.g., G*Power) are not compatible with mediation analyses (Faul, Erdfelder, Lang, & Buchner, 2007), and Hayes (Hayes, 2012, 2013) does not directly address the issue of sample size. However, there is a common rule that having 10-15 participants per independent variable in multiple regression based analyses is sufficient (Field, 2009). Additionally, because of the bootstrapping resampling method fewer participants are needed to test for indirect effects (Hayes, 2012), as compared to older methods of mediation (e.g., Baron & Kenny, 1986). This, in addition to the utilization of confidence intervals, leads to more accurate representation of associations and relatively less risk of Type I error compared to alternate mediation testing methods. Therefore, for the purposes of this study, I needed a minimum of approximately 150 participants due to having 10 independent variables. Ultimately, 199 participants completed all required measures and were included in this analysis. Sample demographics are described in Table 1. The participants were more likely to be female (74.4%), Caucasian (89.4%), and single/never married (73.4%). Participants were most frequently in their third year of college (35.2%), and over a third of participants were 21 years of age or younger (70.4%).

Table 1

Sample Demographic Information

Characteristic	Sample (N= 199)
Gender: N (%)	
Male	51 (25.6)
Female	148 (74.4)
Age:	
<i>M</i>	21.8
<i>(SD)</i>	(5.39)
Years in College:	
<i>M</i>	2.21
<i>(SD)</i>	(1.33)
Ethnicity: N (%)	
Caucasian	178 (89.4)
Other	21 (10.6)
Marital Status: N (%)	
Single	146 (73.4)
Other	53 (26.6)
Sexual Orientation	
Heterosexual	181 (91.0)
Other	18 (9.0)
Religiosity: N (%)	
Very religious	36 (19.8)
Moderately religious	70 (35.2)
Slightly religious	57 (28.6)
Not religious at all	36 (18.1)

Measures

Demographic information. In order to control for demographic characteristics, participants answered questions regarding their age, sex, race, year in college, marital status, sexual orientation, and religiousness/spirituality. Religiousness/spirituality was assessed by a question assessing their degree of religiousness (Fetzer Institute, 1999). Additionally, social desirability was assessed and included as a potential control variable via the 13-question Marlowe-Crowne Social Desirability Scale, short form (Reynolds, 1982).

Self-Compassion. The Self-Compassion Scale (SCS; Neff, 2003a) was administered to assess trait self-compassion. The SCS is a 24-item measure that results in both a total score, as well as six subscale scores (example items in parentheses): self-kindness (“I try to be understanding and patient towards those aspects of my personality I don’t like”), common humanity (“I try to see my failings as part of the human condition”), mindfulness (“When something upsets me I try to keep my emotions in balance”), self-judgment (“When I see aspects of myself I don’t like, I get down on myself”), isolation (“When I fail at something that’s important to me I tend to feel alone in my failure”), and over-identification (“When something upsets me I get carried away with my feelings”). For the current study, only the overall score was used. Questions are answered on a Likert scale, from 1 (*Almost Never*) to 5 (*Almost Always*), with higher scores indicating greater trait self-compassion. In previous research, Neff (2003a) found that the internal reliability of the subscales ranged from Cronbach’s α of .75 to .81, with excellent internal consistency for the overall measure ($\alpha = .92$). Additionally, the SCS was found to have good convergent, divergent, and construct validity, as well as test-retest reliability (overall correlation = .93) over the course of three weeks (Neff, 2003a). In the current study, the SCS was found to have excellent internal consistency ($\alpha = .93$).

Trait Self-Forgiveness. The six-item self-forgiveness subscale of the Heartland Forgiveness Scale (HFS; Thompson et al., 2005) was used to assess dispositional self-forgiveness (example item: “Although I feel bad at first when I mess up, over time I can give myself some slack”). Items are answered on a 7-point scale, ranging from 1 (*Almost always false of me*) to 7 (*Almost always true of me*), with higher scores indicating greater trait self-forgiveness. In previous research, the complete HFS has been found to have good psychometric properties, including convergent validity and test-retest reliability, and the self-forgiveness subscale was found to have adequate internal consistency reliability over the course of three studies (Cronbach’s $\alpha = .72 - .76$) (Thompson et al., 2005). In the present study, this subscale was found to have internal consistency in the excellent range ($\alpha = .81$). Although there are other measures of self-forgiveness (e.g., Wohl et al., 2008), it was important for the purposes of the present study that trait self-forgiveness be measured, and the HFS is one of the most commonly utilized measures of trait self-forgiveness available.

Rumination. The trait-based tendency to ruminate about negative events was measured by the Ruminative Response Scale (RRS; Nolen-Hoeksema & Morrow, 1991). The RRS was selected for use in the current study because it is a well-established measure of trait rumination. This is a 22-item measure answered on a 4-point scale, from 1 (*Never*) to 4 (*Always*) in regard to what participants generally do when they feel down, sad, or depressed (e.g., “Think about how alone I feel,” “Listen to sad music”). Responses are summed to create a total score, with higher scores reflecting a greater tendency to ruminate. This measure was found in a previous study to have an α coefficient of .90 and a test-retest correlation of .67 when given two years later (Treyner, Gonzalez, & Nolen-Hoeksema, 2003). Previous research has found acceptable predictive, as well as convergent validity for the RRS (Butler & Nolen-Hoeksema, 1994; Nolen-

Hoeksema & Morrow, 1991). The α coefficient for the RRS was .95 in the present study, which is in the excellent range (Hulley et al., 2001).

Shame-Proneness. The Test of Self Conscious Affect-3 (TOSCA-3; Tangney & Dearing, 2002) was used to assess participant's dispositional tendency to react in a shame-prone manner. This measure describes sixteen scenarios, 11 negative and 5 positive, and asks participants four to five questions for each scenario about how they may feel in the given situation on a 1 (*Not likely*) to 5 (*Very likely*) scale (Example: You made plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up. You would think: "I'm inconsiderate."). The TOSCA-3 yields 5 indices, including shame-proneness, guilt-proneness, externalization, detachment/unconcern, alpha pride, and beta pride. Only the shame-proneness score was utilized in the current study. Previous alpha coefficients for the shame-proneness subscale ranged from .76 to .88 in three different studies (Tangney & Dearing, 2002). Validity information has not been reported. The TOSCA-3 Shame subscale was found to have excellent internal reliability in the present study ($\alpha = .82$).

Experiential Avoidance. The 7-item Acceptance and Action Questionnaire-2 (Bond et al., 2011) was used to assess experiential avoidance. It is answered on a 1 (*Never True*) to 7 (*Always True*) point Likert scale. Although this measure is sometimes scored in reverse fashion to measure acceptance or psychological flexibility, for the purposes of the current study, it was scored such that higher scores indicate higher levels of experiential avoidance. The AAQ-2 was originally developed as a 10-item measure; however, three items were taken out for psychometric reasons (Hayes, 2011). Previous research with the 10-item AAQ-2 has found improved internal consistency for the AAQ-2 compared to the original version of the AAQ, with a mean alpha coefficient of .84 across six different samples (Bond et al., 2011). The test-retest

reliability at 3 and 12 months was found to be .81 and .79, respectively, and the measure also showed convergent validity through its association with mental health and other outcome variables (Bond, et al.). The present study found excellent internal reliability for the 7-item measure ($\alpha = .91$).

Physical Health (Somatic Symptoms). The 14-item Physical Health Questionnaire (PHQ; Schat, Kelloway, & Desmarais, 2005) was used to measure physical somatic symptoms occurring over the last six months. Respondents answer questions on a 7-point scale, ranging from *Not at all* to *All the time* (example item: “How often have you experienced headaches?”). Although this study used the total score, the PHQ includes four subscales (followed by consistency coefficients from two samples, obtained from previous research): Gastrointestinal Problems ($\alpha = .84 - .86$); Headaches ($\alpha = .90$), Sleep Disturbance ($\alpha = .81$), and Respiratory Illness ($\alpha = .70 - .77$) (Schat et al., 2005). The PHQ has been found to have adequate construct, convergent and discriminate validity (Schat et al., 2005). This measure was found to have excellent internal consistency in the present study ($\alpha = .86$).

Mental Health (Psychological Distress). Psychological distress was assessed via the 21-item Depression, Anxiety, and Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Items in this measure are answered on a 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*) scale based on how participants felt within the last week. The DASS-21 yields three subscales for depression, anxiety, and stress, as well as an overall score, which was used in this study. Example items for each respective subscale are: “I felt I wasn’t worth much as a person”, “I felt I was close to panic”, “I was intolerant of anything that kept me from getting on with what I was doing”). The DASS-21 has been found to have strong concurrent validity with other measures of depression, anxiety, and stress (Osman et al., 2012). Previous research

with a similar sample has found the reliability estimate for the DASS-21 to be in the excellent range ($\alpha = .95$) (Webb, Hirsch, et al., 2013). For the current study, the reliability estimate was also in the excellent range ($\alpha = .94$).

Health Functioning (Physical and Mental Health). The 12-item Medical Outcomes Study Short Form-12 (SF-12; Ware, Kosinski, & Keller, 1996) was used to measure global physical (PHS; 5-items; z -score) and mental (MHS; 5-items; z -score) health status. Items are a mix of yes/no and Likert-scale responses, and refer to either the participant's experience generally, or to their health and health-related functioning within the last four weeks (example item: "During the past 4 weeks how much did pain interfere with your normal work (including both work outside the home and housework)?"). A previous study done with a college student sample from the same region found reliability estimates of $\alpha = .79$ for PHS and $\alpha = .95$ for MHS (Webb, Hirsch, et al., 2013). For the current study, the reliability estimates were $\alpha = .81$ for PHS and $\alpha = .76$ for MHS. Ware et al. (1996) replicated 20 longitudinal and cross-sectional measures of validity used in the development of the longer SF-36 and found relative validity estimates for both the Mental and Physical Component Summaries to be on par with those of the SF-36.

Statistical Analysis

A series of analyses were run in order to test the model proposed in this study. First, in order to examine the relationships between all study variables, bivariate correlations were computed using Pearson correlation coefficients (r). In order to conserve power, only the demographic variables that have significant or near-significant ($p < .10$) associations at the bivariate levels with self-compassion, self-forgiveness, the mediator variables, or mental or physical health were retained. Item responses were averaged to create a mean response score for each measure for each participant.

The association between self-compassion and self-forgiveness as mediated by rumination, shame-proneness and experiential avoidance were next examined via a parallel multiple mediation analysis (see Figure 1) using techniques consistent with Preacher and Hayes' methods (Preacher & Hayes, 2008). In this framework, there are a number of different kinds of relationships that may be identified between the independent variable (IV; self-compassion), dependent variable (DV; self-forgiveness) and the mediators (M; rumination, shame-proneness, and experiential avoidance). The *total effect* (c) refers to the relationship between the IV and the DV, before accounting for the effect of any of the mediators. The *direct effect* (c') represents the effect of the IV on the DV, after accounting for the effect of all of the mediators. A *specific indirect effect* is the amount of variance accounted for by a single mediator or mediator pathway, e.g., through rumination (a_1b_1), and the *total indirect effect* ($a_1b_1 + a_2b_2 + a_3b_3$) refers to the amount of variance accounted for by all of the mediators combined. Several different kinds of mediation outcomes may be found. *Full mediation* occurs when the total effect (c) is significant, and the direct effect (c') is no longer significant. *Partial mediation* occurs when c is significant, and c' is reduced from c but remains significant. Finally, an *indirect-only effect* occurs when one or more indirect effects are significant, but neither c nor c' is significant.

The complete proposed model of the relationship between self-compassion, self-forgiveness, shame, rumination, experiential avoidance, and health was tested via the PROCESS method put forth by Hayes (2012) to test serial multiple mediation. The PROCESS tool combines many of the functions of other popular procedures for such an analyses previously developed by Hayes and colleagues (e.g., MODMED, SOBEL) and allows for more complex analyses, than do other tools, to be completed in one step (Hayes, 2012). In contrast to the assumptions of parallel multiple mediation, in serial mediation the mediators analyzed in

sequence are assumed to have a direct, otherwise causal effect (theoretical directionality can be analyzed with cross-sectional data) on one another (Hayes, 2013). Although the PROCESS tool does not intrinsically allow for a combined parallel and serial mediator model (Hayes, 2012), additional, otherwise parallel mediators can be tested through inclusion of the nontested mediating variables as covariates (Preacher & Hayes, 2008). Thus, for each of the four health outcomes there was the potential for three analyses run, one for each proposed mediator (rumination, shame, and experiential avoidance), with the other mediators and demographic variables controlled for. This could have resulted in a total of twelve serial mediation analyses. However, as will soon be described, only one of the three mediators were significant in the parallel mediation analysis, thus only four serial mediation analyses were run.

Similar to the parallel multiple mediation model described previously, the serial mediation model also results in a total effect, direct effect, and specific and total indirect effects, and may result in full or partial mediation, or in an indirect-only effect. In addition to the direct and total effect of self-compassion on health outcomes, the proposed serial mediation model also allows for 7 specific indirect effects for each of the four health outcomes, including: 1) through rumination (a_1b_1) 2) through shame-proneness (a_2b_2), 3) through experiential avoidance (a_3b_3). 4) through self-forgiveness (a_4b_4), 5) through rumination and self-forgiveness ($a_1a_5b_4$), 6) through shame-proneness and self-forgiveness ($a_2a_6b_4$), and 7) through experiential avoidance and self-forgiveness ($a_3a_7b_4$). This model tests for the direct relationship between self-compassion and health, as well as through multiple serial mediators – that is, first rumination, shame-proneness, and interpersonal problems in parallel, and second, self-forgiveness in serial.

In sum, there were three stages to my statistical analysis. First, I examined bivariate correlations between all variables, and selected demographic control variables based on their

significance with the study variables at the bivariate level. Next, I ran a parallel multiple mediation analysis to analyze the mediating role of rumination, shame-proneness, and experiential avoidance on the relationship between self-compassion and self-forgiveness. Finally, I analyzed the same broad model in a serial multiple mediation analysis within the context of four health outcome variables: mental health (as measured by the DASS), somatic physical health symptoms (as measured by the PHQ), and mental and physical health-related functioning (as measured by the SF-12 MHS and PHS, respectively). It should be noted, however, that in the serial mediation model, self-forgiveness served as an additional mediator, and its total and direct effects were not calculated (i.e., a_4 in Figure 2 is not the same as c and c' in Figure 1). However, only mediators that were significant in the parallel multiple mediation model (i.e., shame) were included in the serial mediation model. This resulted in four serial multiple mediation models run (see Figures 4 – 7).

Hypothesis Testing

Hypothesis 1. The first hypothesis, which states that self-compassion will be related to self-forgiveness, was tested via the significance of both c and c' in the parallel mediation model (Figure 1). This pathway reflects the extent to which self-compassion and self-forgiveness are related after significant demographic variables, and before (in the case of c) and after (in the case of c') rumination, shame-proneness, and experiential avoidance are controlled for.

Hypothesis 2. The significance of the relationships between rumination, shame-proneness, and experiential avoidance with both self-compassion and self-forgiveness is first reflected in the significance level of the Pearson correlation coefficients. Additionally, their significance after controlling for the effects of demographics and one another is more accurately

seen in the *a* pathways in regard to self-compassion, and in the *b* pathways in regard to self-forgiveness in the parallel multiple mediation analysis.

Hypothesis 3. The third hypothesis states that self-compassion and self-forgiveness will be linked with both mental and physical health and functioning. Similar to the testing of the second hypothesis, these relationships were tested first at the bivariate level, and then are reflected in the *c* and *c'* pathways for self-compassion, and *b₄* pathway for self-forgiveness in the serial multiple mediation analyses.

Hypothesis 4. I predicted that the relationship between self-compassion and self-forgiveness would be mediated by rumination, shame-proneness, and experiential avoidance. This hypothesis was examined through the parallel multiple mediation analysis and through examining the relative significance levels of the direct, total, and indirect effects. The association between self-compassion and self-forgiveness may be partially or fully mediated by one or more of the proposed mediators, or it is possible that self-compassion will have an indirect-only effect through the mediators.

Hypothesis 5. The final hypothesis purports that the overall model relating self-compassion, self-forgiveness, and the proposed mediators to physical and mental health will be significant. This hypothesis was examined via the significance of the overall serial multiple mediator models tested. Because shame was the only significant mediator in the parallel mediation analysis, four such analyses were run, reflecting the four health outcomes.

CHAPTER 3

RESULTS

Bivariate Associations

A bivariate correlation matrix was constructed in order to examine the zero-order associations between study variables (see Table 2; Appendix A). All associations are at least $p < .05$, unless otherwise indicated.

Demographic and control variables. Several variables were included as potential controls, including age, gender (1 = male, 2 = female), sexual orientation (dichotomized; 1 = heterosexual, 2 = other), year in college, ethnicity (dichotomized; 1 = Caucasian, 2 = other), marital status (dichotomized; 1 = single, 2 = other), religiousness, and social desirability. Social desirability was associated or trending ($p < .10$) with eight of the nine study variables. Sexual orientation was correlated with all health outcomes (i.e., psychological distress, somatic symptoms, and physical and mental health status), experiential avoidance, and self-forgiveness, and was trending toward significance with rumination. Gender was associated with shame and somatic symptoms and was trending toward significance with psychological distress. Ethnicity was associated with shame and experiential avoidance and was associated or trending with all health outcomes except for physical health status. Age was associated with physical health status and trending with mental health status, and religiousness was trending toward significance with self-compassion and mental health status. Marital status and year in college were both only correlated with physical health status; therefore, along with age, they were only controlled for in the serial mediation analyses, and not in the multiple mediation analyses, since they were not associated at the bivariate level with any of the measures included in the multiple mediation analysis.

Self-compassion, self-forgiveness, and potential mediators. At the bivariate level, self-compassion and self-forgiveness were found to be positively associated with each other ($r = .64$, $p < .001$). As predicted, self-compassion was also found to be negatively associated with rumination ($r = -.54$, $p < .001$), shame ($r = -.47$, $p < .001$), and experiential avoidance ($r = -.62$, $p < .001$). Self-forgiveness was also found to be significantly correlated with each of the proposed mediators in the expected directions, including rumination ($r = -.48$, $p < .001$), shame ($r = -.45$, $p < .001$), and experiential avoidance ($r = -.53$, $p < .001$).

Health outcomes. All four of the health outcome measures were found to have significant correlations in the predicted directions with self-forgiveness ($r_s = |.22| - |.44|$). Self-compassion was also found to have significant, salutary correlations ($r_s = |.36| - |.53|$) with all health outcomes except physical health status.

Somatic ($r_s = .30 - .56$) and psychological ($r_s = .30 - .76$) symptoms were both positively correlated with each of the three proposed mediators. Mental health status was negatively associated with the mediators, ($r_s = -.29 - -.67$). Physical health status was also negatively associated with rumination ($r = -.30$) and with experiential avoidance ($r = -.29$), but was not related to shame. In sum, at the bivariate level, all associations between study variables were significant and in the predicted direction, with the exception of a lack of association between both shame and physical health status, and self-compassion and physical health status.

Multivariable Analyses

As previously described, a parallel multiple mediation analysis and four serial multiple mediation analyses were conducted in order to test the proposed model of association between self-compassion, self-forgiveness, potential mediators of their relationship, and physical and mental health.

Parallel multiple mediation analysis. Figure 3 represents the results of the parallel multiple mediation model, including the coefficient and *p* values (Hayes, 2013). As described, gender, religiousness, sexual orientation, ethnicity, and social desirability were included as controls in this analysis due to their having significant correlations with study variables at the bivariate level. The overall model was significant ($R^2 = .43, p < .0001$), and there was a partial mediation effect. That is, self-compassion had a significant direct effect on self-forgiveness (*c*), and this effect was reduced, yet remained significant once the mediators were accounted for (*c'*) (see Figure 1 and Figure 4). The total indirect effect of the mediators was significant (*ab*), and shame (a_2b_2), but not rumination (a_1b_1) nor experiential avoidance (a_3b_3), had significant specific indirect effects (see Table 3; Appendix B). None of the mediators had significantly greater effect than the others (e.g., *vs.*₁). In sum, self-compassion was found to be associated with greater self-forgiveness, partially due to its role in reducing shame.

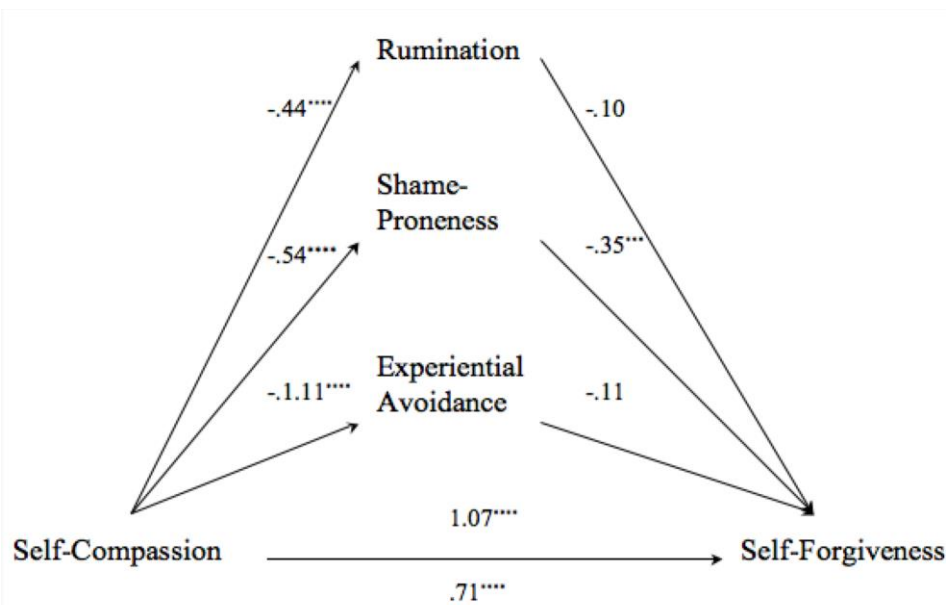


Figure 3. Parallel Multiple Mediation Model.

Adjusted for: gender, religiousness, sexual orientation, ethnicity, and social desirability
 $^{\dagger} p < .10$; $^* p \leq .05$; $^{**} p \leq .01$; $^{***} p \leq .001$; $^{****} p \leq .0001$

Adapted from Preacher and Hayes (2008)

Serial multiple mediation analyses. Similar to the parallel mediation model, Figures 5 through 8 represent the results of the four serial multiple mediation analyses run. Figure 4 is provided as a reference for the corresponding letters symbolizing each pathway for all four serial mediation analyses. Because rumination and experiential avoidance were not significant mediators in the parallel multiple mediation analysis, they were not included in the serial mediation analyses. Each of the four analyses included gender, age, religiousness, sexual orientation, marital status, ethnicity, year in college, and social desirability as control variables.

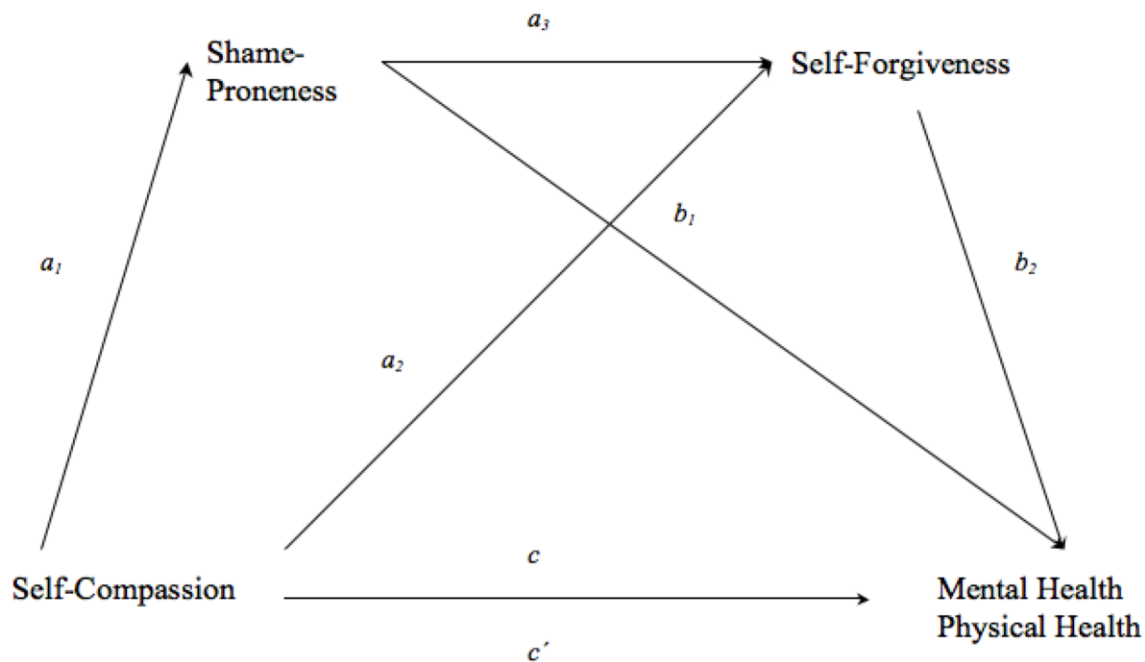


Figure 4. Serial Multiple Mediation Model: Conceptual Model as Tested.

[†] $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

Adapted from Hayes (2013)

Psychological distress. The overall serial mediation model for psychological distress as measured by the DASS-21 was significant ($R^2 = .26, p < .0001$) and is represented in Figure 5. There was a partial mediation effect, as both the total (c) and the direct effect (c') of self-compassion significantly influenced psychological distress. There was a significant overall

indirect effect via the mediators; however, none of the specific mediation pathways were significant (see Table 4; Appendix C). As such, although the total indirect effect was significant, specific indirect effects were indistinguishable. Additionally, none of the mediation pathways, or specific indirect effects, were significantly different in the strength of their effect compared to the others.

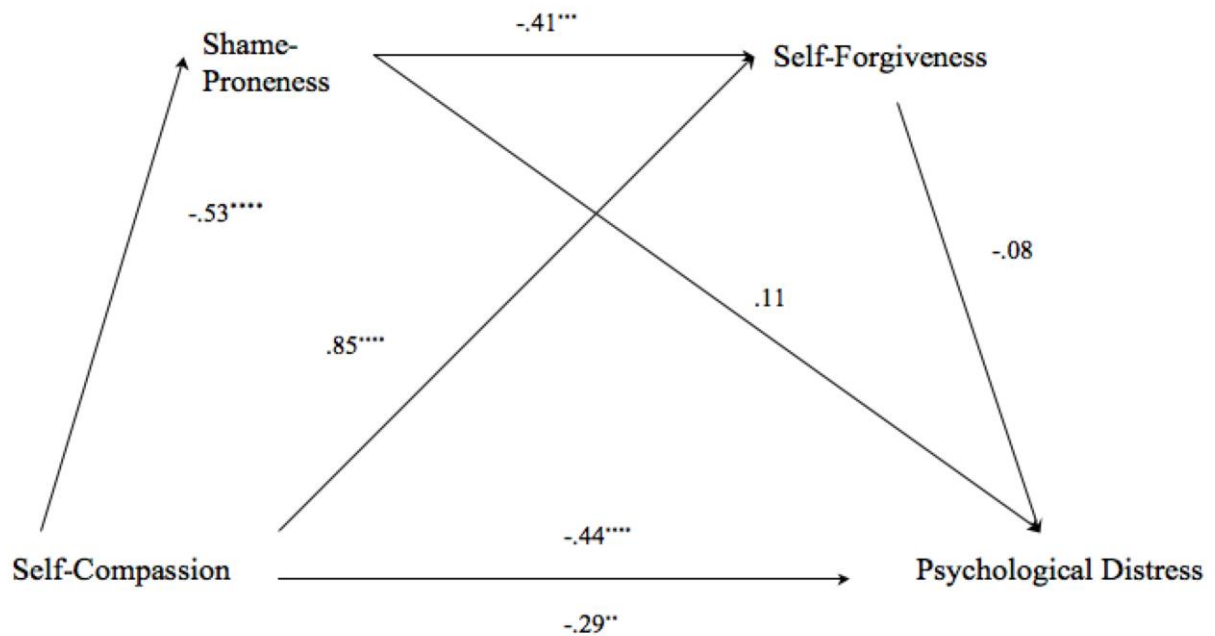


Figure 5. Serial Multiple Mediation Model: Psychological Distress.

Adjusted for: gender, age, religiousness, sexual orientation, marital status, ethnicity, year in college, and social desirability
[†] $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

Adapted from Hayes (2013)

Somatic symptoms. Figure 6 represents the serial mediation model testing the effects of the model on somatic symptoms as assessed by the PHQ. The overall model was significant, ($R^2 = .21, p < .0001$). A full mediation effect was observed, in that self-compassion had a significant effect on somatic symptoms that was fully accounted for by the mediators. There was a significant total indirect effect, and two significant specific indirect effects via shame and self-

forgiveness (in serial; $a_1a_3b_2$) and through self-forgiveness (alone; a_2b_2). That is, for the former, higher levels of self-compassion were associated with lower levels of shame, which in turn was associated with higher levels of self-forgiveness, which in turn was associated with lower levels of somatic symptoms. For the latter, self-compassion was linked with greater self-forgiveness, which was then associated with lower somatic symptoms. Additionally, the effect of the pathway (vs.3) via self-forgiveness (a_2b_2) was significantly greater than that of both mediators in serial ($a_1a_3b_2$).

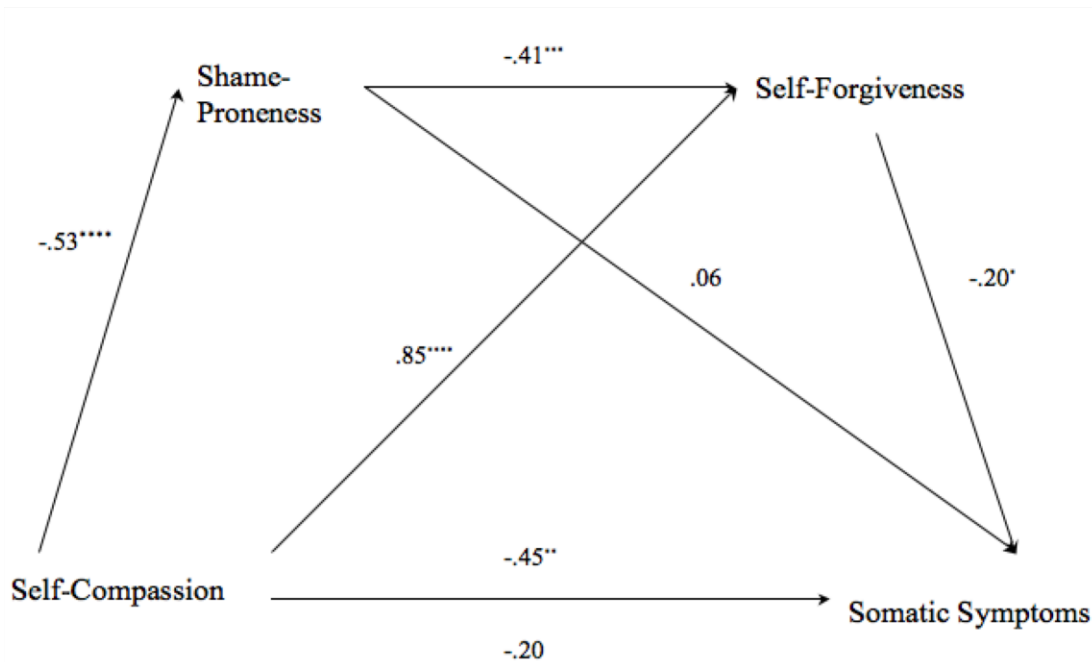


Figure 6. Serial Multiple Mediation Model: Somatic Symptoms.

Adjusted for: gender, age, religiousness, sexual orientation, marital status, ethnicity, year in college, and social desirability
[†] $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

Adapted from Hayes (2013)

Physical health status. The overall serial mediation model for physical health status, as measured by the PHS subscale of the SF-12, was significant ($R^2 = .16, p < .05$) and is represented in Figure 7. There was not a significant total or direct effect found between self-

compassion and physical health status; hence, full or partial mediation was not possible. However, there was a significant total indirect effect, as well as specific indirect effects via shame and self-forgiveness ($a_1a_3b_2$) pathways, and through self-forgiveness alone (a_2b_2). Thus, an indirect only effect was found. That is, for the former self-compassion was linked with lower shame, which in turn resulted in greater self-forgiveness, which then was associated with greater physical health status. For the latter, self-compassion was associated with greater self-forgiveness, which was then associated with higher PHS scores. However, self-compassion and physical health status were not directly related. Furthermore, contrast analyses (*vs.2* and *vs.3*) revealed that the a_2b_2 pathway again exerted a stronger effect compared to the $a_1a_3b_2$ pathway, and the pathway via self-forgiveness (a_2b_2) had a significantly greater effect than that through shame (a_1b_1).

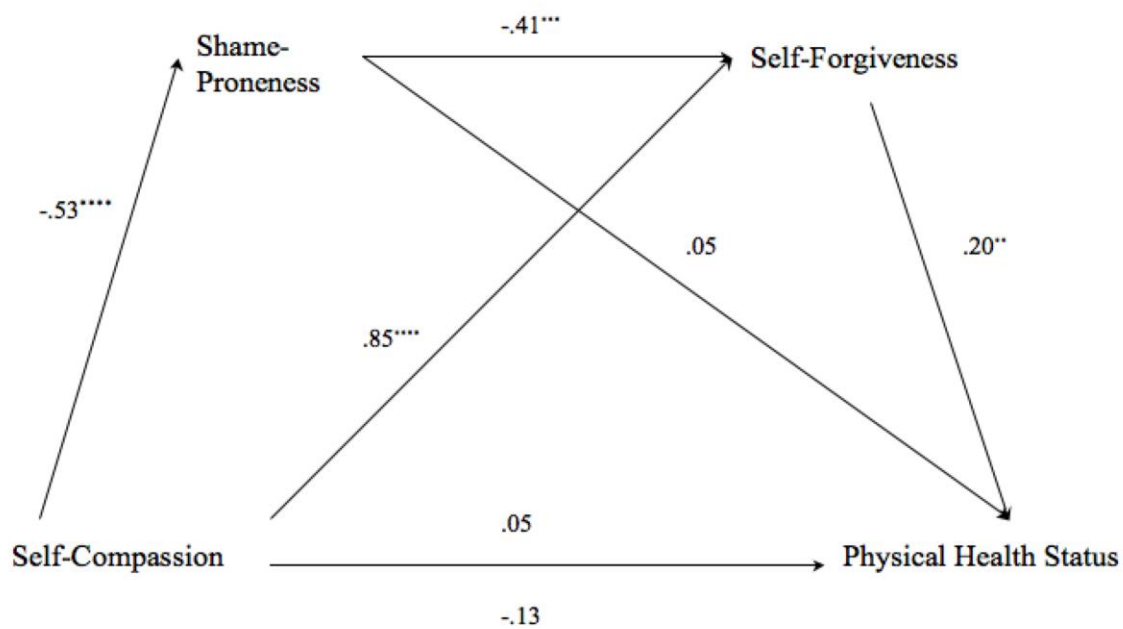


Figure 7. Serial Multiple Mediation Model: Physical Health Status.

Adjusted for: gender, age, religiousness, sexual orientation, marital status, ethnicity, year in college, and social desirability
[†] $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

Adapted from Hayes (2013)

Mental health status. The final serial mediation analysis tested the effect of the model on mental health status as assessed by the MHS subscale of the SF-12, shown in Figure 8. The overall model was significant ($R^2 = .35, p < .0001$), and both direct (c') and total (c) effects were significant. However, there was not a total indirect effect for mental health status, nor were there any specific indirect effects. None of the potential mediators were found to have a stronger effect than the others in this analysis. As such, there was a direct only association between self-compassion and mental health status, such that neither shame nor self-forgiveness were associated with mental health status in this sample (at the multivariable level of analysis), nor were they significant mediators of the association between self-compassion and mental health status.

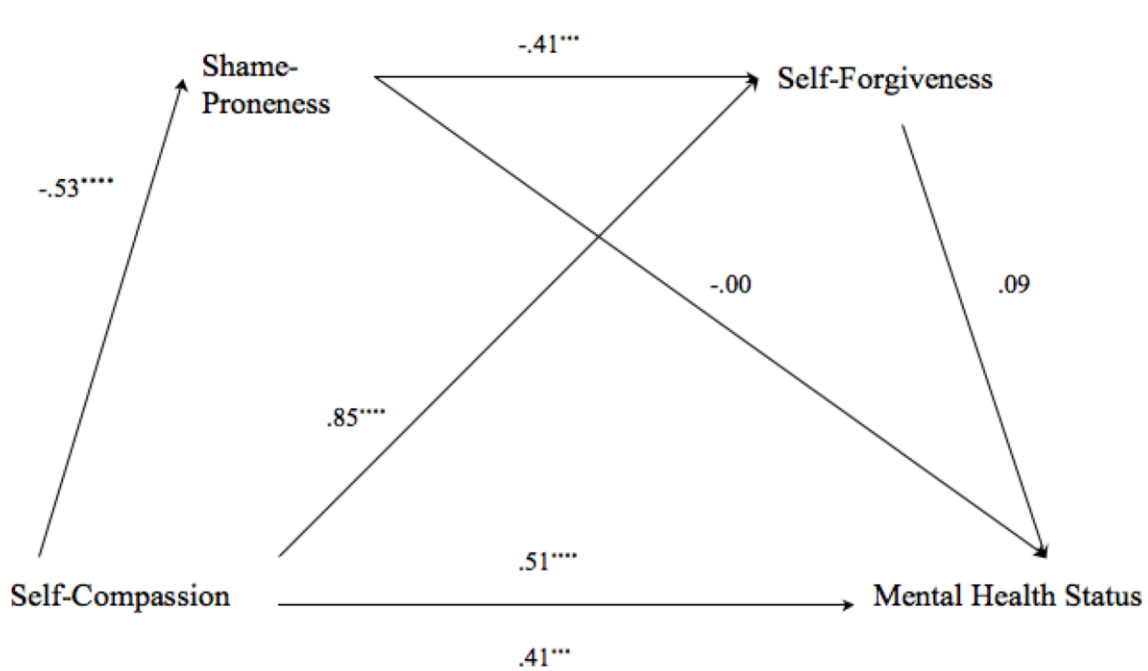


Figure 8. Serial Multiple Mediation Model: Mental Health Status.

Adjusted for: gender, age, religiousness, sexual orientation, marital status, ethnicity, year in college, and social desirability
 $^{\dagger} p < .10$; $^* p \leq .05$; $^{**} p \leq .01$; $^{***} p \leq .001$; $^{****} p \leq .0001$

Adapted from Hayes (2013)

CHAPTER 4

DISCUSSION

Self-compassion and self-forgiveness are constructs that appear to be highly relevant to one another and to health functioning, but heretofore have not been previously examined in the context of one another. The current study found support for the proposed relationship between self-compassion and self-forgiveness, as these two constructs were positively related, and their relationship was partially accounted for by reductions in shame. Moderate support was also found for the salutary effect of this model on health outcomes. The five study hypotheses will next be reviewed in relation to the current findings. The results will then be discussed in the context of prior research, and limitations and future research directions will be identified.

Hypotheses Evaluation

Hypothesis 1. The first hypothesis proposed that self-compassion and self-forgiveness would be directly related above and beyond the effects of covariates. Self-compassion and self-forgiveness were significantly correlated at the bivariate level, and self-compassion also had a total effect (c) on self-forgiveness, after adding in relevant controls, as well as a significant direct effect (c'). Therefore, this hypothesis may be considered supported.

Hypothesis 2. The second hypothesis proposed that rumination, shame, and experiential avoidance would be negatively related to both self-compassion and self-forgiveness. This hypothesis was supported at the bivariate level for all constructs. This hypothesis was also tested via the a and b pathways in the parallel multiple mediation analysis. Self-compassion was found to be significantly, negatively associated with all three mediators (see Table 4; Appendix C). Only shame was significantly associated with self-forgiveness in the mediation analysis (b_2); rumination and experiential avoidance were not.

Hypothesis 3. Hypothesis 3 stated that greater levels of self-compassion and self-forgiveness would be related to better mental and physical health status. In bivariate correlations, this hypothesis was fully supported for self-forgiveness and was supported for self-compassion for three of the four health outcomes, excluding physical health status. This hypothesis was also tested via specific pathways in the serial mediation analyses. In regard to self-forgiveness, it was found to have a significant effect on somatic symptoms and physical health status, but not on psychological distress or on mental health status. For self-compassion, a total effect was found for psychological distress, somatic symptoms, and mental health status, but not physical health status. A direct effect was also found for both psychological distress and mental health status. Self-forgiveness had a *relatively* stronger relationship with better physical health, whereas self-compassion appeared to have a *relatively* stronger impact on psychological health outcomes.

Hypothesis 4. The fourth hypothesis predicted that the parallel mediation model tested would be significant. This hypothesis was supported, as the overall model was significant, and self-compassion was found to have a total effect on self-forgiveness that was partially mediated by reduced shame. There was a total indirect effect of all proposed mediators combined ($a_1b_1 + a_2b_2 + a_3b_3$), but rumination and experiential avoidance did not significantly contribute to the effect of self-compassion on self-forgiveness, whereas shame did.

Hypothesis 5. The fifth and final hypothesis described the four serial mediation analyses. All four models were significant; however, the degree to which this hypothesis was supported in terms of specific pathways depends on the health outcome analyzed. For psychological distress, self-compassion had a significant effect that was partially mediated by a significant total indirect effect, with no significant specific indirect effects found. Self-

compassion was found to have a significant total effect on somatic symptoms that was no longer significant after the inclusion of mediators. The total effect of the mediators was significant, as was the pathway via shame and self-forgiveness, as well as when mediated by self-forgiveness alone. There was an indirect only effect for physical health status via the combined mediators and specifically through shame and self-forgiveness ($a_1a_3b_2$) and self-forgiveness alone (a_2b_2). Finally, for mental health status, self-compassion had a significant direct and total effect that was not mediated either by individual or combined pathways.

Summary of Hypotheses Testing. The results found in the present study provide strong support for its central thesis that self-compassion and self-forgiveness are related to one another. The current results also suggest that the proposed mediators of rumination, shame, and experiential avoidance were all related to self-compassion in mediation analyses, but only shame was related to self-forgiveness. Subsequently, only shame was a significant mediator of the relationship between self-compassion and self-forgiveness. Finally, the significance of the models testing the relationship between self-compassion, shame, self-forgiveness, and health varied based on the health outcome assessed. That is, when statistically identifiable mediators between self-compassion and health were observed, self-forgiveness alone and in conjunction with shame were statistically significant, but shame was not found to be a significant mediator on its own.

Self-Compassion and Self-Forgiveness

In the current study, self-compassion and self-forgiveness retained a significant connection after control variables and potential mediators were accounted for. Previous research on self-compassion and self-forgiveness has been minimal and has not gone beyond bivariate analyses (Breen et al., 2010; Mistler, 2011; Terzino, 2011). The bivariate correlation, in the

current study, between self-compassion and self-forgiveness ($r = .64, p < .001$) is roughly similar to that of the two other studies employing the SCS and the HFS-S; including Breen et al. (2010) ($r = .63, p < .01$) who also used a college sample, and Mistler (2011), ($r = .72, p < .01$) who utilized participants from the general population. Therefore, the current findings are in line with previous research and extend it by finding this association remains after related demographic characteristics and social desirability are controlled for. This is also the first study to specifically examine the relationship between self-compassion and self-forgiveness, and so it is also novel in finding that this association was partially mediated by shame.

Rumination

Rumination was significantly correlated with both self-forgiveness ($r = -.48, p < .001$) and self-compassion ($r = -.54, p < .001$) in the current study. In regard to self-forgiveness, this was in line with the extant scientific literature, as there have only been three studies to examine the association between self-forgiveness and rumination, and these only did so at the bivariate level (Barber et al., 2005; Terzino, 2011; Thompson et al., 2005). However, once relevant controls were included and the relationship was analyzed in the context of the mediation model, self-forgiveness and rumination were no longer related. Rumination has been found via meta-analysis to be highly relevant to forgiveness of others (Fehr et al., 2010); however, it is possible its importance for forgiveness of self is more limited. Future research should further examine the association between rumination and self-forgiveness, as well as the possible role of rumination as a distinction between forgiveness of self and others.

The current study found that self-compassion and rumination were related both in correlations and within the mediation analysis, which is in line with the available prior research. That self-compassion is negatively correlated with rumination has been found consistently across

several studies (Neff, 2003a; Neff, Kirkpatrick, et al., 2007; Neff & Vonk, 2009; Raes, 2010). Furthermore, self-compassion and rumination retained a relationship after control and other study variables were accounted for, which is also consistent with other studies finding self-compassion to be linked with rumination in more complex analyses (Neff, Kirkpatrick, et al., 2007; Neff & Vonk, 2009; Raes, 2010). While the association with rumination and health outcomes was not examined in the current study beyond bivariate analyses, it was significantly correlated in the predicted directions with all four health outcomes, suggesting that it may have important implications for health as well.

Shame-Proneness

Of the three proposed mediators, shame was the only one to have a significant association with self-forgiveness in the parallel mediation model, and was thus the only significant mediator between self-compassion and self-forgiveness and the only mediator to be included in the serial mediation analyses. The present study found that self-compassion is associated with greater self-forgiveness, in part due to a reduction in shame. This is congruent with the self-forgiveness literature, which has put a primary emphasis on the role of self-forgiveness in mitigating shame both through its theoretical models of self-forgiveness (Hall & Fincham, 2005; McConnell et al., 2012; McGaffin et al., 2013; Ranganadhan & Todorov, 2010), as well as in empirical research (Bassett et al., 2011; Fisher & Exline, 2006; Greene & Britton, 2013; King, 2010; Macaskill, 2012; McCann, 2010; McGaffin et al., 2013; Strelan, 2007; Terzino, 2011; Webb et al., 2008). It is surprising, therefore, that researchers of self-compassion have paid relatively little attention to the relationship between self-compassion and shame-proneness. The current findings, which support not only that self-compassion and dispositional shame are related, but also that this

association has implications for mental and physical health, may be but one example of the potential benefits of better integrating the research on self-compassion and self-forgiveness.

Although there has not been research into the relationship between self-compassion, shame, and self-forgiveness, one study did examine the relationship between self-esteem, shame, and self-forgiveness. Greene and Britton (2013) investigated the relationship between self-esteem, shame proneness, and the Heartland measure of forgiveness in a sample of LGBTQ individual, finding that shame and self-forgiveness were positively correlated, and shame-proneness and self-forgiveness were most relevant to self-esteem. Further, in a mediation analysis, self-forgiveness partially mediated the effect of shame-proneness on self-esteem. Self-compassion is thought to be a less-problematic alternative to self-esteem and is often associated with self-esteem (Neff & Vonk, 2009), thus this finding may provide indirect support for the current model, although the conceptual model differed from the present one (that is, self-esteem was the outcome, and not an independent variable).

As mentioned, shame was the only mediator to be included in the serial mediation analyses examining the effects on health outcomes. Although the pathway between shame and health was not significant in any of the four models (b_1), shame did contribute significantly to health outcomes indirectly via its association with self-forgiveness ($a_1a_3b_2$ pathways) for two of the four health outcomes, specifically, somatic symptoms and physical health status. This finding may suggest that shame has a negative effect on health outcomes only to the extent that it is unresolved, i.e., only if shame leads to a lack of forgiving oneself. Prior to the present investigation, there have been four studies (Ianni et al., 2010; Macaskill, 2012; Scherer et al., 2011; M. Webb et al., 2008) examining the association of shame, self-forgiveness, and mental or physical health outcomes, yet none looking at self-compassion in the context of these variables.

Scherer et al. (2011) found that a self-forgiveness intervention increased self-forgiveness, drinking refusal self-efficacy, and decreased shame for individuals receiving treatment for alcohol problems compared to participants receiving treatment as usual. Although this study does not test for an association between variables, it does suggest a common mechanism. Ianni et al. (2010) found that shame moderated the effect of self-forgiveness on alcohol misuse, in that those who were low in self-forgiveness were most likely to misuse alcohol, but only if they were also high in shame. Together, these two studies highlight that shame and self-forgiveness may be especially relevant for a subsection of substance users. Future research should explore whether self-compassion may further inform research and intervention in this area. For example, brief self-compassion and self-forgiveness interventions may be included within pre-existing evidence-based treatments for substance abuse (e.g., Cognitive Behavioral Therapy, Motivation Enhancement Therapy, or Twelve-Step Facilitation Therapy) as a means of reducing shame and to potentially help negate or shorten the severity or length of relapse.

There have also been two studies that examined variables contributing to variance in self-forgiveness. Macaskill (2012) found that shame, anger, and anxiety all contributed significantly to variance in lack of self-forgiveness in a regression analysis. The author also conducted a path analysis, in which shame, anger, and anxiety all predicted self-unforgiveness, but she did not find a significant effect of self-unforgiveness on either mental health or life satisfaction, although the overall model was significant. While this study did not examine the role of self-compassion, it did examine the model linking shame to self-forgiveness to health outcomes. Their results were parallel to the present findings in that they found a connection between shame and self-forgiveness, but not between shame and health outcomes. However, in the present study, self-forgiveness was associated with two of the four health outcomes, somatic health symptoms and

physical health status. Importantly, however, we did not find significant associations between self-forgiveness and psychological distress or mental health status, which are likely more related to the measures used by Macaskill. Therefore, although Macaskill did not find a significant association between self-forgiveness and mental health, these findings are in line with the current results in which forgiveness of self was linked with indicators of physical health. M. Webb et al. (2008) examined associations between a several variables and dispositional forgiveness in college students, including a regression analysis in which shame, guilt, depression and psychological mistreatment all significantly contributed to self-forgiveness. In this case, the mental health variables depression and psychological maltreatment were conceptualized as potential contributors to forgiveness of self, along with shame, instead of the outcome variable as in the current study. Therefore, although the nature of the relationship remains somewhat unclear and a direct comparison between studies is not possible, Webb et al.'s findings also supported an association between shame, mental health, and self-forgiveness.

Experiential Avoidance

The third proposed mediator, experiential avoidance, was related to self-compassion and self-forgiveness in a similar fashion to rumination. That is, it was related as predicted at the bivariate level, and within the multiple mediation analysis it was significantly related to self-compassion but not to self-forgiveness. It was not a significant mediator of self-compassion and self-forgiveness and thus was not tested in the serial mediation analysis. These findings are in line with both the theorized association between self-compassion and ACT philosophy (Hayes, 2008; Neff & Tirch, 2013) and the few empirical studies that have found a link between the SCS and AAQ at the bivariate level (Costa & Pinto-Gouveia, 2013; Neff & Tirch, 2013), as well as the single study to examine this association through regression analyses (Wendling, 2013). The

current finding that self-compassion and experiential avoidance are associated after controlling for the effect of relevant demographic characteristics as well as the study variables is thus a significant and relatively novel finding. Further research should continue to build our understanding of self-compassion in the context of ACT philosophy generally, and as related to experiential avoidance specifically.

Contrary to prediction, self-forgiveness was only linked with experiential avoidance at the bivariate level. To our knowledge, this was the first study to test the association between self-forgiveness and experiential avoidance as measured by the AAQ, particularly in a college student population. One study examined that association of self-forgiveness and a version of the AAQ related to substance abuse within a sample of individuals seeking treatment for substance abuse problems, and found that not only were self-forgiveness and acceptance associated at the bivariate level and within mediation analyses, but it was also found to mediate the effects of both guilt and shame on self-forgiveness (McGaffin et al., 2013). There may be several possible reasons for this apparent discrepancy in findings. As discussed in the context of shame, it is possible that issues related to shame, acceptance, self-forgiveness, as well as treatment outcomes may be especially relevant for substance abusers who have struggled with a stigmatized problem as well as related behaviors they may now regret. Therefore, it is possible that these associations are present and particularly salient in a substance abuse, but not a college student population. Additionally, even within a given population, there may be certain characteristics that *moderate* this association and make it more relevant for some individuals than for others. In any case, there is strong theoretical rationale for better understanding the association between acceptance, or conversely, experiential avoidance and self-forgiveness, and future research should clarify under what circumstances these constructs may (or may not) influence one another.

Self-Forgiveness and Health

In the present study, self-forgiveness was linked with somatic symptoms and physical health status, but not with psychological distress or mental health status. The lack of association between self-forgiveness and the primarily mental health outcomes is in contrast to several studies that have found self-forgiveness to be linked to numerous mental and physical health outcomes (see introduction section for review). In particular, Webb et al. (2013) examined the effect of three forms of forgiveness as mediated by health behavior, social support and interpersonal functioning on the same four health outcomes, using the same four measures used in the current study. They found that forgiveness of self had a total effect on all four outcomes that was fully mediated for physical health status, mental health status, and somatic symptoms, and partially mediated for psychological distress. It is somewhat unexpected that these associations would be found in this study but not in the current one, especially given that this study also included university students from the same region. However, there are several possibilities for these results. One is that Webb et al. used a different measure of forgiveness than the current study, as they utilized the three-item short form measure of forgiveness derived from the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS; Fetzer Institute, 1999). Therefore, it is possible that variations in these measures may contribute to finding different results. Additionally, it is notable that for both studies, there were significant associations at the bivariate level for all four health outcomes tested. The analyses run were different in the two studies, in that Webb et al. explores the role of potential mediators between self-forgiveness and health, while in the current study, self-forgiveness itself is functioning as a mediator. It is notable that for three of the four health outcomes in the study conducted by Webb et al. (2013), the association between forgiveness of self and health was only significant when

the mediators were not accounted for (i.e., c was statistically significant and c' was not), yet forgiveness of self remained associated with health in an indirect fashion (i.e., full or partial mediation). In the current study, the effect of the study variables is already included, and a similar “total effect” on health is not available. Although the mediators in the study are different, it may be a matter of effect size, in that self-forgiveness may frequently be related to mental health; however, the direct effect can be diminished to nonsignificance when related constructs are also tested (i.e., interpersonal functioning, social support, and/or health behavior). Nonetheless, further research is needed to clarify the strength and nature of the potential association between self-forgiveness and mental health. Additionally, as previously discussed, it will be important to clarify if the present trend continues in that the effect of self-forgiveness is stronger for outcomes tied to physical functioning.

Self-Compassion and Health

In the serial analyses, self-compassion was found to have total and direct effects that were partially mediated for psychological distress, total and direct effects only for mental health status, a total effect that was reduced to nonsignificance after the inclusion of mediators for somatic symptoms, and an indirect only effect for physical health status. The results for mental health are fully in line with current research linking self-compassion with greater levels of mental health (Barnard & Curry, 2011; MacBeth & Gumley, 2012; Neff, 2009). There has been relatively less research on self-compassion and physical health, however, and the current findings suggest that this connection may be indirect rather than direct. Self-compassion has been linked with greater engagement in health-promoting behaviors and more adaptive responses to illness (Sirois, Kitner, & Hirsch, 2014; Terry, Leary, Mehta, & Henderson, 2013). A recent literature review identified only two studies that directly explored the association of self-

compassion and physical health specifically. The association between self-compassion and mental and physical health status as measured by the SF-12 was assessed in the context of adult attachment and mattering in a sample of college students (Raque-Bogdan, Ericson, Jackson, Martin, & Bryan, 2011). The authors found that self-compassion was correlated positively with mental health status, but had a small, negative correlation with physical health status. In mediation analyses, self-compassion, along with mattering, partially mediated the association between adult attachment and mental health. Although the model and other variables examined differ between Raque-Bogdan et al.'s and the current study, the findings for the association between self-compassion and SF-12 subscales are generally congruent, in that in both studies a significant positive effect was found in both bivariate and mediation analyses for self-compassion and mental health, but the predicted direct salutary association was not found between self-compassion and physical health status. In the present study there was not a significant association at the bivariate level and an indirect only association was found in the serial mediation analysis between self-compassion and physical health status, while Raque-Bogden et al. did not test for a mediation effect due to finding a small, negative correlation between self-compassion and physical health status at the bivariate level.

The second study identified that examined the association between self-compassion and physical health did so in a sample of older adults (Allen et al., 2012). It found that self-compassion was correlated with overall health, and that it furthermore was a significant moderator between physical health (as measured by the SF-36) and general wellbeing. That is, self-compassion was associated with high levels of well-being for individuals with poor physical health, but those with good physical health had high well-being regardless of their level of self-compassion. In the context of the current research, Allen et al.'s findings highlight that the

association between self-compassion and physical health status may be complex and may depend on other factors such as level of physical health as well as population studied.

The effect of self-compassion on health was found to be fully mediated in the context of somatic symptoms, and have an indirect only effect for physical health status, by shame and self-forgiveness combined as well as self-forgiveness alone. It is important to note that because rumination and experiential avoidance were not significant mediators in the parallel mediation analysis, they were not included in the serial analysis. Therefore, it is untested whether either variable may have served to mediate the association between self-compassion and health. Self-forgiveness was a significant mediator in two of the four health outcome analyses, alone and together with shame. Future research should continue to investigate how self-forgiveness may play a role in the effect of self-compassion on health.

Self-Compassion and Health as Mediated by Shame and Self-Forgiveness

The present study first tested the association of self-compassion and self-forgiveness, along with the role of three potential mediators: rumination, shame-proneness, and experiential avoidance. Self-compassion was related to self-forgiveness, and this relationship was partially mediated by shame alone.

Next, the effects of self-compassion, shame, and self-forgiveness on health outcomes were tested via a series of four serial mediation analyses. These four models ultimately found that the effects varied by the dimension of health studied. A partial mediation effect by the combined indirect effect of the two mediators (shame and self-forgiveness) was found for psychological distress. For somatic symptoms, the effect of self-compassion was fully mediated by the mediators, specifically by self-forgiveness alone and also by shame and self-forgiveness combined. For physical health status, an indirect only effect was observed, again through self-

forgiveness alone and self-forgiveness and shame combined. For mental health status, a directly only effect was found. Notably, shame only contributed to health in combination with self-forgiveness, and was never a sole mediator between self-compassion and health outcomes. Therefore, relative to shame, self-forgiveness may be more important for the effect of self-compassion on health.

It is notable that although self-forgiveness was negatively correlated with all three proposed mediators at the bivariate level in the parallel mediation analyses, these associations were no longer found after the inclusion of covariates and self-compassion. It is therefore possible that self-compassion may have accounted for at least some of the effect of self-forgiveness on rumination and experiential avoidance. Likewise, self-compassion may have accounted for the effects of self-forgiveness on both psychological distress and mental health functioning, suggesting that perhaps self-compassion and self-forgiveness have a positive effect on mental health through similar mechanisms.

To our knowledge, this is the first study that has ever set out to primarily study the association between self-compassion, self-forgiveness, and their potential mediators and effects on health-related functioning. Future studies should continue to explore what factors may play mediating roles in the connection between self-compassion and health overall, as well as between self-compassion, self-forgiveness, and health.

Study Limitations

There are a number of limitations to the present study. Due to the nature of the analyses run, it was not possible to correct for potential Type 1 error through a Bonferonni or other statistical correction. Therefore, it is possible that some of our results were due to chance, and not to an actual relationship present. However, the use of bootstrapping reduces the relative risk

of both Type I and Type II errors (Hayes, 2013), which may attenuate this limitation. A second limitation of our study is that, because this was a cross-sectional study, the direction of the analyses was largely done on a theoretical basis that is yet to be empirically determined. Future research should employ longitudinal, intervention, and experimental research designs to determine in real time whether greater self-compassion scores do in fact lead to greater self-forgiveness after an offense is committed, as well as the existence of concurrent mediators.

Certain characteristics of the study sample may also limit the application of the current findings to other populations. The current sample consisted of undergraduate college students who were 89% white and 74% female from a southern Appalachian regional university. Similarly, while religiousness was controlled for, the southern region of the U.S. is more religious than the rest of the country (Newport, 2006), views God as more judgmental than the rest of the country (Pew Forum on Religion and Public Life, 2008), and has also been observed to practice religion in a relatively unique fashion (Hill, 1999). As such, unmeasured aspects of religious culture may also make generalization more difficult. It is possible that populations that are less religious than the one utilized here may differ in their degree of shame-proneness or in the extent to which they place cultural value on the concept of forgiveness. As the associations found here become more established within the research literature, it will be increasingly important to explore the extent to which these relationships are retained in more diverse and clinical populations.

The replicability of findings has been increasingly attended to as an important part of the research process and has become a growing priority for funding agencies (Collins & Tabak, 2014). Although much of the current findings are in line with present theoretical and empirical

research, some of these results are novel or minimally studied; therefore, it will be important to replicate these findings not only with similar populations, but with more diverse samples as well.

Clinical Applications

It is not uncommon for clinicians to encounter individuals who are suffering the effects of shame after making mistakes. The concept of self-forgiveness can, at times, be a difficult sell in the therapeutic process. Often, clients will respond with skepticism that they can ever reach a point of self-forgiveness; “Sure, that sounds great, but how do I do that?!” is a typical response. The practice of self-compassion may lay the groundwork for the process of self-forgiveness to take place. Self-compassionate thoughts, actions, and feelings that are developed in the present moment within the therapy room may facilitate future self-forgiveness. Furthermore, learning how to be self-compassionate may reduce the development of future shame, and may allow self-forgiveness to develop more readily when feelings of shame do arise.

As emerging adults, college students are beginning to navigate adult social and occupational relationships independently, often for the first time. Public outreach programs with college students should consider including teaching self-compassion, as this may serve to help students not only develop self-forgiveness as needed, but to engage in other behaviors that allow them to “right the ship” after errors have been made. For college students, learning how to be self-compassionate may support successful behavior in college in multiple ways, for example, after receiving a poor grade, those who have learned self-compassion may be more motivated to engage in better study habits instead of procrastinating or being so self-critical their motivation suffers (Neff, et al., 2005).

Future Directions

Many of the associations explored in the present investigation have been minimally studied, leaving numerous avenues open for future research. As previously discussed, future research should examine the association between self-compassion and self-forgiveness within more diverse populations than that studied here. Self-compassion and self-forgiveness may be especially relevant for some groups and may interact within those populations in unique ways. For example, self-compassion may be especially relevant for LGBTQ individuals. Even though the sample of individuals identifying as having a sexual orientation other than heterosexual in the current study was small ($n = 18$), significant bivariate associations were still seen, such that having an orientation other than heterosexual was correlated with poorer health outcomes for all four variables, as well as lower self-compassion and greater experiential avoidance. This highlights that there are many challenges associated with self-identifying as LGBTQ that may require a particularly developed ability to cope and be resilient (e.g., Adams, 2007; Almeida, Johnson, Corliss, Molnar, & Azreal, 2009). For individuals who have to navigate these challenges and cope with stigma from others, the ability to be compassionate with oneself in difficult moments, as well as to forgive oneself after making a mistake, may be especially relevant for mental and physical wellbeing. As previously described, Greene and Britton (2013) found that self-forgiveness partially mediated the effect of shame on self-esteem in a sample of LGBTQ individuals, thus illustrating that the associations found in the current study may remain relevant for this population. An unpublished dissertation found that greater levels of self-compassion had a positive impact on LGB identity development in a nationwide sample of LGB adults (Crews, 2013). Otherwise, no other published studies were found that examined the effect of either self-compassion or self-forgiveness on LGBTQ identity or functioning.

Future research should also examine these associations within clinical populations. For example, the relationship between self-compassion and self-forgiveness, as well as shame, rumination, and experiential avoidance may be especially relevant for individuals struggling with substance use disorders. There is some research to support that shame and self-forgiveness may be particularly important for individuals seeking recovery (Ianni et al., 2010; McGaffin et al., 2013; Scherer et al., 2011). Indeed, although there was not an association found in the current study between experiential avoidance and self-forgiveness, a previous study with individuals seeking treatment for substance abuse that also utilized the HFS and a substance abuse-specific version of the AAQ found that acceptance did have a significant effect on self-forgiveness in that sample (McGaffin et al., 2013). Future research may consider examining the current proposed model and its effects on alcohol and other substance misuse, as well as its relevance in the treatment of substance use disorders.

One of the limitations of the current study is that it is done with cross-sectional self-reported questionnaires. Hence, the ability to draw causal conclusions is limited. Future studies should include longitudinal research to see whether greater levels of self-compassion do in fact predict greater self-forgiveness, as well as lower shame, rumination, and experiential avoidance, after committing an offense. Likewise, treatment studies should investigate whether interventions designed to increase self-compassion, such as Compassionate Mind Training (Gilbert & Procter, 2006), also lead to increases in self-forgiveness, as well as whether self-forgiveness interventions (Fisher, 2010; Scherer et al., 2011) lead to enhanced self-compassion. Even in research where the emphasis is not on the integration of the two variables but on either self-forgiveness or self-compassion in other contexts, researchers should routinely consider whether to include the other construct. For example, while progress has been made on

developing a model of self-forgiveness (Hall & Fincham, 2005; McConnell et al., 2012; McGaffin et al., 2013; Ranganathan & Todorov, 2010), researchers developing future iterations of this model may consider including self-compassion as a predictor of self-forgiveness. Likewise, self-compassion research may be furthered by considering the role of self-forgiveness in its manifestation.

The issue of pseudo- vs. real self-forgiveness remains a challenge in the assessment of self-forgiveness. Perhaps, as the saying goes, “the proof is in the pudding,” and the most accurate test of whether self-forgiveness is genuine or simply excusing is whether or not efforts are made to avoid repeating the offense in the future. Future research should continue to investigate the role of self-compassion in the self-forgiveness process, and should ideally do so within the context of emphasizing taking responsibility for one’s actions, as well as whether or not attempts at behavior change are made (Wenzel et al., 2012). It is possible that viewing one’s offenses in a self-compassionate light may make an individual more likely to take responsibility for one’s actions, engage in a genuine self-forgiveness process, and take meaningful steps to prevent committing similar offenses in the future.

Although the proposed model of the relationship between self-compassion and self-forgiveness was developed based on available research findings and theory, it is possible that there are other potential mediators that serve as indirect means by which self-compassion impacts self-forgiveness. It is probable that self-compassion may interact with other factors known to influence self-forgiveness for a specific offense, including relationship with the offended, seeking forgiveness, apology and reparations, and nature of the offense (Fehr et al., 2010; Hall & Fincham, 2005; McConnell et al., 2012). There may also be other mediators of the association between trait-level self-compassion and self-forgiveness that were not tested here.

Additionally, this association exists in the broader context of other psychological phenomena that interact in complex ways. Future research should continue to work toward creating a more complete model of how individual characteristics, such as those studied here, interact with the plethora of other human traits to influence cognition, emotion, and behavior in a unified way.

Conclusion

As we have seen, self-compassion and self-forgiveness are two growing areas of interest in the psychology research literature that appear to have a lot in common, to the point that the terms have been used in the very definitions of the other. Both self-compassion and self-forgiveness are adaptive means of self-regulation during difficult times that are related to but independent from spirituality. Although they have much in common, they are also distinct, in that self-forgiveness occurs in the face of an offense, while self-compassion is relevant during any period of struggle. Self-forgiveness is also more process-based, whereas self-compassion may be more experiential. That is, individuals may be self-compassionate as they are experiencing a painful emotion or event. However, self-forgiveness does not, and possibly should not, occur during or immediately after committing an offense, but rather requires work toward the resolution of guilt or shame and recommitment toward ones' values (Fisher & Exline, 2006; Wenzel et al., 2012). Although many parallels exist between the two constructs, the relationship between the two has not been previously intentionally explored.

The current study tested two multiple mediation models to examine the relationship between self-compassion and self-forgiveness and their subsequent effects on mental and physical health. In the first, self-forgiveness and self-compassion were proposed to be related directly as well as indirectly via reduced levels of rumination, shame, and experiential avoidance. This model was partially supported, in that self-compassion was found to have an effect on self-

forgiveness that was partially mediated by shame. In the second model, a series of four serial mediation analyses were run to test the effect of self-compassion, shame, and self-forgiveness on four health outcomes. It was found that generally self-compassion and self-forgiveness did have an impact on health, though the strength, significance, and role of shame varied depending on the variable analyzed. There are a wealth of research opportunities remaining to be explored, and our understanding of each variable stands to be enhanced by consideration of the other.

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APPENDIX A

Table 2

Bivariate Associations^a and Descriptive Statistics for Dependent Variables

	Self-Compassion	Self-Forgiveness	Rumination n = 197	Shame n = 198	Experiential Avoidance n = 199	Psychologic al Distress n = 196	Somatic Symptoms n = 198	Physical Health Status n = 198	Mental Health Status n = 197
Gender	-.04	.08	-.01	.27***	-.00	-.13 [†]	.19**	.001	-.04
Age	.01	.01	.07	-.09	.00	.06	.06	-.35***	-.12 [†]
Education	-.03	-.10	.10	-.04	.04	.07	.02	-.15*	-.11
Ethnicity	.11	.07	-.11	-.16*	-.17*	-.13 [†]	-.14*	-.07	.15*
Marital Status	-.11	.00	.03	.05	.08	.04	.03	-.18*	-.07
Sexual Orientation	-.09	-.19**	.13 [†]	.10	.20**	.18*	.21**	-.15*	-.25***
Religiousness	-.13 [†]	-.11	.09	.02	.03	.01	.06	-.10	-.14 [†]
Social Desirability	.51***	.29***	-.35***	-.12 [†]	-.38***	-.21**	-.22**	.04	.30***
Self-Forgiveness	.64***	---	-.48***	-.45***	-.53***	-.43***	-.36***	.22**	.44***
Self-Compassion	---	.64***	-.54***	-.47***	-.62***	-.46***	-.36***	.06	.53***
Rumination	-.54***	-.48***	---	.41***	.74***	.76***	.53***	-.30***	-.66***
Shame	-.48***	-.45***	.41***	---	.38***	.30***	.30***	-.02	-.29***
Experiential Avoidance	-.62***	-.53***	.74***	.38***	---	.62***	.56***	-.29***	-.67***
<i>M</i>	3.08	4.75	2.04	3.02	3.12	.81	3.25	.66	.14
<i>(SD)</i>	(.66)	(1.08)	(.60)	(.66)	(1.32)	(.62)	(.96)	(3.43)	(3.48)

^a N = 199

Gender: 1 = male, 2 = female; Education = year in college; Ethnicity: 1 = Caucasian, 2 = other; Marital Status: 1 = single, 2 = other; Sexual Orientation: 1 = heterosexual, 2 = other; Religiousness: 1 = Not religious at all, 2 = slightly religious, 3 = moderately religious, 4 = very religious).

Effect size (strength of association) of r : .10=small, .30=medium, .50=large (Cohen, 1988)

[†] $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

APPENDIX B

Table 3

	Point Estimate	BCa 95% CI	
		Lower	Upper
<i>ab</i>	.36*	.17	.58
<i>a₁b₁</i>	.04	-.11	.18
<i>a₂b₂</i>	.19*	.08	.33
<i>a₃b₃</i>	.12	-.05	.32
<i>vs.₁</i>	-.15	-.37	.04
<i>vs.₂</i>	-.08	-.37	.18
<i>vs.₃</i>	.07	-.15	.28

Indirect Effects for Parallel Mediation Model^a

^a Full DV Model (FDVM) $R^2 = .43^{****}$

BCa 95% CI = Bias Corrected and Accelerated 95% Confidence Interval

ab = Total Indirect Effect

a₁b₁ = Specific Indirect Effect through Rumination

a₂b₂ = Specific Indirect Effect through Shame

a₃b₃ = Specific Indirect Effect through Experiential Avoidance

vs.₁ = *a₁b₁* versus *a₂b₂*

vs.₂ = *a₁b₁* versus *a₃b₃*

vs.₃ = *a₂b₂* versus *a₃b₃*

† $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

5,000 bootstrap samples

APPENDIX C

Table 4

	Psychological Distress ^a			Somatic Symptoms ^b			Physical Health Status ^c			Mental Health Status ^d		
	Point	BCa 95% CI		Point	BCa 95% CI		Point	BCa 95% CI		Point	BCa 95% CI	
	Estimate	Lower	Upper	Estimate	Lower	Upper	Estimate	Lower	Upper	Estimate	Lower	Upper
<i>ab</i>	-.15*	-.28	-.02	-.25*	-.44	-.07	.19*	.05	.33	.10	-.03	.23
<i>a₁b₁</i>	-.06	-.15	.02	-.03	-.19	.11	-.03	-.11	.06	.00	-.08	.09
<i>a₁a₃b₂</i>	-.02	-.05	.01	-.04*	-.10	-.01	.04*	.02	.09	.02	-.01	.06
<i>a₂b₂</i>	-.07	-.18	.04	-.17*	-.33	-.04	.17*	.07	.29	.07	-.03	.19
vs. ₁	-.04	-.15	.05	.01	-.16	.18	-.07	-.18	.03	-.02	-.12	.08
vs. ₂	.01	-.16	.17	.14	-.10	.39	-.19*	-.36	-.05	-.07	-.24	.09
vs. ₃	.05	-.03	.15	.13*	.03	.28	-.13*	-.25	-.05	-.05	-.16	.02

Indirect Effects for Serial Mediation Model

^a Full DV Model (FDVM) $R^2 = .26^{****}$; ^b FDVM $R^2 = .21^{****}$; ^c FDVM $R^2 = .16^*$; ^d FDVM $R^2 = .35^{****}$

BCa 95% CI = Bias Corrected and Accelerated 95% Confidence Interval

ab = Total Indirect Effect

a₁b₁ = Specific Indirect Effect through Shame

a₁a₃b₂ = Specific Indirect Effect through Shame and Self-Forgiveness

a₂b₂ = Specific Indirect Effect through Self-Forgiveness

vs.₁ = *a₁b₁* versus *a₁a₃b₂*

vs.₂ = *a₁b₁* versus *a₂b₂*

vs.₃ = *a₁a₃b₂* versus *a₂b₂*

† $p < .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$

.5,000 bootstrap samples

VITA

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ETSU Outstanding Thesis in Education and Social Sciences Award
(2012)

ETSU Department of Psychology Teaching Award for Graduate
Teacher Assistants (2012)
ETSU Graduate and Professional Student Association Travel
Award Recipient (2011)