

## *ABSTRACT*

RAMSEY, JENNIFER LYNN. Being Prepared: Effects of Proactive Coping and Mood Management on Well-Being and Stress Residue in Older Adults (Under the direction of Shevaun D. Neupert, Ph.D.).

Stress accelerates normative declines associated with aging. Proactive coping is the accumulation of resources which may enable individuals to avoid stressors and has been found to be positively related with health and well-being outcomes in older adults. Emotion regulation is also positively associated with well-being outcomes and emotion regulation abilities have been shown to increase with age. This study examined the associations among proactive coping and mood management, a construct related to emotion regulation, and their effects on stress residue, or the build-up of stressor effects, daily physical health symptoms, and daily positive and negative affect in older adults. Participants took part in the Anticipatory Coping Every Day (ACED) study and completed 9 daily diary questionnaires. Data from 380 out of a possible 387 days from 43 independently living older adults aged 60 to 96 from the greater Raleigh area ( $M = 74.65$ ,  $SD = 8.19$ ) were used.

Results showed that proactive coping and mood management were positively related at the between-person level. Multilevel models with mood management entered as a Level 2 variable revealed that mood management positively predicted positive affect but not negative affect or physical health symptoms at the between-person level. Between-person analyses also showed that proactive coping was associated with higher positive affect but was not related to negative affect or the number of physical health symptoms. Additionally, supplemental analyses indicated that higher levels of emotional clarity mitigated the effects of within-person stress residue on negative affect. These findings highlight the importance of accounting for the temporal dimensions of stress and coping when examining the

associations among and effects of these processes on affect and health outcomes. Results also add to the current understanding of proactive coping, mood management, stress residue, and the complexities associated with the effects of these processes on health and well-being outcomes in older adults.

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Being Prepared: Effects of Proactive Coping and Mood Management on Well-Being and  
Stress Residue in Older Adults

by  
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## **BIOGRAPHY**

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## INTRODUCTION

The associations among chronic stress and health have been well documented (Korte, Koolhaas, Wingfield, & McEwen, 2005; McEwen & Stellar, 1993; Thoits, 2010). The effects of daily stressors should also be noted as these seemingly minor hassles can have more immediate and cumulative effects on well-being outcomes in later life compared to chronic stress (Stawski, Mogle, & Sliwinski, 2013). Specifically, daily stressors have been associated with increases in negative affect, physical health symptoms, and memory failures (Almeida, Wethington, & Kessler, 2002; Neupert, Almeida, Mroczek, & Spiro, 2006; Stawski, et al., 2013).

The negative effects of stress on health, affect, and cognition may be especially detrimental for older adults experiencing declines in physiological functioning (Baltes, 1997). Although such declines are normative in older age, individual differences exist regarding their magnitude and impact on health and well-being outcomes (Fagundes, Gillie, Derry, Bennett, & Kiecolt-Glaser, 2012). Stress is one such individual difference factor shown to exaggerate the effects of normative aging on physical functioning.

As such, a bleak picture of the latter portion of the lifespan emerges if one focuses solely on normative physical declines and tendency for stress to accelerate this process. However, aging can be viewed in a more optimistic light when one also considers functioning in the emotional domain and associated well-being outcomes. Some older adults seem more resilient to diminished capacities and show better well-being outcomes compared to others (Fagundes et al., 2012). The purpose of this study is to identify possible factors associated with resilience and well-being in later life. Specifically, I examined the

interactions among mood management and proactive coping in terms of their potential positive impact on health and reactivity outcomes in older adults.

An abundance of research indicates that older adults show an increase in emotional functioning and well-being, possibly due to emotional expertise and a wealth of well-integrated emotion schemas gained over time (Carstensen, Isaacowitz, & Charles, 1999). Evidence for the stability-despite-loss paradox of subjective well-being seems to support the assertion that, despite losses in certain domains of functioning, older adults possess the potential to maintain or even experience gains in emotional functioning (Baltes & Baltes, 1990). For example, in their cross-sectional study, Stawski, Sliwinski, Almeida, and Smyth (2008) found evidence supporting increases in hedonic well-being until the very late portions of the life-span. Results showed that older adults reported lower levels of negative affect and higher levels of positive affect compared to younger adults. Longitudinal research also indicated that older age was associated with increases in subjective well-being and decreases in negative affect (Cacioppo, Hawkley, Kalil, Hughes, Waite, & Thisted, 2008; Charles, Reynolds, & Gatz, 2001).

### **Emotion Regulation in Older Adults**

There are several possible explanations for increases in subjective well-being in later life. From a neuropsychological perspective, age-related reductions in amygdala activation may function to diminish negative emotional arousal but not positive emotional arousal. Amygdalar decline may explain the noted decreases in negative affect, but is insufficient in explaining increases in positive affect (Cacioppo, Berntson, Bechara, Tranel, & Hawkley, 2011).

Another explanation for age-related increases in subjective well-being focuses on improved emotion regulation strategies in older age. Emotion regulation refers to processes by which individuals attempt to influence the type, timing, and manner in which emotions are experienced (Gross, 1998). Gross asserts that the function of emotion regulation is to modify or maintain the emotion dynamics and/or situations giving rise to such dynamics. Along these lines, emotions can be operationalized as an input-output process. This process begins with the evaluation of external or internal emotion cues. Certain emotions then trigger a coordinated set of response tendencies. These response tendencies facilitate adaptive responding to perceived challenges and opportunities. Importantly, these response tendencies can be modulated. It is this modulation, or emotion regulation, which finally determines the final emotions expressed.

It is important to note that this is a rather linear interpretation of the emotion regulation process. Emotions themselves are multifaceted processes which unfold over time, vary in magnitude, domain, duration, and behavioral responses (Gross, 2002). As such, the modulation component of emotion regulation (Gross, 1998) is especially important as this enables regulation of these dynamic emotion processes (Gross, 2002). It follows then, that the emotion regulation processes aimed at modifying such emotion dynamics, must also be multifaceted and dynamic. Specifically, emotion regulation processes need not be aimed solely at decreasing negative emotions (Parrott, 1993). Individuals may attempt to increase, decrease, or maintain both positive and negative emotions depending on situational, temporal, behavioral, psychological, and physiological components of a given emotion situation (Gross, 2002; Parrott, 1993). Given the dynamic and multi-componential nature of

emotion regulation, it is not surprising that several alternate explanations exist for the maintenance and improvement of emotion regulation abilities in later life.

Research indicates that older adults may have gained a more in-depth knowledge of their own and others' emotions and be better able to identify the factors and situations most relevant to maintaining and optimizing emotional well-being (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Labouvie-Vief & Medler, 2002). Older adults are posited to employ more effective emotion regulation strategies due to the accumulation of and elaboration upon these strategies over the life course (Mather & Carstensen, 2005). Specifically, older adults may have gained increased wisdom regarding the relative costs and benefits associated with different forms of emotion regulation (Gross & John, 2002).

Two emotion regulation strategies shown to vary by age and to differentially impact well-being outcomes include reappraisal and suppression. Gross et al. (2003) and John and Gross (2004) examined individual differences in the use of reappraisal and suppression as emotion regulation strategies to determine their long-term impact on affect, cognition, and social interaction outcomes. Reappraisal was associated with greater positive emotion, better interpersonal functioning, and higher reported levels of well-being. Inverse relationships among suppression and these variables were found. Additionally, with age, individuals demonstrated increased use of reappraisal as an emotion-regulation strategy and decreased use of suppression (John & Gross, 2004).

These findings seem to suggest that reappraisal is more effective than suppression and that older adults in general engage in reappraisal to a greater extent than suppression. However, findings by Brummer and Stopa (2014) challenged these conclusions. The study included younger, middle-aged, and older adults ranging in age from 18 to 91 ( $M= 37.11$ ,  $SD$

= 20.55). Results showed that older adults reported using suppression to a significantly greater extent than younger or middle-aged adults. Additionally, suppression was unrelated to psychological distress in the older adult age group and older adults reported lower levels of stress and anxiety than younger or middle-aged adults.

These conflicting findings make sense when one considers that emotion regulation is a dynamic and multifaceted process which depends on situational, temporal, behavioral, psychological, and physiological factors (Aldo, 2013). As such, the specific strategies used to modulate emotional experience will also be greatly influenced by such factors (Gross, 2002; Parrott, 1993). Additionally, the assumption of the uniform effectiveness of emotion regulation strategies in modifying emotional outcomes contributes to an oversimplified interpretation of emotion regulation processes (Bonanno & Burton, 2013). Specifically, an abundance of research indicates the uniform effectiveness and adaptive value of reappraisal and the uniformly maladaptive nature of suppression (Gross, 2002; John & Gross, 2004; Richards & Gross, 2000). Importantly, these studies did not account for the influence of temporal and contextual factors on strategy selection and effectiveness. The dynamic nature of emotion regulation processes suggests that contextual factors, individual differences, emotion-eliciting stimuli, strategy selection, and outcomes of interest uniquely impact strategy efficacy (Aldo, 2013). Along these lines, studies examining potential differences in the effectiveness of specific emotion regulation strategies highlight the importance of accounting for the effects of contextual demands on emotion regulation efficacy.

In their meta-analysis, Webb, Miles, and Sheeran (2012) assessed results from 306 experimental comparisons on the effects of specific emotion regulation strategies on emotion-modification outcomes. Results revealed limited differences in the effects of

suppression and reappraisal on emotion outcomes. In another study, Sheppes et al. (2014) examined the contextual effects of the intensity of an emotional situation on early disengagement strategies and later-stage engagement strategies. Early disengagement strategies, such as distraction, require the individual to disengage from emotional processing at the attentional selection stage whereas later-stage engagement strategies, such as reappraisal, require an individual to elaborate on emotional information and alter the meaning of this information at the semantic meaning stage (Sheppes et al.). Results showed that individuals tended to select later-stage engagement strategies in the context of low emotion intensity and early-stage disengagement strategies in the context of high emotion intensity.

Taken together, these findings suggest that emotion regulation is a broad, dynamic, and multifaceted construct that can be measured in various ways. Additionally, experimental efforts aimed at comparing the effectiveness of specific strategies must also include an assessment of related contextual and temporal indices in order to accurately examine the effectiveness of different emotion regulation strategies (Aldo, 2013). As such, I opted to include a more global as opposed to strategy-specific measure of emotion regulation in the current study as I intended to assess the associations among domain-general emotion regulation processes and coping, stress, health, and affective well-being outcomes.

Specifically, I employed an assessment of mood management in order to examine emotion regulation as a global as opposed to situation-specific construct. Mood management refers to individuals' perceived ability to assess, understand, differentiate, regulate and improve one's own mood (Gross & John, 2003). In contrast, emotion regulation refers to an individual's attempts to modify or maintain a specific emotion experience (Gross, 1998).

Research examining the influence of individual differences on emotion regulation efficacy indicates that the emotion regulation strategies employed by older adults and the efficacy of these strategies differs from those employed by younger adults. One such difference occurs in the social network domain such that selection of one's social network may be a more effective regulation strategy for older compared to younger adults. Older adults tend to construct smaller and closer social networks compared to younger adults and report less negative affect when engaging in argument avoidance (Carstensen, Fung, & Charles, 2003; Charles, Piazza, Luong, & Almeida, 2009).

In another study, older adults reported less difficulty in regulating emotions overall relative to younger adults (Orgeta, 2009). Older adults in this study also reported being better at impulse control compared to younger adults and impulse control was positively related to positive affect in older adults but not younger adults. Other research has found that, compared to younger adults, older adults are more likely to engage in affective suppression and inhibition of emotional responses (McConatha & Huba, 1999). These findings may indicate domain and strategy-specific differences in emotion regulation efficacy between older and younger adults.

Urry and Gross (2010) proposed that age differences in emotion regulation strategies can be explained by directly applying the selection, optimization and compensation meta-theory (SOC) to emotion regulation (SOC-ER) (Baltes & Baltes, 1990). The SOC-ER framework asserts that individuals select and optimize emotion regulation strategies based on available resources. Older adults then compensate for losses of resources, such as declines in cognitive control, which previously supported some forms of emotion regulation via selection and optimization of alternative forms of emotion regulation. The alternative forms

of emotion regulation are those supported by gains in or maintenance of other resources (i.e. expertise in interpreting one's own and others' emotions).

### **Coping in Older Adults**

Although the SOC-ER framework (Urry & Gross, 2010) has yet to be empirically tested, it does suggest that the selection and implementation of emotion regulation is, in part, determined by available resources. One such resource available to older adults may be coping efficacy (Aldwin, 2007). Reactive coping is defined as activities undertaken to master, tolerate, reduce, or minimize environmental or psychological demands perceived to represent potential threats, existing harm, or losses (Folkman & Lazarus, 1985; Lazarus & Folkman, 1984). Coping efficacy is dependent upon the person, stressor, and situation (Aldwin, 2007). Therefore, what is considered effective coping in one situation may not be adaptive in another (Folkman & Moskowitz, 2004).

As previously mentioned, older adults experience age-related declines in physical as well as certain cognitive functions (Baltes, 1997). Additionally, the types of stressors encountered change over the lifespan (Brandstädter, 1999). As such, older adults may employ different coping strategies than younger individuals (Aldwin, 2007). Brandstädter posited that younger adults engage in assimilative coping to a greater extent than older adults because many of the stressors they may face can be controlled to an extent. As such, younger adults may be more likely to engage in problem-focused coping strategies as these strategies are likely to be more effective. Conversely, many of the problems and challenges faced by older adults (i.e. death of a spouse, physical declines) are largely out of an individual's control. Thus, accommodative, or emotion-focused, coping strategies may be more effective.

Specifically, Rothermund and Brandstädter (2003) examined changes in coping with performance deficits in a 4-year longitudinal study including 762 participants ranging in age from 58 to 81 years at the start of the study. Results showed that from 58 to 70 years of age, older adults employed compensatory strategies (planning and intentional activities to maintain abilities). Individuals aged 70 years and older employed more accommodative strategies (adjusting standards of personal performance in several domains of functioning). Additionally, results showed that perceived functional deficits and losses increased with age, but were most pronounced for individuals 80 years and older. However, the degree to which individuals were content with their performance was found to remain stable. These results are in line with the SOC-ER framework in that older adults compensated for declines in functional abilities and thus physical resources, by selecting different coping strategies (accommodative) based on available resources (Urry & Gross, 2010).

### **Emotion Regulation and Coping**

The aforementioned findings indicate several similarities between emotion regulation and coping. Specifically, both are context-dependent processes and older adults can maintain both coping and regulatory efficacy despite normative age-related declines (Aldwin, 2007; Folkman & Moskowitz, 2004; Gross, 2002; John & Gross, 2004; Labouvie-Vief & Medler, 2002; Mather & Carstensen, 2005; Parrott, 1993; Rothermund & Brandstädter, 2003). However, it is important to note that coping, especially emotion-focused coping, and emotion regulation are distinct concepts (Gross, 1999). Specifically, the function of emotion-focused coping is to lessen negative emotions associated with a stressor whereas emotion regulation refers to an individual's efforts to influence which specific emotions are experienced and

when and how these emotions are experienced and expressed. Despite being distinct domains, research indicates that coping and emotion regulation are necessarily related.

For example, the life-span theory of control holds that individuals' capacity to control their environment and achieve their developmental goals declines in older adulthood (Wrosch, Heckhausen, & Lachman, 2000). As such, older adults employ secondary control strategies, such as emotion regulation, to a greater extent than primary control strategies during latter portions of the lifespan. Secondary control strategies focus on changing the self in order to adjust to a given situation. Primary control strategies focus on changing the situation itself. The shift to secondary control strategies is adaptive for older adults as many of the stressors they experience (i.e. health stressors) may not be directly in their control so they must instead control their emotional reactivity to such stressors (Aldwin, 2007; Neupert, Almeida, Mroczek, & Spiro 2006; Ramsey, Neupert, Mroczek, & Spiro, 2015; Wrosch et al., 2000).

Other studies indicate an association between emotion regulation and coping outcomes. Evidence indicates that reappraisers are more likely to employ reinterpretation, or cognitive efforts aimed at finding different ways to deal with a threat or challenge; whereas suppressors are more likely to engage in rumination, or continued preoccupation with the threat without resolution (Gross & John, 2003). The aforementioned findings suggest that coping and emotion regulation strategies can influence each other, but the direction of this relationship is unclear. The SOC-ER framework asserts that individuals select and optimize emotion regulation strategies based on available resources (Urry & Gross, 2010). I posit that coping, specifically proactive coping, is one such resource which aids in the optimization of emotion regulation.

## **Proactive Coping**

The previously cited research focused solely on the associations among reactive coping, emotion regulation, and well-being outcomes. However, if older adults do indeed optimize emotion regulation abilities by selecting strategies based on available resources (Urry & Gross, 2010), then the associations among proactive coping, emotion regulation, and well-being outcomes should be examined. Proactive coping is temporally prior to reactive coping and anticipatory coping and involves an accumulation of resources and acquisition of skills designed to address nonexistent or nebulous stressors (Aspinwall & Taylor, 1997). Prior research guided by the broaden- and-build theory of positive emotions provides evidence for the beneficial effects of the accumulation of emotional resources on reactive coping, and emotion regulation efficacy, as well as on health and affective well-being outcomes (Fredrickson, 2001; Tugade, Fredrickson & Feldman Barrett, 2004).

In line with the broaden-and-build theory of positive emotions, during instances involving threatening stimuli, the function of negative affect is to counteract homeostasis and elicit a response to the threatening stimuli. Conversely, positive affect functions to return the individual to a homeostatic state in order to avoid the detrimental physiological and psychological consequences of prolonged arousal (Levenson, 1999; Tugade & Fredrickson, 2004). The ability to differentiate among positive and negative affective states has been associated with improved emotion regulation. Specifically, higher levels of emotional granularity regarding discrimination among negative emotions associated with the ability to employ a wider range of emotion-regulation strategies. This suggests that the ability to distinguish among and utilize information from discrete negative emotions has beneficial effects on emotion regulation (Feldman Barrett, Gross, Christensen, & Benvenuto, 2001).

Additionally, cognitive broadening is associated with positive emotions such that the ability to experience positive emotions in the face of stressful events may function as a resource promoting psychological rest and mitigating the detrimental effects of negative emotional arousal on cognitive functioning (Fredrickson, 2001; Tugade et al., 2004). According to Tugade and colleagues this may serve to immunize the individual against the negative effects of stress and restore the ability to implement effective coping strategies. Importantly, the cognitive broadening associated with the cultivation of positive emotions may have long term impacts on coping outcomes such that repeated experiences of positive emotions may result in a habitual broad-minded coping. For example, when affective experiences and broad-minded coping were assessed at two time points five weeks apart, the association between positive emotions and broad-minded coping strengthened (Fredrickson & Joiner, 2001). Results showed that positive emotions predicted improvements in broad-minded coping which then predicted increases in positive emotions and that this increase in positive emotions continued to predict increases in broad-minded coping. Thus, experiencing positive emotions can be viewed as a personal resource. Continued positive emotional experiences may result in an accumulation of these resources which can then be drawn on during times of stress when negative emotional experiences threaten remaining cognitive resources and could even facilitate planning for future events (Tugade et al., 2004).

However, findings regarding the ability of positive emotions, specifically positive emotional granularity, to facilitate coping efforts are mixed. For example, Tugade and colleagues (2004) found that positive emotional granularity was significantly associated with only 2 of the 14 COPE (Carver, 1997) subscales. Results showed that positive emotional granularity was negatively correlated with the mental self-distraction subscale and positively

correlated with the behavioral disengagement subscale. These findings indicated that higher positive emotional granularity promoted attention to and thorough consideration of options in the coping context but that these effects were strategy-specific.

It is important to note that the previously mentioned studies assessed reactive as opposed to proactive coping. Proactive coping involves the accumulation of resources designed to prepare for a nebulous stressor, whereas reactive coping involves resources and efforts aimed at mitigating the detrimental effects of situation-specific stressors (Aldwin, 2007; Aspinwall & Taylor, 1997). As such, proactive coping strategies are likely more domain-general compared to the situation-specific reactive coping strategies. Therefore, proactive coping efforts may be more applicable and effective in mitigating the detrimental effects of potential stressors in multiple domains of functioning compared to reactive coping efforts. Based on the accumulation of resources and abilities from multiple domains of functioning associated with proactive coping, I posit that proactive coping efficacy is more global measure of coping efforts compared to reactive coping. Thus, proactive coping efficacy may serve as a better index than reactive coping efficacy of older adults' ability to acquire resources prior to a stressful or emotionally arousing situation in which emotion regulation must be employed.

Additionally, proactive coping may be especially beneficial to older adults experiencing functional declines as the magnitude of a stressor is likely to be diminished if addressed earlier as opposed to after the stressor has occurred (Aspinwall & Taylor, 1997; Baltes, 1997). There is evidence that proactive coping is positively related to physical health. Proactive coping has been associated with less functional disability, less depression, and greater perceived social support in a cross-sectional study of community dwelling older

adults (Greenglass, Fiksenbaum, & Eaton, 2006). A cross-sectional study including 3000 participants ranging in age from 50 to 70 years showed that physical health problems and proactive coping use were negatively related (see Ouwehand, de Ridder & Bensing, 2007 for review).

Proactive coping may also positively impact well-being by reducing allostatic load, or the suboptimal range of physiological effort exerted in response to the continued threat posed by stress over the life span (Cicchetti, 2011). Specifically, fewer physiological and psychological resources are required to address a stressor in its developing stages compared to a full-blown stressor (Aspinwall & Taylor, 1997). This can be especially beneficial for older adults as they are undergoing normative physical and psychological declines which are exaggerated by the effects of stress including the detrimental effects of allostatic load and reduced immune functioning (Fagundes et al., 2012).

The potential for proactive coping to reduce allostatic load may not be readily apparent if one perceives proactive coping efforts as situation-specific. Importantly, the conceptualization of proactive coping in the current study asserts that this form of coping is more domain-general than reactive coping and consists of a broad range of abilities and resources. Additionally, a wider range of options are available to manage a stressor when it is temporally farther away. Options become more constrained as time to the stressor decreases (Aspinwall & Taylor, 1997).

There are some disadvantages to proactive coping that should be addressed. As resources are accumulated in anticipation of a nebulous stressor, the stressor may not occur. As such, the proactive coper may undertake activities and unnecessarily expend resources. Additionally, due to the nebulous and ambiguous nature of the stressor, the types of resources

needed to manage the event may be unclear. As such, initial coping efforts may be ineffective, or in some cases exaggerate the problem (Aspinwall & Taylor, 1997). The inappropriate allotment of limited cognitive and psychological resources to proactive coping efforts may manifest as greater reactivity and more physical health complaints.

Accounting for both the advantages and disadvantages of proactive coping, I posit that by engaging in proactive coping, a process occurring temporally prior to a stressor or situation requiring emotion regulation processes, older adults may accumulate the resources necessary for emotion regulation as described by SOC-ER (Urry & Gross, 2010). As a result, they may be able to select and engage in more effective mood management due to initial proactive coping efforts. This could result in higher levels of well-being as indicated by lower levels of negative affect and higher levels of positive affect and fewer physical health symptoms.

### **Proactive Coping and Stress Residue**

If effective engagement in proactive coping does diminish the magnitude of a stressor through the acquisition and mobilization of skills prior to the occurrence of a stressor, then I posit that proactive coping efforts may also impact stress residue, or “soap scum” build-up of stressor effects (Almeida, Stawski, & Cichy, 2011; Aspinwall & Taylor, 1997). Stress residue is considered to be the leftover effect of the stressor after the stressful event itself has passed. Almeida and colleagues operationalized stress residue as the within-person relationship between a stressor on one day and affect on a subsequent day, controlling for affect on the previous day and same-day reactivity (the within-person relationship between same-day stressor and affect).

As previously mentioned, the detrimental effect of this stress is especially harmful to older adults as the normative age-related physical and psychological declines are exaggerated by these stress effects (Baltes, 1997; Cicchetti, 2011; Fagundes, et al., 2012). It seems to follow then, that the stress residue, or build-up of stressor effects, would further compound the negative influences of stress on health and well-being outcomes in older adults. Along these lines, Almeida et al. (2011) posited that stress residue from one day to the next may differentially impact an individual's ability to respond in a resilient and adaptive manner when faced with stress which continues to be present across days even if the original stressor no longer remains.

The Strength and Vulnerability Integration Theory (SAVI: Charles, 2010) may help explain the manner in which proactive coping could function to diminish these negative effects of stress residue. According to SAVI age-related increases in emotional well-being through more frequent and effective application of attentional strategies, reappraisals, and behaviors enable older adults to avoid negative events or de-escalate such events when they do occur (Charles, Mather, & Carstensen, 2003; Coats & Blanchard-Fields, 2008; Wrosch, Heckhausen, & Lachman, 2000). These strategies are posited to produce age-related advantages in emotional well-being, such as improved emotion regulation and emotional well-being. SAVI suggests that there are limits to these benefits. SAVI posits that time functions as a moderator to increase or mitigate age-related benefits in emotional functioning. Specifically, SAVI predicts that the age-related increases in emotion regulation abilities will be minimized immediately prior to or following a stressor, but reappear as time passes and that situations of chronic stress will mitigate, or lessen, age-related emotion-response advantages.

Thus, SAVI suggests that stress limits the effectiveness of age-related advances in emotion regulation on lessening the detrimental impact of stress effects on well-being outcomes (Charles, 2010). As such, the build-up of stress effects associated with stress residue would prove especially detrimental for older adults despite possible emotion regulation advantages (Almeida et al., 2011, Baltes, 1997). However, the amount of resources necessary to effectively cope with a stressor may be related to the point in the stress process when such resources are employed with fewer physiological and psychological resources required early in the stress process (Aspinwall & Taylor, 1997). Proactive coping involves the accumulation of resources and skill acquisition independent of the presence of a stressor. As such, I posited that older adults who engage in proactive coping would require fewer resources to mitigate the effects of the stressor, and these resources and skills mobilized prior to the stressful event would likely be less impacted by the stressor itself. Therefore, despite normative age-related declines in cognitive and physical resources, and the mitigating effects of stress on emotion regulation abilities, proactive coping efforts should lessen the effects of stress residue in older adults.

### **Present Study**

To date, no study has specifically examined the associations among proactive coping, mood management, stress residue, health, and affective well-being outcomes in older adults. As previously stated, stress accelerates normative declines associated with aging (Fagundes et al., 2012). I posited that proactive coping and mood management may serve as protective factors in regards to the detrimental effect of stress on well-being outcomes. Specifically, proactive coping lessens the amount of resources necessary to cope with a stressor and has been found to be positively related with health and well-being outcomes in older adults

(Aspinwall & Taylor, 1997; Greenglass, Fiksenbaum, & Eaton, 2006). Emotion regulation is also positively associated with well-being outcomes (Brummer & Stopa, 2014; John & Gross, 2004) and emotion regulation abilities have been shown to increase with age (Carstensen et al., 2000; Labouvie-Vief & Medler, 2002; Mather & Carstensen, 2005). As such, I posited that older adults who report more engagement in proactive coping and mood management would show better well-being outcomes compared to older adults who do not employ these strategies.

One manner of assessing the well-being outcomes associated with proactive coping and mood management is via increases in positive and decreases in negative affect (John & Gross, 2004). To this end, I examined the associations among mood management and negative and positive affect. Consistent with previous research, I hypothesized that mood management would be positively associated with positive affect and negatively associated with negative affect (Gross & John, 2003; John & Gross, 2004). I also examined the associations among proactive coping and negative and positive affect. Based on prior research examining reactive coping and well-being outcomes, I hypothesized that proactive coping would be positively related to positive affect and negatively related to negative affect (Aldwin, 2007). As previously mentioned, coping and emotion regulation are related yet distinct constructs. Prior research indicates that proactive coping and emotion regulation may have similar effects on the well-being outcomes of interest in the current study. As such, I hypothesize that both proactive coping and mood management would be positively related to positive affect and negatively related to negative affect and physical health symptoms.

As stress can also worsen physical health symptoms, I examined the associations of mood management and proactive coping with physical health symptoms (Cicchetti, 2011;

Fagundes et al., 2012). I hypothesized a negative relationship between physical health symptoms and mood management and proactive coping as older adults who reported engaging in these strategies may be more resilient to the negative effects of stress and thus less susceptible to the impact of stress on physical functioning (Cicchetti, 2011; Fagundes, et al., 2012).

Additionally, I examined the association between mood management and proactive coping. Again, consistent with prior research examining reactive coping and emotion regulation, I hypothesized a positive relationship between proactive coping and mood management (Gross & John, 2003). Based on Urry and Gross's (2010) SOC-ER framework I hypothesized that proactive coping would mediate the associations between mood management, positive and negative affect, and physical health symptoms as proactive coping may enable older adults to accumulate resources necessary to implement effective mood management strategies. I proposed proactive coping as the mediator because proactive coping requires the accumulation of resources prior to a stressful situation and lessens the amount of resources necessary to cope with a stressor (Aspinwall & Taylor). Emotion regulation functions to modify the emotion process during or after a stressful situation (Gross, 1999). Thus, despite the potential for stress to mitigate the beneficial effects of emotion regulation on well-being outcomes, engagement in proactive coping should provide older adults with resources and abilities relatively unaffected by the presence of a stressor (Charles, 2010).

Finally, I examined the associations among proactive coping, mood management, and stress residue. Prior studies have not necessarily accounted for the different temporal dimensions of the stress process (Aldwin, 2007; Wheaton, 1999). Stress research suggests

that lasting or continuous stress may impact health and well-being outcomes in a different manner than a discrete or short term stressor (Aldwin, 2007). As such, this study examined potential differences in stress residue as they related to mood management and proactive coping strategies. Although stress residue builds up over time, engagement in proactive coping may mitigate the effects of stressors before they occur (Almeida et al., 2011; Aspinwall & Taylor, 2007). This could result in less stress residue and thus higher levels of subjective well-being and fewer physical health symptoms (Cicchetti, 2011; Fagundes et al., 2012). Following the recommendations of Almeida and colleagues, stress residue was operationalized as the within-person relationship between a stressor on one day and affect on a subsequent day, controlling for affect on the previous day and same-day reactivity (the within-person relationship between same-day stressor and affect).

## **Method**

### **Participants**

Participants took part in the Anticipatory Coping Every Day (ACED) study (Neupert, Ennis, Ramsey, & Gall, 2015) and were recruited through presentations at community activity groups targeted for older adults. All participants were living independently. Potential participants were informed about the purpose of the study, and volunteers were asked to complete a verbal cognitive screening of the Short Blessed Test (Katzman et al., 1983). Individuals who scored 8 or lower out of a possible 24 points were deemed to lack significant cognitive impairment and were included in the study. Of 51 initial participants, 43 returned diary packets. Participants were aged 60-96 ( $M = 74.65$ ,  $SD = 8.19$ ), and included 39 women (90.7%), and 4 men (9.3%). Twenty-two (51.2%) were African American, 20 (46.5%) were European American, and 1 (2.9%) was Asian American. Of the 43 participants, 15 (35.7%)

were married, 3 (7.1%) were separated, 5 (11.9%) were divorced, 18 (42.9%) were widowed, 1 (2.4%) was never married, and 1 participant did not report on marital status.

### **Procedure**

Participants read and signed informed consent forms and provided contact information for mailing of compensation. They were then given the packets of daily diary questionnaires to complete, along with pre-paid envelopes to return to the primary investigator.

Participants completed diaries over nine consecutive days at home. The first packet contained baseline information including demographic information, such as SES, personality assessments, proactive coping and emotion regulation questionnaires. The following eight days consisted of items assessing daily stressors, anticipatory coping, cognition, affect, and physical health symptoms. Upon completion of all packets, participants mailed them back, and were subsequently debriefed and compensated. Compensation was given in the form of gift cards: \$20 was given for completion of five or more study days, and \$10 was given for four or fewer days. The compliance rate was 98.2%, with 380 out of a possible 387 days completed.

### **Diary Measures**

*Daily affect* was measured using The Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988). The PANAS consists of two 10-item mood scales each containing words describing different feelings and emotions (Watson et al.) (See Appendix A). Participants indicated to what extent they experienced each emotion during each of the eight consecutive days. Responses ranged from 1 (*slightly or not at all*) to 5 (*extremely*). A composite for daily negative affect and daily positive affect was calculated

across all 8 days, with higher scores indicating more negative affect and positive affect. Internal consistencies for the current study were high when averaging across all persons on day 1 (positive affect:  $\alpha = .95$ ; negative affect:  $\alpha = .78$ ). These Cronbach alphas are similar to the internal consistency measures reported by Grühn et al. (2012) (positive affect:  $\alpha = .90$ ; negative affect:  $\alpha = .87$ ).

*Daily Stressors* were assessed using a paper-pencil version of the Daily Inventory of Stressful Events (DISE) (Almeida, Wethington, & Kessler, 2002). Participants answered questions regarding arguments, potential arguments, stressors that occurred at work and volunteer settings and at home, network stressors (stressors that occurred to a network of friends and family), health-related events, and other stressors (stressors that did not fit into the other categories) each day (See Appendix B). This semi-structured inventory possesses construct validity with stressor content and focus variables accounting for 8% of the variance in physical symptoms and 12% of variance in negative mood (Almeida et al., 2002). For the purposes of this study, one composite score representing the sum of the total number of stressors reported on each of the eight days was calculated. Higher scores indicate more stressors and lower scores indicate fewer stressors.

*Physical Health Symptoms.* This measure is based on a Larsen and Kasimatis's (1991) physical symptom checklist. This checklist consists of 26 different symptoms (e.g., headaches, backaches, sore throat, and poor appetite) (See Appendix C). The construct validity of this measure of physical health is evidenced by the significant positive association between stressor exposure and physical health ( $\gamma_{10} = 0.14$ ,  $t = 6.08$ ,  $p < 0.001$ ) in a study on the effects of the Columbia Shuttle disaster on older adult participants in the VA Normative Aging Study (Neupert et al., 2006a).

Participants responded yes or no to the list of symptoms. A daily composite was created for each day based on the sum of experienced symptoms. Higher scores indicate more reported physical symptoms, or poorer physical health.

### **Baseline Measures**

*Mood management* was measured via the Trait-Meta Mood Scale (TMMS; Mayer, Goldman, Turvey, & Palfai, 1995). The TMMS consists of 3 subscales derived from sums of items from 1 (*strongly disagree*) to 5 (*strongly agree*). These scales include Paying Attention to Feelings (13 items), Clarity of Feelings (11 items) and Mood repair (6 items). The internal consistencies reported by Salovey and colleagues for each scale were high (Attention  $\alpha = .86$ ; Clarity:  $\alpha = .87$ ; Repair:  $\alpha = .82$ ).

An example question from the Paying Attention to Feelings subscale is ‘*When I am happy I realize how foolish most of my worries are*’ ( $M = 4.10, SD = 0.46$ ). A question included in the Clarity of feelings sub-scale is ‘*I am rarely confused about how I feel*’ ( $M = 3.7, SD = 0.49$ ). A question from the Mood Repair subscale is ‘*I try to think good thoughts no matter how badly I feel*’ ( $M = 0.64, SD = .85$ ) (See Appendix D).

Reliability analyses of the three subscales in the current study indicated the repair subscale had low reliability ( $\alpha = .18$ ). Removing items did not improve the reliability. The low reliability of the mood repair subscale could be due to the relatively small sample size in this study ( $N = 43$ ) compared to the nearly 200 participants in Salovey and colleagues (1995) original assessment of the TMMS reliability. Additionally, the TMMS was originally constructed and assessed in a sample of undergraduate students (Salovey et al., 1995), whereas this study is comprised solely of older adults. As previously mentioned, the efficacy and type of emotion regulation strategies employed by older adults may differ from those

employed by younger adults (John & Gross, 2004; Mather & Carstensen, 2005).

Additionally, contextual, temporal, and individual difference factors influence the selection of strategy-specific measures of emotion regulation and the effects of these emotion regulation strategies on well-being outcomes (Aldo, 2013). As such, the mood repair subscale may not be sensitive enough to capture the domain-general emotion regulation efforts specific to an older adult population. To my knowledge, no study has specifically examined the reliability of the TMMS in an older adult sample.

The internal consistencies in the current study for the clarity subscale ( $\alpha = .73$ ) and attention subscale ( $\alpha = .70$ ) were adequate. Removing items from these subscales did not improve the reliability. The internal consistency for the TMMS as a whole was acceptable ( $\alpha = .81$ ). Removing items did not improve the reliability.

The mood repair subscale of the TMMS has been shown to be positively related to reappraisal (Gross & John, 2003). However, the low reliability for this subscale in the current study prevented the use of the repair subscale as a measure of reappraisal as an emotion regulation strategy. The TMMS can function as an indicator of mood management. According to Gross and John mood management and emotion regulation are conceptually relevant constructs. Mood management refers to individuals' perceived ability to assess, understand, differentiate, regulate and improve one's own mood. In contrast, emotion regulation refers to an individual's attempts to modify or maintain a specific emotion experience (Gross, 1998). As such, mood management may function as a domain-general as opposed to a strategy-specific measure of emotion regulation. Gross and John assert that the TMMS measures three constructs related to mood management. The clarity subscale assesses perceptions of coherence about and contentment with one's feelings. The attention subscale

assesses one's perceived ability to recognize and evaluate emotions. The repair subscale assesses positive attitude and perceived ability to improve negative mood (Gross & John, 2003).

Some research supports the inclusion of all three TMMS subscales as a measure of mood management. First, the three subscales have been shown to be negatively related to suppression (Gross & John, 2003). Second, Martinez-Pons (1997) found evidence for a functional sequence of emotional management as measured by the TMMS (Salovey et al., 1995). Using path analytic methodology, Martinez-Pons showed that Clarity was not possible in the absence of Attention and that Repair was not possible in the absence of Clarity. As such, I included all subscales from the TMMS in further analyses as a measure of mood management. Based on the procedure outlined by Donaldson-Feilder and Bond (2004), I calculated a mean for all items, irrespective of subscale, from the TMMS. Higher scores indicated higher levels of mood management.

*Proactive Coping* was measured via the Proactive Coping subscale of the Proactive Coping Inventory (PCI: Greenglass, Schwarzer, & Taubert, 1999a). The Proactive Coping subscale consists of 14 items designed to assess autonomous goal setting and self-regulatory goal attainment cognitions and behavior. Participants are asked to rate how true each item was using 5-point Likert scale from not at all true to completely true. Example items include: “*I try to let things work out on their own*” and “*I try to pinpoint what I need to succeed*” (See Appendix E). Few studies have assessed the validity of the PCI. However, one study did compare the PCI to other scales which assessed coping styles (Greenglass, Schwarzer, Jakubiec, Fiksenbaum, & Taubert, 1999b). Participants included 252 Canadian college students and community-dwelling adults ranging from 17 to 60 years of age ( $M = 21.74$ ) and

144 Polish immigrants living in Canada ranging from 16 to 60 years of age ( $M = 38.93$ ). Results from Greenglass and colleagues' (1999b) study indicated that the proactive coping subscale of the PCI was positively correlated with the Preventative Coping and Internal Control subscales from of Peacock and Wong's Coping Inventory (1990), and the Active Coping subscale from the Brief COPE (Carver, 1997). Additionally, moderately negative correlations were found between proactive coping, depression, self-blame, denial and behavioral disengagement. The data suggest that proactive coping does not tend to include negative elements but remains positively focused on the tasks at hand. Greengalss et al. (1999b) concluded that these results suggest that proactive coping involves the ability to mobilize effort prior to the occurrence of a stressor as opposed to reactionary efforts post-stressor. These results also indicate that proactive coping efforts need not include negative appraisals and elements but instead are directed towards maintaining positive thinking and behaviors regarding the a task or adverse event (Greenglass et al., 1999b).

Fiksenbaum, Greenglass, and Eaton (2006) assessed the reliability of the PCI proactive coping subscale in their study on the relationship between coping, social support, daily hassles, functional disability, and physical and psychological health status in 224 community-residing older adults ( $M = 75$ ,  $SD = 6.88$ ). They found this subscale to be a highly reliable measure of proactive coping ( $\alpha = .84$ ). The reliability of this scale in the current study was high ( $\alpha = .76$ ). Additionally, the proactive coping subscale of the PCI seems to be a global measure of proactive coping. The potential ability of the proactive coping subscale of the PCI to capture the broad range of abilities and resources associated with the current definition of proactive coping is evident in the wording of the items included in this scale. For example, the items '*I like challenges and beating the odds*', '*I turn*

*obstacles into positive experiences*’, and *‘I am a “take charge” person*’ suggest that the proactive coping subscale of the PCI assesses an individual’s thinking and proactive coping behaviors in a wide variety of situations as opposed to solely assessing the planning facet of proactive coping or proactive coping behaviors in specific domains of functioning. Thus, the proactive coping subscale of the PCI (Greenglass et al., 1999a) was employed in all further analyses based on the high reliability, the ability of the measure to assess global thinking and proactive coping behaviors, and the accumulating evidence of the validity (Greengalss et al., 1999b).

### **Covariates**

*Neuroticism* was included as a covariate because it is a risk factor for poor health (Aldwin, Spiro, & Park, 2006). Neuroticism was assessed with the neuroticism subscale of the NEO-FFI (Costa & McCrae, 1992). Participants rate 12 items on a five-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Two-week retest reliability was found to be high for each scale, ranging from .86 to .90 and .89 for neuroticism specifically (Robins, Fraley, Roberts, & Trzesniewski, 2001). Additionally, internal consistencies for the five scales range from .68 to .86 (Costa & McCrae, 1992). A mean composite was calculated for each person in the current study. The reliability of neuroticism in the current study was high ( $\alpha = .83$ )

### **Results**

Prior to conducting analyses designed to address the research hypotheses as previously outlined, I conducted descriptive analyses to obtain information regarding average values for variables of interest, distributions of those variables, and aggregated between-person associations. I also examine distributions and associations at the within-person level.

See Table 1 for between-person descriptive characteristics and Table 2 for intercorrelations among study variables.

Table 1

*Descriptive Characteristics for the Variables of Interest*

Variable	<i>M</i>	<i>SD</i>	Range
Positive Affect	3.20	0.80	1.05-4.78
Negative Affect	1.13	0.19	1-1.90
Stress	0.64	0.85	0-3.38
Mood Management	3.84	0.37	3.13-4.83
Physical Health	2.17	1.38	0- 5.62
Neuroticism	2.19	0.56	1.08- 3.75
Proactive Coping	3.53	0.38	2.36-4.29

I employed separate multilevel models to address the first hypothesis regarding the relationship between mood management, positive affect, negative affect, and physical health symptoms. It is recommended to conduct a preliminary analysis to ensure that there is sufficient variability between and within individuals in the outcome variable to warrant continuation with analyses (Nezlek, 2001; Raudenbush & Bryk, 2002). This preliminary analysis is termed a fully unconditional model in which no term other than the intercept is included at any level (Nezlek, 2001). The fully unconditional model used to examine the between-person and within-person variability in daily negative affect was:

$$\text{Level 1: Negative Affect}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + u_{0i}$$

This model provides a point estimate and confidence interval for the grand mean,  $\gamma_{00}$ . The model also provides information about Level 1 and Level 2 variability in the outcome variable through two parameters:  $\sigma^2$  (within-person variability) and  $\tau_{00}$  (between-person variability). These parameters were used to calculate the intra-class coefficient which is a measure of the proportion of variance in the outcome variable that is between individuals. This correlation can be calculated using the following formula:

$$\rho = \tau_{00} / (\tau_{00} + \sigma^2)$$

Results indicated that  $\tau_{00}$  was .03 and  $\sigma^2$  was .05. Thus the intra-class correlation coefficient was .38, meaning that 38% of variability in daily negative affect was between people. I calculated the proportion of variance in the outcome variable that was within-people using the following formula:

$$1 - \rho$$

Results yielded a correlation coefficient of .62, indicating that 62% of the variance in daily negative affect was within people. This suggests that individuals tended to vary more around their own averages than they differed from others, meaning there was sufficient variability in the outcome variable to warrant further analyses.

The fully unconditional model used to examine the between-person and within-person variability in daily positive affect was:

$$\text{Level 1: Positive Affect}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + u_{0i}$$

Results indicated that  $\tau_{00}$  was 0.63 and  $\sigma^2$  was 0.17. Thus, 79% of variability in daily positive affect was between people and 21% of the variance in the outcome variable was within people, meaning there was sufficient variability in the outcome variable to warrant

further analyses. The fully unconditional model used to examine the between-person and within-person variability in daily physical health symptoms was:

$$\text{Level 1: Physical Health}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + u_{0i}$$

Results indicated that  $\tau_{00}$  was 1.82 and  $\sigma^2$  was 1.15. Thus, 61% of variability in daily physical health was between people and 39% of the variance in the outcome variable was within people.

The following model was used to test Hypothesis 2 to determine whether mood management was negatively related to negative affect. Between-person differences in neuroticism and stress were controlled for by entering the variables into the model as Level 2 covariates.

$$\text{Level 1: NegativeAffect}_{it} = \beta_{0it} + r_{it}$$

$$\begin{aligned} \text{Level 2: } \beta_{0i} = & \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{stress}) + \\ & \gamma_{03}(\text{neuroticism}) + u_{0i} \end{aligned}$$

In Level 1, Negative affect for person  $i$  on day  $t$  is a function of the intercept  $\beta_{0it}$ , which is the expected level of negative affect for person  $i$ . The error term,  $r_{it}$ , represents the amount person  $i$  fluctuates around the mean. In the Level 2 equations,  $\gamma_{00}$  is the grand mean of negative affect for an individual with average levels of mood management, neuroticism, and stress,  $\gamma_{01}$  is the main effect of mood management,  $\gamma_{02}$  is the main effect of stress,  $\gamma_{03}$  is the main effect of neuroticism. The degree to which people vary from the sample mean of negative affect is represented by  $u_{0i}$ .

Results indicated that mood management was not related to negative affect levels between individuals ( $\gamma_{01} = 0.08$ ,  $t = 1.12$ ,  $p = .27$ ). There were no neuroticism differences in

negative affect between individuals ( $\gamma_{03} = 0.03, t = 0.59, p = .56$ ). Daily stress was associated with negative affect with individuals reporting more stressors also reporting higher negative affect ( $\gamma_{02} = 0.09, t = 6.35, p < .01$ ).

I calculated the percentage of between-person variance accounted for by the Level 2 predictors using the following formula:

$$(\tau_{00uc} - \tau_{00c}) / \tau_{00uc}$$

This model accounted for 33% of the between-person  $[(.03 - .02)/.03]$  variance in negative affect.

The following model was used to determine whether mood management was positively related to positive affect.

$$\text{Level 1: PositiveAffect}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{stress}) + \gamma_{03}(\text{neuroticism}) + u_{0i}$$

Results indicated that mood management was positively associated with positive affect between individuals ( $\gamma_{01} = 1.08, t = 3.71, p < .01$ ) with individuals reporting greater mood management also reporting higher positive affect. There were no neuroticism differences in positive affect between individuals ( $\gamma_{03} = -2.04, t = -0.94, p = .35$ ).

Interestingly, stress was associated with levels of positive affect with individuals reporting more stressors also reporting higher positive affect ( $\gamma_{02} = 0.09, t = 2.81, p < .01$ ). This model accounted for 27% of the between-person  $[(.63 - .46)/.63.]$  variance in positive affect.

The following model was used to determine whether mood management was negatively related to physical health symptoms.

Level 1: Physical Health<sub>it</sub> =  $\beta_{0it}$  +  $r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{stress}) + \gamma_{03}(\text{neuroticism})$   
 +  $u_{0i}$

Results indicated that mood management was not associated with the number of physical health symptoms between individuals ( $\gamma_{01} = 0.26, t = 0.44, p = .67$ ). There were neither neuroticism differences ( $\gamma_{03} = 0.26, t = 0.67, p = .51$ ) nor stressor ( $\gamma_{02} = 0.10, t = 1.21, p = .23$ ) differences in physical health symptoms between individuals. This model accounted for 0% of the between-person  $[(1.82 - 1.82)/1.82]$  variance in physical health symptoms.

The following model was used to determine whether proactive coping was negatively associated with negative affect. Between-person differences in neuroticism and stress were controlled for.

Level 1: Negative Affect<sub>it</sub> =  $\beta_{0it}$  +  $r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{stress}) +$   
 $\gamma_{03}(\text{neuroticism}) + u_{0i}$

In Level 1, Negative affect for person  $i$  on day  $t$  is a function of the intercept  $\beta_{0it}$ , which is the expected level of negative affect for person  $i$ . The error term,  $r_{it}$ , represents the amount person  $i$  fluctuates around the mean. In the Level 2 equations,  $\gamma_{00}$  is the grand mean of negative affect for an individual with average levels of proactive coping, neuroticism, and stress,  $\gamma_{01}$  is the main effect of proactive coping,  $\gamma_{02}$  is the main effect of stress,  $\gamma_{03}$  is the main effect of neuroticism. The degree to which people vary from the sample mean of negative affect is represented by  $u_{0i}$ .

Results indicated that proactive coping was not associated with negative affect levels between individuals ( $\gamma_{01} = 0.02, t = 0.33, p = .74$ ). There were no neuroticism differences in

negative affect between individuals ( $\gamma_{03} = .02, t = .42, p = .67$ ). Daily stress was associated with negative affect with individuals reporting more stressors also reporting higher negative affect ( $\gamma_{02} = 0.10, t = 6.39, p < .01$ ). This model accounted for 33% of the between-person  $[(.03 -.02)/.03]$  variance in negative affect.

The following model was used to determine whether proactive coping was positively related to positive affect.

$$\text{Level 1: PositiveAffect}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{stress}) + \gamma_{03}(\text{neuroticism}) + u_{0i}$$

Results indicated that proactive coping was associated with positive affect between individuals ( $\gamma_{01} = 1.03, t = 3.25, p = .002$ ), with individuals reporting greater levels of proactive coping also reporting higher positive affect. There were no neuroticism differences in positive affect between individuals ( $\gamma_{03} = 0.01, t = 0.06, p = .96$ ). Daily stress was associated with positive affect with individuals reporting more stressors also reporting higher positive affect ( $\gamma_{02} = 0.09, t = 2.85, p = .005$ ). This model accounted for 21% of the between-person  $[(.63 -.50)/.63]$  variance in positive affect.

The following model was used to determine whether proactive coping was negatively associated with physical health symptoms.

$$\text{Level 1: Physical Health}_{it} = \beta_{0it} + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{stress}) + \gamma_{03}(\text{neuroticism}) + u_{0i}$$

Results indicated that proactive coping was not associated with the number of physical health symptoms between individuals though results approached significance ( $\gamma_{01} = -$

1.14,  $t = -1.86$ ,  $p = .07$ ). There were neither neuroticism differences ( $\gamma_{03} = -0.08$ ,  $t = -0.19$ ,  $p = .85$ ) nor stressor ( $\gamma_{02} = 0.10$ ,  $t = 1.23$ ,  $p = .22$ ) differences in physical health symptoms between individuals. This model accounted for 7% of the between-person [(1.82 -1.69)/ 1.82] variance in physical health symptoms.

I conducted Pearson Correlation analyses to test Hypothesis 3 to determine the relationship between proactive coping and mood management as well as the intercorrelations among study variables of interest. See Table 2. Results indicated that proactive coping and mood management were positively related with individuals reporting more mood management also reporting more proactive coping.

Table 2

*Between-Person Correlations Among All Variables of Interest*

	1	2	3	4	5	6	7
1. Positive Affect	–	.33*	.23	.52**	-.12	-.17	.48**
2. Negative Affect		–	.56***	.22	.28	.04	.07
3. Stress			–	.21	.18	-.02	.15
4. Mood Management				–	.06	-.15	.42*
5. Physical Health					–	.11	-.29
6. Neuroticism						–	-.35*
7. Proactive Coping							–

*Note.* \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Following the prescription of Baron and Kenny (1986) I tested Hypothesis 4 by determining the relationship between mood management (IV), proactive coping (M), and positive affect (DV), negative affect (DV), and physical health symptoms (DV) by calculating the Pearson product-moment correlation coefficients as the value of the correlation is the same as the beta from a bivariate regression. Results showed that mood management (IV) was positively and significantly related to positive affect (DV), negative affect (DV), and proactive coping (M), but not to physical health symptoms (DV). Proactive coping (M) was significantly related to positive affect (DV) and physical health symptoms (DV), but was not significantly related to negative affect (DV) (see Table 2). As such, I was unable to continue with mediation analyses with negative affect and physical health

symptoms as the DV but was able to continue analyses with positive affect as the DV based on the procedure outlined by Baron and Kenny (1986).

In step two of the mediation analyses I ran a hierarchical regression analysis with the mood management (IV) predicting positive affect (DV) in the first block and then added proactive coping (M) in the next block. Results revealed that the model as a whole was not significant [ $F(2, 40) = 10.07, p = .09$ ]. Mood management was a significant and positive predictor of positive affect ( $\beta = 0.33, t = 2.22, p = .03$ ), indicating that higher levels of mood management was related to higher levels of positive affect. When proactive coping was added to block two, mood management remained a significant predictor ( $\beta = 0.33, t = 2.21, p = .03$ ), indicating that proactive coping did not mediate the effect of mood management on positive affect. Additionally, the effect of proactive coping on positive affect was not significant ( $\beta = 0.07, t = 0.45, p = .65$ ). The first model accounted for 11% of the variance in positive affect and the second model account for 11% of the variance in positive affect. Results from a follow up Sobel test (1982) indicated that proactive coping did not mediate the relationship between mood management and positive affect ( $t = -0.28, p = .78$ ).

As noted previously, stress residue is operationalized as the within-person relationship between a stressor on one day and affect on a subsequent day, controlling for affect on the previous day and same-day reactivity (Almeida et al., 2011). Thus, separate multilevel models with daily information at Level 1 and person information at Level 2 were implemented for each dependent variable (physical health symptoms, positive affect, and negative affect) and for mood management and proactive coping in order to test Hypothesis 5. Level 1 predictors for each model included today's stress and yesterday's stress. Depending on the DV, yesterday's negative affect, yesterday's positive affect, or yesterday's

physical health symptoms were also included at Level 1. Level 2 predictors for each model included either proactive coping or mood management, and neuroticism. I hypothesized a Yesterday's Stress X Proactive Coping and Yesterday's Stress X Mood Management effect on negative affect, positive affect, and physical health symptoms.

I employed the following model to examine whether mood management would be negatively related to negative affect in response to stress residue. I conducted all subsequent analyses with the stressor variable group-mean centered, such that the between-person differences in level of daily stressors were removed from the estimate of the within-person relationship between stressors and negative affect.

Level 1:  $\text{Negative Affect}_{it} = \beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's negative affect}) + r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$

$\beta_{1i} = \gamma_{10}$

$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{mood management})$

$\beta_{3i} = \gamma_{30}$

I entered negative affect into the model as a Level 1 dependent variable with Level 1 independent variables including today's stress ( $\beta_{1it}$ ), yesterday's stress ( $\beta_{2it}$ ), and yesterday's negative affect ( $\beta_{3it}$ ). Level 2 predictors included main effects for mood management ( $\gamma_{01}$ ) and the interaction of Mood Management X Yesterday's Stress ( $\gamma_{21}$ ). I controlled for between-person differences in neuroticism ( $\gamma_{02}$ ).

Mood management ( $\gamma_{01} = 0.11, t = 1.44, p = .16$ ) was not associated with negative affect. Neither yesterday's negative affect ( $\gamma_{30} = 0.04, t = 0.74, p = .46$ ) nor yesterday's stress ( $\gamma_{20} = 0.29, t = 1.26, p = .21$ ) were associated with negative affect. The Mood Management X

Yesterday's Stress interaction was not significant ( $\gamma_{21} = -0.08, t = -1.36, p = .18$ ). Today's stress was significantly related to negative affect ( $\gamma_{10} = 0.10, t = 5.34, p < .01$ ) such that increases in stressors were associated with increases in negative affect from yesterday to today. This model accounted for 12% of the within-person variability in negative affect [1-(.07/.08)] and 3% of the between-person variability in negative affect [1-(.036/.037)].

The following model was employed to examine whether mood management would be positively related to positive affect in response to stress residue.

Level 1: Positive Affect<sub>it</sub> =  $\beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's positive affect}) + r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{mood management})$$

$$\beta_{3i} = \gamma_{30}$$

Mood management ( $\gamma_{01} = 0.24, t = 2.72, p = .010$ ) was associated with positive affect with individuals reporting greater mood management also reporting greater positive affect. Yesterday's positive affect ( $\gamma_{30} = 0.83, t = 23.35, p < .01$ ) was associated with today's positive affect such that individuals who reported positive affect on one day also reported positive affect the following day. Yesterday's stress ( $\gamma_{20} = 0.15, t = 0.28, p = .78$ ) was not associated with positive affect. The Mood Management X Yesterday's Stress interaction was not significant ( $\gamma_{21} = -0.03, t = -0.22, p = .82$ ). Today's stress was not associated with positive affect ( $\gamma_{10} = 0.03, t = 0.59, p = .55$ ). This model accounted for 73% of the within-person variability in positive affect [(1-(.22/.8)] and 95% of the between-person variability in positive affect [(1-(.031/.654)].

The following model was employed to examine if mood management was negatively related to physical health symptoms in response to stress residue.

$$\text{Level 1: Physical Health}_{it} = \beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's physical health}) + r_{it}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{mood management}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{mood management})$$

$$\beta_{3i} = \gamma_{30}$$

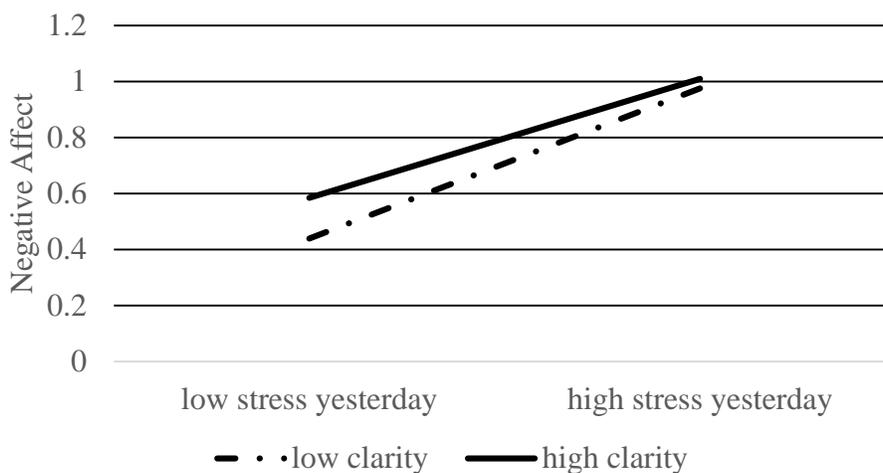
Mood management ( $\gamma_{01} = 0.11, t = 0.31, p = .76$ ) was not associated with physical health symptoms. Yesterday's physical health symptoms ( $\gamma_{30} = 0.43, t = 8.15, p < .01$ ) were associated with today's physical health symptoms such that individuals who reported physical health symptoms on one day also reported physical health symptoms the following day. Yesterday's stress ( $\gamma_{20} = 1.04, t = 0.90, p = .37$ ) was not associated with physical health symptoms. The Mood Management X Yesterday's Stress interaction was not significant ( $\gamma_{21} = -0.30, t = -1.04, p = .30$ ). Today's stress was not significantly associated with physical health symptoms ( $\gamma_{10} = .07, t = .69, p = .49$ ). This model accounted for 18% of the within-person variability in physical health symptoms [(1.15-.94)/1.15] and 69% of the between-person variability in physical health symptoms [(1.82-.56)/1.82].

In an effort to further explore the effects of mood management on stress residue outcomes, I examined these associations with the three subscales of the TMMS separately (Salovey et al., 1995).

Prior research indicated that the clarity subscale, but not the repair or attention subscales, is related to lower cortisol release during repeated stress (Salovey et al., 2002).

Based on these findings I conducted a supplementary analysis examining the effects of the clarity subscale on stress residue. Results showed a significant Yesterday's Stress X Clarity effect on average level of daily negative affect ( $\gamma_{21} = -0.10, t = -2.52, p = .013$ ). In order to interpret this interaction, I plotted the slope of reactivity for low clarity (operationalized as one standard deviation below the average mean of the sample), and high clarity (one standard deviation above the average mean of the sample). Older adults with higher clarity tended to exhibit less stress residue compared to older adults with a lower clarity. This model accounted for 12% of the within-person variance in daily negative affect and 3% of the between-person variance in daily negative affect (See Figure 1).

Additional supplemental analyses revealed no significant effects of clarity on stress residue and positive affect ( $\gamma_{21} = -0.06, t = -0.65, p = .52$ ) or daily physical health symptoms ( $\gamma_{21} = -0.36, t = -1.77, p = .08$ ). These results suggest that the perceived ability to discriminate clearly among moods mitigates the effects of stress residue on negative affect, but not positive affect or physical health symptoms.



*Figure 1.* Clarity X Yesterday's Stress I employed the following model to examine whether proactive coping was negatively related to negative affect in response to stress residue.

Level 1:  $NegativeAffect_{it} = \beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's negative affect}) + r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$

$\beta_{1i} = \gamma_{10} +$

$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{proactive coping})$

$\beta_{3i} = \gamma_{30}$

I entered negative affect into the model as a Level 1 dependent variable with Level 1 independent variables including today's stress ( $\beta_{1it}$ ), yesterday's stress ( $\beta_{2it}$ ), and yesterday's negative affect ( $\beta_{3it}$ ). Level 2 predictors included main effects for proactive coping ( $\gamma_{01}$ ) and the interaction of Proactive Coping X Yesterday's Stress ( $\gamma_{21}$ ). I controlled for between-person differences in neuroticism ( $\gamma_{02}$ ).

Proactive Coping ( $\gamma_{01} = 0.08, t = 0.36, p = .39$ ) was not associated with negative affect. Neither yesterday's negative affect ( $\gamma_{30} = 0.03, t = 0.52, p = .60$ ) nor yesterday's stress ( $\gamma_{20} = 0.09, t = 0.54, p = .59$ ) were associated with negative affect. The Proactive Coping X Yesterday's Stress interaction was not significant ( $\gamma_{21} = -0.03, t = -0.67, p = .51$ ). Today's stress was associated with negative affect ( $\gamma_{10} = 0.10, t = 5.23, p < .01$ ) with increases in stressors being associated with increases in negative affect from yesterday to today. This model accounted for 12% of the within-person variability in negative affect [ $1 - (.07/.08)$ ] and 3% of the between-person variability in negative affect [ $1 - (.036/.037)$ ].

I employed the following model to examine whether proactive coping was positively related to positive affect in response to stress residue.

Level 1:  $\text{Positive Affect}_{it} = \beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's positive affect}) + r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$

$$\beta_{1i} = \gamma_{10}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{proactive coping})$$

$$\beta_{3i} = \gamma_{30}$$

Proactive Coping ( $\gamma_{01} = 0.20, t = 2.13, p = .04$ ) was associated with positive affect with individuals reporting greater proactive coping also reporting greater positive affect. Yesterday's positive affect ( $\gamma_{30} = 0.84, t = 23.88, p < .01$ ) was associated with today's positive affect such that individuals who reported positive affect on one day also reported positive affect the following day. Yesterday's stress ( $\gamma_{20} = -0.53, t = -1.29, p = .20$ ) was not associated with positive affect. The Proactive Coping X Yesterday's Stress interaction was not significant ( $\gamma_{21} = 0.15, t = 1.37, p = .17$ ). Today's stress was not associated with positive

affect ( $\gamma_{10} = 0.02$ ,  $t = 0.45$ ,  $p = .65$ ). This model accounted for 73% of the within-person variability in positive affect [ $1 - (.22/.8)$ ] and 95% of the between-person variability in positive affect [ $(1 - (.031/.654))$ ].

I employed the following model to examine whether proactive coping was negatively related to physical health symptoms in the presence of stress residue.

Level 1:  $\text{Physical Health}_{it} = \beta_{0it} + \beta_{1it}(\text{today's stress}) + \beta_{2it}(\text{yesterday's stress}) + \beta_{3it}(\text{yesterday's physical health}) + r_{it}$

Level 2:  $\beta_{0i} = \gamma_{00} + \gamma_{01}(\text{proactive coping}) + \gamma_{02}(\text{neuroticism}) + u_{0i}$

$\beta_{1i} = \gamma_{10} + u_{1i}$

$\beta_{2i} = \gamma_{20} + \gamma_{21}(\text{proactive coping}) + u_{2i}$

$\beta_{3i} = \gamma_{30} + u_{3i}$

Proactive Coping ( $\gamma_{01} = -0.43$ ,  $t = -1.11$ ,  $p = .27$ ) was not associated with physical health symptoms. Yesterday's physical health symptoms ( $\gamma_{30} = 0.44$ ,  $t = 8.10$ ,  $p < .01$ ) were associated with today's physical health symptoms such that individuals who reported more physical health symptoms on one day also reported more physical health symptoms the following day. Yesterday's stress ( $\gamma_{20} = -0.30$ ,  $t = -0.35$ ,  $p = .72$ ) was not associated with physical health symptoms. The Proactive Coping X Yesterday's Stress interaction was not significant ( $\gamma_{21} = 0.04$ ,  $t = 0.16$ ,  $p = .87$ ). Today's stress was not associated with physical health symptoms ( $\gamma_{10} = 0.06$ ,  $t = 0.60$ ,  $p = .55$ ). This model accounted for 48% of the within-person variability in physical health symptoms [ $1 - (1.53/2.97)$ ] and 64% of the between-person variability in physical health symptoms [ $1 - (.72/1.98)$ ].

## Discussion

The present study expands current understandings of the relationship between coping, mood management, health and affective well-being outcomes, and stress in older adults. Specifically, this is the first study to consider the associations between proactive coping and mood management and the potential for proactive coping to mediate the relationship between mood management and well-being outcomes. Additionally, this is the first study to examine the potential effects of proactive coping and mood management on stress residue.

Between-person correlations among study variables yielded some unexpected results. Specifically, positive and negative affect were positively related. This correlation contrasts with Watson and colleagues' (1988) findings that these scales are independent with between-person correlations ranging from  $-.12$  to  $-.23$ . However, Bellingtier, Neupert, and Kotter-Grühn (2015) found positive and negative affect to be positively correlated at the within-person level based on the same data set employed in the current study. DePaoli and Sweeney (2000) also found the same positive relationship between positive and negative affect at the within-person level. Additionally, the "undoing" function of positive affect may help to explain the positive between-person correlation between positive and negative affect in the current study (Fredrickson & Levenson, 1998; Tugade & Fredrickson, 2004). As previously mentioned, the function of positive emotions is to dampen the detrimental effects of the negative emotions on reactivity to stressful situations (Levenson, 1999; Tugade & Fredrickson, 2004). As such, positive emotions may follow a negative emotional experience in order to "undo" the detrimental effects of negative affect and thus result in a positive correlation between the two affective states.

Additionally, multilevel models showed that daily stress was associated with positive affect such that increases in stressors were associated with increases in positive affect. This contradicts assertions that stress should reduce levels of positive affect (Ensel & Lin, 1991). However, other studies have shown a similar relationship with daily positive affect increasing on days with a stressor independent of age (Uchino et al., 2006). These findings may be due to increased emotional complexity with age (Carstensen et al., 2000; Labouvie-Vief & Medler, 2002; Ong, Mroczek & Riffin, 2011) and the “undoing” function of positive affect. (Fredrickson & Levenson, 1998; Tugade & Fredrickson, 2004). Emotional complexity is a multifaceted construct which can refer to an individual’s ability to experience both positive and negative emotions during a specific time frame and the degree to which individuals are able to distinguish among discrete emotions (Carstensen et al. 2000; Ong & Bergeman, 2004). Greater levels of emotional complexity have been shown to be related to greater overall psychological resilience, lower levels of stress, and lower levels of neuroticism (Ong & Bergeman, 2004). Therefore, older adults in the current study may exhibit more positive affect when they experience a stressor because increases in emotional complexity may enable them to experience more positive affect in relation to negative affect in order to mitigate the detrimental effects of a stressor.

Results also indicated that mood management was not related to negative affect or the number of daily physical health symptoms between individuals. However, mood management was related to positive affect with individuals reporting greater mood management also reporting more positive affect. This result was in the hypothesized direction and supports other findings that there is a positive relationship between mood management, a construct related to emotion regulation, and well-being (Brummer & Stopa,

2014; Gross & John, 2003; John & Gross, 2004). Additionally, this finding supports the assertion that age-related changes in motivation prompt older adults to allocate more resources to emotion management efforts and that this enhanced emotion functioning is evident in increased positive affect reported by older adults (Carstensen et al., 2003; Knight et al., 2007).

The failure to find a significant effect of mood management on negative affect and physical health symptoms could result from the measure of mood management employed. The measure of mood management employed was originally constructed and assessed in a sample of undergraduate students (Salovey et al., 1995) whereas this study includes only older adults. Additionally, emotional regulatory strategies and efficacy have been shown to differ by age (John & Gross, 2004; Mather & Carstensen, 2005). To date, no study has examined mood management as assessed by the TMMS in an exclusively older adult sample. As such, the TMMS may not be sensitive enough to capture the mood management tendencies specific to an older adult population.

Thus, the failure to find a significant effect of mood management on physical health symptoms may be due to use of the TMMS as a measure of mood management. Donaldson-Feilder and Bond (2004) examined the ability of the TMMS to predict various well-being outcomes including mental health and physical well-being in a sample of employees living in the United Kingdom. They included all three TMMS subscales in the same manner employed in the current study by creating a composite score of all items irrespective of subscale. Results showed that the TMMS did not significantly predict any of the well-being outcomes (Donaldson-Feilder & Bond, 2004).

Results also showed that proactive coping was a significant predictor of positive affect such that individuals who reported more proactive coping also reported higher levels of positive affect. However, proactive coping was not a significant predictor of negative affect or physical health symptoms.

These findings may be explained by the way in which individuals who engage in proactive coping approach obstacles. Greenglass (2002) posited that individuals who engage in proactive coping view demands as challenges rather than stressors. As such, engaging in proactive coping may function to increase positive affect because the individual does not perceive a potential stressor or obstacle as a threat. Additionally, engagement in proactive coping does not require that a future stressor be present (Aspinwall & Taylor, 1997). Therefore, proactive coping occurs independently of stressor occurrence so the function of proactive coping need not be negative affect reduction in response to a stressor or threat of a stressor (Aspinwall & Taylor, 1997).

A possible explanation for the failure to find significant effects of proactive coping on physical health symptoms may be due to the function of proactive coping itself and the age of the participants in the current study. Because this sample is comprised exclusively of older adults, declines in physical functioning and increases in physical health complaints may be perceived as normative, or on-time events, at this point in development (Baltes, 1997; Neugarten, 1968). Additionally, proactive coping involves an accumulation of resources and acquisition of skills designed to address nonexistent or nebulous stressors (Aspinwall & Taylor, 1997). Proactive coping may function to lessen reactivity to stressors related to physical health and functioning by enabling individuals to prepare for potential health difficulties and declines preemptively. However, these preparatory efforts may not be evident

in the number of physical health symptoms an individual reports given the normative trajectory of physical functioning in older age.

Results from analyses employed to assess the association between proactive coping and mood management were in the hypothesized direction. Proactive coping and mood management were positively associated with individuals reporting more mood management also reporting more proactive coping. This result is in line with previous findings showing associations among mood management, emotion regulation, and reactive coping strategies (Gross & John, 2003). This result also adds to the current understanding of the relationship between emotion regulatory abilities and the temporal aspects of coping processes. Specifically, this study is the first to demonstrate a positive relationship between mood management and proactive coping which is temporally prior to reactive coping (Aspinwall & Taylor, 1997).

Results from analyses employed to examine whether proactive coping functioned as a mediator for the associations among mood management and positive affect, negative affect, and physical health symptoms showed that proactive coping did not mediate the associations between mood management and the well-being outcomes of interest. There is a lack of prior evidence regarding the direction of the relationship between mood management and proactive coping. The SOC-ER (Urry & Gross, 2010) framework suggests available resources, such as those provided by proactive coping, enable effective emotion regulatory efforts. No study has specifically examined the effects of proactive coping on the associations between mood management and well-being outcomes. As such, the current findings may indicate that proactive coping does not impact mood management or the associations among mood management and well-being outcomes. Although this study did

not find the predicted associations, these associations may still exist. The lack of prior evidence indicating the direction and nature of the associations among emotion regulatory abilities, the temporal dimensions of coping, and well-being outcomes prevents the conclusive dismissal of proactive coping as a mediator of the relationship between mood management and well-being outcomes. Although I did not find evidence for mediation at the between person level, a within-person assessment of the associations among coping, mood management, affect and physical health may yield different results in future studies.

Results from analyses conducted to determine the associations among mood management and stress residue showed that mood management was not significantly associated with stress residue as assessed by positive affect, negative affect, or physical health symptoms. These results may indicate the inability of mood management to mitigate the effects of stress residue on well-being outcomes. However, this is the first study to examine stress residue as a temporal aspect of the stress process, and no prior evidence regarding the nature of the associations among stress residue, mood management, and the well-being outcomes of interests exists to further explain these null findings.

Results also showed that proactive coping was not significantly associated with stress residue as assessed by positive affect, negative affect, or physical health symptom outcomes. This may be due to trait-like nature of proactive coping and the stage in the stress process stress residue may represent (Almeida et al., 2011; Aspinwall & Taylor, 1997). Stress residue is considered to be the leftover effects of the stressor after the stressful event itself has passed (Almeida et al., 2011). As such I posit that stress residue functions as a precursor to chronic stress. Thus, the effects of proactive coping may not be evident at such an early stage in the development of chronic stress but may be evident if examined later in the stress

process when the consistent build-up of stressor reactivity results in measurable levels of chronic stress. No study has directly examined the effects of proactive coping on chronic stress but research suggests that lasting or continuous stress may impact health and well-being outcomes in a different manner than a discrete or short term stressor (Aldwin, 2007).

### **Limitations and Future Directions**

There are some important limitations to this study. Although previous research indicated a relationship among mood management as assessed by the TMMS and emotion regulation strategies, it is unclear whether a direct assessment of specific emotion regulation strategies would have yielded different results. As such, a measure designed to specifically assess emotion regulation strategies such as the Emotion Regulation Questionnaire (ERQ: Gross & John, 2003) should be included in future studies. This would allow for a strategy-specific assessment of the relationship between emotion regulation and proactive coping and the effects of these processes on stress, health, and affective well-being outcomes.

Additionally, this study sought to fill gaps in the current literature regarding associations among the temporal dimensions of the stress and coping processes and mood management and well-being outcomes. I was able to examine proactive coping as a potential mediator for the associations between mood management and positive and negative affect and physical health symptoms at the between-person level. However, the ability to assess these associations at the within-person level would have enabled a more thorough examination and discussion regarding my null findings. Future studies should include both a daily and between-person assessment of emotion regulation strategies and/or mood management. This would enable a more complete assessment of the temporal dimensions of

coping and regulatory abilities as well as allow for a more conclusive and informative discussion regarding the associations among these processes.

Along these lines, the lack of a chronic stress assessment limited my ability to examine the associations among mood management, proactive coping, and well-being outcomes at multiple points in the stress process. The study did include a measure of daily stress which allowed for the assessment of stress residue. However, as proactive coping represents a trait-like process, the effects may not have been evident in daily assessments of stress. Research indicates that chronic stress can impact health and well-being outcomes differently than stress occurring earlier in the stress process or stress that last for a shorter duration (Aldwin, 2007). This suggests that future research examining the effects of proactive coping on well-being outcomes and stress should include assessments of chronic and daily stress in order to examine the associations among these processes at multiple points in the stress process.

### **Conclusions**

Limitations notwithstanding, this was the first study to examine the associations between proactive coping and mood management and the effects of these processes on stress residue and health and affective well-being outcomes. Results showed that mood management as assessed by the TMMS and proactive coping were significantly related though the exact nature of this relationship remains unclear (Salovey et al., 1995). Both mood management and proactive coping significantly predicted positive affect but not negative affect or physical health symptoms. Additionally, supplemental analyses indicated that higher levels of clarity, or the ability to differentiate among mood states, mitigated the

effects of stress residue on negative affect, but not positive affect or physical health symptoms.

These findings highlight the importance of accounting for the temporal dimensions of stress and coping when examining associations among and effects of these processes on affect and health outcomes. Results also add to the current understanding of proactive coping, mood management, stress residue, and the complexities associated with the effects of these processes on health and well-being outcomes in older adults.

## REFERENCES

- Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science*, 8, 155–172.
- Aldwin, C. M. (2007). *Stress, Coping, and Development: An Integrative Perspective* (2nd Edition). New York, NY, USA: Guilford Press, 2007.
- Aldwin, C. M., Spiro, A. III, & Park, C. L. (2006). Health, behavior, and optimal aging: A lifespan developmental perspective. In J. Birren & K. W. Schaie (Eds.), *Handbook of the Psychology of Aging*, 6th ed (pp. 85 – 104). San Diego: Academic Press.
- Almeida, D. M., Wethington, E., & Kessler, R. C. (2002). The Daily Inventory of Stressful Events (DISE): An interview based approach for measuring daily stressors. *Assessment*, 9, 41–55.
- Aspinwall, L. G., Sechrist, G. B., & Jones, P. R. (2005). Expect the best and prepare for the worst: Anticipatory coping and preparations for Y2K. *Motivation and Emotion*, 29, 357-388.
- Aspinwall L. G., Taylor S. E. (1997). A stitch in time: self-regulation and proactive coping. *Psychological Bulletin*, 121, 417–436.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, 52, 366-380.
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes

- (Eds.), *Successful aging: Perspectives from the behavioral sciences* (Vol. 1, pp. 1-34). New York: Cambridge University Press.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Bellingtier, J. A., Neupert, S. D., & Kotter-Grühn, D. (2015). The combined effects of daily stressors and major life events on daily subjective ages. *Journal of Gerontology: Psychological Sciences*. Advance online access. doi: 10.1093/geronb/gbv101.
- Bonanno, G. A., & Burton, C. L. (2013). Regulatory Flexibility: An Individual Differences Perspective on Coping and Emotion Regulation. *Perspectives on Psychological Science*, *8*, 591 –612.
- Brummer, L., & Stopa, L. (2014). The influence of age on emotion regulation strategies and psychological distress. *Behavioural and Cognitive Psychotherapy*, *42*, 668–681.
- Cacioppo, J.T., Hawkley, L.C., Kalil, A., Hughes, M.E., Waite, L., & Thisted, R.A. (2008). Happiness and the invisible threads of social connection: The Chicago Health, Aging, and Social Relations Study. In M. Eid & R. Larsen (Eds.), *The science of well-being* (pp.195–219). New York: Guilford.
- Cacioppo, J. T., Berntson, G. G., Bechara, A., Tranel, D., & Hawkley, L. C. (2011). Could an aging brain contribute to subjective well being?: The value added by a social neuroscience perspective. In A. Todorov, S. T. Fiske, & D. Prentice (Eds.), *Social Neuroscience: Toward Understanding the Underpinnings of the Social Mind* (pp. 249-262). New York, NY: Oxford University Press.

- Carstensen, L. L., Fung, H., & Charles, S. (2003) Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion, 27*, 103-123.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*, 165-181.
- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult lifespan. *Journal of Personality and Social Psychology, 79*, 644-655.
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*, 92-100.
- Charles, S. T. (2010). Strength and Vulnerability Integration: A model of emotional well-being across adulthood. *Psychological Bulletin, 136*, 1068–1091.
- Charles, S.T., Mather, M., & Carstensen, L.L. (2003). Aging and emotional memory: the forgettable nature of negative images for older adults. *Journal of Experimental Psychology, 132*, 310–324.
- Charles, S. T., Piazza, J. R., Luong, G., & Almeida, D. M. (2009) Now you see it, now you don't: Age differences in affective reactivity to social tensions. *Psychology and aging, 24*, 645-653.
- Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality and Social Psychology, 80*, 136–151.
- Cicchetti, D. (2011). Allostatic load. *Development and Psychopathology, 23*, 723-724.

- Coats, A. H., & Blanchard-Fields, F. (2008). Emotion regulation in interpersonal problems: The role of cognitive-emotional complexity, emotion regulation goals, and expressivity. *Psychology and Aging, 23*, 39–51.
- Costa, P. T., & McCrae R. R. (1992). Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual. *Psychological Assessment Resources*, Odessa, FL.
- DePaoli, L. C., Sweeney, D. C. (2000). Further validation of the positive and negative affect schedule. *Journal of Social Behavior and Personality, 15*, 561-568.
- Donaldson-Feilder, E. J. & Bond, F.W. (2004). The relative importance of psychological acceptance and emotional intelligence to workplace well-being. *British Journal of Guidance & Counselling, 32*, 187–203.
- Ensel, W. M., & Lin, N. (1991). The life stress paradigm and psychological distress. *Journal of Health and Social Behavior, 32*, 321-341.
- Fagundes, C. P., Gillie, B. L., Derry, H. M., Bennett, J. M., Kiecolt-Glaser, J. K. (2012). Resilience and immune function in older adults. *Annual Review of Gerontology & Geriatrics, 32*, 29-49.
- Fiksenbaum, L. M., Greenglass, E. R., Eaton, J. (2006). Perceived social support, hassles, and coping among the elderly. *Journal of Applied Gerontology, 25*, 17-30.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: A study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48*, 150-170. doi: 10.1037/002f2-3514.48.1.150

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*, 745–774.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology:

The broaden-and-build theory of positive emotions. *American Psychologist*, *56*, 218-226.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals

toward emotional well-being. *Psychological Science*, *13*, 172–175.

Fredrickson, B. L., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion*, *12*, 191–220.

Greenglass, E.R. (2002). Proactive coping and quality of life management. In E.

Frydenberg (Ed.), *Beyond coping: Meeting goals, visions, and challenges* (pp.

3762). London: Oxford University Press

Greenglass, E.R., Fiksenbaum, L., & Eaton, J. (2006). The relationship between coping, social support, functional disability, and depression in the elderly. *Anxiety, Stress, and Coping: An International Journal*, *19*, 15–31.

Greenglass, E.R. Schwarzer, R. Jakubiec, D. Fiksenbaum, L. & Taubert, S. (1999b). *The Proactive Coping Inventory (PCI): A multidimensional research instrument*. Paper presented at the 20th International Meeting of the Stress and Anxiety Research Society (STAR), Cracow, Poland.

- Greenglass, E. R., Schwarzer, R., & Taubert, S. (1999a). The Proactive Coping Inventory (PCI): A multidimensional research instrument. Online publication available at: [www.psych.yorku.ca/greenglass/](http://www.psych.yorku.ca/greenglass/)
- Gross, J.J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224–237.
- Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition & Emotion, 13*, 551–573.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*, 281–291.
- Gross, J. J., & John, O. P. (2002). Wise emotion regulation. In L. Feldman Barrett & P. Salovey (Eds.), *The wisdom of feelings: Psychological processes in emotional intelligence* (pp. 297–318). New York: Guilford.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348–362.
- Grühn, D., Diehl, M., Lumley, M., Labouvie-Vief, G. (2012). Time-based indicators of emotional complexity: Interrelations and Correlations. doi: 10.1037/a0030363.
- John, O. P., & Gross, J. J. (2004) Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*, 1301-1333.

- Knight, M., Seymour, T.L., Gaunt, J.T., Baker, C., Nesmith, K., & Mather, M. (2007). Aging and goal-directed emotional attention: Distraction reverses emotional biases. *Emotion, 7*, 705–714.
- Korte, S. M., Koolhaas, J. M., Wingfield, J. C., McEwen, B. S. (2005). The Darwinian concept of stress: benefits of allostasis and costs of allostatic load and the trade-offs in health and disease. *Neuroscience and Biobehavioral Reviews, 29*, 3-38.
- Labouvie-Vief, G., & Medler, M. (2002). Affect optimization and affect complexity: Modes and styles of regulation in adulthood. *Psychology and Aging, 17*, 571-588.
- Larsen, R. J., & Kasimatis, M. (1991). Day-to-day symptoms: Individual differences in the occurrence, duration, and emotional concomitants of minor daily illnesses. *Journal of Personality, 59*, 387–423.
- Lazarus R. S., & Folkman S. (1984). *Stress, Appraisal, and Coping*. New York: Springer
- Levenson, R. W. (1999). The intrapersonal functions of emotion. *Cognition & Emotion, 13*, 481–504.
- Martinez-Pons, M. (1997). The relation of emotional intelligence with selected areas of personal functioning. *Imagination, Cognition, and Personality, 17*, 3-14.
- Mather, M., & Carstensen, L.L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Sciences, 9*, 496–502.
- McConatha, J. T., & Huba, H. M. (1999). Primary, secondary, and emotional control across adulthood. *Current Psychology: Developmental, Learning, Personality, 18*, 164–170.
- McEwen, B., & Stellar, E. (1993). Stress and the individual: Mechanisms leading to disease. *Archives of Internal Medicine, 153*, 2093–2101.

- Neugarten, B. L. (1968). Adult personality: Toward a psychology of the life cycle. In B. L. Neugarten (Ed.), *Middle age and aging: A reader in social psychology* (pp. 137–147). Chicago: University of Chicago Press.
- Neupert, S. D., Almeida, D. M., Mroczek, D. K., & Spiro III, A. (2006a). The effects of the Columbia shuttle disaster on the daily lives of older adults: Findings from the VA Normative Aging Study. *Aging & Mental Health, 10*, 272-281.
- Neupert, S. D., Almeida, D. M., Mroczek, D. K., & Spiro, A., III. (2006b). Daily stressors and memory failures: Findings from the VA Normative Aging Study. *Psychology and Aging, 21*, 424 – 429.
- Ong, A. D., & Bergeman, C. S. (2004). The complexity of emotions in later life. *Journal of Gerontology: Psychological Sciences, 59B*, 117-122.
- Ong A. D., Mroczek D. K., Riffin C. (2011). The health significance of positive emotions in adulthood and later life. *Social and Personality Psychology Compass, 5*, 538–551.
- Orgeta, V. (2009). Specificity of age differences in emotion regulation *Aging & Mental Health, 13*, 818–826
- Ouwehand, C., de Ridder, D. T. D., Bensing, J. M. (2007). A review of successful aging models: Proposing proactive coping as an important additional strategy. *Clinical Psychology Review 27*, 873–884
- Parrott, W. G. (1993). Beyond hedonism: Motives for inhibiting good moods and for maintaining bad moods. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 278–308). Englewood Cliffs, NJ: Prentice Hall.
- Peacock, E. J., & Wong, P. T. (1990). The Stress Appraisal Measure (SAM): A multidimensional approach to cognitive appraisal. *Stress Medicine, 6*, 227-236.

- Ramsey, J. L., Neupert, S. D., Mroczek, D., & Spiro, A. (2015). The effects of daily co-occurrence of affect on older adults' reactivity to health stressors. *Psychology & Health*. doi 10.1080/08870446.2015.1111368.
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology*, 79, 410–424.
- Robins, R. W., Fraley, R. C., Roberts, B. W., & Trzesniewski, K. H. (2001). A longitudinal study of personality change in young adulthood. *Journal of Personality*, 69, 617–640.
- Rothermund, K., & Brandstädter, J. (2003). Coping with deficits and losses in later life: From compensatory action to accommodation. *Psychology and Aging*, 18, 896–905.
- Salovey, P., Mayer, J., Goldman, S., Turvey, C. & Palfai, T. (1995). Emotional attention, clarity and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J.W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125-154) Washington, DC: American Psychological Association.
- Salovey, P., Stroud, L. R., Woolery, A. & Epel, E. S. (2002). Perceived emotional intelligence, stress reactivity, and symptom reports: Further explorations using the trait-meta mood scale. *Psychology and Health*, 17, 611-627.
- Sheppes, G., Scheibe, S., Suri, G., Radu, P., Blechert, J., & Gross, J. J. (2014). Emotion Regulation choice: A conceptual framework and supporting evidence. *Journal of Experimental Psychology*, 143, 163-181.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology 1982* (pp. 290-312). Washington DC: American Sociological Association.

- Stawski, R. S., Mogle, J. A., & Sliwinski, M. J. (2013). Associations among fluid and crystallized cognition and daily stress processes in older adults. *Psychology and Aging, 28*, 57-63.
- Stawski, R. S., Sliwinski, M. J., Almeida, D. M., & Smyth, J. M. (2008). Reported exposure and emotional reactivity to daily stressors: The roles of adult age and global perceived stress. *Psychology and Aging, 23*, 52-61.
- Thoits, P. (2010). Stress and health: Major findings and policy implications. *Journal of Health and Social Behavior, 51*, Supplement, S41–S53.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*, 320-333.
- Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*, 1161-1190.
- Uchino, B. N., Berg, C. A., Smith, T. W., Pearce, G., & Skinner, M. (2006). Age-related differences in ambulatory blood pressure during daily stress: Evidence for greater blood pressure reactivity with age. *Psychology and Aging, 21*, 231-239.
- Urry, H. L. & Gross, J. J. (2010). Emotion regulation in older age. *Current Directions in Psychological Science, 19*(6), 352-357.
- Watson, D. & Clark, L. A. (1997). Measurement and mismeasurement of mood: recurrent and emergent issues. *Journal of Personality Assessment, 68*, 267-296.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.

Wheaton, B. (1999). Models for the stress-buffering functions of coping resources. *Journal of Health and Social Behavior*, 26, 352-364.

**APPENDICES**

### Appendix A

#### The Positive and Negative Affect Schedule

Using the following scale, indicate to what extent you have felt these emotions in the past 24 hours.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

### Appendix B

#### Daily Inventory of Stressful Events (DISE)

In the **past 24 hours**, did you have an **argument or disagreement with anyone?**

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



a. **Who** was it with?

- \_\_\_ Spouse
- \_\_\_ Your Child(ren)
- \_\_\_ Your Grandchild(ren)
- \_\_\_ Other Family Member
- \_\_\_ Friend
- \_\_\_ Neighbor
- \_\_\_ Co-worker
- \_\_\_ Someone Else \_\_\_\_\_

b. What was the **main topic** of the argument?

- \_\_\_ Money/Financial Issues
- \_\_\_ Family obligation/responsibilities
- \_\_\_ Household-related tasks
- \_\_\_ Work /Volunteer-related tasks
- \_\_\_ Scheduling
- \_\_\_ Other \_\_\_\_\_

c. How **stressful** was this for you?

\_\_\_ Not At All \_\_\_ A Little \_\_\_ Somewhat \_\_\_ Very

d. How much **control** do you feel you had over this situation?

\_\_\_ None \_\_\_ A Little \_\_\_ Some \_\_\_ A lot

e. Is the issue **resolved**? \_\_\_ No \_\_\_ Yes

In the **past 24 hours**, did anything happen (other than what you have already mentioned) that you **could have argued or disagreed** about, but you decided to let it pass?

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



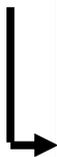
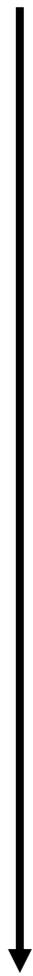
- a. **Who** was it with?
- \_\_\_ Spouse  
 \_\_\_ Your Child(ren)  
 \_\_\_ Your Grandchild(ren)  
 \_\_\_ Other Family Member  
 \_\_\_ Friend  
 \_\_\_ Neighbor  
 \_\_\_ Co-worker  
 \_\_\_ Someone Else \_\_\_\_\_
- b. What was the **main topic** of the potential argument or disagreement?
- \_\_\_ Money/Financial Issues  
 \_\_\_ Family obligation/responsibilities  
 \_\_\_ Household-related tasks  
 \_\_\_ Work /Volunteer-related tasks  
 \_\_\_ Scheduling  
 \_\_\_ Other \_\_\_\_\_
- c. How **stressful** was this for you?
- \_\_\_ Not At All \_\_\_A Little \_\_\_ Somewhat \_\_\_Very
- d. How much **control** do you feel you had over this situation?
- \_\_\_ None \_\_\_A Little \_\_\_ Some \_\_\_ A lot
- e. Is the issue **resolved**? \_\_\_ No \_\_\_ Yes

In the **past 24 hours**, did anything happen **in your workplace or volunteer setting** (other than what you have already mentioned) that most people would consider stressful?

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



a. **Who** else was involved?  
\_\_\_ No one else  
\_\_\_ Spouse  
\_\_\_ Your Child(ren)  
\_\_\_ Your Grandchild(ren)  
\_\_\_ Other Family Member  
\_\_\_ Friend  
\_\_\_ Co-worker  
\_\_\_ Someone Else \_\_\_\_\_

b. Was there an argument or disagreement?  
\_\_\_ No \_\_\_ Yes

c. What was the **main source** of the stress?  
\_\_\_ Income or job security  
\_\_\_ Mistakes  
\_\_\_ Having too much to do  
\_\_\_ Scheduling  
\_\_\_ Other \_\_\_\_\_

d. How **stressful** was this for you?  
\_\_\_ Not At All \_\_\_ A Little \_\_\_ Somewhat \_\_\_ Very

e. How much **control** do you feel you had over this situation?  
\_\_\_ None \_\_\_ A Little \_\_\_ Some \_\_\_ A lot

f. Is the issue **resolved**? \_\_\_ No \_\_\_ Yes

In the **past 24 hours**, did anything happen **at home** (other than what you have already mentioned) that most people would consider stressful?

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



a. **Who** else was involved?

- No one else  
 Spouse  
 Your Child(ren)  
 Your Grandchild(ren)  
 Other Family Member  
 Friend  
 Neighbor  
 Co-worker  
 Someone Else \_\_\_\_\_

b. Was there an argument or disagreement?

- No       Yes

c. What was the **main source** of the stress?

- Household maintenance  
 Neighborhood concerns  
 Having too much to do  
 Scheduling conflicts  
 Financial issues  
 Pet problems  
 Other \_\_\_\_\_

d. How **stressful** was this for you?

- Not At All    A Little    Somewhat    Very

e. How much **control** do you feel you had over this situation?

- None       A Little       Some       A lot

f. Is the issue **resolved**?    No                       Yes

In the **past 24 hours**, did anything happen **to a close friend or relative** (other than what you have already mentioned) that turned out to be stressful for you?

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



a. What relation is this person to you?

- Spouse
- Your Child(ren)
- Your Grandchild(ren)
- Other Family Member
- Friend
- Neighbor
- Co-worker
- Someone Else \_\_\_\_\_

b. What happened to this person?

- Financial problem
- Legal problem
- Health or safety issue
- Work-related issue
- Death
- Emotional problem
- Relationship problem
- Other \_\_\_\_\_

c. How **stressful** was this for you?

- Not At All    A Little    Somewhat    Very

d. How much **control** do you feel you had over this situation?

- None    A Little    Some    A lot

e. Is the issue **resolved**?    No    Yes

In the **past 24 hours**, did anything stressful happen (other than what you have already mentioned) **regarding your personal health**?

\_\_\_\_\_ NO

\_\_\_\_\_ YES

NO YES



a. **Who** else was involved?

- No one else  
 Spouse  
 Your Child(ren)  
 Your Grandchild(ren)  
 Other Family Member  
 Friend  
 Neighbor  
 Co-worker  
 Someone Else \_\_\_\_\_

b. Was there an argument or disagreement?

\_\_\_\_\_ No \_\_\_\_\_ Yes

c. What was the **main problem**?

- Accident  
 Potential accident  
 Medication-related issue  
 Health insurance issue  
 Illness  
 Receiving treatment  
 Problems during health care visit  
 Other \_\_\_\_\_

d. How **stressful** was this for you?

\_\_\_\_\_ Not At All \_\_\_\_\_ A Little \_\_\_\_\_ Somewhat \_\_\_\_\_ Very

e. How much **control** do you feel you had over this situation?

\_\_\_\_\_ None \_\_\_\_\_ A Little \_\_\_\_\_ Some \_\_\_\_\_ A lot

f. Is the issue **resolved**? \_\_\_\_\_ No \_\_\_\_\_ Yes



**Appendix C**

## Physical Health Symptoms Checklist

In the **past 24 hours**, did you experience any of the following **physical symptoms**? (Check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Headache                    | <input type="checkbox"/> Muscle Soreness                                   |
| <input type="checkbox"/> Backache                    | <input type="checkbox"/> Poor Appetite                                     |
| <input type="checkbox"/> Fatigue                     | <input type="checkbox"/> Other Stomach Problems                            |
| <input type="checkbox"/> Joint Pain                  | <input type="checkbox"/> Chest Pain  |
| <input type="checkbox"/> Muscle Weakness             | <input type="checkbox"/> Dizziness   |
| <input type="checkbox"/> Cough                       | <input type="checkbox"/> Shortness Of Breath Or Difficulty Breathing       |
| <input type="checkbox"/> Sore Throat                 | <input type="checkbox"/> Menstrual Related-Symptoms (Ex. Cramps, bloating) |
| <input type="checkbox"/> Fever                       | <input type="checkbox"/> Hot Flashes Or Flushes                            |
| <input type="checkbox"/> Chills                      | <input type="checkbox"/> Any Other Physical Symptoms Or Discomforts        |
| <input type="checkbox"/> Other Cold And Flu Symptoms | <input type="checkbox"/> Skin Related Symptoms                             |
| <input type="checkbox"/> Nausea                      | <input type="checkbox"/> Eye Related Symptoms                              |
| <input type="checkbox"/> Allergies                   | <input type="checkbox"/> Ear Related Symptoms                              |
| <input type="checkbox"/> Constipation                | <input type="checkbox"/> Teeth Related Symptoms                            |
| <input type="checkbox"/> Diarrhea                    | <input type="checkbox"/> Leg Or Foot Related Symptoms                      |

**Appendix D**  
Trait Meta Mood Scale (TMMS)

Please read each statement and decide whether or not you agree with it. Check the box for each statement that corresponds to your opinion. (Strongly Disagree, Somewhat Disagree, Neither Agree nor Disagree, Somewhat Agree, or Strongly Agree)

Repair (\* = reverse scored)

I try to think good thoughts no matter how badly I feel.  
 Although I am sometimes sad, I have a mostly optimistic outlook.  
 When I am upset I realize that the “good things in life” are illusions.\*  
 When I become upset I remind myself of all the pleasures in life.  
 Although I am sometimes happy, I have a mostly pessimistic outlook.\*  
 No matter how badly I feel, I try to think about pleasant things.

Clarity (\* = reversed scored)

Sometimes I can't tell what my feelings are.\*  
 I am rarely confused about how I feel.  
 I can never tell how I feel.\*  
 My belief and opinions always seem to change depending on how I feel.\*  
 I am often aware of my feelings on a matter.  
 I am usually confused about how I feel.\*  
 I feel at ease about my emotions.  
 I can't make sense out of my feelings.\*  
 I am usually very clear about my feelings.  
 I usually know my feelings about a matter.  
 I almost always know exactly how I am feeling.

Attention (\* = reversed scored)

People would be better off if they felt less and thought more.\*  
 I don't think it's worth paying attention to your emotions or moods.\*  
 I don't usually care much about what I'm feeling.\*  
 Feelings give direction to life.  
 I believe in acting from the heart.  
 The best way for me to handle my feelings is to experience them to the fullest.  
 One should never be guided by emotions.\*  
 I never give in to my emotions.\*  
 I pay a lot of attention to how I feel.  
 I don't pay much attention to my feelings.\*  
 I often think about my feelings.  
 Feelings are a weakness humans have.\*  
 It is usually a waste of time to think about your emotions.\*

## Appendix E

Greenglass et al. (1999a): Proactive Coping subscale of the Proactive Coping Inventory

The following statements deal with reactions you may have to various situations. Indicate how true each of these statements is depending on how you feel about the situation by checking the box that most accurately describes how true each reaction is of you. (Not at All True, Barely True, Somewhat True, Completely True) (\* = reverse scored)

1. I am a “take charge” person.
2. I try to let things work out on their own.\*
3. After attaining a goal, I look for another, more challenging one.
4. I like challenges and beating the odds.
5. I visualize my dreams and try to achieve them.
6. Despite numerous setbacks, I usually succeed in getting what I want.
7. I try to pinpoint what I need to succeed.
8. I always try to find a way to work around obstacles; nothing really stops me.
9. I often see myself failing so I don’t get my hopes up too high.\*
10. When I apply for a position, I imagine myself filling it.
11. I turn obstacles into positive experiences.
12. If someone tells me I can’t do something, you can be sure I will do it.
13. When I experience a problem, I take the initiative in resolving it.
14. When I have a problem, I usually see myself in a no-win situation.\*