TESTING A PERSONALITY-BASED MODEL OF RESILIENCE AMONG CAREGIVERS IN THE MIDUS II & III PROJECT

A Dissertation

by

MICHAELA V. WALSH

Submitted to the Office of Graduate and Professional Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Chair of Committee,	Timothy R. Elliott
Committee Members,	Daniel Brossart
	Wen Luo
	Rebecca Schlegel
Head of Department,	Shana Hagan-Burke

December 2018

Major Subject: Counseling Psychology

ABSTRACT

Objective: (1) To investigate potential mediating effects of positive affect, social support, and coping style on relationships between resilient personality and depression and life satisfaction outcomes. (2) To test possible moderating effects of caregiver status (transitional caregivers vs. non-caregivers) on model relationships to examine adjustment to the caregiver role. Design/Setting: Participants in the Midlife in the United States (MIDUS) project completed telephone interviews and self-report surveys for Phase II (2006) and Phase III (2013) data collections after being recruited via random-digit phone-number dialing. The current study used this public data for structural equation modeling. Participants: 2,838 respondents from both Phase II and Phase III of the MIDUS dataset were predominantly white (93%), female (56%; 44% male), and an average of 55 years old. Measures: Items assessing Five-Factor Model personality traits were used to identify resilient and non-resilient personality prototypes. The PANAS measured positive affect. The COPE Inventory measured two coping styles (emotion-focused coping, problem-focused coping). Other MIDUS queries measured social support (from family relationships, friendships), depression symptoms, and life satisfaction. Results: *Model 1* (Main Effects) – Resilient personality appeared to facilitate adjustment through hypothesized associations with higher positive affect, lower emotion-focused coping, and higher social support. Problem-focused coping results were unexpected, as it had positive direct and indirect effects on depression. *Model 2* (Interaction Effects) – Similar model relationships to Model 1 occurred when these

model pathways were run separately among chronic caregivers, transitional caregivers, and non-caregivers. Positive affect was the most consistently significant mediator. Moderation tests comparing non-caregivers and transitional caregivers yielded non-significant results. Conclusions: Resilient personality appears to impact psychological well-being via helpful associations with higher positive affect, greater social support, and less use of avoidant coping strategies. These relationships were stable across all three caregiver status groups, suggesting that caregiver status does not strongly impact how resilient personalities fundamentally operate. Researchers should continue defining psycho-behavioral mechanisms of resilience and developing clinical interventions for increasing positive affect and mitigating avoidant coping.

DEDICATION

This dissertation is dedicated to my mother and grandmother, whose loving caregiving relationship is the original cause for my attention to this research area. It is also dedicated to the many wonderful people who have loved and supported me during graduate school, internship, and my work on this dissertation: my fiancé Dr. Andrew Christy; my parents, Alyson Bentley and John Walsh; and my sister, Conna Walsh.

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my committee chair, Dr. Elliott, and my committee members, Dr. Brossart, Dr. Luo, and Dr. Schlegel, for their guidance during this dissertation process. Thank you to Dr. Trey Armstrong for his friendship and statistical encouragement. I am very grateful for the unwavering support from my fiancé, friends, family, and internship supervisors and peers at the University of Rochester's University Counseling Center.

CONTRIBUTORS AND FUNDING SOURCES

Contributors

This work was supervised by the following dissertation committee: Dr. Timothy Elliott (Committee Chair), Dr. Wen Luo and Dr. Daniel Brossart of the Department of Educational Psychology, and Dr. Rebecca Schlegel of the Department of Psychology. All work for the dissertation was completed independently by the student and in collaboration with Dr. Yu-Yu Hsiao regarding cluster analysis instruction and consultation and with Dr. Trey Armstrong regarding path analysis results consultation.

Funding Sources

There are no funding contributions to acknowledge related to the research and compilation of this document. This dissertation used public, freely available data from the Midlife in the United States research project (MIDUS). Several funding sources made the MIDUS study possible: "The MIDUS 1 study (Midlife in the U.S.) was supported by the John D. and Catherine T. MacArthur Foundation Research Network on Successful Midlife Development. The MIDUS 2 and MIDUS 3 research was supported by grants from the National Institute on Aging (P01AG020166, R37AG027343). The research was further supported by the following grants M01-RR023942 (Georgetown), M01-RR00865 (UCLA) from the General Clinical Research Centers Program and 1UL1RR025011 (UW) from the Clinical and Translational Science Award (CTSA) program of the National Center for Research Resources, National Institutes of Health" (Radler, 2014, p. 6).

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

FIGURE Page

CHAPTER I

INTRODUCTION

Informal caregivers provide unpaid care for adult family members, friends, or neighbors whose ability to independently complete activities of daily living (ADLs) such as eating, dressing, maintaining hygiene, attending appointments, or managing finances due to an illness, disability, or injury (National Alliance for Caregiving & AARP, 2015). For a variety of individual and societal factors, the psychological resilience of informal caregivers has wide-ranging influence on the health and well-being of much of the United States population. In attempting to identify and describe the mechanisms of psychological resilience among caregivers, this study aims to fill theoretical gaps in the resilience literature and potentially inform future intervention programs that may increase informal caregivers' resiliency.

Though the exact prevalence of individuals providing unpaid care is difficult to ascertain, a significant portion of the United States' adult population find themselves in this role at some point in their life (Reinhard, Feinberg, Choula, & Houser, 2015). According to the *Caregiving in the U.S. 2015* report, the estimated prevalence of those providing unpaid care for an adult is 16.6% (National Alliance for Caregiving & AARP, 2015). This percentage will likely rise as the United States population "greys" due to the aging Baby Boomer generation (i.e., those born between 1946-1964) (Ortman, Velkoff, & Hogan, 2014). The overall aging of the population will result in caregiving demands upon the United States population, economy, and healthcare system rising significantly

in the decades to come (Redfoot, Feinberg, & Houser, 2013). The scale and importance of informal caregiving is represented in caregiving advocate and former First lady Roslyn Carter's statement that "There are only four types of people in the world: those who have been caregivers, those who currently are caregivers, those who will be caregivers, and those who will need caregivers" (Carter & Golant, 2013, p. 1).

The time spent engaged in unpaid care annually in the United States is extensive and immensely valuable, amounting to approximately 37 billion hours and representing an estimated $470 billion worth of labor (Reinhard et al., 2015). In 2013, an estimated 40 million informal caregivers provided an average of 18 hours of unpaid care per week in the United States, while those living with their care recipient provided closer to 40 hours of care per week (National Alliance for Caregiving & AARP, 2015; Reinhard et al., 2015). In addition to the individual costs of informal caregiving, it has been estimated that it has substantial societal and economic costs as well. Informal caregivers are often part or full-time workers, which has been estimated to annually cost United States employers upwards of $28 billion (Reinhard et al., 2015). In presenting these statistics on a grand scale, the ubiquitous and stressful nature of informal caregiving is evident.

Therefore, it is important to understand and anticipate individuals' adjustment to the caregiving experience. The Pearlin model of caregiving maintains that the caregiving experience is more complex and holistic than simply the sum of caregiver responsibilities (Pearlin, Mullan, Semple, & Skaff, 1990). Instead, their model proposes an ever-evolving experience that considers the caregiver's adjustment to primary and

secondary aspects of the caregiving role and the social environment surrounding the caregiver. This is a dynamic process, and healthy coping strategies and social support can exert influence different points of this adjustment process (Pearlin et al., 1990).

The concept of psychological resilience has recently garnered increasing empirical attention, as the shift to strengths-based positive psychology has taken place over the past two decades (Fletcher & Sarkar, 2013), and as the focus of research has turned from exact protective factors to the process of resilience and its mechanisms (Davydov, Stewart, Ritchie, & Chaudrieu, 2010; Luthar, Cicchetti, & Becker, 2000). Psychological resilience is described as "…the ability to sustain equilibrium and adaptive functioning under stressful circumstances" (Mancini & Bonanno, 2010, p. 259). Resilient individuals are characterized by their tendency to maintain current level of functioning and display few problems functioning in the wake of stressful life events.

Several possible theoretical models of resilience have been extensively explored in the literature. While most of these theories and their respective studies address resilience in terms of "bouncing back" to normal functioning after a traumatic event or injury, among informal caregivers the "event" would be the onset of their caregiving duties (Elliott, Berry, Richards, & Shewchuk, 2014). Therefore, those caregivers who exhibit lower levels of psychological distress (e.g., depression) and higher levels of positive outcomes (e.g., life satisfaction) would be considered "resilient" to the well-documented stresses of caregiving.

Due to the complex and under-defined nature of resilience, it is best understood within a theoretical framework. The two most prominent resilience models in the

discourse currently are Block's (1980) personality-based prototypes (e.g., resilient, undercontrolled, overcontrolled), and Bonanno's (2004) trajectory model of adjustment (e.g., resilient, chronic, delayed, and recovering). These two theories will be used to frame this proposed study. The Bonanno model is descriptive, and it does not account for the origins of the different trajectories. However, its strength lies in its data-driven nature. Block's model of resilience offers a potential explanation of resilience in terms of personality dispositions and development. This means that it is more amenable to assessment, but implications for interventions are more tenuous, as personality is generally considered stable. Therefore, there is a need for more specific understanding resilience mechanisms that are amenable to clinical intervention. This current study examined theory-based mechanisms that will attempt to account for how Block's model of a resilience personality prototype may explain current and subsequent indicators of adjustment.

There are several ways by which resilience promotes optimal adjustment in routine and stressful conditions. Resilience is associated with positive emotions, greater satisfaction in interpersonal and social relationships, and adaptive self-regulation strategies and effective coping behaviors (Bonanno, 2004; Fredrickson & Turgrade, 2004; Folkman & Lazarus, 1980). The meditating effects of these three variables (e.g., positive emotions, social support, coping style) on resilience-adjustment relationships among informal caregivers and non-caregivers were tested in this study.

A growing base of literature supports the significant role that positive affect is a fundamental mechanism of resilience (Frederickson, Tugade, Waugh, & Larkin, 2003;

Tugade & Fredrickson, 2004). Frederickson's broaden-and-build model of positive emotion has demonstrated that positive emotions promote more flexibility and social engagement that leads to resilient outcomes (Tugade & Fredrickson, 2004). Positive emotions have also been found to protect against stressful life situations, such as chronic pain (Ong, Zautra, & Reid, 2010). Relatedly, caregivers' social support and engagement will also be examined as a possible route from resilience prototype to positive well-being outcomes.

Different types of coping styles may also mediate some individuals navigate stressful life circumstances. Current research identifies two styles coping styles (e.g., problem-focused coping and emotion-focused coping) (Folkman & Lazarus, 1980). Problem-focused coping focuses on reducing stress directly via strategies such as planning, increasing applied effort or seeking social support. Emotion-focused coping focuses on reducing immediate subjective experience of negative affect via avoidant strategies. Emotion-focused strategies include seeking emotional support from others, self-blame, and wishful thinking (Folkman & Lazarus, 1980).

The purpose of the current study is to enhance understanding of the mechanisms of resilience by examining how mediating factors (e.g., positive emotion, social support, and problem-focused vs. emotion-focused coping style) play a role in caregivers' resilience after the onset of caregiving duties. The present study utilized a multiple-group (e.g., caregivers and non-caregivers) structural equation model of the mediating effects of positive affect, social support, and coping styles on the relationship between trait resilience and outcomes of depression and life satisfaction. Using a moderated-

mediation framework, non-caregivers and those caregivers transitioning into the role were compared to test how the model pathways might change between those who became caregivers between the two time points, and those who remained non-caregivers. Studies have been conducted previously with a similar set of predictors (e.g., stress, appraisal, coping, and social support) of adaptability among caregivers (Haley, Levine, Brown, & Bartolucci, 1987), but this study attempted to provide a unique "before" snapshot of caregivers before they assumed their caregiving duties.

In order to examine this line of inquiry, this current study used data from the publicly-available MIDUS (Midlife in the United States) data set. The MIDUS project is an on-going longitudinal study began in 1996 through the MacArthur Midlife Research Network. Its overarching purpose is to frame and assess aging as a biopsychosocial process (Radler, 2014). It includes many variables assessed by interview and self-report measures. Through a combination of phone interviews and mail-in surveys, various demographic, social, psychological, and health-related surveys were conducted among a total of 7,000 Americans in order to assess age-related health changes among adults between the ages of 25 to 74. Since the initial data collection (Phase I), two subsequent waves of data have been collected (Phase II in 2006, Phase III in 2013) among the same participants.

This study used the latter two longitudinal phases of the existing MIDUS data set to examine those participants who stated that they were *not* caregivers at Phase II, and who became caregivers by Phase III. Therefore, by comparing Phases II and III it is hoped that "before and after" snapshots of these individuals' general well-being status

(in the form of Depression and Life Satisfaction outcomes) will emerge. This design is meant to address calls in the literature for more longitudinal and pre-caregiving research, to illuminate possible predictors of caregiver well-being (Cameron & Elliott, 2015). Additionally, this investigation used cluster analysis to first group participants into personality prototypes (e.g., resilient vs. non-resilient), and used these clusters to evaluate their transition into the caregiver role between Phase II and Phase III. These prototypes were obtained through a cluster analysis of personality data collected at the Phase II measurement occasion.

Resilience studies of caregivers are numerous, but many measures of resilience lack the theoretical framework that could offer clear hypotheses or more directly imply recommendations for clinical interventions. For example, it is not yet clear if caregiver resilience is associated with enduring personality traits, and if these traits are associated with specific behavioral mechanisms that facilitate adjustment.

Given the predicted increase in the rate of those who will need caregiving in the future (Redfoot, Feinberg, & Houser, 2013), the substantial prevalence of individuals who have been informal caregivers (National Alliance for Caregiving & AARP, 2015), and the lack of clarity surrounding the sources and mechanisms of resilience, this research may add to the literature helping to identify individuals who may be at risk for complicated adjustment upon assuming a caregiver role. In doing so, more effective clinical interventions for these particular caregivers may be developed and tested.

In this study, a contextual model is used to investigate how resilient and non-resilient prototypes predict depression and life satisfaction over time among informal

caregivers. The resilient prototype is expected to be associated with less depression and greater life satisfaction over time, while the non-resilient prototype is expected to be associated with greater depression and lower life satisfaction. This model is designed to examine several mechanisms that may explain how the resilient prototype promotes adjustment to caregiving. Based on an understanding of the characteristics that typify resilience, it is hypothesized that the resilient prototype will be significantly associated with greater positive emotion, greater social support, and more effective, problem-focused coping behaviors in comparison to the undercontrolled and overcontrolled prototypes. Furthermore, it is hypothesized that these mediators will also be associated with lower depression and greater life satisfaction in the expected directions. Additionally, it is expected that caregivers characterized by the non-resilient prototype will report less positive emotion, less social support, and utilize unproductive, emotion-focused coping strategies. These relationships, in turn, were expected to demonstrate the mechanisms by which the resilient personality prototype facilitates optimal adjustment among caregivers.

CHAPTER II

LITERATURE REVIEW

The etymology of the word “resilience”, from the Latin *resiliens* meaning "to rebound”, illustrates the phenomenon of individuals who maintain healthy functioning despite difficult or traumatic life events. The question of how certain individuals are able to so readily utilize flexibility, resource-seeking and a positive outlook as means of “rebounding” has now been an area of empirical study for over 40 years. Much of the first and most influential forays into psychological resilience occurred the developmental psychology literature. These original studies investigated how a certain set of children coming from backgrounds of chronic poverty, parental mental illness, and divorce defied expectations by developing in a typical manner and demonstrating optimal levels of adjustment (Fleming & Ledogar, 2008; Garmezy, 1991; Luthar, Cicchetti, & Baker, 2000; Werner & Smith, 1989).

The initial conceptualization of resilience was that these “invincible” children (Werner & Smith, 1989) were heathy and functional due to an imperviousness to outside stressors. However, the resilience discourse has evolved and now considers resilience related to greater engagement with one’s environment — not less. Contrary to other earlier conceptualizations of resilience, it has generally been found that resiliency is the most common of the reaction to stressful life events (Bonanno, 2004; Bonanno, Kennedy, Galatzer-Levy, Lude, & Elfstrom, 2012). Some researchers have dubbed

resilience the "ordinary magic" of healthy human functioning in the face of adversity (Masten, 2001).

Resilience is a complex, higher-order phenomenon and as such, it may be best understood in terms of theoretical models. Although there are several theoretical models of resilience, the present study is primarily informed by the personality-focused (Block & Block, 1980) and trajectory-focused (Bonanno, 2004) models. The two differ most notably in when and how "resilience" is determined: either pre-existing as a stable personality trait (as described in the Block conceptualization) or evidenced "after the fact" in terms of an observed pattern of adjustment.

Block's Theory of Resilience

The Block model conceptualizes resilience in terms of personality (Block & Kremen, 1996). In developing this model, the Blocks drew upon Kurt Lewin's theory of psychological "elasticity" and "permeability" of the self (Farkas & Orosz, 2015). This model's theoretical framework is rooted in two primary concepts: ego-resiliency and ego-control. Ego-control represents suppression of impulsive behavior, while ego-resilience is the ability to adapt effectively the demands of the surrounding environment by modulating this controlling function.

Out of this theory, three consistent personality prototypes that are predictive of adjustment emerged. These prototypes have been classified as "resilient," "overcontrolled," and "undercontrolled". Each prototype is characterized by how these individuals manage impulses and engage with their environment. Those individuals who belong to the resilient prototype can fine-tune their level of control as their context

situation requires it. Without this resiliency, a rigid or "brittle" reaction pattern is seen. For example, those who fall into the overcontrolled prototype show extensive impulse control and engage in avoidant coping in stressful situations, while the undercontrolled type is characterized by a low impulse control, and increased impulsivity in stressful situations (Block & Kremen, 1996).

One of the primary ways to assess for an individual's membership to one of these prototypes is through another personality construct. Using cluster analysis statistical techniques, personality traits from the Five-Factor Model (FFM) (Costa & McCrae, 1992) can be mapped on to the resilient, overcontrolled, and undercontrolled types. The five factors of this model include openness, conscientiousness, extraversion, agreeableness, and neuroticism. Openness involves willingness to seek out new experiences. Conscientiousness refers to persistence in goal-directed behavior. Extraversion represents an outwardly-focused tendency that generally results in greater sociability and more positive emotionality. Agreeableness is characterized by a preference for warm and compassionate interpersonal interactions. Neuroticism is characterized by a lack of emotional stability that results in higher levels of and a greater propensity for depression and negative affect.

The FFM constructs have been found to cluster into these three personality prototypes in the following patterns: resilient individuals tend to score low in neuroticism and obtain elevated scores on the remaining personality traits (openness, conscientiousness, extraversion, agreeableness). Due to this combination of traits, the resilient prototype is exemplified by its resulting engaged behavior and lack of avoidant

coping in the face of challenging or potentially upsetting life events (Elliott et al., 2015). In contrast to the resilient prototype, those who are undercontrolled tend to have low conscientiousness and moderate levels of neuroticism, while overcontrolled individuals are characterized by high neuroticism, and low extraversion (Elliott et al., 2015). Block's model of resilience points to discrete temperamental factors that cause observable patterns of well-being. For example, higher ego-resilience is positively related to perceived social support, and negatively related to internalizing symptoms among freshman college students (Taylor, Doane, & Eisenberg, 2014). Among outpatient therapy clients, ego-resilience was found to significant mediate the relationship between childhood trauma experiences and anxiety, depression, and self-harm behaviors (Philippe, Laventure, Beaulieu-Pelletier, Lecours, & Lekes, 2011).

Bonanno's Theory of Resilience

In contrast with the Block model of resilience which identifies stable traits, Bonanno's model does not speak to the origin of psychological resilience. Recently, Bonanno (2015) defined the concept of resilience as being made up of four necessary temporal components: 1) baseline functioning, 2) aversive circumstances, 3) post-adversity resilient outcome, and 4) predictors of resilient outcomes (Bonanno, Romero, & Klein, 2015). This further reasserts this model focus on the temporal process of resilience, and it does not emphasize the assessment of resilient traits or prototypes.

As opposed to the personality-based Block model of resilience, the Bonanno "process" model proposes the idea of four different adjustment trajectories after an upsetting event or the onset of a chronic stressor. These descriptive trajectories are

referred to as chronic, recovery, delayed, and resilient (Bonanno, 2004). The resilient trajectory is notable in that these individuals exhibit little change in depression scores across time. This stability represents the notion of resilience as being an ability to maintain homeostasis and adaptability regardless of the presence of life stressors. The affective opposite of the resilient trajectory is the chronic trajectory. Those who fall into the chronic trajectory report steadily elevated depression symptoms over time, both before and after the life stressor. The next two trajectories represent more dynamic paths of adjustment to life stress. The recovery trajectory is characterized by higher levels of depression following a life stress which gradually improve over time until returning to original levels of distress. Finally, the delayed trajectory shows relatively mild levels of depression after the life stress, but which then increase as time goes on. Statistically, these trajectories were first established via latent growth modeling techniques.

Resilience and Caregiver Adjustment

In addition to the primary stresses of completing a variety of daily caregiving-related ADLs, many secondary caregiver stresses such as social activity restriction (Mausbach, Chattillion, Moore, Roepke, Depp, & Roesch, 2011) and employment disruption arise (Lai, 2012; National Alliance for Caregiving & AARP, 2015). Informal caregiving can be a complex, stressful endeavor, oftentimes resulting in higher anxiety and poorer mental health functioning in caregivers, especially among those who are genetically predisposed to the effects of stress (Vitaliano, Strachan, Dansie, Goldberg & Buchwald, 2014). The transition into becoming a caregiver is often characterized by compounding stressful changes. This stress can significantly impact the mental health

and well-being of caregivers. For example, a meta-analysis of 84 caregiver stress studies comparing caregivers to non-caregivers indicated that caregivers significantly exhibit elevated depression (both self and clinician-rated), increased perceived stress, and suppressed subjective well-being (Pinquart & Sorensen, 2003). This is especially true in cases where the caregiver lives with the care recipient. Aspects such as new time demands of care, constant vigilance and provision of medical care, limited availability to work outside the home, family disruption, social isolation, and significantly diminished sleep impact caregiver stress (Heaton, Noyes, Sloper, & Shah, 2005). As these already substantial caregiving demands on society and informal caregivers increase over time, the consideration for the psychological well-being and resilience of those providing unpaid care will likely come into focus as a crucial topic of study.

The potentially heavy costs and risks associated with informal caregiving are clear. However, this does not fully illustrate the nuanced portrait of caregiver well-being. Despite the demonstrated stressful nature of informal caregiving, research also indicates that most informal caregivers are resilient to the complex life circumstance that is caregiving. For instance, after a span of three years, family caregivers of individuals who had experienced strokes were comparable to non-caregivers in terms of reported depression and life satisfaction (Haley, Roth, Hovater, & Clay, 2015). This resilience manifests in reports of high positive affect and low levels of depression and anxiety over time (Elliott, Berry, Richards, & Shewchuk, 2014) or generalized low distress (Pielmaier, Milek, Nussbeck, Walder, & Maercker, 2013). As in the body of literature on psychological impact of caregiving, the broader empirical basis for the mechanisms of

psychological resilience has thus far been limited in clarity of definition and theoretical framing (Fletcher & Sarkar, 2013). These comprehensive models of resilience are theoretically sound, but do not identify how resiliency produces these positive outcomes. According to the Pearlin Model of caregiving, there are several "entry points" in the caregiving process where changes can impact the entire caregiver experience (Pearlin et al., 1990).

Individual differences also influence the process of caregiver adjustment. Personality factors have been studied as playing a role in which individuals become caregivers and how they adjust to this new role. Using the Five-Factor Model (e.g., openness, conscientiousness, extraversion, agreeableness, and neuroticism), a growing body of research has made empirical connections between these traits and the well-being outcomes of informal caregivers. While the connections between personality traits and well-being outcomes among caregivers are generally consistent with those connections found in the general population, it is necessary to study the unique impact on caregiver-specific outcomes (Löckenhoff, Duberstein, Friedman, & Costa, 2011).

Trait neuroticism is generally characterized by negative emotional experience and relates broadly to poor adjustment to the caregiver role in the form of increased distress and diminished mental health. Rohr and colleagues (2013) found that personality factors impacted which caregiving tasks people adopted, and how they adjusted to them: higher neuroticism ("emotional instability" in the study) related to a greater chance of stepping into the caregiving role in the first place (Rohr, Wagner, & Lang, 2013). This means that those who are already more likely to experience mental distress are at further

risk because they are more likely to transition into the stressful caregiving role (perhaps due to increased awareness of others' distress; Rohr et al., 2013). It was also found that despite the increased stress associated with taking on a caregiving role, clients' levels of neuroticism remained stable throughout. However, comparatively, those who withdrew from caregiver duties or were non-caregivers reported a decrease in neuroticism over the same period (Roh et al., 2013). Greater trait neuroticism among informal caregivers has been connected to several maladjustment outcomes, such as greater functional impairment in their care recipients (Bookwala & Schulz, 1998), increased depressive symptoms (Jang, Clay, Roth, Haley, & Mittelman, 2004; Kim, Park, Lee, Choi, Moon, Seo…& Moon, 2016), and greater perceived caregiver distress and burden (Markiewicz, Reis, & Gold, 1997; Renzetti, Iacono, Pinelli, Marri, & Modugno, 2001). Revealing a potential path of personality to resilience, greater trait neuroticism is associated with caregivers' use of emotion-focused coping strategies that emphasize diminishing negative emotions via avoidance and distraction (Chappell & Dujela, 2009).

In contrast with trait neuroticism, trait extraversion (i.e., positive affect and sociability) and agreeableness correspond with healthier adjustment to caregiving. They may serve a dual-purpose: acting as both a protective buffer against the negative effects of caregiver stress and actively promoting positive aspects of caregiving to be more readily appraised. Agreeableness is largely associated with better mental health among caregivers (Löckenhoff, Duberstein, Friedman, & Costa, 2011) and use of more adaptive coping strategies among caregivers (Hooker, Frazier, & Monahan, 1994). Some research has focused on the more positive impacts of the caregiver role in terms of personality

factors (Koerner, Kenyon, & Shirai, 2009). Commonly reported benefits of the caregiver role include feeling useful, experiencing more meaning in life, and enjoying companionship with their care recipient (Baronet, 2003; Cohen, Gold, Shuman, Zucchero, 1994). Koener and colleagues found that trait agreeableness and extraversion accounted for 20% of the variance in reported caregiver benefits. These findings align with the defining features of these traits — namely that agreeableness is defined as being warm, caring and willing to help, and that extraversion is related to greater optimism and increased comfort eliciting social support (Koerner et al., 2009). Those caregivers lower on these two traits may find that their emotional distance from others (i.e., lower extraversion) and lack of comfort with providing help (i.e., lower agreeableness) very much at odds with the caregiving role. Additionally, increased levels of trait extraversion among caregivers were found to relate to positive health outcomes such as lower prevalence of depression (Kim, Duberstein, Sörensen, & Larson, 2005), use of more adaptive coping strategies (Hooker et al., 1994), and lower perceived caregiver burden (Markiewicz, et al., 1997). While all caregivers are likely to experience a combination of positive and negative caregiving appraisals, the subjective benefits of caregiving may play an important role in buffering the detrimental effects of negative caregiving experiences. Most of the existing research connecting personality traits to caregiver outcomes focuses on the deleterious effects of trait neuroticism, and less on the possibly more beneficial effects of the remaining FFM traits.

Certain subsets of these FFM traits have been grouped theoretically and statistically into Block's model of resilience-based personality prototypes. Resilience

seems to significantly influence adjustment to the caregiving role by way of several paths. Indeed, resilience can be conceptualized in terms of successful adjustment to challenging circumstances. The empirical literature base examining caregiver adjustment and resilience focuses on caregivers of individuals with a wide variety of maladies. The following studies focus on caregivers of those with spinal cord injuries (Elliott et al., 2014), dementia (Dias, Santos, Sousa, Nogueira, Torres, Belfort, & Dourado, 2015; O'Rourke, Kupferschmidt, Claxton, Smith, Chappell, & Beattie, 2010; Sutter, Perrin, Peralta, Stolfi, Morelli, Pena Obeso, & Arango-Lasprilla, 2015), and cancer (Jones, Whitford, & Bond, 2015).

Despite the diversity of health concerns that necessitate caregiving, several congruous patterns emerge across studies. Fundamentally, resilience is associated with lower levels of reported depression and mental distress (Dias et al., 2015; Elliott et al., 2014; O'Rourke et al., 2010; Sutter et al., 2015). Other studies conceptualize resilience in terms of subjective caregiver burden, and the expected pattern bears out in this research as well. Caregivers who report lower caregiver burden also report lower depressive symptoms than those caregivers who report high caregiver burden (Jones et al., 2015). Resilience is not merely an ease of adjustment to the practical realities of caregiving (e.g., gaining new duties, learning new skills, etc.), but importantly promotes caregivers' subjective emotional well-being (e.g., depression, subjective burden).

It is difficult to conceptually disentangle caregivers' emotional well-being from the various factors (e.g., internal and external) that may contribute to their increased resilience to the stress of adjusting to caregiving. It is also tautological to assert that

resilience implies greater emotional well-being. By what means does the phenomenon of resilience translate into greater caregiver well-being? Specifically, the present study will focus on the mechanisms that may allow, in part, for the resilience-adjustment relationship: positive emotion, social support, and coping style.

Positive Emotion

The study of positive emotion has proliferated recently, in keeping with the current epoch of positive psychology. Positive emotion broadly encompasses emotions such as happiness, joy, love, gratitude, and optimism (Frederickson, Tugade, Waugh, & Larkin, 2003). Beyond merely pleasant subjective experiences, positive emotion has been shown to be a vital component of effective coping and resilience in the face of adverse conditions.

Initial studies of the protective effects of positive emotions in stressful circumstances (Lazarus, Kanner, & Folkman, 1980) demonstrated that these emotions help by allowing for psychological "rest" from negative affect, maintaining efforts at coping, and restoring psychological resources that may be exhausted by stress. Additionally, this early research on positive emotion revealed the importance of positive emotion in promoting more flexible thinking and creative problem-solving processes (Isen, Daubman, & Nowicki, 1987). These foundational findings set the basis for key concepts relating to how positive emotions are currently being examined in the discourse.

Through the broaden-and-build theoretical model of positive emotion, Fredrickson has posited and demonstrated how positive emotions promote flexibility and

social engagement, and lead to even greater opportunities for resilient outcomes (Tugade & Fredrickson, 2004). These outcomes ultimately both reinforce this positive cycle and help to alleviate the harmful effect of stress. This has been referred to as a resilient "cascade" of daily positive experiences (Ong, Bergeman, & Boker, 2009).

A strong connection between resilience and positive emotion has been shown in the literature. Positive emotion has empirically emerged as a uniquely vital mechanism through which resilience promotes adjustment in times of stress (Elliott et al., 2014, Frederickson et al., 2003; Tugade & Fredrickson, 2004; Walsh et al., 2016). Individuals deemed more resilient have greater likelihood to engage with their environment in the form of proactive behavior that anticipates and mitigates future challenges (Farkas & Orosz, 2015; Ong et al., 2009). In addition to this anticipatory effect, positive emotions may also reverse the harmful effects of negative, stressful circumstances. For example, resilience has been related to greater positive emotion levels in individuals with acquired disabilities (Quale & Shanke, 2010), among individuals who were thrust into caregiving roles following traumatic injury to a family member (Elliott et al., 2014), and it has also been found to buffer against unavoidable stressful life situations, such as chronic pain (Ong, et al., 2010).

Importantly, positive emotion has an important role in facilitating social connections and perceived relational closeness. Relational closeness facilitates the exchange of positive emotions between individuals, which can increase the relational resources the individuals share. Positive emotions and social connections reinforce one another reciprocally, as meaningful social connections foster even more positive

emotions in an "upward spiral" (Kok, Coffey, Cohn, Catalino, Vacharkulksemsuk, Algoe, Brantley, & Fredrickson, 2013). This self-reinforcing "upward spiral" dynamic encompasses positive impacts on both physical and mental health.

The above literature shows that positive emotion has broadly been shown to be mechanism of resilience. However, the nature and process of this mechanism remains under-examined. Recent literature has begun to illuminate this process: Positive emotion has been shown to have a clear effect on the relationship between adjustment and activity engagement among individuals with traumatic upper limb loss (Walsh, et al., 2016). Once accounted for, positive emotion explains the relationship between resilience and adjustment to difficult life circumstances in terms of this maintenance of engagement with the environment (e.g., resources, social networks) (Walsh et al., 2016). This was also demonstrated among new caregivers in a year-long longitudinal study which found that positive affect and stress related to care provision (regardless of the objective functional impairment of the care recipient) were factors unique to the caregivers who exhibited resilient outcomes (Elliott et al., 2014).

While positive emotion has been linked to several other resilience-related factors, the existing literature supports the notion that it is a distinct feature which uniquely defines the resilient personality (Fredrickson et al., 2013). Nevertheless, the present study also considered contextual factors of informal caregiver resilience such as social support and coping style, and how they possibly account for positive properties of resilience. In doing so, the design of this study hopes to also account for a caregivers'

social context and interaction with that context, in addition to accounting for individual differences.

Social Support

Social support has been defined as "support accessible to an individual through social ties to other individuals, groups, and the larger community" (Lin, Simeone, Ensel, & Kuo, 1979, p. 109). Certain aspects of the resilient personality prototype help individuals to access and maintain these social ties. There is considerable evidence that resilient individuals are characterized by prosocial, interpersonally effective behavior that facilitates relationships.

Resilience is associated with having increased support from and increased contact in one's most important relationships (Bonanno, 2004). The Block model (1980) of personality prototypes seems especially relevant to examining social support in relation to resilience, in terms of how the undercontrolled and overcontrolled types relate to their environment. For example, the both the internalizing tendencies of the overcontrolled type (e.g., shyness, social withdrawal) and the externalizing tendencies of the undercontrolled type (e.g., aggressiveness) seem to lend themselves to social ruptures and lack of meaningful social engagement (Dennissen, Asendorpf, & van Aken, 2008). Furthermore, the predictive utility of resilient personality was demonstrated in the same study, in which resilient personality prototypes predicted adult outcomes via earlier behavioral ratings of these same individuals as children (Dennissen et al., 2008).

These predictive studies indicate that resilient individuals exhibit less aggressive behavior and take on adult social roles earlier (e.g., gaining employment, moving out of

parents' home, and establishing romantic partnerships) than their overcontrolled or undercontrolled peers (Dennissen et al., 2008). In comparison to resilient individuals, overcontrolled individuals have been found to be more isolated and participate in less recreational activities in a study of indicators for successful aging (Steca, Alessandri, & Caprara, 2010). This same study also indicated that undercontrolled individuals are generally more untrusting of others (including their own family members) than resilient individuals (Steca et al., 2010). These findings have also been found among resilient combat veterans, who report significantly more social support than their undercontrolled and overcontrolled peers (Elliot et al., 2015). Among caregivers, higher levels of social support are associated with lower levels of depressive symptomatology and higher levels of well-being and general health, independent of social problem solving (Grant, Elliott, Weaver, Glandon, Raper, & Giger, 2006).

This set of findings is salient for the concerns of informal caregivers, for whom the relational quality between themselves and the care recipient may have significant influence over their well-being outcomes. Among a study of new caregivers, "relative stress" emerged as a consistent difference between caregivers characterized as resilient outcomes and those who were not (Elliott et al., 2014). Relative stress was defined as the stress encountered by the caregiver in their relationship with their care recipient. It was significantly lower among those caregivers whose distress outcomes were low all throughout the first year of caregiving (Elliott et al., 2014).

There is a paucity of studies that specifically address the caregiver experience in relation to the protective effects of social support. The current study will attempt to

further examine how the personality prototypes of informal caregivers impact their outcomes on depression and life satisfaction, with social support as one of the tested mediators.

Coping Style

Evidence indicates that resilient individuals have distinctly effective coping abilities. Coping is defined as self-regulatory thoughts and behaviors used in an effort to manage the demands of stressful situations (Folkman & Moskowitz, 2004). It is a dynamic process and can be conceptualized as a set of "transactions" between an individual and their environment (Folkman & Lazarus, 1980; Folkman & Moskovitz, 2004).

It is apparent from the literature that resilient coping broadly implicates greater engagement with one's environment and available resources during stressful events. For example, resilient adults tend to exhibit more proactive, problem-solving coping styles in the wake of a traumatic injury (Berry, Elliott, & Rivera, 2007). Resilience individuals also tend to engage in more action-oriented coping strategies, while overcontrolled and undercontrolled individuals tend to rely predominantly on avoidant coping behavior (Elliott et al., 2015). Additionally, avoidant coping was found to be one of three mediators that accounted for the relationship between the non-resilient personality prototype and poor mental health (e.g., depression, post-traumatic stress disorder) among veterans of the current Iraq and Afghanistan wars (Elliott et al., 2015). Most individuals engage in both active and avoidant coping strategies, but research points to the "ratio" of these strategies as resulting in distinct well-being outcomes (Folkman & Lazarus, 1980).

For instance, among veterans of the Iraq and Afghanistan wars, those who were overcontrolled engaged in action-oriented coping equivalent to the resilient individuals, but the overcontrolled individuals displayed more avoidant coping styles than the resilient types (Elliott, Hsiao, Kimbrel, Meyer, Debeer, Gulliver, Kwok, & Morissette, 2017).

Two styles of coping currently dominate much of the research landscape: problem-focused coping and emotion-focused coping (Folkman & Lazarus, 1980). Problem-focused coping encompasses strategies that attempt to directly reduce or eliminate stress by engaging with the "problem" itself, such as via proactive planning, increasing applied effort, and seeking social support. These strategies deal directly with the stressful conditions, sometimes even proactively mitigating the situation beforehand (Folkman & Lazarus, 1980). Problem-focused coping reduces stress by addressing struggles in practical ways, while emotion-focused coping is directed at reducing the subjective experience of negative affect through avoidance. Emotion-focused coping attempts to regulate the unpleasant emotions that result from stressful situations. Examples of emotion-focused strategies include seeking emotionally-based support from others, "venting" or "ranting", self-blaming, and wishful thinking (Folkman & Lazarus, 1980). In contrast with problem-focused coping, emotion-focused coping does not go to the "root" of the problematic situation and instead attempts to mitigate the secondary emotional reactions caused by the situation.

Studies of coping interventions further illustrate how training in a greater engagement in problem-focused coping via problem-solving skills leads to beneficial

mental health outcomes. Clinical trials have shown the positive impact of problem-solving training for informal caregivers, resulting in decreased depression, increased constructive problem-solving skills, and decreased use of dysfunctional problem-solving strategies (Berry, Elliott, Grant, Edwards, & Fine, 2012). However, other clinical research has shown that problem-solving training does not directly impact problem-solving skills, though it does have positive impacts (e.g., significantly lower depression) (Pfeiffer, Beische, Hautzinger, Berry, Wengert, & Hoffrichter, et al., 2014). Engaged, problem-focused coping may be a crucial channel by which resilience promotes positive outcomes for informal caregivers. The problem-focused coping style reflects the engaged nature of resilience and relates to the seeking of external resources such as those via social connections. These possible mechanisms will be examined in this study and tested for possible differences between caregivers and non-caregivers.

The model for this study attempts to partially illuminate the "black box" of personality-based resilience by testing three mediators supported in the resilience literature. Positive affect, social support, and coping style will be tested as possible conduits by which resilient individuals are able to better adapt to and manage the stress of caregiving. Taken together, these three meditators encompass the informal caregiver's subjective experience (i.e., positive emotion), social context (i.e., social support), and management of obstacles in their environment (i.e., coping style). These three mediators will be tested on the degree to which they account for the relationship between resilient personality prototypes (Block & Block, 1980) and well-being outcomes (i.e., depression, life satisfaction). In doing so, this study will aim to contribute to the underdefined

conceptual status of resilience and provide information on which to base clinical interventions for caregivers. It is hoped that by using longitudinal data for this study, the eventual results will provide an important chance to measure possible risk and protective factors for individuals who become informal caregivers. Furthermore, this *a priori* model will be compared between non-caregivers and transitional caregivers (i.e., participants who transitioned to the caregiver role between Phase II and Phase III). This study will endeavor to answer the question "Does resilient personality facilitate optimal adjustment among informal caregivers through its presumed relationships with positive emotion, social support and coping?".

CHAPTER III

METHOD

The current study utilized a data from the Midlife Development in the United States (MIDUS) project. The MIDUS was funded by the John D. and Catherine T. MacArthur Foundation and the National Institute on Aging and is managed via the University of Wisconsin-Madison Institute on Aging (Radler, 2014). The MIDUS data collection project is reviewed and approved by the Education and Social/Behavioral Sciences and the Health Sciences IRBs at the University of Wisconsin-Madison. This project was conceptualized as a national interdisciplinary study of behavioral, social, psychological, biological, neurological factors that influence well-being in the aging process. As a longitudinal study, it endeavors to follow participants from early adulthood into midlife and on into old age. The first wave of data collection occurred between 1995-1996 (Phase I), with subsequent waves taking place in 2004-2005 (Phase II), and 2013-2014 (Phase III). The current study will utilize the two most recent data collection occasions (Phase II and Phase III) in order to track the role that personality-based resilience plays adjustment to the caregiving role.

Procedure

The MIDUS dataset is openly accessible online (http://midus.colectica.org). The initial set of MIDUS participants (N = 7,108) of Phase I were first contacted in 1995 using a Random Digit Dial (RDD) to reach national sample of American adults aged 24 to 74. Participants who consented then partook in a phone interview lasting

approximately 30 minutes and then subsequently completed two 55-page long self-administered mail-in questionnaires (Radler, 2014). Since this first data collection wave, two subsequent waves have been conducted in keeping with the following protocol (Phase II, N = 4,963; Phase III, N = 3,294). Letters were sent out ahead of time with a brochure were sent to all Phase II participants, reminding participants of their past involvement in MIDUS and informing them that an interviewer would be contacting them for a telephone survey within several weeks. Following successful completion of a 30-min phone interview, participants were then mailed two self-assessment questionnaires (SAQs). Monetary incentives were offered at both Phase II and Phase III to compensate for potential respondent burden in this multimode survey (e.g., up to $60 for completion of both surveys).

Measures

Predictor Variable

Personality Prototype

Resilient, undercontrolled, and overcontrolled personality types were attempted to be derived via cluster analysis from the Five-Factor Model (FFM) personality trait measures in the MIDUS II dataset. The FFM traits are Neuroticism (M = 2.07, SD = .63, Cronbach's α = .74), Extraversion (M = 3.10, SD = .57, Cronbach's α = .76), Openness to Experience (M = 2.98, SD = .54, Cronbach's α = .77), Conscientiousness (M = 3.38, SD = .46, Cronbach's α = .68) and Agreeableness (M = 3.45, SD = .50, Cronbach's α = .80). All five traits were measured in the self-administered questionnaire portion of MIDUS II, using a 26-item adjective measure (4 items for Neuroticism, 5 items for

Extraversion, 7 items for Openness to Experience, 5 items for Conscientiousness, and 5 items for Agreeableness). Participants indicated how well adjectives (e.g., "Organized," "Curious," "Moody") described them using a 4-point scale (1 = A lot, 4 = Not at all). To compute the composite scores for each trait, responses were reverse-coded such that higher values reflected greater endorsement of the trait adjectives, then averaged together.

Resilient, undercontrolled, and overcontrolled personality prototypes were attempted to be extracted from these composite trait scores via cluster analysis (see Statistical Analysis section, pg. 33). Based on the original proposal and the resulting cluster, resilient and non-resilient prototypes were used in the structural equation modeling analyses. Once these prototypes were extracted, a dummy-coded variable were computed to distinguishes between resilient and non-resilient (i.e. either undercontrolled or overcontrolled) participants. This variable will be the index of resilient personality used in the final structural equation model.

Grouping Variable

Caregiver Status

Participants' caregiver status was assessed at both Phase II and Phase III of the MIDUS data collection, in Part D of the telephone interview portion. Participants were asked whether, during the past 12 months, they had given personal care to a family member or friend for a period of at least one month owing to a physical or mental condition, illness, or disability. The present investigation focused on a comparison between "transitional caregivers", defined as participants who responded "no" to this

question at Phase II and "yes" at Phase III, and non-caregivers, who responded "No" at both time points. Rather than computing a variable that distinguishes between these groups, parallel path models will be computed for each group in a Multiple Groups SEM framework (see Statistical Analysis section, pg. 33).

Mediator Variables

Positive Affect

Positive affect was assessed in MIDUS II during the self-administered questionnaire portion of the study, using the 4-item Positive Affect and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; M = 3.58, SD = .76, Cronbach's α = .86). This scale asked participants to indicate how often during the past 30 days they had felt "enthusiastic," "attentive," "proud," and "active." Responses were made on a 5-point scale (1 = All of the time, 5 = None of the time). Scores on the individual items were reverse-coded and averaged to yield the final composite variable.

Social Support

Participants' perceived social support from friends and family was measured with 8 items ("How much do your friends/family really care about you?," "How much can you rely on them for help if you have a serious problem?"; Whalen & Lachman, 2000) in the self-administered questionnaire portion of MIDUS II (*Friends*: M = 3.28, SD = .66, Cronbach's α = .88; *Family*: M = 3.52, SD = .58, Cronbach's α = .84). Responses were made on a 4-point scale (1 = A lot, 4 = Not at all), and were averaged to yield the final composite variable.

Problem-focused Coping

Problem-focused coping was measured during the self-administered questionnaire portion of MIDUS II using the Problem-Focused Coping subscale of the COPE inventory (Carver, Scheier, & Weintraub, 1989). This 12-item scale consists of items tapping positive reinterpretation (e.g., "I try to grow as a person as a result of the experience"), active coping (e.g., "I take additional action to try to get rid of the problem"), and planning (e.g., "I try to come up with a strategy about what to do"). Responses to these items were recorded on a 4-point scale (1 = A lot, 4 = Not at all), and were reverse-coded before being summed to yield the final composite variable (M = 37.71, SD = 6.03, Cronbach's α = .90).

Emotion-focused Coping

Emotion-focused coping was measured during the self-administered questionnaire portion of MIDUS II using the Emotion-Focused Coping subscale of the COPE inventory (Carver, Scheier, & Weintraub, 1989). This 12-item scale consists of items tapping venting of emotions (e.g., "I get upset and let my emotions out"), denial (e.g., "I say to myself, 'This isn't real's"), and behavioral disengagement (e.g., "I admit to myself that I can't deal with it, and quit trying"). Responses to these items were recorded on a 4-point scale (1 = A lot, 4 = Not at all), and were reverse-coded before being summed to yield the final composite variable (M = 21.67, SD = 5.68, Cronbach's α = .83).

Outcome Variables

Depression

Depression was assessed in the telephone interview portion of MIDUS III using seven Yes/No items, each of which asked participants to indicate whether they had experienced a given depressive symptom (e.g., "lose interest in most things," "feel more tired or low on energy than usual," "feel down on yourself, no good, worthless") during at least two weeks in the past 12 months. The number of "Yes" responses to these seven items was summed to yield the composite depression variable (M = .47, SD = 1.57, Cronbach's α = .54).

Life Satisfaction

Participants' satisfaction with their lives was assessed with six items during the self-administered questionnaire portion of MIDUS III. These items asked participants to indicate their satisfaction with their work, their financial situation, their health, their relationship with their spouse/partner (if applicable), their relationship with their children (if applicable), and with their life overall. These satisfaction ratings were recorded on an 11-point scale (0 = The worst possible, 10 = The best possible), and were averaged to yield the composite life satisfaction variable (M = 7.58, SD = 1.33, Cronbach's α = .70).

Data Management

Raw MIDUS datasets are cleaned and transformed according to MIDUS variable coding and naming conventions using SPSS and SAS file types. The telephone interview and questionnaire data are merged into a single dataset with an anonymous identification

number that allows all MIDUS project datasets (cognitive, stress, biomarker, and neuroscience) to be combined at the anonymous case-level. This anonymous identification number was used to track participants' caregiver status between Phase II and Phase III in the current study.

Statistical Analysis

Both demographic data and descriptive statistics for both the two MIDUS Phase II and Phase III data collection waves will be conducted for all caregiver and non-caregiver groups. Resilient personality prototypes were obtained using cluster analysis techniques. Variables based on the Five Factor personality measure were inputted for form the resilience clusters IBM SPSS version 22 (IBM® SPSS® Statistics, Chicago, IL, USA). The differences in the variables between the clusters were comparable to know personality prototype clusters. This included a two-step cluster process: 1) Agglomerative hierarchical clustering was used to obtain starting points for the K-means cluster analysis 2) Next, the K-means techniques was conducted with K=3 to obtain the centroid clusters representing the resilience prototypes. K=3 was chosen based on the theoretical assertions of Block's model of three resilience prototypes and was also tested against with K=2 and K=4. Participants' resilient personality cluster membership will be used in the accompanying *a priori* path model (Figure 1) as the predictor variable, with non-resilient personality membership as the reference group.

To investigate possible moderating effects of caregiver status, the caregiver status at Phase II and Phase III was used to create comparison groups. The caregiver group was comprised of those who declined caregiver activity in Phase II, but endorsed

it in Phase III (i.e., labeled “transitional caregivers” in this study). Non-caregivers denied caregiver activity in both phases of data collection.

As opposed to using traditional techniques of investigating moderator effects using interaction terms inside of an MLR framework, a multiple-groups SEM model was estimated to show possible effects of resilient personality prototype directly on the outcome measures, along with possible effects of mediators on this relationship (see Figure 1). The predictor was resilient personality prototype status (i.e., either belonging to the resilient cluster or not, with non-resilient cluster as the reference group). The mediators examined were positive affect, social support, problem-focused coping, and emotion-focused coping. Resilient prototype cluster status and the mediators will be used to predict the outcome measures of depression and life satisfaction at both Phase II and Phase III. Depression and life satisfaction at Phase II and Phase III will be modeled simultaneously. Mediation was tested by looking at the direct effect from resilience cluster status to the outcome measures, along with the indirect effect from resilience status through the four mediators to the outcome measures.

Inside of the Multiple Groups SEM framework, the path model is computed in each group separately (i.e., caregivers, non-caregivers). All 16 indirect effects were computed for each group separately using the MODEL CONTSTRAINT command in MPlus 7.4 (Muthén & Muthén, 2012). This command created terms that represent each indirect effect as a product of two separate parameters.

The presence of indirect effects was evaluated by looking at bootstrapped asymmetric percentile confidence intervals. This is because the term is asymmetric. The

presence of mediation was determined by whether these confidence intervals contain zero. These confidence intervals were provided with the MODEL CONSTRAINT command. The presence of mediation was evaluated for both groups.

To examine the moderator-mediator relationships, the indirect and direct effects were compared between the transitional caregiver and non-caregiver groups. Each indirect effect was constrained equal with its matching indirect effect in the other group. The constrained model was then compared with the freely-estimated model to determine whether the moderating effect was significant. This difference testing was calculated using the MPlus 7.4 program (Muthén & Muthén, 2012). Each significant mediator, in their respective group, was then compared using equality constraint to its matching mediator in the other group. The difference between the constrained and freely-estimated model provided evidence to the moderating effect of caregiver status.

Research Question and Hypotheses

Does resilient personality facilitate optimal adjustment among informal caregivers through its presumed relationships with positive emotion, social support and coping style?

1. Three theoretically-supported, personality-based resilience clusters will emerge in MIDUS data (resilient, undercontrolled, overcontrolled).
2. Resilient personality will be directly associated with lower levels of depression, higher life satisfaction.
3. The mediators positive affect, social support, and problem-focused coping will be associated with *lower depression, higher life satisfaction.*

4. The mediator emotion-focused coping will be associated with *higher depression, lower life satisfaction.*
5. The relationship between resilient personality and outcomes (life satisfaction and depression), will be mediated by positive affect, social support, problem-focused coping, and emotion-focused coping.
6. The relationships between resilient personality and mediators on life satisfaction and depression will differ by caregiver group (non-caregivers vs. transitional caregivers).
7. Resilient personality's influence on outcomes, via mediators, will ameliorate the "transition" to caregiving role through greater use of adaptive positive affect, social support, problem-focused coping, and lower use of maladaptive emotion-focused coping.

CHAPTER IV

RESULTS

Descriptive Analyses

The original total sample for this study was 2,838 participants (male, *n* = 1,237; female, *n* = 1,601) from the MIDUS Phase III data collection. All participants in MIDUS Phase III were also included in the previous Phase II. For the path analyses in this study, this total *N* was reduced to 2,534 after removing one of the caregiver status groups (those who reported being caregivers at Phase II but denied caregiver status at Phase III) from the path model analyses, due to its irrelevance to the primary research question's focus on adaptation to the caregiver role.

The sample's self-reported identities were predominantly white (*n* = 2,627, 92.6%) and female (*n* = 1,601, 56.41%). As per the primary focus of the MIDUS data collection on "middle age", the mean age of the sample was 55.02 (*SD* = 11.37). Further racial and ethnic demographic information is detailed in Table 1.

To examine possible moderating effects of caregiver status, three groups of participants were defined. These groups were derived based on their responses to the informal caregiving item in the MIDUS survey across Phase II and Phase III. The item measured if during the past 12 months, participants had "…given personal care to a family member or friend for a period of at least one month owing to a physical or mental condition, illness, or disability." Chronic caregivers responded in the affirmative at both time points (*n* = 91, 3.59%; male: *n* = 18, 19.8%; female: *n* = 73, 80.2%), transitional caregivers responded negatively at Phase II and positively at Phase III (*n* = 265, 10.46%;

male: n = 83, 31.3%; female: n = 182, 68.7%), while non-caregivers were defined by their denial of caregiver status at both time points (n = 2,178, 85.95%; male: n = 1,027, 47.2%; female: n = 1,151, 52.8%).

Descriptive statistics for all self-report variables as grouped by participant gender and caregiver status are displayed in Table 2. Caregiver status is categorized into three groups (i.e., chronic caregivers, transitional caregivers, and non-caregivers) and was then further split by gender (i.e., male, female) among the three caregiver status groups.

A two-way between-subjects multivariate analysis of variance (MANOVA) was conducted to examine possible differences in FFM personality traits and the hypothesized mediators and outcomes based on gender and caregiver group membership (i.e., chronic caregivers, transitional caregivers, non-caregivers). No significant interaction effects between gender and caregiver status occurred, but several significant main effects of these group memberships on personality traits, mediators, and outcomes were observed.

First, several gender differences were observed among the FFM personality traits. These gender differences are displayed in Table 3. Women scored significantly higher on agreeableness (M = 3.61, SD = .02) than men (M = 3.29, SD = .04), $F(1, 2206) = 38.87$, $p < .001$. Male participants were significantly higher in openness, $F(1, 2206) = 11.24$, $p = .001$, than female participants (M_{Female} = 2.88, SD = .03; M_{Male} = 3.06, SD = .05). conscientiousness significantly differed between genders, $F(1, 2206) = 4.51$, $p = .034$, with female participants (M = 3.49, SD = .02) scoring higher than male participants (M = 3.39, SD = .04). Finally, women were significantly higher in neuroticism, F(1,

2206) = 14.01, $p < .001$, than men ($M_{Female} = 2.16$, $SD = .03$; $M_{Male} = 1.92$, $SD = .06$). No gender difference in extraversion was detected, $F(1, 2206) = 1.04$, $p = .307$. No significant main effects for caregiver group membership occurred for any FFM trait.

With respect to the hypothesized mediator and outcome variables, some main effects of both gender and caregiver status were observed. There were significant gender differences for two of the mediators (i.e., social support and emotion-focused coping) and both depression outcome variables. On emotion-focused coping, women ($M = 23.19$, $SD = .27$) scored significantly higher than men ($M = 20.74$, $SD = .50$), $F(1, 2206) = 18.70$, $p < .001$. Women ($M = 3.52$, $SD = .02$) also scored significantly higher on social support, $F(1, 2206) = 15.48$, $p < .001$, than men ($M = 3.31$, $SD = .05$). For the first depression measurement women ($M = .75$, $SD = .07$) reported significantly higher depression than men ($M = .38$, $SD = .14$), $F(1, 2206) = 5.59$, $p = .020$. Similarly, women ($M = .77$, $SD = .07$) also scored significantly higher on the Time 2 depression measurement than men ($M = .36$, $SD = .14$), $F(1, 2206) = 6.83$, $p = .009$.

Significant effects of caregiver group membership (i.e., chronic caregivers, transitional caregivers, non-caregivers) were only observed for the two depression outcome variables. For the Time 1 depression measure, $F(2, 2206) = 4.44$, $p = .012$, chronic caregivers scored significantly higher ($M = .99$, $SD = .21$) than both non-caregivers ($M = .39$, $SD = .03$), $p_{diff} = .004$, and transitional caregivers ($M = .32$, $SD = .11$), $p_{diff} = .004$. On the Time 2 depression measure, $F(2, 2206) = 3.97$, $p = .019$, chronic caregivers ($M = .83$, $SD = .21$) again scored significantly higher than non-caregivers ($M = .34$, $SD = .03$), $p_{diff} = .019$. Transitional caregivers displayed a middling level of

depression (M = .52, SD = .10) that did not significantly differ from either chronic caregivers (p_{diff} = .18) or non-caregivers (p_{diff} = .098). There is also a pattern wherein the transitional caregivers became more depressed at the second time point (M = .52, SD = 1.73) compared to the first time point (M = .32, SD = 1.71), $t(264) = 4.68$, $p < .0001$, perhaps due to increased emotional distress as they took on caregiving duties between the first and second time points. The chronic caregivers displayed elevated depression at both time points, in keeping with the assumed stress of the caregiving role. There were no significant main effects for caregiver group membership on any of the mediators, or on either life satisfaction variable. These results can be found in Table 4.

Cluster Analysis

In an attempt to identify the three expected personality prototypes (i.e., resilient, undercontrolled, and overcontrolled), a cluster analysis was conducted using SPSS 22.0 (IBM SPSS Statistics, Chicago, IL, USA). A total of 2,534 participants were captured in the following cluster analysis. The clusters were based on the Five-Factor Model personality traits as measured in the MIDUS Phase II data. Thus, the personality prototypes represent participants' personality profiles at the initial measurement point in the present study, prior to the measurement of the second set of well-being outcomes in the Phase III data collection.

In order to identify the personality-based resilience clusters, a two-step cluster analysis with Ward's method was conducted, followed by a K-means analysis. These clusters were formed based on participants' constellations of scores on the Five-Factor Model personality scale (neuroticism, extraversion, openness, agreeableness, and

conscientiousness). A K-means clustering analysis assigned participants into one of the three resulting clusters, with the Cohen's Kappa coefficient (.604), showing significant agreement. Statistical outliers on the Five-Factor Model traits were trimmed (n = 48) from the sample if their score on a trait was more than three standard deviations above or below the mean.

After evaluating agreement of the clusters, an effort was made to assign a conceptual label to each cluster, based on the average scores of the Five-Factor Model traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) exhibited by each cluster. The clusters found in this study and their corresponding grouping of traits are presented in Figure 2. Although three clusters were obtained in the analysis and the rate of agreement was acceptable, only one of the three clusters was readily interpretable in terms of existing theory.

Specifically, a cluster characterized by a low neuroticism level and higher levels of the other four traits (i.e., extraversion, openness, conscientiousness, and agreeableness) was labeled the *resilient* cluster, in keeping with both theoretical and empirical bodies of literature (Berry, Elliott, & Rivera, 2007). The other two clusters that emerged did not clearly map onto typical personality prototypes defined in the literature. While these two clusters (which had been predicted to represent the “undercontrolled” and “overcontrolled” personality prototypes) contained elements that did not map clearly onto theoretical expectations, the did generally express maladaptive patterns of elevated neuroticism (i.e., negative affect) and lower levels of the remaining, more positively-valanced traits (e.g., extraversion, openness, conscientiousness, and agreeableness).

Although prototypical overcontrolled and undercontrolled profiles were not clearly obtained, given this study's specific focus on the interplay between caregiver status and resiliency, these two clusters were merged under a single *non-resilient* label.

The chronic caregiver group (n = 91; resilient: n = 37, 40.7%; non-resilient: n = 54, 59.3%), transitional caregiver group (n = 265; resilient: n = 125, 47.2%; non-resilient: n = 140, 52.8%), and non-caregiver group (n = 2,178; resilient: n = 969, 44.5%; non-resilient: n = 1,209, 55.5%) all had similar percentages of resilient and non-resilient members, $\chi^2(3) = 1.53$, $p = .68$, Cramer's $V = .02$.

Similar approaches using a resilient vs. non-resilient binary comparison have been used previously in testing the resilient personality prototype's specific features (Shiner & Masten, 2012). This approach was appropriate for use in this study, due to the emphasis on testing possible mechanisms of the resilient personality prototype (i.e., positive affect, social support, coping style). The theorized undercontrolled and overcontrolled personality prototypes, while distinct from one another, have both been found to have harmful effects on mental health outcomes like self-regulation and interpersonal relationships (Alessandri et al., 2014; Asendorpf et al., 2001). This study's purpose was not to illuminate differences between the undercontrolled and overcontrolled clusters or their impacts on the outcome variables, but rather to test possible mechanisms of the resilient personality prototype. Therefore, this study utilized a resilient vs. non-resilient dichotomy (i.e., resilient personality prototype membership as a predictor variable with non-resilient personality prototype membership as the reference group).

An independent-samples *t*-test was conducted with this binary resilient/non-resilient variable as the grouping variable, and the individual FFM traits and the hypothesized mediators and outcomes entered as the test variables (see Table 5 for results). The two personality prototype clusters were found to differ significantly from one another on all measured variables. With respect to the Big Five, the resilient cluster was significantly higher than the non-resilient cluster in agreeableness, extraversion, conscientiousness, and openness, and significantly lower in neuroticism. This confirms the above qualitative evaluation of the personality-based differences between the resilient and non-resilient prototypes.

With respect to the hypothesized mediators, the resilient cluster was found to be higher in social support, positive affect, and problem-focused coping, and lower in emotion-focused coping, relative to the non-resilient cluster. Finally, with respect to the primary outcome variables, the resilient cluster was found to be relatively lower in depression and higher in life satisfaction than the non-resilient cluster, at both time points that these mental-health outcomes were measured. These findings showed that individuals falling into these two groups did indeed differ significantly on the hypothesized mediator and outcome variables, providing initial supporting evidence and justifying the subsequent path-analytic hypothesis tests.

Correlational Analyses

All Five-Factor Model (FFM) personality traits were found to correlate significantly (p's < .001) with one another in the expected directions, as seen in Table 6. Neuroticism correlated inversely with all other more positively-valanced traits (i.e.,

openness, -.213; conscientiousness, -.197; extraversion, -.196; agreeableness, -.114). All other traits (i.e., openness, conscientiousness, extraversion, agreeableness) were significantly correlated (*p's* < .001).

Correlations between all model variables are presented in Table 7. The binary personality prototype variable (on which 0 = Non-Resilient, 1 = Resilient) significantly correlated with all mediators and outcomes. Resilient personality positively correlated with problem-focused coping (r = .388, p < .001) and positive affect (r = .415, p < .001). Next, resilient personality correlated with social support (r = .292, p < .001) and life satisfaction in both measurements waves (LS1, r = .316, p < .001; LS2, r = .216, p < .001). Resilient personality was negatively related to emotion-focused coping (r = -.293, p < .001) and depression for both measurements (DEP1, r = -.133, p < .001; DEP2, r = -.070, p < .001).

Positive affect as measured by the PANAS scale was significantly correlated with all other potential mediators and with all outcome variables. Positive affect displayed relatively strong positive correlations with life satisfaction at both phases (LS1, r = .478, p < .001; LS2, r = .342, p < .001) and problem-focused coping (r = .403, p < .001). Positive affect also correlated positively with social support (r = .310, p < .001). Finally, it was inversely correlated with depression at both time points (DEP1, r = -.276, p < .001; DEP2, r = -.196, p < .001) and emotion-focused coping (r = -.243, p < .001).

Social support, too, significantly correlated with all other mediators and all outcomes. It displayed modest correlations with life satisfaction at both measurements

(LS1, $r = .346$, $p < .001$; LS2, $r = .276$, $p < .001$) and also with problem-focused coping ($r = .297$, $p < .001$). Social support displayed small negative relationships with both depression measures (DEP1, $r = -.091$, $p < .001$; DEP2, $r = -.114$, $p < .001$) and with emotion-focused coping ($r = -.118$, $p < .001$).

Emotion-focused coping significantly correlated with all other variables in the model. It was inversely correlated with problem-focused coping ($r = -.250$, $p < .001$) and both life satisfaction measurements (LS1, $r = -.230$, $p < .001$; LS2, $r = -.170$, $p < .001$). Emotion positively predicted both depression measurements (DEP1, $r = .200$, $p < .001$; DEP2, $r = -.114$, $p < .001$).

Problem-focused coping significantly correlated with most other variables, excluding the second depression measurement. In addition to correlations reported above, it positively correlated with both life satisfaction measurements (LS1, $r = .255$, $p < .001$; LS2, $r = .191$, $p < .001$) and negatively with the first depression measure ($r = -.068$, $p < .001$).

The first depression measure significantly correlated with other variables, including the second depression measure ($r = .304$, $p < .001$). It was also negatively correlated with both life satisfaction measurements (LS1, $r = -.234$, $p < .001$; LS2, $r = -.179$, $p < .001$).

Depression at the second measurement correlated significantly with all variables except problem-focused coping. Of the remaining significant correlations to report, this second measurement of depression negatively correlated with both life satisfaction measurements (LS1, $r = -.178$, $p < .001$; LS2, $r = -.250$, $p < .001$). Finally, both life

satisfaction variables correlated significantly with all other variables in the model, as reported above. The two life satisfaction measurements displayed a robust and significant intercorrelation ($r = .600$, $p < .001$).

These correlational results provided further grounds on which to pursue the primary path analyses. The observed relationships indicate that the predictor variable of resilient vs. non-resilient personality prototype, and the mediator and outcome variables in the model, exhibit a robust network of interrelationships that largely conform to theoretical expectations and empirical precedents. The resilient personality profile is associated with higher scores on the adaptive mediating mechanisms (positive affect, social support, and problem-focused coping) and higher life satisfaction, and conversely is associated with lower scores on emotion-focused coping and depression. Furthermore, the relationships observed between the mediators and outcomes support the possibility that these variables are indeed mediating mechanisms that may account, in part, for the observed relationships between resilient personality and mental health outcomes.

Path Analyses

Path analysis was used in this study to test the theoretical assumptions about relationships between the model variables (i.e., predictor, mediators, outcomes). The MPlus 7.4 (Muthén & Muthén, 2012) statistical program was used to test the direct and indirect relationships between the predictor variable (Resilient vs. non-resilient personality prototype), mediating variables (PA, SS, EFC, & PFC), and outcome variables (DEP1, DEP2, LS1, LS2). A total of 2,534 participants were included in these

path analyses. Figure 1 displays the *a priori* path model. Model fit was assessed using the χ^2 test of model fit, comparative fit index (CFI), Tucker–Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root means square residual (SRMR). Adequate model fit is indicated by a nonsignificant χ^2 test ($p > .05$). CFI and TLI values above .95 indicate good incremental fit (Kline, 2005; Yu, 2002), while for absolute fit indices, an RMSEA value between .05 and .08 indicates acceptable fit, and below .05 indicates good fit (Browne & Cudeck, 1992). An SRMR value below .05 suggest good model fit (Kline, 2005). Confidence intervals (95%) for indirect effects were estimated using 5,000 bootstrap samples.

Model 1 – Main Effects

This model served as a preliminary check of the overall model design and did not include the multiple group estimates or moderation tests. In this model, path estimates and indirect effects were computed for the combined sample (i.e., all three caregiver groups together) to assess broad effects irrespective of caregiver status. The chi-square test was significant, $\chi^2(2) = 16.21$, $p < .0001$; the CFI (0.99) and TLI (0.95) indicated good fit; the RMSEA (.05) and SRMR (.01) also indicated good fit. This model was found to have overall good fit and the path coefficients were able to be meaningfully interpreted.

In Model 1, the predictor (resilient personality) accounted for 17% percent of variance in positive affect ($R^2 = .17$), 15% for problem-focused coping, and 8% for both social support ($R^2 = .08$) and emotion-focused coping ($R^2 = .08$). Resilient personality and the four mediator variables combined accounted for 10% of variance found in

depression at the first time point (R^2 = .10). Resilient personality, the four mediator variables, and the first measurement of depression combined accounted for 11% of variance found in depression at the second time point (R^2 = .11). 29% of variance was explained for life satisfaction at the first measurement, and resilient personality, the four mediator variables, and the first measurement of life satisfaction combined accounted for 37% of variance found in depression at the second time point (R^2 = .37).

Direct effects

These direct effects are for the entire model, and not separated by participants' caregiver group status as they are in Model 2. These results are presented in Table 8. The resilient personality prototype was significantly associated with all four mediating variables in the following directions: greater positive affect ($p < .001$), greater social support ($p < .001$), greater problem-focused coping ($p < .001$), and less emotion-focused coping ($p < .001$). This shows some of the generally adaptive aspects of the resilient personality prototype (i.e., more positive affect, social support from friends and family, active coping and less avoidant coping). There were also significant direct effects between resilient personality prototype and the first life satisfaction outcome (LS1, $p < .001$).

Greater positive affect significantly predicted all four outcome variables: lower depression at both measurements (DEP1 $p < .001$; DEP2, $p < .001$), and higher life satisfaction at both measurements (LS1, $p < .001$; LS2, $p = .002$). Emotion-focused coping also significantly predicted all outcome variables. Emotion-focused coping significantly predicted the depression outcomes and the first measurement of life

satisfaction. EFC was associated with higher depression at both measurements (DEP1, $p < .001$; DEP2, $p = .016$), and lower initial life satisfaction (LS1, $p < .001$; LS2, $p = .14$). Social support significantly predicted three outcome variables: lower depression at the second measurement ($p < 0.01$) and higher life satisfaction at both measurements (LS1, $p < .001$; LS2, $p = .001$). Unexpectedly, problem-focused coping significantly predicted higher levels of depression at both measurements (DEP1, $p < .001$; DEP2, $p < .001$). It had no significant relationship with the life satisfaction outcome variables.

Indirect effects

Table 9 contains all 16 indirect effects between the resilient personality prototype (resilient vs. non-resilient) and the four outcome measures (DEP1, DEP2, LS1, LS2), via the four mediators (PA, SS, PFC, & EFC). Twelve of the 16 total pathways exhibited significant effects (CIs do not contain 0) from resilient personality through mediators to one of the four outcome variables, see Table 9 for CIs. Of the 12 significant pathways in Model 1, the pathways containing PA and EFC consistently displayed significant indirect effects on both depression and life satisfaction outcomes. PA overall predicted greater life satisfaction and lower depression, while EFC was related to lower life satisfaction and greater depression. Greater social support significantly mediated the relationship between resilient personality and life satisfaction at both time points.

While these indirect effects all conformed to theoretical predictions, a number of unexpected results were also obtained in this model. Perhaps most surprisingly, positive indirect effects of resilient personality via Problem-focused Coping were observed for both Time 1 and Time 2 depression. In other words, resilient individuals were more

depressed to the extent that they reported greater use of PFC. The other unexpected results were not opposite to predictions in this manner, but simply consisted in a lack of statistical significance for predicted indirect effects, as follows: Resilient personality to DEP1 and DEP2 via SS, and Resilient personality to LS1 or LS2 via PFC.

To summarize, positive affect, emotion-focused coping, and social support significantly mediated the relationship of resilient personality prototype to both depression and life satisfaction outcomes, as hypothesized. However, the results for problem-focused coping were unexpected, as this variable was found to have positive direct and indirect effects on depression. While it is difficult to conclusively interpret this finding, it may reflect the complex and multifaceted relationship between coping and psychological distress. Although problem-focused coping is thought to be an effective means of dealing with stress (and therefore was expected to negatively predict depression in the present study), it may also be that endorsement of various coping strategies increases on average as people experience distress. If problem-focused coping specifically is a preferred coping strategy of resilient individuals, as hypothesized, it may not be surprising that endorsement of this strategy was found to be associated with greater depression among resilient individuals in this analysis.

Model 2 – Interaction Effects

Model 2 added the use of multiple group estimates to the fundamental structure of Model 1. This tested for differences between the pathways among the three different caregiver groups. Regarding model fit, the chi-square test was significant, $\chi^2(6) = 19.70$,

p = .0031; the CFI (0.99) and TLI (0.94) indicated good fit; the RMSEA (.05) and SRMR (.012) also indicated good fit. This model had overall similar fit to Model 1.

Variance accounted for in the model differed by the separate three caregiver groups. Among the chronic caregivers, 18% of problem-focused coping (R^2 = .18) and 16% of the variance in positive affect (R^2 = .16) was shared or explained by the predictor (Resilient personality). Five percent each of the variance of both social support (R^2 = .05) and emotion-focused coping (R^2 = .05) was explained or shared by the predictive resilient personality. The single predictor and four mediators accounted for 13% of variance in depression at the first time point (R^2 = .13), and 22% of variance in life satisfaction at the first time point (R^2 = .22). Resilient personality, the four mediator variables, and the first measurement of depression combined accounted for 14% of variance found in depression at the second time point (R^2 = .14). Resilient personality, the four mediator variables, and the first measurement of life satisfaction combined accounted for 33% of variance found in depression at the second time point (R^2 = .33).

Variance among the transitional caregiver group occurred as follows: Twenty-two percent of positive affect's variance was accounted for by resilient personality (R^2 = .22). Twelve percent of the variance of social support was explained or shared by resilient personality (R^2 = .12). Resilient personality accounted for 11% of emotion-focused coping's variance (R^2 = .11) and 9% of problem-focused coping's variance (R^2 = .09). For the outcome variables, 13% of the variance of depression at the first measurement (R^2 = .13), and 32% of the variance of life satisfaction at the first measurement (R^2 = .32). Resilient personality, the four mediator variables, and the first

measurement of depression combined accounted for 10% of variance found in depression at the second time point (R^2 = .10). Resilient personality, the four mediator variables, and the first measurement of life satisfaction combined accounted for 41% of variance found in depression at the second time point (R^2 = .41). The proportion of variance accounted for in the life satisfaction by the model variables among the transitional caregiver group is notable, as compared to the other two groups.

In the non-caregiver group, 16% of the variance in positive affect (R^2 = .16) was shared or explained by the predictor (Resilient personality). Fifteen percent each of the variance of social support (R^2 = .15) was explained or shared by the predictive resilient personality. Eight percent of the variance of both social support (R^2 = .08) and problem-focused coping (R^2 = .08) was accounted for by resilient personality. The predictor and four mediators accounted for 13% of variance in depression at the first time point (R^2 = .13) and 22% of variance in in life satisfaction at the first time point (R^2 = .22). Resilient personality, the four mediator variables, and the first measurement of depression combined accounted for 12% of variance found in depression at the second time point (R^2 = .12). Resilient personality, the four mediator variables, and the first measurement of life satisfaction combined accounted for 37% of variance found in depression at the second time point (R^2 = .37).

Direct Effects

Results for participants in the chronic caregiver group, (i.e., endorsed caregiver status at both Phase II and Phase III; n = 91) are contained in Table 10. Resilient personality was significantly associated with all four mediator variables in the following

directions: greater PA ($p < .001$), greater SS ($p = .024$), more PFC behavior ($p < .001$), and less EFC behavior ($p = .02$). This shows the generally adaptive associations of the resilient personality prototype (i.e., more positive affect, social support from friends and family, active coping behaviors and less avoidant coping behaviors). Greater PA significantly predicted lower depression at the first measurement (DEP1, $p = .031$), and higher life satisfaction at the initial measurement (LS1, $p < .001$). No other mediators or the resilient personality predictor variable were found to have significant relationships with the outcomes variables.

Direct effects for participants in the transitional caregiver group (i.e., denied caregiver status at Phase II and endorsed it at Phase III; $n = 265$) are in Table 11. As with the chronic caregiver group, resilient personality was significantly associated with all four mediators (p's $< .001$). In comparison with the chronic caregiver group, this group has a greater number of significant associations between mediators and outcomes. PA emerged as the most consistent mediator of three outcomes (lower DEP1, $p < .001$; higher LS1, $p < .001$; higher LS2, $p = .041$). EFC was significant in its expected direct relationship with depression at the first time point ($p = .014$) and in its inverse relationship with life satisfaction at the second measurement ($p = .019$). SS emerged as a significant predictor of greater life satisfaction at the first ($p = .024$) and second measurement ($p = .044$), and at the second depression measurement ($p = .036$). PFC did not significantly relate to any outcome among the transitional caregiver group. There were no significant direct effects between resilient personality and the outcome variables among the transitional caregiver group.

Direct effects for participants in the non-caregiver group (i.e., denied caregiver role at both measurement occasions; n = 2,178) are contained in Table 12. This was the only group in Model 2 in which the Resilient personality prototype significantly predicted an outcome variable: LS1 ($p < .001$). Additionally, the Resilient personality predictor was significantly associated with all four mediators (p*'s* < .001). Membership in the Resilient personality cluster predicted significantly higher PA, greater SS, more PFC, and less EFC. PA emerged as one of the two most reliably significant mediators for relationships with the four outcome variables (p*'*s < .001; LS2, p = .01). EFC emerged in this group as a consistent predictor of two outcomes. Greater prevalence of EFC significantly predicted higher levels of depression, (DEP1, $p < .001$) and lower levels of life satisfaction (LS1, $p = .001$). SS significantly predicted lower depression at the second time point ($p = .017$), and greater life satisfaction at both the first ($p < .001$) and second measurements ($p = .012$), as expected. Among this group, higher levels of PFC behavior significantly predicted greater levels of depression in a marginal and unexpected manner. (DEP1, $p = .001$; DEP2, $p = .046$).

Overall in Model 2's direct effects, resilient personality was significantly related to all four mediators in all three groups (mostly $p < .001$, except for SS [$p = 0.023$] and EFC [$p = 0.021$] among chronic caregiver group). Across all three groups, PA most commonly predicted the outcome variables. The only significant direct effect between the predictor and an outcome was found in the non-caregiver group, between resilient personality and life satisfaction measured at the first time point ($p < .001$).

Indirect Effects

A total of 48 indirect effects were tested across the three distinct caregiver status groups. Among the three groups, pathways containing mediator PA between resilient personality and mental health outcomes (i.e., Depression, Life Satisfaction) were the most consistently significant. The groups vary in size, with more significant indirect effect pathways (CIs do not contain 0) being found as the number of participants in each group increased. See Tables 13, 14, and 15 for all indirect effects among the chronic, transitional, and non-caregiver groups, respectively.

Among chronic caregivers (n = 91), five indirect effect were significant: Resilient personality had significant indirect effects on depression at the first measurement and both life satisfaction measurements via PA. Indirect effects of resilient personality via PFC were also observed for both life satisfaction measurements. Table 13 contains all pathway coefficients for the chronic caregiver group.

Eight of the 16 indirect effects were significant among transitional caregivers (n = 265). Table 14 contains all pathway coefficients for the transitional caregiver group. Resilient personality exhibited significant indirect effects on all four outcomes through PA (i.e., lower depression, greater life satisfaction). Resilient personality also had indirect effects via social support on both life satisfaction measurements. Indirect effects of resilient personality via emotion-focused coping were found for both measurements of depression (i.e., higher depression). No indirect effects involving problem-focused coping were observed among transitional caregivers.

Non-caregivers (n = 2,178) denied caregiver status at both Phase II and Phase III. Among this group, 12 of the 16 indirect effects were significant (CI's do not contain 0). These are presented in Table 15. Resilient personality was predictive of depression both measurements via positive affect, emotion-focused coping, and problem-focused coping. Resilient personality predicted life satisfaction at both measurements through positive affect, social support, and emotion-focused coping. The four remaining indirect effects tested were found to be non-significant among non-caregivers.

Taken together, the overall patterns appeared largely consistent across the three caregiver groups, and largely mirror the patterns seen previously in Model 1. Although fewer of the indirect effects were found to be statistically significant among the chronic caregivers and the transitional caregivers as compared to the non-caregivers, all of the coefficients were similar in magnitude and direction. Given the substantially lower *n*s for chronic caregivers and transitional caregivers, the differences in significance may reflect lower statistical power in the two caregiver groups rather than meaningful differences in the operation of the psychological mechanisms in question. Across all caregiver groups positive affect was the most consistently significant mediator.

Moderation and path differences between groups

Tests of moderation of caregiver status in this model were performed by calculating differences between the transitional caregivers and non-caregivers on paired indirect pathways (i.e., moderated-mediation). Results of these moderation tests for all model pathways can be found in Table 16. These tests yielded no significant effects.

This overall lack of significant moderation by caregiver status model pathways suggests that caregiver status does not strongly moderate how mechanisms of resilience operate at a fundamental level. For the most part, the mediational pathways linking resilient personality to mental health outcomes were similar among the compared transitional caregiver and non-caregiver groups.

Results Summary

Results of the present study indicate that a resilient personality prototype appears to facilitate adjustment through its hypothesized associations with higher positive affect and less use of avoidant emotion-focused coping strategies. The other two mediators (social support, problem-focused coping) hypothesized to mediate the relationship between resilient personality and adjustment, did not appear to play as consistent a role (and indeed, some of the findings for problem-focused coping were actually opposed to their hypothesized directions). Most of the indirect effect paths in Model 1 were significant (12 of 16 paths). Contradicting hypothesized relationships in this basic model, social support was not found to mediate between resilience and depression. Additionally, problem-focused coping did not mediate between resilient personality and life satisfaction and unexpectedly was found to positively predict depression.

Model 2 introduced and tested the hypothesized group differences between how being a chronic caregiver, transitional caregiver, or non-caregiver might result in unique pathway relationships. Across these three groups, positive affect was most consistently found to mediate the relationship between resilient personality and mental health outcomes (depression and life satisfaction). While there was some variability in the exact

coefficients and patterns of significance, for the most part the results obtained for each separate caregiver group in Model 2 resembled those obtained when the groups were collapsed together in Model 1. Finally, Model 2 also tested a moderating effect of caregiver status on the model's mediation relationships. There was no significant moderation by caregiver status, indicating that these mechanisms are operating independently of whether or not one is a caregiver.

CHAPTER V

DISCUSSION AND CONCLUSION

This study is informative both about the resilient personality prototype in general, and more specifically about its role in adjustment to caregiving. Using existing MIDUS II and MIDUS III data, this study examined the relationship between the resilient personality prototype and psychological well-being (i.e., depression and life satisfaction), as mediated via positive affect, social support, and coping style. Additionally, this study considered potential differences in these relationships based on caregiver status (i.e., chronic caregivers, transitional caregivers, and non-caregivers). Further, to examine possible moderating effects of adjustment to the caregiver role, the present study statistically tested for differences between non-caregivers and transitional caregivers specifically.

This study used a combination of cluster analysis and path analyses (moderated-mediation). The cluster analysis attempted to extract three distinct clusters based on the Five-Factor personality model to identify resilient and non-resilient (i.e., overcontrolled, undercontrolled) prototypes as posited by the Block model of resilience (Block & Block, 1980; McCrae & Costa, 2010). The resilient cluster clearly emerged in these results, with expected and empirically-supported configurations of Five-Factor Model traits (i.e., low neuroticism, high extraversion, high openness, high conscientiousness, high agreeableness). Although theoretically-meaningful differences between the two non-resilient clusters did not emerge as clearly, the original proposal had always been to

combine these two clusters into a general "non-resilient" cluster to compare resilient and non-resilient participants in the subsequent structural equation models. Thus, the failure to obtain clear overcontrolled and undercontrolled prototypes did not pose any problems for the planned analyses.

A similar binary resilient vs. non-resilient comparison has been used effectively to test the resilient personality prototype's specific features in previous research (e.g., Shiner & Masten, 2012). Thus, adopting this binary approach was appropriate in the current investigation, which focused on testing possible mechanisms of the resilient personality prototype (i.e., positive affect, social support, coping style). The maladaptive features of the two other personality prototypes (i.e., undercontrolled and overcontrolled), while distinct from one another, are assumed to have similarly detrimental effects on mental health-related outcomes, such as self-regulation and interpersonal relationships (Alessandri et al., 2014; Asendorpf et al., 2001). This study was not intent on clarifying differences that may exist between the undercontrolled and overcontrolled clusters, nor how they may differ on mediator or outcome variables. Therefore, in service of parsimony and theoretical clarity, this study used a resilient vs. non-resilient dichotomy.

After the resilient and non-resilient clusters were identified, path analyses tested the hypothesized mediating effects of positive affect, social support, and coping style (i.e., emotion-focused coping, problem-focused coping styles) between resilient personality prototype and mental health outcome variables (i.e., depression and life satisfaction, each measured at two time points). Results of the overall mediation model

(Model 1) were largely consistent with the hypotheses, though some predicted indirect effects were not observed (particularly for problem-focused coping). These results were largely reproduced in Model 2, in which the same path model was estimated separately within each of the three caregiver groups (chronic caregiver, transitional caregivers, and non-caregivers).

Finally, moderation testing of interactions between caregiver group membership and model pathway relationships revealed that only one pathway differed significantly between non-caregivers and transitional caregivers. This pathway was the relationship between resilient personality, emotion-focused coping, and life satisfaction at the second measurement. Overall, transitional caregivers were less likely to use emotion-focused coping than their non-caregiver counterparts. However, those transitional caregivers that did use emotion-focused coping had greater deleterious effects on their reported life satisfaction.

Despite some unexpected patterns in these results, this study found consistent support for positive affect's role in mediating resilience and psychological well-being among caregivers and non-caregivers alike. Emotion-focused coping behavior also emerged as a consistent mediator in the models tested, emphasizing the fundamental contradiction between avoidant coping (of which emotion-focused coping is a prime exemplar) and the resilient personality. These findings offer evidence for possible psycho-behavioral mechanisms of resilience and inform future studies of caregiver adjustment and resilience. This future research may influence policy and intervention

development that is much-needed in light of our increasingly aging society and the caregivers who will play a role in this societal shift.

Discussion of Personality Prototypes

This study's findings demonstrate the reliability of resilience as a concept able to be identified via clustering of the Five-Factor Model traits. However, the two theorized non-resilient clusters (i.e., overcontrolled, undercontrolled) from the Block Model of resilience were not clearly differentiated in this cluster analysis. In keeping with the *a priori* model of this study, these two clusters were grouped into a non-resilient cluster and used as a reference group for the resilient personality predictor variable.

The trait characteristics that most strongly distinguished the resilient cluster from the non-resilient clusters were extraversion and neuroticism. The resilient cluster had a relatively low mean level of neuroticism, in contrast with the higher levels of neuroticism in both non-resilient clusters. Additionally, the resilient personality prototype exhibited high levels of extraversion, while the other two non-resilient personality clusters contained lower levels of extraversion. There is robust empirical support for the affective features of neuroticism and extraversion – with neuroticism associated with negative affect and extraversion being associated with positive affect (Diener, Oishi, & Lucas, 2003; Smillie, DeYoung, & Hall, 2015). The fact that these two traits displayed the greatest differences between the resilient and non-resilient clusters in the present study is suggestive that affective experience is fundamental to understanding resilience, a suggestion that was borne out in the subsequent mediation analyses.

The resilient and non-resilient clusters also differed on the remaining FFM traits, with the resilient cluster exhibiting higher openness, conscientiousness, and agreeableness relative to the non-resilient cluster. These differences illustrate the resilient personality prototype's higher levels of adaptive traits, as predicted and in keeping with the current knowledge base. This emphasizes the different patterns at play between the resilient and non-resilient personality prototypes. These varying constellations of more positively-valanced traits and the negatively-valanced neuroticism trait reflect the adaptive nature of the resilient personality prototype (i.e., proactive coping, greater positive affect) and the jeopardizing nature of the non-resilient prototype (i.e., avoidant coping, greater negative affect).

This study's results lend support to the validity of using a binary resilient vs. non-resilient cluster comparison. Resilient individuals were found to differ meaningfully from non-resilient individuals on the mediating variables and well-being outcomes. The mediating variables selected for this study (positive affect, social support, and coping style) were intended to test for possible psychobehavioral mechanisms of resilience. Positive affect has been strongly implicated in the literature as a mechanism of resilience (Frederickson et al., 2003; Tugade & Fredrickson, 2004; Walsh et al., 2016), and as possibly even reversing negative affect's harmful effects (Elliott et al., 2014; Ong, et al., 2010; Quale & Shanke, 2010). Social support is also positively associated with resilience and adjustment to stressful circumstances (Grant et al., 2006; Steca et al., 2010). Coping style or tendency towards certain coping strategies is also seen as an important mechanism of resilience (Berry et al., 2007): with proactive, goal-oriented style being a

hallmark of resilience, and avoidant, emotion-focused coping indicating a lack of resilience (Elliott et al., 2015; Elliott et al., 2017). Prior theory and evidence suggest that resilient behavior is broadly characterized by proactive engagement, as opposed to avoidance (Farkas & Orosz, 2015; Ong et al., 2009). These proactive tendencies lend themselves to more effective coping behaviors that enhance psychological well-being and mitigate detrimental effects of stress, including adjustment to the caregiver role (Elliott et al., 2014), among other distressing life circumstances (combat experience, Elliott et al., 2015; upper limb loss, Walsh et al., 2016).

Consistent with this body of knowledge, and in keeping with study hypotheses, members of this study's resilient cluster, on average, scored significantly higher on social support, positive affect, and problem-focused coping, and lower on emotion-focused coping, compared to non-resilient cluster members. These findings suggest specific affective and behavioral manifestations of the resilient and non-resilient personality prototypes' different trait configurations and justified the use of these variables as mediators in the primary path analyses.

Resilience is essentially defined by its association with lower distress (Elliott et al., 2014; Pielmaier et al., 2013). Resilience is primarily understood as a phenomenon related to well-being in spite of distressing life circumstances, achieved via self-regulation and adaptation (Block & Kremen, 1996). The current study provided further evidence for the validity of the resilient and non-resilient prototypes by way of their differences on mental health outcomes (i.e., depression, life satisfaction). Resilient individuals displayed higher levels of life satisfaction than non-resilient individuals at

both time points, and lower levels of depression at Time 1. Although the difference between resilient and non-resilient individuals' Time 2 depression did not meet conventional significance criteria, it approached significance at $p = .063$ and the direction of the difference was consistent with that observed at Time 1. These findings provide further evidence that the resilient vs. non-resilient distinction captured meaningful, theoretically-expected differences in well-being, and justify further examination of these outcomes in the subsequent SEM analyses.

While the two expected non-resilient FFM-based clusters (i.e., overcontrolled, undercontrolled) did not clearly emerge in the present cluster analysis, this did not impact the proposed *a priori* model (i.e., using a collapsed non-resilient prototype as reference group for resilient prototype as predictor variable). The failure to obtain all three theoretical prototypes is not unprecedented: Donnellan and Robins (2010) have documented inconsistencies in obtaining these profiles in the prior literature. Several explanations for challenges in identifying the three theoretical clusters are posited, including sampling bias (i.e., undercontrolled and overcontrolled are less likely to be included in healthy samples) and inconsistencies in cluster-analytic techniques. These inconsistencies have particularly been found in studies that attempt to define the variables in term of the FFM or "Big Five" model traits, as did the current study (Donnellan & Robins, 2010). While the current study does not directly address these clustering concerns since the non-resilient prototypes were collapsed, it nonetheless speaks to the validity of the identified resilient and non-resilient clusters as described above.

Interestingly, some alternatives to the Five-Factor Model of personality and the Block model of resilient prototypes exist in the literature. For example, some recent research has tested the utility of a six-factor model of personality with an added "Honesty-humility" trait (Isler, Fletcher, Liu, & Sibley, 2017). This added trait is purported to delineate more clearly the overcontrolled and undercontrolled prototypes by emphasizing impulse control and self-promotion behaviors (Isler et al., 2017). Future studies that aim to measure differences between all three clusters should consider comparing alternative models with more widely-used models.

Discussion of Hypotheses

As hypothesized, participants in the resilient personality prototype group were found to significantly differ from the non-resilient prototype participants in terms of reporting higher positive affect, higher levels of social support, higher use of problem-focused coping, and less use of emotion-focused coping. Additionally, the resilient personality prototype participants significantly differed from the non-resilient prototype participants in terms of lower depression at both measurements and higher life satisfaction at both measurements, as hypothesized. These basic findings reflect this study's research question emphasizing healthy adjustment to the caregiver role (i.e., the resilient personality prototype was associated with endorsing more positive psychosocial variables, fewer negative psychosocial variables, greater well-being, and lower psychological distress). Furthermore, the bivariate correlations indicated that the hypothesized mediating variables were associated with the well-being outcomes in accordance with predictions. Positive affect, social support, and problem-focused coping

all exhibited positive relationships with life satisfaction and negative relationships with depression, while the opposite pattern was observed for emotion-focused coping. All of these preliminary findings supported carrying out the primary hypothesis tests using SEM.

In the Model 1 (Main Effects) results, the resilient personality prototype appeared to facilitate adjustment through its hypothesized associations with higher positive affect, lower use of emotion-focused coping strategies, and greater experienced social support (although social support failed to mediate between resilient personality and the Time 1 depression measurement). These findings mirrored the basic bivariate correlations, and the observed indirect effects further provide support for the proposed causal mechanisms of resilience. Overall, resilient participants appear to be better off in terms of mental health to the extent that they experience more positive affect, receive more social support, and engage in less emotion-focused coping.

However, in contrast with hypotheses, problem-focused coping did not mediate between resilient personality and life satisfaction. Even more unexpectedly, problem-focused coping was found to significantly mediate between resilience and depression (at both time points) in a manner opposite to predictions, such that resilient participants who reported engaging in more problem-focused coping actually reported *higher* levels of depression on average. This contrasts with both resilience and PFC's negative direct effects on depression. While unexpected, these patterns may be due to a relationship in which greater depression levels motivated resilient participants to engage in higher levels of coping, and particularly a more effective coping style. The subscales that make

up the PFC scale of the COPE Inventory are *positive reinterpretation* (e.g., "I look for something good in what is happening"), *active coping* (e.g., "I do what has to be done, one step at a time"), and *planning* (e.g., "I make a plan of action"). These subscales seem characterized by direct, positively-valanced approaches to life's challenges, which conceptually seems at odds with the content measured by the MIDUS depression assessment such as anhedonia, amotivation, functional challenges with eating and sleeping, among other depressive symptoms. This issue is discussed further in the 'Mechanisms of Resilience' subsection (see p. 76).

In Model 2 (Interaction Effects), the same path model as in Model 1 was tested separately in each of the three caregiver groups. In terms of the magnitude and direction of path coefficients, results were roughly similar across the three groups, with indirect effects containing positive affect being the most consistently significant. This may speak to the fundamental role of positive affect in resilience. The other three mediators' relative inconsistency across the three groups may imply that they are not as central to the phenomenon of resilience. Overall, fewer significant indirect effects were observed in the transitional caregiver group, and fewer still in the chronic caregiver group, compared to the non-caregiver group. This could reflect true differences in the operative mechanisms between the three groups, but may more likely be due to the relatively smaller sample sizes of the two caregiver groups compared to the non-caregiver group. Because of these groups' smaller sample sizes, statistical power is lower in these groups relative to both the full sample and the non-caregiver group (Cohen, 1992), therefore making it more difficult to detect significant effects in the two caregiver groups

(especially in the chronic caregiver group, $n = 91$), even if true effects are present. In future research it would be desirable if larger samples of caregivers, equal in number to non-caregivers, could be obtained in order to avoid these issues of statistical power and permit clearer interpretations of observed differences.

Overall, there was limited evidence for significant differences between caregivers and non-caregivers — depression was the only variable on which the groups differed from one another significantly in the basic MANOVA. Chronic caregivers in this study were significantly higher in depression at both time points relative to non-caregivers, and higher than transitional caregivers at the first measurement only (possibly reflecting the fact that at the second measurement, transitional caregivers had also assumed caregiving duties). This is consistent with the assumption that caregiving can be a stressful, emotionally-distressing experience (Pinquart & Sorensen, 2003; Vitaliano et al., 2014). Based on this finding, it was appropriate to further test how caregiver group membership might have a moderating effect on the model pathways. In an attempt to isolate participants' adjustment to the caregiving role at the second MIDUS measurement, the tests of moderation in this study compared non-caregivers and transitional caregivers only. This was in keeping with the goal of investigating the adjustment or transition to the caregiver role.

Overall, there was no moderation of model relationships by caregiver status between the compared non-caregivers and transitional caregivers. This reflects other research stating that the difference between caregivers and non-caregivers in non-clinical samples is typically minimal (Haley et al., 2015). The transitional caregiver group was

identified in this study in an attempt to capture a longitudinal view of psychological adjustment to the caregiver role, as highlighted in this study's research question. As a group, transitional caregivers were compared with the non-caregiver group via moderation tests to investigate how becoming a caregiver might alter relationships between resilient personality, psychosocial mediators, and mental health outcomes.

Both the hypothesized and unexpected findings of the current study offer opportunities for theoretical extrapolations and analysis, as has been called for in existing resilience literature (Fletcher & Sarkar, 2013). This study succeeded in testing and possibly illuminating some elements at play in the underdefined "black box" that is the phenomenon of psychological resilience. In testing the mediators that were chosen, there was an attempt to theoretically encompass caregivers' subjective experience (i.e., positive affect), social context (i.e., social support), and management of distress prompted by challenges in their lives (i.e., coping styles).

Theoretical Implications

Mechanisms of Resilience

This study tested possible mechanisms of resilience, and how they might differ between different caregiver groups, in the context of a sound theoretical framework. The primary theoretical implications of this study come primarily from the prominence of positive affect, social support, and emotion-focused coping that occurred in this study. The problem-focused coping mediator did not behave as expected in this model, which may be related to the dynamic nature of coping that is difficult to capture in study designs such as this which do not assess causality. Additionally, based on the occurrence

of several direct effects in the results, the possible role of psychological flexibility is introduced and discussed as a potential factor not measured in this model.

While problem-focused coping did not behave as expected in this study, some possible explanations may prompt further discussion about how coping operates for resilient individuals. Due to the model design of this study, it is difficult to disentangle possible causal relationships between affect and coping (i.e., all measured as mediators) and their roles in resilience. However, this study does offer some evidence that dovetails with existing theoretical frameworks of coping and resilience. This study's findings seem partially to fit within the approach and avoidance paradigm (Moos & Holahan, 2003) in terms of understanding the features of the resilient personality prototype. The ways that positive affect and emotion-focused coping emerged as the most reliable mediators in this study's models may reflect underlying approach- and avoidance-based processes.

The prominence of positive affect as a mediator for resilience in this study reflects an extensive, existing body of literature. Model paths containing positive affect in this study did not significantly differ between caregivers and non-caregivers, perhaps suggesting that positive affect is a basic, fundamental mechanism of resilience that does not substantially differ in how it functions across different groups.

In the theoretical framing of this study, a specific area of this literature that was emphasized was Frederickson's broaden-and-build theory (Frederickson et al., 2003, Tugade & Frederickson, 2004), in which positive affect is valuable beyond its merely pleasant subjective character. The broaden-and-build theory posits that positive affect

also stimulates openness and flexibility (i.e., approach motivation) that facilitate greater engagement with the social and physical environment. Greater engagement with one's environment leads to more opportunities for relationships and resources that further enhance one's well-being (Cameron & Elliott, 2015; Ong et al., 2009). Through the lens of resilience, positive affect may activate engagement with challenging circumstances and broadening one's access to helpful resources or support. This study's findings supported these concepts consistently, from the basic correlations and comparisons between the resilient and non-resilient clusters through the primary structural equation models testing mediation. This mirrors previous research highlighting how positive emotion activates greater psychological flexibility and sociability with others (Tugade & Fredrickson, 2004). In terms of understanding what resilience is and how it operates, the current findings imply that the ability to experience positive emotions, even in distressing circumstances, is central to this phenomenon. In taking a personality-based approach to resilience, this suggests that traits with substantial affective content, such as extraversion and neuroticism, are of particular interest and may constitute the core of the "resilient personality."

While the social support variable was not as consistently predictive as the positive affect and emotion-focused coping mediators in the current study, the results still largely reflect existing literature about social support and resilience. In keeping with much of the existing literature, social support was found to have positive associations with well-being in this study (significant indirect effects on life satisfaction at both time points, and depression at the second time point). In this study, social support was

measured by averaging two existing MIDUS scales (*Support from Family, Support from Friends*) that included items such as "Thinking about the members of your family, not including your spouse/partner, how much do they (a) care about you? (b) understand the way you feel about things?" and "How much can you rely on friends for help if you have a serious problem?" (Whalen & Lachman, 2000). This mediator attempted to capture the engaged, trust-based social elements of resilience, which has been strongly supported in existing literature (Bonanno, 2004; Elliott et al., 2015; Grant et al., 2006).

Based on both the Five-Factor personality model and the Broaden-and-Build theory (Frederickson et al., 2003), there are theoretical reasons to believe that social support is related to positive affect, as the FFM trait of extraversion encapsulates both sociability and positive emotions (McCrae & Costa, 2010), and Broaden-and-Build theory predicts that positive affect will result in greater social engagement (Frederickson et al., 2003). Thus, these two hypothesized mediators may interact with one another in ways that were not tested in the current models (e.g., a pattern of serial mediation in which resilience predicts positive affect, which in turn predicts social support, ultimately predicting well-being in a tautological manner; Laird et al., 2018). Clarifying how these two mechanisms of resilience may operate in tandem with one another represents an interesting challenge for future investigations, which may illuminate possible avenues for clinical intervention.

In this study's results, emotion-focused coping can be seen as a theoretical foil to positive affect as a mechanism of resilience. In keeping with Block's theoretical framework of resilience (1980), trait neuroticism has been associated with higher use of

avoidant, emotion-focused coping strategies (Chappell & Dujela, 2009), theoretically linking personality-based negative affect with the subsequent coping mechanism focused on managing these heightened negative emotions. Emotion-focused coping was the next most prominent mechanism of resilient personality that emerged in this study, after positive affect. It was the one of the most consistently significant mediators in both models and was also notable in this study as the sole mediator to exhibit significant moderation by caregiver status.

Emotion-focused coping assumes that there is negative affect to be managed, and that the primary means of management involve attempts to soothe the unpleasant emotions, as opposed to exploring direct solutions for the challenges causing the unpleasant emotions (which would reflect a more 'problem-focused' strategy). In this study, the emotion-focused coping measure included subscales measuring *denial* (e.g., "I act as though it hasn't even happened"), *expressing negative affect* via venting (e.g., "I let my feelings out"), and *behavioral disengagement* (e.g., "I give up the attempt to get what I want;" Carver, Scheier, & Weintraub, 1989). Use of these emotion-focused strategies indicates a lack of resilience and also reflects evidence that avoidant coping is a reliable transdiagnostic factor in psychopathology (Levin, MacLane, Daflos, Seeley, Hayes, Biglan, & Pistorello, 2014).

This connection was reflected in the current study, wherein emotion-focused coping was consistently associated with higher depression and lower life satisfaction to a significant degree. This demonstrates how the avoidance of unpleasant emotions drives psychological distress in a way that may characterize a lack of resilience. This adds

some nuance to the results for positive affect discussed above. In addition to experiencing more positive affect across situations, the resilient individual is less likely to engage in coping behaviors that aim at minimizing or avoiding negative affect. Of course, as with social support, it may be the case that positive affect and emotion-focused coping are related to one another in ways that were not tested in the present analyses. It is possible, for instance, that resilient individuals engage in less emotion-focused coping *because* they experience more positive affect in the first place. Consistent with this possibility, some evidence suggests that, in the context of positive affect, some of the deleterious effects of negative affect on well-being are diminished (e.g., Ong et al., 2010). Future research is needed to fully explore this and other possible interrelations between positive affect and emotion-focused coping as mechanisms of resilience.

The unexpected relationships with the problem-focused coping mediator in this study include its lack of significant mediation of the relationship between resilience and life satisfaction, and its positive indirect effects on depression at both time points. This was despite very small, but expectedly inverse correlations with depression in the preliminary analyses. Problem-focused coping was measured with the COPE Inventory (Carver, Scheier, & Weintraub, 1989), using subscales encompassing *positive reinterpretation* (e.g., "I look for something good in what is happening"), *active coping* (e.g., "I do what has to be done, one step at a time"), and *planning* (e.g., "I make a plan of action"). As hypothesized, resilient personality was significantly, positively associated with endorsement of problem-focused coping strategies. Since problem-

focused coping is characterized as a more active, engaged style of coping which addresses life's challenges in a positive, direct manner, it is unclear why this variable was found to have positive indirect effects on depression. Despite the lack of clear resolution for how problem-focused coping behaved in the acquired results, several theory-based accounts of this result can be explored further.

One potential explanation for this unexpected result is that resilient individuals facing greater emotional distress may attempt to cope through greater use of approach-oriented, problem-focused strategies. It seems incorrect to conclude that resilient individuals are more depressed *due to* their use of problem-focused coping, based on extensive literature indicating the contrary (Berry et al., 2012; Berry et al., 2007; Chappell & Dujela, 2009; Elliott et al., 2015). Conceptually, it seems more probable that when resilient individuals experience depression, they use problem-focused coping strategies. However, the type of mediational analyses used in this study do not provide conclusive empirical evidence about the exact causal sequence of the variables in the model. Overall, problem-focused coping is a complex factor that may be both a response to psychological distress (pushing its relationship with variables like depression in a more positive direction), as well as an effective means of dealing with distress (pulling its relationship with depression and other indicators of pathology in a negative direction). This complexity may account for the near-zero baseline correlations observed between depression and problem-focused coping, and its opposite-to-predicted behavior as a mediating factor. In addition to the surprising results surrounding problem-focused

coping in this study, the several direct effects found in this study's models may indicate the presence of an unmeasured factor that is perhaps influencing model relationships.

The significant direct effects found between resilient personality and life satisfaction at the first time point in the overall model (Model 1), and between the same variables among the non-caregiver group in Model 2, indicate the presence of salient factors not directly measured in this study's model. Based on an emerging area of research and the results of this study, a possible unmeasured factor that may have been at play in this model is *psychological flexibility*. Psychological flexibility is defined in the literature as how an individual "…(1) adapts to fluctuating situational demands, (2) reconfigures mental resources, (3) shifts perspective, and (4) balances competing desires, needs, and life domains" (Kashdan & Rottenberg, 2010). A growing body of research supports psychological flexibility as an important factor in adjustment to stressful life circumstances (e.g., depression and suicidal ideation, Bryan, Ray-Sannerud, Heron, 2015; PTSD and pain interference, Berghoff, McDermott, Dixon-Gordon, 2018; traumatic brain injury, Elliott et al., 2017), including caregiving specifically (Jansen, Haahr, Lyse, Pedersen, Trauelsen, & Simonsen, 2017). Conceptually, psychological flexibility fits as a mechanism by which resilient personality could impact life satisfaction outcomes by way of maintaining engagement with unpleasant emotional states and behaving in a proactive, goal-directed manner. In contrast with psychological flexibility, psychological inflexibility or "brittleness" is characterized by more avoidant and less ego-resilient distress responses (Farkas & Orosz, 2015). These maladaptive

would likely manifest behaviorally as disengagement with one's environment, and slow and/or ineffective responses to distressing situations (Farkas & Orosz, 2015).

Implications for Caregiver Adjustment

The lack of significant moderation results perhaps indicates that caregiving acts an experience that *activates* mechanisms of resilience/non-resilience (i.e., stress elicits coping) rather than truly moderating how the mechanisms work at a basic level. This result, coupled with the overall lack of significant moderation by caregiver status on the other pathways in the model, suggests that overall caregiver status does not strongly moderate how mechanisms of resilience fundamentally operate. The mediational pathways linking resilient personality to mental health outcomes were similar among transitional caregivers and non-caregivers. This reflects research with non-clinical/population-based samples in which there is often little difference in meaningful distress levels between caregivers and non-caregivers (Marino, Haley, & Roth, 2017). This lack of overall difference speaks to the "ordinary magic" view of resilience (Masten, 2001) as relatively typical healthy functioning.

Despite the potentially typical or "ordinary" nature of resilience, it is crucial to clarify how the mechanisms of this phenomenon operate in order to design novel or validate existing clinical interventions. The present findings suggest that possessing a resilient personality profile promotes well-being among caregivers in much the same way that it promotes well-being among people in general, with positive affect emerging as perhaps the most basic mechanism of resilience.

Practical Implications

Within studies using MIDUS data sets, there are a variety of ways that "resilience" has been conceptualized and analyzed (Ryff et al., 2012). In previous studies using MIDUS data, resilience is not conceptualized as a function of personality traits, but rather as the atheoretical maintenance of higher levels of well-being outcome despite life circumstances that are assumed to be stressful (e.g., socioeconomic adversity, aging, history of childhood abuse, etc.). In other words, resilience was essentially operationalized as an outcome, rather than a predictor. This current study attempted to "dig deeper" by testing possible psychological mechanisms by which individuals may endure and thrive despite difficult life circumstances. This more person- and process-centered research design is preferable when trying to isolate exact psychological aspects that might be intervened upon in clinical treatment (Elliott & Erosa, 2016).

In continuing to clarify the psycho-behavioral mechanisms of resilience (e.g., positive affect), effective caregiver-specific and resilience-based interventions can be better developed. It seems especially vital to effectively identify non-resilient individuals who may particularly struggle with adjustment to caregiver roles or other emergent stressors (e.g., by screening for non-resilient traits). Trait personality assessments, including Five-Factor Model-based assessments like the NEO-PI-3 (Costa & McCrae, 1992), or alternative assessments for resilience such as the Q-Sort (Block, 1961) could be useful in this endeavor. Another relevant assessment is the Experiential Avoidance in Caregiving Questionnaire (EACQ; Marquez-Gonzalez, Romero Moreno, Lopez Martinez, Losada, Losada, Romero-Moreno, & ... Lopez, 2014), which taps into the

capacity for psychological flexibility among family caregivers. The EACQ is comprised of three factors (*Active Avoidant Behaviors, Intolerance for Negative Thoughts and Emotions, Apprehension Concerning Negative Internal Experiences*) and contains items like "Every time I start to have bad thoughts about my situation as a caregiver, I try to escape from them and distract myself" and "I am scared by the emotions and thoughts I have about my relative" (Marquez-Gonzalez, et al., 2014; p. 904). After identifying particularly at-risk caregivers, interventions would focus on enhancing the proactive, flexible, and self-regulatory skills in the face of stressful life circumstances.

The results of this study lend themselves to the development of interventions for caregivers and potential caregivers (e.g., perhaps targeting those individuals most likely to take on caregiver roles via demographics, such as women aged 49-64 years old with a high school or less education; NAC & AARP Public Policy Institute, 2015). The current study did not find many significant differences between caregivers and non-caregivers in terms of how the mediation models emerged. However, there is a case to be made for considering the specific logistical issues unique to caregiving stress that warrants specialized treatment (e.g., managing care recipients' healthcare, social isolation, assisting with basic activities of daily living, etc.). Based on the current results, targeted interventions ought to focus on the most consistent mediators between resilience and well-being: increasing positive affect, lowering emotion-focused coping, and encouraging social support-seeking.

Based on Block's view of resilience as a phenomenon of self-regulation (via ego-resiliency and ego-control; Block & Kremen, 1996), psychoeducational interventions

that emphasize self-regulatory skills (affectively and behaviorally) may play a role in helping to foster affect regulation and overall resilience. Similarly, interventions stemming from the concept of psychological flexibility entail accepting and engaging with unpleasant affect, instead of avoiding it (Kashdan & Rottenberg, 2010). The current study's results also suggest that the general goals of such interventions would be up-regulating positive affect and bolstering tolerance for negative affect in order to ultimately increase active, goal-directed activity. Several prevailing clinical interventions focused on these goals reflect past research and theory and the results of this current study.

The current study's identified mechanisms of resilience map onto empirically-supported mindfulness practices and acceptance and commitment therapy (ACT). These related clinical techniques focus on increasing positive affect, proactive coping, and self-regulation more broadly. In addition to increasing positive affect, these interventions also conceptually match with the view of resilience as a function of sustained engagement and psychological flexibility, in contrast with avoidant detachment and psychological brittleness.

Mindfulness encompasses a broad range of techniques that emphasize present-minded awareness of one's thoughts and emotions. Common mindfulness techniques include meditation, deep breathing, and grounding to the present moment using one's senses. Broad, non-caregiver-specific interventions such as mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982) and acceptance and commitment therapy (ACT; Hayes, Luoma, Bond, Masuda, Lillis, 2006) focus on increasing abilities to notice and

"stay in the present moment", especially amid unpleasant thoughts and emotions as primary vehicles of therapeutic change. These clinical approaches align with the results of this study that emphasized the importance of positive affect and limiting avoidant coping. Additionally, in keeping with the cyclical broaden-and-build model of positive affect (Tugade & Fredrickson, 2004), the use of mindfulness-based skills and the assumed subsequent positive effects would theoretically spark a positive cascade of self-reinforcing adaptive behaviors. For example, increases in positive affect may lead to greater opportunities for or likelihood of an individual engaging in goal-directed activity, increased engagement in social relationships and one's environment, and lower likelihood of maladaptive avoidant behaviors.

Caregiver-specific mindfulness-based resilience training (MBRT), as developed by the Mayo Clinic, was shown to be efficacious in significantly lowering perceived stress, depression, anxiety, and negative affect (Stonnington et al., 2016) among those caring for new recipients of organ transplants. The MBRT training that was tested combined MBSR and ACT modules, in addition to psychoeducational elements regarding the neurobiology of stress and resilience. Programs like MBRT are promising as direct interventions on individuals' ability to gain and/or activate skills-based mechanisms of resilience, such as proactive engagement and psychological flexibility.

Acceptance and commitment therapy (Hayes et al., 2006) explicitly endeavors to increase psychological flexibility. It has been specifically tested among caregivers and found to be effective in reducing symptoms of depression and grief among those caring for individuals with dementia (Márquez-González, Losada, & Romero-Moreno, 2014),

and caregivers of individuals in end-of-life hospice care (Davis, Deane, & Lyons, 2016). This mode of treatment is would seem to match especially well with caregivers whose care recipients have poor or terminal health prognoses, based on the unchangeable quality of the circumstances.

Limitations and Strengths

This study is characterized by several limitations and strengths, which inform suggestions for future directions in this research area. Both the strengths and limitations of this study are largely rooted in the unique qualities of the MIDUS data set. In terms of limitations, the data used in this study are limited in generalizability. These limits include the lack of racial and ethnic diversity of the MIDUS sample (i.e., 92.6% self-reported white participants), despite attempts to gain nationally representative sample via RDD sampling of "…non-institutionalized, English speaking adults, aged 25 to 74, selected from working telephone banks in the coterminous United States" (Radler, 2014, p.3). This reflects larger concerns in the field of psychological science and its lack of representative samples (Henrich, Heine, & Norenzayan, 2010).

A methodological limitation of this study's data collection was the wide range of time between measurement time points (MIDUS Phase II, 2006; and Phase III, 2013). This gap only allows for a rather coarse measurement of caregiver adjustment and makes it difficult to discern the exact point of transition into the caregiver role. Future studies would do well to follow caregivers and potential caregivers (e.g., individuals anticipating engaging in caregiving in the near future with particular family members) with more frequent measurements in order to attempt identifying these eventual

caregivers and how their adjustment takes place. Another measurement-related limitation of this study is how the caregivers were identified by a single item that did not encompass further detail regarding the type or intensity of the participant's caregiver role (The item inquired if during the past 12 months, had participants "…given personal care to a family member or friend for a period of at least one month owing to a physical or mental condition, illness, or disability."). While this broad definition allows for preliminary conceptual analysis using this survey-style data collection, future studies would do well to more intentionally define caregivers in terms of their specific length of caregiver role and intensity of caregiving duties (i.e., hours of care per week, types of care provided, type of impairments or health issues necessitating caregiving role, etc.).

The mediation analyses conducted for this study were limited in various ways. This correlational approach cannot speak to causation, especially with only two longitudinal time points drawn from the MIDUS. Furthermore, there is recent criticism about mediation analyses' limited ability to sustain strong inferences, especially when mediating variables are measured at the same time as the independent variables (Winer, Cervone, Bryant, McKinney, Liu, & Nadorff, 2016). The current study contains merely statistical evidence of mediation, as opposed to stronger empirical evidence, which would require either experimental methods or stronger temporal sequencing of measurement. Some researchers have also suggested an experimental approach to testing mediation to avoid the issues of correlational studies using an "experimental causal chain" (Spencer, Zanna, & Fong, 2005). However, because an experimental approach is impossible with personality-based independent variables, a more rigorous correlational

approach could involve a longitudinal design with each class of variable (i.e., predictors, mediators, outcomes) measured sequentially at its own time point. Despite these statistical limitations, there are conceptual reasons why personality variables such as FFM traits should be considered stable, longstanding dispositions and thus "prior" to other measured variables. The large sample size of this study may also have led to overstated significance (Hays, 1981; Thompson, 1994), but also means that the estimate of the effects will be more precise.

This study's most notable strengths are the MIDUS sample's use of non-clinical populations (i.e., not recruited in clinics or hospital settings), allowing for a more externally valid study of the resilience personality prototype and its associations (Haley et al., 2015). As the concept of resilience continues to accrue increased empirical attention and popular application, studies utilizing non-clinical samples will become increasingly relevant. The large sample size of the MIDUS data sets allows for more precise analyses due to the relatively high statistical power. The longitudinal design of this study also allows for a unique "before" snapshot of transitional caregivers prior to the onset of their caregiver role. This allowed for comparisons with the non-caregiver group via moderation tests to highlight possible differences at both time points of the study, meaning that stronger, predictive inferences can be drawn. This study therefore answers the call in the literature for more longitudinal, pre-caregiving research as a means of identify possible protective factors (Cameron & Elliott, 2015). This study's strengths and limitations point the way to considerations for future research about resilience, both among caregivers and other populations.

Future Directions for Research

In considering the limitations and strengths of the present study, several directions for future research in this area emerge. This study offers a basis for further examination of the resilient personality prototype among non-clinical populations, which lends itself towards the identification of fundamental psycho-behavioral mechanisms of resilience.

In terms of study design, future longitudinal studies should try capturing more frequent measurements to make more finely-tuned "before" and "after" comparisons illustrating caregiver adjustment. This presents a challenge, as the caregiver role often manifests unexpectedly due to sudden onset of illness or disability. However, perhaps via regular surveying of middle age to older individuals via community centers or screening in primary care settings, potential near-future caregivers can be identified and studied as they adjust to the new role. In addition to better capturing the caregiving experience, longitudinal designs with more frequent follow-ups might also better capture the operation of mechanisms of resilience as they unfold over time. This is especially the case when considering that the mechanisms that were supported in the current study consisted of subjective states (e.g., positive affect) and specific behaviors (e.g., emotion-focused coping) that might vary substantially over relatively short periods of time, even while displaying a degree of trait-like consistency over time.

While it is not possible to resort to experimental methods and manipulate personality, future research could improve through a better longitudinal design to avoid concerns regarding temporal mediation. For example, future designs might measure

personality-based resilience clusters at T1, followed by measurement of mediators at T2, then measurement of outcomes at T3. This would allow for more robust inferences to be drawn between the personality prototypes, their possible mechanistic mediators, and their impact on well-being outcomes. This would also address the issue of atemporal mediation as discussed in the Limitations subsection of this chapter (Winer et al., 2016).

In terms of increasing generalizability, studies of caregiver resilience and adjustment that focus on specific racial and cultural groups should be examined. The MIDUS used the RDD (random digit dialing) method of participation recruitment, which generated random phone numbers to contact potential participants. While the RDD method mitigates potential selection bias, future studies could perhaps identify and work with specific cultural communities to examine differences in resilience and adjustment in an explicit cultural context. A search of the extant literature reveals that this work has recently begun receiving more in-depth empirical attention, largely via dissertations in the fields of nursing, public health, and social work. This demonstrates the nascent state of these cultural inquiries into caregiver resilience, and the important role that psychologically-based research has yet to play in this arena. As with many other areas of psychological inquiry, research on the psychology of caregiving may suffer from a lack of diversity (Henrich et al., 2010). Psychology can contribute to this arena through the lens of a theoretically robust, personality-based model of resilience. Combined with the systemic and health-related focus of fields like public health and social work, future psychological research could offer a clear view of how specific personality traits predict types of and degrees of various relevant health behaviors among various cultures.

Finally, individuals who have transitioned out of the caregiver role (e.g., perhaps due to the death of, or improvement of care recipients' health) were excluded from this study, but they are increasingly garnering interest in the study of caregiver well-being (Haley et al., 2015). In future studies using the MIDUS data, this would mean examining participants who reported being a caregiver at Phase II and denied so at Phase III fared in terms of well-being. Once again, it should be noted that the item used to identify caregivers in the MIDUS is rather broad. There is interest in the role of resilience for these former caregivers who have transitioned out of the stressful role. Inasmuch as many caregivers report that their caregiving responsibilities are a source of meaning in life (Baronet, 2003; Cohen et al., 1994), the transition out of caregiving may carry risks as well as relief. Future research should investigate how resilience functions among caregivers both in their adjustment *into* and transition *out of* the caregiver role. This would illuminate perhaps how a resilient personality might facilitate adjustment of all kinds, especially when compared to the return to baseline well-being over time observed for caregivers (Haley et al., 2015).

In conclusion, this study sets a solid foundation for understanding caregiver resilience via the MIDUS project. It provides evidence for the prominence of certain factors in adjustment to a caregiver role, with particularly strong support for the role of positive affect and emotion-focused coping in resilience. The results of this study yielded patterns that, while not entirely consistent with all hypothesized model pathways, support the Block model of resilience (Block & Block, 1980) and hone in on exact mechanisms of this phenomenon. This conceptual refinement helps to translate

"resilience" into applicable terms that can have real, therapeutic implications for caregivers and non-caregivers alike. As the MIDUS project continues amassing longitudinal data in the coming years, further opportunities to study caregiver adjustment and facets of resilience abound.

REFERENCES

Alessandri, G., Vecchione, M., Donnellan, B.M., Eisenberg, N., Caprara, G.V., & Cieciuch, J. (2014). On the cross-cultural replicability of the resilient, undercontrolled, and overcontrolled personality types. *Journal of Personality, 82*(4), 340-353. https://doi.org/10.1111/jopy.12065

Asendorpf, J. B., Borkenau, P., Ostendorpf, F., & van Aken, M.A.G. (2001). Carving personality description at its joints: Confirmation of three replicable personality prototypes for both child and adults. *European Journal of Personality, 15*(3), 169-198. https://doi.org/10.1002/per.408.abs

Baronet, A. (2003). The impact of family relations on caregivers' positive and negative appraisal of their caregiving activities. *Family Relationship*. *52*(1), 137-142. https://doi.org/10.1111/j.1741-3729.2003.00137.x

Berry, J., Elliott, T., & Rivera, P. (2007). Resilient, undercontrolled, and overcontrolled personality prototypes among persons with spinal cord injury. *Journal of Personality Assessment*, *89*(3), 292-302. https://doi.org/10.1080/00223890701629813

Berry, J. W., Elliott, T., Grant, J., Edwards, G., & Fine, P. R. (2012). Does problem-solving training for family caregivers benefit care recipients with severe disabilities? A latent growth model of the Project CLUES randomized clinical trial. *Rehabilitation Psychology*, *57*(2), 98-112. https://doi.org/10.1037/a0028229

Block, J. (1961). The Q-sort method in personality assessment and psychiatric research. Springfield, IL, US: Charles C. Thomas Publisher. https://doi.org/10.1037/13141-000

Block, J. H., & Block, J. (1980). The role of ego control and ego resiliency in the organization of behavior. In W.A. Collins (Ed.), *The Minnesota Symposium on Child Psychology: Vol. 13. Development of cognition, affect, and social relations* (pp. 39-101). Hillsdale, NJ: Erlbaum. https://doi.org/10.4324/9781315803029

Block, J., & Kremen, A.M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology, 70* (2), 349-361. https://doi.org/10.1037//0022-3514.70.2.349

Bonanno, G.A. (2004). Loss, trauma and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20-28. https://doi.org/10.1037/0003-066x.59.1.20

Bonanno, G. A., Kennedy, P., Galatzer-Levy, I. R., Lude, P., & Elfstrom, M. L. (2012). Trajectories of resilience, depression and anxiety following spinal cord injury. *Rehabilitation Psychology, 57*(3), 236-247. https://doi.org/10.1037/a0029256

Bonanno, G.A., Romero, S., &. Klein, S. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory, 26*(2), 139-169. https://doi.org/10.1080/1047840x.2015.992677

Bookwala, J. & Schulz, R. (1998). The role of neuroticism and mastery in spouse caregivers' assessment of and response to a contextual stressor. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *53B*(3), 155-164. https://doi.org/10.1093/geronb/53b.3.p155

Bryan, C. J., Ray-Sannerud, B., & Heron, E. A. (2015). Psychological flexibility as a dimension of resilience for posttraumatic stress, depression, and risk for suicidal ideation among Air Force personnel. *Journal of Contextual Behavioral Science*, *4*(4), 263-268. https://doi.org/10.1016/j.jcbs.2015.10.002

Cameron, J. & Elliott, T. (2015). Studying long-term caregiver health outcomes with methodologic rigor. *Neurology*, *84*(13), 1292-1293. https://doi.org/10.1212/wnl.0000000000001430

Carter, R. W., & Golant, S. K. (2013). *Helping yourself help others: A book for caregivers* (2nd ed.). New York: Public Affairs. https://doi.org/10.1093/sw/41.3.328

Carver, C. S., Scheier, M. F. & Weintraub, J. K. (1989). Assessing coping strategy: A theoretically-based approach. *Journal of Personality and Social Psychology*, *56*(2), 267-283. https://doi.org/10.1037//0022-3514.56.2.267

Chappell, N. & Dujela, C. (2009). Caregivers—Who copes how?. *The International Journal of Aging and Human Development*, *69*(3), 221-224. https://doi.org/10.2190/ag.69.3.d

Cohen, C.A., Gold, D.P., Shulman, K.I., Zucchero, C.A. (1994). Positive aspects of caregiving: An overlooked variable in research. *Canadian Journal of Aging. 13*(3), 378-391. https://doi.org/10.1017/s071498080000619x

Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO–PI–R) and NEO Five-Factor Inventory (NEO–FFI) professional manual*. Odessa, FL: Psychological Assessment Resources. https://doi.org/10.1037/t03907-000

Davis, E. L., Deane, F. P., & Lyons, G. C. (2016). An acceptance and commitment therapy self-help intervention for carers of patients in palliative care: Protocol of a feasibility randomised controlled trial. *Journal of Health Psychology,* 135910531667972. https://doi.org/10.1177/1359105316679724

Davydov, D. M., Stewart, R., Ritchie, K., & Chaudrieu, I. (2010). Resilience and mental health. *Clinical Psychology Review, 30*(5), 479-495. https://doi.org/10.1016/j.cpr.2010.03.003

Dennissen, J. A., Asendorpf, J. B., & van Aken, M. G. (2008). Childhood personality predicts long-term trajectories of shyness and aggressiveness in the context of demographic transitions in emerging adulthood. *Journal of Personality, 76*(1), 67-100. https://doi.org/10.1111/j.1467-6494.2007.00480.x

Dias, R., Santos, R., Sousa, M., Nogueira, M., Torres, B., Belfort, T., & Dourado, M. (2015). Resilience of caregivers of people with dementia: A systematic review of biological and psychosocial determinants. *Trends in Psychiatry and Psychotherapy, 37*(1), 12-19. https://doi.org/10.1590/2237-6089-2014-0032

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, *54*(1), 403-425. https://doi.org/10.1146/annurev.psych.54.101601.145056

Donnellan, M. B., & Robins, R. W. (2010). Resilient, overcontrolled, and undercontrolled personality types: Issues and controversies. *Personality and Social Psychology Compass*, *4*(11), 1070-1083. https://doi.org/10.1111/j.1751-9004.2010.00313.x

Elliott, T., Berry, J., Richards, J., & Shewchuk, R. (2014). Resilience in the initial year of caregiving for a family member with a traumatic spinal cord injury. *Journal of Consulting and Clinical Psychology*, *82*(6), 1072-1086. https://doi.org/10.1037/a0037593

Elliott, T. Hsiao, Y. Kwok, O., Kimbrel, N., Meyer, E., DeBeer, B., Morrisette, S., & Gulliver, S. (2015). Resilience, traumatic brain injury, depression, and posttraumatic stress among Iraq/Afghanistan war veterans. *Rehabilitation Psychology*, *60*(3), 263-276. https://doi.org/10.1037/rep0000050

Elliott, T., & Erosa, N. A. (2016). Psychological adjustment. In Y. Benyamini, M. Johnstone, &V. Karademas (Eds.), *Assessment in Health Psychology* (pp. 201-212). Boston, MA: European Association in Psychological Assessment (EAPA) Book Series, Hogrefe Publishing. https://doi.org/10.1027/00452-000

Elliott, T. Hsiao, Y. Kimbrel, N., Meyer, E., DeBeer, B., Gulliver, S., Kwok, O., & Morrisette, S. (2017). Resilience and traumatic brain injury among

Iraq/Afghanistan war veterans: Differential patterns of adjustment and quality of life. *Journal of Clinical Psychology, 73*(9), 1160-1178. https://doi.org/10.1002/jclp.22414

Farkas, D., & Orosz, G. (2015). Ego-resiliency reloaded: A three-component model of general resiliency. *PLoS ONE*, *10*(3), e0120883. http://doi.org/10.1371/journal.pone.0120883

Fleming, J., & Ledogar, R. J. (2008). Resilience, an evolving concept: A review of literature relevant to aboriginal research. *Pimatisiwin, 6*(2), 7-23. https://doi.org/10.1080/00207543.2011.563826

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist, 18*(1), 12-23. https://doi.org/10.1027/1016-9040/a000124

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, *3*(21). 219-239. https://doi.org/10.2307/2136617

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*(1), 745-774. https://doi.org/10.1146/annurev.psych.55.090902.141456

Fredrickson, B. L., Tugade, M., Waugh, C., & Larkin, G. (2003). What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001.

Journal of Personality and Social Psychology, *84*(2), 365-376. https://doi.org/10.1037//0022-3514.84.2.365

Fredrickson, B. L. (2013). Positive emotions broaden and build. *Advances in Experimental Social Psychology*, *47*, 1-53. https://doi.org/10.1016/b978-0-12-407236-7.00001-2

Garmezy, N. (1991). Resilience and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist, 34*(4), 416-430. https://doi.org/10.1177/0002764291034004003

Grant, J. S., Elliott, T. R., Weaver, M., Glandon, G. L., Raper, J. L., & Giger, J. N. (2006). Social support, social problem-solving abilities, and adjustment of family caregivers of stroke survivors. *Archives of Physical Medicine and Rehabilitation, 87*(3), 343-350. https://doi.org/10.1016/j.apmr.2005.09.019

Hays, W.L. (1981). *Statistics* (3rd ed.). New York: Holt, Rinehart & Winston.

Heaton, J., Noyes, J., Sloper, P., & Shah, R. (2005). Families' experiences of caring for technology-dependent children: A temporal perspective. *Health and Social Care in the Community*, *13*(5), 441-450. https://doi.org/10.1111/j.1365-2524.2005.00571.x

Haley, W., Levine, E., Brown, S., & Bartolucci, A. (1987). Stress, appraisal, coping, and social support as predictors of adaptational outcome among dementia caregivers. *Psychology and Aging*, *2*(4), 323-330.

Haley, W., Roth, D., Hovater, M., & Clay, O. (2015). Long-term impact of stroke on family caregiver well-being: A population-based case-control study. *Neurology, 84*(13), 1323-1329. https://doi.org/10.1212/wnl.0000000000001418

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*(2-3), 61-83. https://doi.org/10.2139/ssrn.1601785

Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem-solving. *Journal of Personality and Social Psychology, 52*(6), 1122-1131. https://doi.org/10.1037//0022-3514.52.6.1122

Isler, L., Fletcher, G. J. O., Liu, J. H., & Sibley, C. G. (2017). Validation of the four-profile configuration of personality types within the Five-Factor Model. *Personality and Individual Differences, 106*, 257-262. https://doi.org/10.1016/j.paid.2016.10.058

Jang, Y., Clay, O., Roth, D., Haley, W., & Mittelman, M. (2004). Neuroticism and longitudinal change in caregiver depression: Impact of a spouse-caregiver intervention program. *The Gerontologist, 44*(3), 311-317. https://doi.org/10.1093/geront/44.3.311

Jansen, J. E., Haahr, U. H., Lyse, H.-G., Pedersen, M. B., Trauelsen, A. M., & Simonsen, E. (2017). Psychological flexibility as a buffer against caregiver distress in families with psychosis. *Frontiers in Psychology, 8*, 1-7. https://doi.org/10.3389/fpsyg.2017.01625

Jones, S., Whitford, H., & Bond, M. (2015). Burden on informal caregivers of elderly cancer survivors: Risk versus resilience. *Journal of Psychosocial Oncology*, *33*(2), 178-198. https://doi.org/10.1080/07347332.2014.1002657

Kim, S.K., Park, M., Lee, Y., Choi, S.H., Moon, S.Y., Seo, S.W., … and Moon, Y. (2016). Influence of personality on depression, burden, and health-related quality of life in family caregivers of persons with dementia. *International Psychogeriatrics*, *29*(2), 227-237. https://doi.org/10.1017/s1041610216001770

Koerner, S., Kenyon, D., & Shirai, Y. (2009). Caregiving for elder relatives: Which caregivers experience personal benefits/gains? *Archives of Gerontology and Geriatrics*, *48*(2), 238-245. https://doi.org/10.1016/j.archger.2008.01.015

Kok, B., Coffey, K., Cohn, M., Catalino, L., Vacharkulksemsuk, T., Algoe, S., Brantley, M., & Fredrickson, B. (2013). How positive emotions build physical health: Perceived positive social connections account for the upward spiral between positive emotions and vagal tone. *Psychological Science*, *24*(7), 1123-1132. https://doi.org/10.1177/0956797612470827

Lai, D. (2012). Effect of financial costs on caregiving burden of family caregivers of older adults. *SAGE Open*, *2*(4), 1-14. https://doi.org/10.1177/2158244012470467

Laird, V., Elliott, T. R., Brossart, D. F., Luo, W., Hicks, J. A., Warren, A. M., & Foreman, M. (2018). Trajectories of affective balance one year after traumatic injury: Associations with resilience, social support, and mild traumatic brain injury. *Journal of Happiness Studies*. https://doi.org/10.1007/s10902-018-0004-1

Lazarus, R. S., Kanner, A. D., & Folkman, S. (1980). Emotions: A cognitive phenomenological analysis. In R. Plutchik & H. Kellerman (Eds.), *Theories of emotion* (pp. 189-217). New York: Academic Press. https://doi.org/10.1016/b978-0-12-558701-3.50014-4

Levin, M. E., MacLane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A., & Pistorello, J. (2014). Examining psychological inflexibility as a transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science*, *3*(3), 155-163. https://doi.org/10.1016/j.jcbs.2014.06.003

Lin, N., Ensel, W. M., Simeone, R. S., & Kuo, W. (1979). Social support, stressful life events, and illness: A model and an empirical test. *Journal of Health and Social Behavior*, *20*(2), 108-119. https://doi.org/10.2307/2136433

Löckenhoff, C., Duberstein, P., Friedman, B., & Costa, P. (2011). Five-factor personality traits and subjective health among caregivers: The role of caregiver strain and self-efficacy. *Psychology and Aging*, *26*(3), 592-604. https://doi.org/10.1037/a0022209

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*(3), 543-562. https://doi.org/10.1111/1467-8624.00164

Márquez-González, M., Losada, A., & Romero-Moreno, R. (2014). Acceptance and commitment therapy with dementia caregivers. In N. A. Pachana & K. Laidlaw, (Ed.), The Oxford Handbook of Clinical Geropsychology: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199663170.001.0001

Marino, V. R., Haley, W. E., & Roth, D. L. (2017). Beyond hedonia: A theoretical reframing of caregiver well-being. *Translational Issues in Psychological Science*, *3*(4), 400-409. https://doi.org/10.1037/tps0000134

Markiewicz, D., Reis, M., & Gold, D. (1997). An exploration of attachment styles and personality traits in caregiving for dementia patients. *The International Journal of Aging and Human Development*, *45*(2), 111-132. https://doi.org/10.2190/t4q4-e8f0-jwt5-dbag

Marquez-Gonzalez, M., Romero Moreno, R., Lopez Martinez, J., Losada, A., Losada, A., Romero-Moreno, R., & ... Lopez, J. (2014). Development and validation of the Experiential Avoidance in Caregiving Questionnaire (EACQ). *Aging & Mental Health*, *18*(7), 897-904. https://doi.org/10.1080/13607863.2014.896868

Masten, A. (2001). Ordinary magic - Resilience processes in development. *American Psychologist*, *56*(3), 227-238. https://doi.org/10.1037//0003-066x.56.3.227

Mausbach, B., Chattillion, E., Moore, R., Roepke, S., Depp, C., & Roesch, S. (2011). Activity restriction and depression in medical patients and their caregivers: A meta-analysis. *Clinical Psychology Review*, *31*(6), 900-908. https://doi.org/10.1016/j.cpr.2011.04.004

McCrae, R.R., & Costa, P.T. (2010). *NEO inventories for the NEO Personality Inventory-3 (NEO-PI-3), NEO Five-Factor Inventory-3 (NEO-FFI-3), NEO Personality Inventory-Revised (NEO-PI-R): Professional manual.* Lutz, FL: Psychological Assessment Resources, Inc.

Moos, R. H., & Holahan, C. J. (2003). Dispositional and contextual perspectives on coping: Toward an integrative framework. *Journal of Clinical Psychology*, *59*(12), 1387-1403. https://doi.org/10.1002/jclp.10229

Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology*, *75*(5), 1333-1349. https://doi.org/10.1037//0022-3514.75.5.1333

Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

National Alliance for Caregiving, & AARP Public Policy Institute. (2015) report: *Caregiving in the U.S. 2015*. Retrieved from AARP Website: http://www .caregiving.org/wp-content/uploads/2015/05/2015_CaregivingintheUS _FinalReport-June-4_WEB.pdf.

Ong, A. D., Bergeman, C. S., & Boker, S. M. (2009). Resilience comes of age: Defining features in later adulthood. *Journal of Personality*, *77*(6), 1777-1804. https://doi.org/10.1111/j.1467-6494.2009.00600.x

Ong, A. D., Zautra, A. J., & Reid, M. C. (2010). Psychological resilience predicts decreases in pain catastrophizing through positive emotions. *Psychology and Aging*, *25*(3), 516-523. https://doi.org/10.1037/a0019384

O'Rourke, N., Kupferschmidt, A., Claxton, A., Smith, J., Chappell, N., & Beattie, B. (2010). Psychological resilience predicts depressive symptoms among spouses of

persons with Alzheimer disease over time. *Aging & Mental Health*, *14*(8), 984-993. https://doi.org/10.1080/13607863.2010.501063

Ortman, J., Velkoff, V., & Hogan, H. (2014). An aging nation: The older population in the United States. *Current Population Reports*. Washington, D.C.: U.S. Census Bureau.

Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. (1990). Caregiving and the stress process: An overview of concepts and their measures. *The Gerontologist*, *30*(5), 583-594. https://doi.org/10.1093/geront/30.5.583

Penley, J. A., & Tomaka, J. (2002). Associations among the Big Five, emotional responses, and coping with acute stress. *Personality and Individual Differences*, *32*(7), 1215-1228. https://doi.org/10.1016/s0191-8869(01)00087-3

Pfeiffer, K., Beische, D., Hautzinger, M., Berry, J., Wengert, J., & Hoffrichter, R.,…. & Elliott, T. (2014). Telephone-based problem-solving intervention for family caregivers of stroke survivors: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *82*(4), 628-643. https://doi.org/10.1037/a0036987

Philippe, F. L., Laventure, S., Beaulieu-Pelletier, G., Lecours, S., & Lekes, N. (2011). Ego-resiliency as a mediator between childhood trauma and psychological symptoms. *Journal of Social and Clinical Psychology*, *30*(6), 583-598. https://doi.org/10.1521/jscp.2011.30.6.583

Pielmaier, L., Milek, A., Nussbeck, F. W., Walder, B., & Maercker, A. (2013). Trajectories of posttraumatic stress symptoms in significant others of patients

with severe traumatic brain injury. *Journal of Loss and Trauma*, *18*(6), 521-538. https://doi.org/10.1080/15325024.2012.719342

Pinquart, M., & Sorensen, S. (2003). Differences between caregivers and non-caregivers in psychological health and physical health: A meta-analysis. *Psychology and Aging*, *18*(2), 250-267. https://doi.org/10.1037/0882-7974.18.2.250

Quale, A. J., & Schanke, A.-K. (2010). Resilience in the face of coping with a severe physical injury: A study of trajectories of adjustment in a rehabilitation setting. *Rehabilitation Psychology*, *55*(1), 12-22. https://doi.org/10.1037/a0018415

Radler, B.T., (2014). The Midlife in the United States (MIDUS) Series: A national longitudinal study of health and well-being. *Open Health Data*. *2*(1), p.e3. http://doi.org/10.5334/ohd.ai

Redfoot, D., Feinberg, L., & Houser, A. (2013). *The aging of the baby boom and the growing care gap: A look at future declines in the availability of family caregivers*. Washington, D.C. AARP Public Policy Institute.

Reinhard, S.C., Feinberg, L.F., Choula, R., & Houser, A. (2015). *Valuing the Invaluable: 2015 Update*. Retrieved from AARP Website: http://www.aarp.org/content/dam/aarp/ppi/2015/valuing-the-invaluable-2015-update-new.pdf.

Renzetti, C., Iacono, S., Pinelli, M., Marri, L., & Modugno, M. (2001). Living with dementia: Is distress influenced by carer personality? *Archives of Gerontology and Geriatrics*, *33*(7), 333-340. https://doi.org/10.1016/s0167-4943(01)00157-1

Rohr, M., Wagner, J., & Lang, F. (2013). Effects of personality on the transition into caregiving. *Psychology and Aging*, *28*(3), 692-700. https://doi.org/10.1037/a0034133

Rossi, A. S. (2001). *Caring and doing for others: Social responsibility in the domains of family, work, and community*. Chicago: University of Chicago Press. https://doi.org/10.1086/378422

Ryff, C. D., Friedman, E., Fuller-Rowell, T., Love, G., Morozink, J., Radler, B., Tsenkova, V., & Miyamoto, Y. (2012). Varieties of resilience in MIDUS. *Social and Personality Psychology Compass*, *6*(11), 792-806. https://doi.org/10.1111/j.1751-9004.2012.00462.x

Schuster, T. L., Kessler, R. C., & Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressive mood. *American Journal of Community Psychology, 18*(3), 423-438. https://doi.org/10.1007/bf00938116

Shiner, R.L., & Masten, A.S. (2012). Childhood personality as a harbinger of competence and resilience in adulthood. *Development and Psychopathology*, *24*(2), 507-528. https://doi.org/10.1017/s0954579412000120

Smillie, L. D., DeYoung, C. G., & Hall, P. J. (2015). Clarifying the relation between extraversion and positive affect. *Journal of Personality*, *83*(5), 564-574. https://doi.org/10.1111/jopy.12138

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining

psychological processes. *Journal of Personality and Social Psychology*, *89*(6), 845-851. https://doi.org/10.1037/0022-3514.89.6.845

Steca, P., Alessandri, G., & Caprara, G. (2010). The utility of a well-known personality typology in studying successful aging: Resilients, undercontrollers, and overcontrollers in old age. *Personality and Individual Differences*, *48*(4), 442 -446. https://doi.org/10.1016/j.paid.2009.11.016

Stonnington, C. M., Darby, B., Santucci, A., Mulligan, P., Pathuis, P., Cuc, A., … Sood, A. (2016). A resilience intervention involving mindfulness training for transplant patients and their caregivers. *Clinical Transplantation*, *30*(11), 1466-1472. https://doi.org/10.1111/ctr.12841

Sutter, M., Perrin, P., Peralta, S., Stolfi, M., Morelli, E., Pena Obeso, L., & Arango-Lasprilla, J. (2015). Beyond strain: Personal strengths and mental health of Mexican and Argentinean dementia caregivers. *Journal of Transcultural Nursing*, *27*(4), 376-384. https://doi.org/10.1037/e545562014-001

Taylor, Z. E., Doane, L. D., & Eisenberg, N. (2014). Transitioning from high school to college: Relations of social support, ego-resiliency, and maladjustment during emerging adulthood. *Emerging Adulthood*, *2*(2), 105-115. https://doi.org/10.1177/2167696813506885

Thompson, B. (1994). *Inappropriate statistical practices in counseling research: Three pointers for readers of research literature.* Washington, D.C. Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. 391 990).

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*(2), 320-333. https://doi.org/10.1037/0022-3514.86.2.320

Vitaliano, P., Strachan, E., Dansie, E., Goldberg, J., & Buchwald, D. (2014). Does caregiving cause psychological distress? The case for familial and genetic vulnerabilities in female twins. *Annals of Behavioral Medicine*, *47*(2), 198-207. https://doi.org/10.1007/s12160-013-9538-y

Vollrath, M., & Torgersen, S. (2000). Personality types and coping. *Personality and Individual Differences*, *29*(2), 367-378. https://doi.org/10.1016/s0191-8869(99)00199-3

Walsh, M.V., Armstrong, T., Poritz, J., Elliott, T.R., Jackson, W.T., & Ryan, T. (2016). Resilience, pain interference, and upper limb loss: Testing the mediating effects of positive emotion and activity restriction on distress. *Archives of Physical Medicine and Rehabilitation*, *97*(5), 781-787. https://doi.org/10.1016/j.apmr.2016.01.016

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*(6), 1063-1070. https://doi.org/10.1037//0022-3514.54.6.1063

Werner, E. E., & Smith, R. S. (1989). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York: Adams Bannister Cox.

Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science, 4*(3), 81-85. https://doi.org/10.1036/1097-8542.yb120299

Whalen, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family and friends: Costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships, 17*(1), 5-30. https://doi.org/10.1177/0265407500171001

Winer, E. S., Cervone, D., Bryant, J., McKinney, C., Liu, R. T., & Nadorff, M. R. (2016). Distinguishing mediational models and analyses in clinical psychology: Atemporal associations do not imply causation. *Journal of Clinical Psychology, 72*(9), 947-955. https://doi.org/10.1002/jclp.22298

APPENDIX A

SCALES AND ITEMS

Five-Factor Model Items (Rossi, 2001)

"Please indicate how well each of the following describes you…"

Neuroticism
Moody, Worrying, Nervous, Calm (Reverse-coded)

Extraversion
Outgoing, Friendly, Lively, Active, Talkative

Openness to Experience
Creative, Imaginative, Intelligent, Curious, Broad-minded, Sophisticated, Adventurous

Agreeableness
Helpful, Warm, Caring, Softhearted, Sympathetic

Conscientiousness
Organized, Responsible, Hardworking, Thorough**,** Careless (Reverse-coded)

Positive Affect Items (Positive and Negative Affect Schedule [PANAS]; Watson, Clark, & Tellegen, 1988)

"During the past 30 days, how much of the time did you feel…"

"…enthusiastic?"
"…attentive?"
"…proud?"
"…active?"

Social Support Scales & Items (Whalen & Lachman, 2000)

Support from Family
"Not including your spouse or partner, how much do members of your family really care about you?
"How much do they understand the way you feel about things?
"How much can you rely on them for help if you have a serious problem?"
"How much can you open up to them if you need to talk about your worries?"

Support from Friends
"How much do your friends really care about you?

"How much do they understand the way you feel about things?
"How much can you rely on them for help if you have a serious problem?"
"How much can you open up to them if you need to talk about your worries?"

Coping Style Scales & Items (Carver, Scheier, & Weintraub, 1989)

Problem-focused Coping

Positive Reinterpretation and Growth Subscale
"I try to grow as a person as a result of the experience."
"I try to see it in a different light, to make it seem more positive."
"I look for something good in what is happening."
"I learn something from the experience."

Active Coping Subscale
"I concentrate my efforts on doing something about it."
"I take additional action to try to get rid of the problem."
"I take direct action to get around the problem."
"I do what has to be done, one step at a time."

Planning Subscale
"I make a plan of action."
"I try to come up with a strategy about what to do."
"I think about how I might best handle the problem."
"I think hard about what steps to take."

Emotion-focused Coping

Focus on and Venting of Emotion Subscale
"I get upset and let my emotions out."
"I get upset, and am really aware of it."
"I let my feelings out."
"I feel a lot of emotional distress and find myself expressing those feelings a lot."

Denial Subscale
"I say to myself 'this isn't real'."
"I refuse to believe that it has happened."
"I pretend that it hasn't really happened."
"I act as though it hasn't even happened."

Behavioral Disengagement Subscale
"I admit to myself that I can't deal with it, and quit trying."
"I give up trying to reach my goal."

"I give up the attempt to get what I want."
"I reduce the amount of effort I'm putting into solving the problem."

Depression Items (Wang, Berglund, & Kessler, 2000)

"During two weeks in past 12 months, when you felt sad, blue, or depressed, did you…"
"…lose interest in most things?"
"…feel more tired out or low on energy than is usual?"
"…lose your appetite?" *or* "…appetite increased?"
"…have more trouble falling asleep than usual?"
"…have a lot more trouble concentrating than usual?"
"…feel down on yourself, no good, or worthless?"
"…think a lot about death?"

Life Satisfaction Items (Prenda & Lachman, 2001)

Life Overall
"Using a scale from 0 to 10 where 0 means 'the worst possible life overall' and 10 means 'the best possible life overall,' how would you *rate your life overall* these days?"

Health
"Using a scale from 0 to 10 where 0 means 'the worst possible health' and 10 means 'the best possible health,' how would you *rate your health* these days?"

Work
"Please think of the work situation you are in now, whether part-time or full-time, paid or unpaid, at home or at a job. Using a scale from 0 to 10 where 0 means 'the worst possible work situation' and 10 means 'the best possible work situation,' how would you *rate your work situation* these days?"

Finances
"Using a scale from 0 to 10 where 0 means 'the worst possible financial situation' and 10 means 'the best possible financial situation,' how would you *rate your financial situation* these days?"

Relationship with Children (if applicable)
"Using a scale from 0 to 10 where 0 means 'the worst possible relationship' and 10 means 'the best possible relationship,' how would you *rate your overall relationship with your children* these days?"

Relationship with Spouse/Partner (if applicable)
"Using a scale from 0 to 10 where 0 means 'the worst possible marriage or close relationship' and 10 means 'the best possible marriage or close relationship,' how would you *rate your marriage or close relationship* these days?"

APPENDIX B

TABLES AND FIGURES

Table 1

Self-reported race of MIDUS Phase II & III participants

Self-reported race	*N*	Percent
White	2,627	92.57
Black/African-American	91	3.20
Native American	41	1.44
Asian	14	0.49
Native Hawaiian or Pacific Islander	1	0.04
Other	56	1.97
Don't know	7	0.25
Refused	1	0.04
	2,838	100.00

Table 2

Descriptive Statistics for Self-Report Variables by Gender and Caregiver Status

	Caregiver Groups					
	Chronic		*Transitional*		*Non-caregiver*	
	Men (n = 18)	Women (n = 73)	Men (n = 84)	Women (n = 182)	Men (n = 1035)	Women (n = 1157)
Self-Report Variables	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
FFM Traits						
Agreeableness	3.18 (0.55)	3.68 (0.37)	3.33 (0.52)	3.59 (0.40)	3.29 (0.51)	3.57 (0.44)
Extraversion	3.11 (0.63)	3.16 (0.57)	3.10 (0.55)	3.18 (0.55)	3.07 (0.46)	3.15 (0.55)
Neuroticism	1.99 (0.82)	2.31 (0.62)	1.95 (0.60)	2.13 (0.64)	1.96 (0.59)	2.09 (0.61)
Conscientiousness	3.41 (0.46)	3.47 (0.43)	3.31 (0.42)	3.47 (0.42)	3.38 (0.43)	3.46 (0.42)
Openness	3.16 (0.55)	2.87 (0.57)	3.00 (0.52)	2.89 (0.52)	2.95 (0.50)	2.90 (0.53)
Mediator Variables						
Social Support	3.40 (0.40)	3.52 (0.40)	3.23 (0.55)	3.48 (0.47)	3.34 (0.50)	3.51 (0.48)
Positive Affect	3.72 (0.83)	3.55 (0.79)	3.61 (0.64)	3.56 (0.78)	3.65 (0.70)	3.62 (0.74)
Problem-Focused Coping	38.67 (6.72)	39.22 (5.64)	38.15 (5.62)	38.68 (5.61)	37.99 (5.88)	38.27 (5.65)
Emotion-Focused Coping	21.57 (6.42)	23.47 (5.31)	20.69 (5.72)	22.82 (5.14)	20.67 (4.85)	23.08 (5.65)
Outcome Variables						
Depressed Affect – Time 1	0.72 (1.74)	1.21 (2.27)	0.20 (1.06)	0.76 (1.92)	0.20 (1.02)	0.57 (1.71)
Depressed Affect – Time 2	0.39 (1.65)	1.25 (2.38)	.36 (1.36)	0.70 (1.87)	0.25 (1.14)	0.46 (1.55)
Life Satisfaction – Time 1	7.58 (1.10)	7.06 (1.37)	7.63 (1.13)	7.57 (1.13)	7.63 (1.13)	7.62 (1.23)
Life Satisfaction – Time 2	7.91 (1.05)	7.41 (1.25)	7.68 (1.28)	7.49 (1.26)	7.68 (1.28)	7.63 (1.29)

Table 3

Means and Mean Differences for Self-Report Variables by Gender

	Gender	
	Female (*n* = 1,601)	*Male* (*n* = 1,237)
Self-Report Variables	*M* (*SD*)	*M* (*SD*)
FFM Personality Traits		
Agreeableness	3.61_A (0.44)	3.29_B (0.51)
Extraversion	3.17_A (0.55)	3.10_A (0.56)
Neuroticism	2.16_A (0.62)	1.92_B (0.60)
Conscientiousness	3.49_A (0.42)	3.39_B (0.43)
Openness	2.88_A (0.53)	3.06_B (0.50)
Mediator Variables		
Social Support	3.52_A (0.47)	3.31_B (0.51)
Positive Affect	3.60_A (0.75)	3.72_A (0.70)
Problem-Focused Coping	38.82_A (5.89)	38.54_A (5.87)
Emotion-Focused Coping	23.19_A (5.57)	20.74_B (4.94)
Outcome Variables		
Depressed Affect – Time 1	0.75_A (1.77)	0.38_B (1.04)
Depressed Affect – Time 2	0.77_A (1.66)	0.36_B (1.17)
Life Satisfaction – Time 1	7.50_A (1.23)	7.70_A (1.13)
Life Satisfaction – Time 2	7.54_A (1.28)	7.67_A (1.29)

Note: Means not sharing a subscript are significantly different at $p < 0.05$.

Table 4

Means and Mean Differences for Self-Report Variables by Caregiver Status

	Caregiver Groups		
	Chronic (n = 91)	*Transitional* (n = 265)	*Non-caregiver* (n = 2,178)
Self-Report Variables	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
FFM Personality Traits			
Agreeableness	3.45_{A} (0.46)	3.48_{A} (0.46)	3.43_{A} (0.50)
Extraversion	3.13_{A} (0.58)	3.16_{A} (0.55)	3.11_{A} (0.56)
Neuroticism	2.08_{A} (0.68)	2.03_{A} (0.63)	2.01_{A} (0.61)
Conscientiousness	3.45_{A} (0.43)	3.43_{A} (0.43)	3.44_{A} (0.43)
Openness	3.03_{A} (0.57)	2.96_{A} (0.52)	2.93_{A} (0.51)
Mediator Variables			
Social Support	3.45_{AB} (0.40)	3.36_{A} (0.51)	3.43_{B} (0.50)
Positive Affect	3.71_{A} (0.80)	3.63_{A} (0.74)	3.64_{A} (0.72)
Problem-Focused Coping	39.17_{A} (5.84)	38.70_{A} (5.61)	38.17_{A} (5.91)
Emotion-Focused Coping	22.45_{A} (5.56)	21.63_{A} (5.41)	21.81_{A} (5.42)
Outcome Variables			
Depressed Affect – Time 1	0.99_{A} (2.18)	0.32_{B} (1.71)	0.39_{B} (1.43)
Depressed Affect – Time 2	0.83_{A} (2.27)	0.52_{AB} (1.73)	0.34_{B} (1.38)
Life Satisfaction – Time 1	7.44_{A} (1.33)	7.70_{A} (1.12)	7.66_{A} (1.18)
Life Satisfaction – Time 2	7.69_{AB} (1.23)	7.46_{A} (1.30)	7.67_{B} (1.29)

Note: Means not sharing a subscript are significantly different at $p < 0.05$.

Table 5

T-test Results for Self-Report Variables by Resilience Cluster Membership

	Cluster Means		Test Statistics		
	Resilient (*n* = 1,131)	*Non-resilient* (*n* = 1,403)			
Self-Report Variables	*M* (*SD*)	*M* (*SD*)	*t*	*p*	*df* †
FFM Personality Traits					
Agreeableness	3.67 (0.35)	3.27 (0.52)	22.72	< .001*	2465.29
Extraversion	3.44 (0.40)	2.86 (0.53)	31.27	< .001*	2525.70
Neuroticism	1.63 (0.37)	2.37 (0.57)	39.33	< .001*	2428.22
Conscientiousness	3.60 (0.35)	3.29 (0.43)	20.06	< .001*	2531.97
Openness	3.20 (0.43)	2.70 (0.47)	28.22	< .001*	2492.82
Mediator Variables					
Social Support	3.59 (0.40)	3.30 (0.52)	15.40	< .001*	2523.04
Positive Affect	3.95 (0.59)	3.36 (0.71)	22.97	< .001*	2526.33
Problem-Focused Coping	40.71 (5.01)	36.20 (5.74)	21.02	< .001*	2501.90
Emotion-Focused Coping	20.27 (4.78)	23.37 (5.50)	15.12	< .001*	2503.18
Outcome Variables					
Depressed Affect – Time 1	0.23 (1.07)	0.61 (1.76)	6.77	< .001*	2370.22
Depressed Affect – Time 2	0.31 (1.27)	0.50 (1.61)	3.30	.001*	2531.25
Life Satisfaction – Time 1	8.02 (1.00)	7.28 (1.21)	16.85	< .001*	2529.66
Life Satisfaction – Time 2	7.92 (1.17)	7.39 (1.32)	10.07	< .001*	2224.84

Note: † Levene's test for equality of variances was significant for all measures, and as such the degrees of freedom for these analyses were adjusted accordingly*;* **p* < 0.05.

Table 6

Bivariate Correlations among Five-Factor Model Traits

Trait	*A*	*E*	*N*	*C*	*O*
Agreeableness	–	.50	-.11	.29	.33
Extraversion		–	-.20	.28	.51
Neuroticism			–	-.20	-.21
Conscientiousness				–	.31
Openness					–

Note: All correlations in table are statistically significant at $p < .001$.

Table 7

Bivariate Correlations among Predictor, Mediator, & Outcome Variables

Variable	PP	PA	SS	EFC	PFC	DEP1	DEP2	LS1	LS2
Personality Prototype†	–	.42*	.29*	-.29*	.39*	-.13*	-.07*	.32*	.22*
Positive Affect		–	.31*	-.24*	.40*	-.28*	-.20*	.48*	.34*
Social Support			–	-.12*	.30*	-.09*	-.11*	.35*	.28*
Emotion-Focused Coping				–	-.25*	.20*	.11*	-.23*	-.17*
Problem-focused Coping					–	-.07*	-.01	.26*	.19*
Depressed Affect, Time 1						–	.30*	-.23*	-.18*
Depressed Affect, Time 2							–	-.18*	-.25*
Life Satisfaction, Time 1								–	.60*
Life Satisfaction, Time 2									–
n	2820	2832	2838	2815	2815	2838	2838	2838	2512
M	.45	3.62	3.43	22.04	38.27	.47	.43	7.60	.026
SD	.50	.73	.50	5.41	5.86	1.56	1.50	1.19	1.30

Note: † For Personality Prototype, 0 = Non-resilient and 1 = Resilient, * = $p < .001$.

Table 8

Standardized Path Estimates of Model 1 (Main Effects)

		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Positive Affect	Resilience	0.415 (0.015)	28.577	< .001
Social Support	Resilience	0.293 (0.016)	18.090	< .001
Emotion-focused Coping	Resilience	-0.293 (0.017)	-17.605	< .001
Problem-focused Coping	Resilience	0.388 (0.016)	24.749	< .001
Life Satisfaction 1	Resilience	0.082 (0.019)	4.423	< .001
	Positive Affect	0.361 (0.020)	18.011	< .001
	Social Support	0.197 (0.020)	10.076	< .001
	Emotion-focused Coping	-0.097 (0.020)	-4.965	< .001
	Problem-focused Coping	-0.005 (0.021)	-0.258	0.797
Life Satisfaction 2	Resilience	-.003 (0.018)	-.151	0.88
	Positive Affect	0.069 (0.023)	3.041	.002
	Social Support	.067 (0.02)	3.389	.001
	Emotion-focused Coping	-.026 (0.018)	-1.463	.143
	Problem-focused Coping	0.002 (0.020)	.103	0.918
	Life Satisfaction 1	0.537 (0.021)	25.519	< .001

Table 8 Continued

Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Depression 1	Resilience	-0.004 (0.019)	-0.217	0.828
	Positive Affect	-0.266 (0.024)	-11.097	< .001
	Social Support	-0.019 (0.022)	-0.872	0.383
	Emotion-focused Coping	0.154 (0.023)	6.783	< .001
	Problem-focused Coping	0.083 (0.023)	3.622	< .001
Depression 2	Resilience	0.022 (0.021)	1.13	0.259
	Positive Affect	-0.136 (0.024)	5.647	< .001
	Social Support	-0.077 (0.022)	-3.483	< .01
	Emotion-focused Coping	0.052 (0.022)	2.409	.016
	Problem-focused Coping	0.089 (0.021)	4.206	< .001
	Depression 1	.252 (.032)	7.845	< .001
Positive Affect with				
	Social Support	0.211 (0.020)	10.455	< .001
	Emotion-focused Coping	-0.143 (0.021)	-6.887	< .001
	Problem-focused Coping	0.291 (0.019)	15.165	< .001
Social Support with				
	Emotion-focused Coping	-0.032 (0.020)	-1.591	0.112
	Problem-focused Coping	0.210 (0.019)	10.911	< .001

Table 8 Continued

Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Emotion-focused Coping with				
	Problem-Focused Coping	-0.156 (0.021)	-7.344	< .001
Depression 1 with				
	Life Satisfaction 1	-0.108 (0.023)	-4.798	< .001
Depression 2 with				
	Life Satisfaction 2	-0.175 (0.025)	-6.988	< .001

Note: CR=Critical Ratio.

Table 9

Indirect Effect Estimates from Predictors to Outcomes through Mediators in Model 1

Effect	Unstandardized Coefficient	Unstandardized 95% CI
Resilience → Positive Affect → Depression 1**	-0.347	-0.424, -0.274
Resilience → Positive Affect → Depression 1 → Depression 2**	-0.084	-0.118, -0.087
Resilience → Positive Affect → LS 1**	0.358	0.308, 0.412
Resilience → Positive Affect → LS 1 → LS 2**	0.211	0.177, 0.247
Resilience → Social Support → Depression 1	-0.018	-0.061, 0.022
Resilience → Social Support → Depression 1 → Depression 2	-0.004	-0.016, .005
Resilience → Social Support → LS 1**	0.138	0.107, 0.172
Resilience → Social Support → LS 1 → LS 2**	0.081	0.063, 0.104
Resilience → EFC → Depression 1**	-0.142	-0.193, -0.099
Resilience → EFC → Depression 1 → Depression 2**	-0.034	-0.052, -0.022
Resilience → EFC → LS 1**	0.068	0.041, 0.099
Resilience → EFC → LS 1 → LS 2**	0.040	0.024, 0.059
Resilience → PFC → Depression 1**	0.101	0.045, 0.156
Resilience → PFC → Depression 1*→ Depression 2*	0.024	0.011, 0.041
Resilience → PFC → LS 1	-0.005	-0.044, 0.032
Resilience → PFC → LS 1 → LS 2	-0.003	-0.026, 0.019

Note: Reference group for Resilient personality is the non-resilient group.
Depression 1 & 2 and LS 1 & 2 refer to Depression and Life Satisfaction variables at MIDUS Phase II and Phase III. EFC = Emotion-focused Coping; PFC = Problem-focused Coping.
CI = confidence interval (lower bound, upper bound).
*$p < .01$, **$p < .001$.

Table 10

Standardized Path Estimates for Chronic Caregivers in Model 2

Chronic Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Positive Affect	Resilience	0.401 (0.072)	5.538	< .001
Social Support	Resilience	0.230 (0.102)	2.253	0.024
Emotion-focused Coping	Resilience	-0.238 (0.102)	-2.331	0.020
Problem-focused Coping	Resilience	0.431 (0.088)	4.881	< .001
Life Satisfaction 1	Resilience	0.077 (0.107)	0.724	0.469
	Positive Affect	0.391 (0.105)	3.712	< .001
	Social Support	0.125 (0.091)	1.392	0.164
	Emotion-focused Coping	-0.160 (0.110)	-1.455	0.146
	Problem-focused Coping	-0.237 (0.129)	-1.835	0.067
Life Satisfaction 2	Resilience	0.195 (0.116)	1.678	0.093
	Positive Affect	-0.71 (0.130)	-.534	0.587
	Social Support	0.101 (0.111)	.917	0.359
	Emotion-focused Coping	-0.066 (0.096)	.688	0.492
	Problem-focused Coping	-0.041 (0.107)	-1.385	0.700
	Life Satisfaction 1	0.526 (.120)	4.381	< .001

Note: CR=Critical Ratio

Table 10 Continued

Chronic Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Depression 1	Resilience	-0.093 (0.120)	-0.777	0.437
	Positive Affect	-0.278 (0.129)	-2.158	0.031
	Social Support	-0.148 (0.107)	-1.380	0.168
	Emotion-focused Coping	0.096 (0.138)	0.692	0.489
	Problem-focused Coping	0.199 (0.145)	1.372	0.170
Depression 2	Resilience	-0.97 (0.133)	-0.787	0.431
	Positive Affect	-0.181 (0.132)	-1.371	0.171
	Social Support	-0.163 (0.108)	-1.511	0.131
	Emotion-focused Coping	-0.087 (0.099)	-0.876	0.381
	Problem-focused Coping	0.257 (0.142)	1.815	0.070
	Depression 1	0.179 (.127)	1.414	0.157
Positive Affect with				
	Social Support	0.276 (0.105)	2.618	0.009
	Emotion-focused Coping	-0.224 (0.104)	-2.160	0.031
	Problem-focused Coping	0.377 (0.090)	4.183	< .001

Note: CR=Critical Ratio

Table 10 Continued

Chronic Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Social Support with	Emotion-focused Coping	-0.047 (0.093)	-0.509	0.611
	Problem-focused Coping	0.296 (0.096)	3.071	0.002
Emotion-focused Coping with	Problem-Focused Coping	-0.157 (0.105)	-1.497	0.134
Depression 1 with	Life Satisfaction 1	-0.124 (0.124)	-1.003	0.316
Depression 2 with	Life Satisfaction 2	-0.169 (0.039)	-1.220	0.222

Note: CR=Critical Ratio.

Table 11

Standardized Path Estimates for Transitional Caregivers in Models 2

Transitional Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Positive Affect	Resilience	0.477 (0.044)	10.861	< .001
Social Support	Resilience	0.354 (0.052)	6.829	< .001
Emotion-focused Coping	Resilience	-0.334 (0.051)	-6.535	< .001
Problem-focused Coping	Resilience	0.308 (0.056)	5.486	< .001
Life Satisfaction 1	Resilience	0.036 (0.061)	0.600	0.548
	Positive Affect	0.449 (0.066)	6.768	< .001
	Social Support	0.155 (0.072)	2.151	0.031
	Emotion-focused Coping	-0.115 (0.072)	-1.599	0.110
	Problem-focused Coping	-0.012 (0.062)	-0.201	0.841
Life Satisfaction 2	Resilience	-0.022 (0.069)	-0.325	0.745
	Positive Affect	0.154 (0.075)	2.054	0.040
	Social Support	0.159 (0.077)	2.077	0.038
	Emotion-focused Coping	-0.154(0.063)	-2.436	0.015
	Problem-focused Coping	-0.024 (0.060)	-0.401	0.689
	Life Satisfaction 1	0.426 (.067)	6.308	< .001

Note: CR=Critical Ratio

Table 11 Continued

Transitional Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Depression 1	Resilience	0.051 (0.061)	0.829	0.407
	Positive Affect	-0.315 (0.071)	-4.442	< .001
	Social Support	0.099 (0.069)	1.433	0.152
	Emotion-focused Coping	0.192 (0.074)	2.599	0.009
	Problem-focused Coping	0.042 (0.064)	0.650	0.516
Depression 2	Resilience	0.094 (0.068)	1.378	0.168
	Positive Affect	-0.121 (0.074)	-1.627	0.104
	Social Support	-0.176 (0.083)	-2.128	0.033
	Emotion-focused Coping	0.073 (0.064)	1.142	0.254
	Problem-focused Coping	0.092 (0.057)	1.606	0.108
	Depression 1	0.195 (.089)	2.285	0.029

Note: CR=Critical Ratio

Table 11 Continued

Transitional Caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Positive Affect with				
	Social Support	0.163 (0.070)	2.342	0.019
	Emotion-focused Coping	-0.107 (0.069)	-1.552	0.121
	Problem-focused Coping	0.193 (0.063)	3.054	0.002
Social Support with				
	Emotion-focused Coping	0.032 (0.069)	0.460	0.646
	Problem-focused Coping	0.103 (0.064)	1.607	0.108
Emotion-focused Coping with				
	Problem-Focused Coping	-0.112 (0.078)	-1.440	0.150
Depression 1 with				
	Life Satisfaction 1	-0.032 (0.077)	-0.419	0.675
Depression 2 with				
	Life Satisfaction 2	-0.173 (0.092)	-1.869	0.062

Note: CR=Critical Ratio.

Table 12

Standardized Path Estimates for Non-caregivers in Model 2

Non-caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Positive Affect	Resilience	0.401 (0.018)	22.313	< .001
Social Support	Resilience	0.282 (0.019)	14.669	< .001
Emotion-focused Coping	Resilience	-0.281 (0.020)	-14.011	< .001
Problem-focused Coping	Resilience	0.390 (0.019)	20.746	< .001
Life Satisfaction 1	Resilience	0.091 (0.020)	4.497	< .001
	Positive Affect	0.369 (0.022)	16.972	< .001
	Social Support	0.195 (0.022)	8.924	< .001
	Emotion-focused Coping	-0.074 (0.022)	-3.356	0.001
	Problem-focused Coping	-0.003 (0.024)	-0.114	0.910
Life Satisfaction 2	Resilience	0.021 (0.020)	-1.076	0.282
	Positive Affect	0.067 (0.026)	2.56	0.101
	Social Support	0.055 (0.022)	2.537	0.011
	Emotion-focused Coping	-0.019 (0.020)	-.904	0.330
	Problem-focused Coping	0.008 (0.022)	0.337	0.736
	Life Satisfaction 1	0.550 (.024)	22.689	< .001

Note: CR=Critical Ratio.

Table 12 Continued

Non-caregivers				
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Depression 1	Resilience	-0.003 (0.021)	-0.160	0.873
	Positive Affect	-0.278 (0.028)	-10.046	< .001
	Social Support	-0.021 (0.026)	-0.807	0.419
	Emotion-focused Coping	0.140 (0.027)	5.271	< .001
	Problem-focused Coping	0.088 (0.026)	3.332	0.001
Depression 2	Resilience	0.037 (0.023)	1.627	0.104
	Positive Affect	-0.143 (0.028)	-5.130	< .001
	Social Support	-0.061 (0.025)	-2.423	0.015
	Emotion-focused Coping	0.049 (0.026)	1.924	0.054
	Problem-focused Coping	0.050 (0.025)	2.105	0.044
	Depression 1	0.262 (.039)	6.662	< .001
Positive Affect with				
	Social Support	0.226 (0.022)	10.032	< .001
	Emotion-focused Coping	-0.130 (0.024)	-5.429	< .001
	Problem-focused Coping	0.303 (0.022)	13.980	< .001

Note: CR=Critical Ratio.

Table 12 Continued

		Non-caregivers		
		Maximum Likelihood Estimation		
Dependent Variable	Independent Variable	Standardized Estimate (Std. Error)	Standardized CR	*p*
Social Support with				
	Emotion-focused Coping	-0.035 (0.023)	-1.545	0.122
	Problem-focused Coping	0.227 (0.022)	10.473	< .001
Emotion-focused Coping with				
	Problem-Focused Coping	-0.154 (0.024)	-6.518	< .001
Depression 1 with				
	Life Satisfaction 1	-0.102 (0.025)	-4.074	< .001
Depression 2 with				
	Life Satisfaction 2	-0.159 (0.030)	-5.230	< .001

Note: CR=Critical Ratio.

Table 13

Indirect Effect Estimates from Predictors to Outcomes through Mediators: Model 2, Chronic Caregivers

Effect	Unstandardized Coefficient	Unstandardized 95% CI
Resilience → Positive Affect → Depression 1	-0.492	[-1.135, -0.058]
Resilience → Positive Affect → Depression 1 → Depression 2	-0.092	[-0.402, 0.009]
Resilience → Positive Affect → LS 1*	0.423	[0.167, 0.849]
Resilience → Positive Affect → LS 1→ LS 2	0.208	[0.081, 0.469]
Resilience → Social Support → Depression 1	-0.151	[-0.619, 0.029]
Resilience → Social Support → Depression 1 → Depression 2	-0.028	[-0.241, 0.004]
Resilience → Social Support → LS 1	0.078	[-0.011, 0.291]
Resilience → Social Support → LS1 → LS 2	0.039	[-0.003, 0.164]
Resilience → EFC → Depression 1	-0.101	[-0.521, 0.148]
Resilience → EFC → Depression 1 → Depression 2	-0.019	[-0.179, 0.018]
Resilience → EFC → LS 1	0.103	[-0.018, 0.376]
Resilience → EFC → LS1 → LS 2	0.051	[-0.005, 0.232]
Resilience → PFC → Depression 1	0.377	[-0.15, 1.117]
Resilience → PFC → Depression 1 → Depression 2	0.07	[-0.019, 0.431]
Resilience → PFC → LS 1	-0.276	[-0.673, -0.011]
Resilience → PFC → LS 2	-0.136	[-0.353, -0.017]

Note: Reference group for Resilient personality is the non-resilient group. Depression 1 & 2 and LS 1 & 2 refer to Depression and Life Satisfaction variables at MIDUS Phase II and Phase III. EFC = Emotion-focused Coping; PFC = Problem-focused Coping. CI = confidence interval (lower bound, upper bound). $*p < .01$.

Table 14

Indirect Effect Estimates from Predictors to Outcomes through Mediators: Model 2, Transitional Caregivers

Effect	Unstandardized Coefficient	Unstandardized 95% CI
Resilience → Positive Affect → Depression 1**	-0.514	[-0.843, -0.257]
Resilience → Positive Affect → Depression 1 → Depression 2*	-0.101	[-0.269, -0.018]
Resilience → Positive Affect → LS 1**	0.478	[0.314, 0.732]
Resilience → Positive Affect → LS1 → LS 2**	0.237	[0.137, 0.408]
Resilience → Social Support → Depression 1	0.12	[-0.041, 0.303]
Resilience → Social Support → Depression 1 → Depression 2	0.024	[-0.001, 0.085]
Resilience → Social Support → LS 1*	0.123	[0.016, 0.257]
Resilience → Social Support → LS1 → LS 2*	0.061	[0.01, 0.143]
Resilience → EFC → Depression 1*	-0.22	[-0.455, -0.059]
Resilience → EFC → Depression 1 → Depression 2*	-0.043	[-0.137, -0.007]
Resilience → EFC → LS 1	0.086	[-0.013, 0.23]
Resilience → EFC → LS1 → LS 2	0.042	[-0.005, 0.116]
Resilience → PFC → Depression 1	0.044	[-0.088, 0.191]
Resilience → PFC → Depression 1 → Depression 2	0.009	[-0.014, 0.052]
Resilience → PFC → LS 1	-0.008	[-0.091, 0.081]
Resilience → PFC → LS1 → LS 2	-0.004	[-0.047, 0.041]

Note: Reference group for Resilient personality is the non-resilient group. Depression 1 & 2 and LS 1 & 2 refer to Depression and Life Satisfaction variables at MIDUS Phase II and Phase III. EFC = Emotion-focused Coping; PFC = Problem-focused Coping. CI = confidence interval (lower bound, upper bound).
*$p < .01$, **$p < .001$.

Table 15

Indirect Effect Estimates from Predictors to Outcomes through Mediators: Model 2, Non-caregivers

Effect	Unstandardized Coefficient	Unstandardized 95% CI
Resilience → Positive Affect → Depression 1**	-0.322	[-0.407, -0.244]
Resilience → Positive Affect → Depression 1 → Depression 2**	-0.081	[-0.118, -0.051]
Resilience → Positive Affect → LS 1**	0.351	[0.298, 0.408]
Resilience → Positive Affect → LS1 → LS 2**	0.211	[0.175, 0.255]
Resilience → Social Support → Depression 1	-0.017	[-0.06, 0.024]
Resilience → Social Support → Depression 1 → Depression 2	-0.004	[-0.017, 0.005]
Resilience → Social Support → LS1**	0.13	[0.098, 0.168]
Resilience → Social Support → LS1 → LS 2**	0.078	[0.058, 0.105]
Resilience → EFC → Depression 1**	-0.114	[-0.168, -0.07]
Resilience → EFC → Depression 1 → Depression 2*	-0.029	[-0.048, -0.016]
Resilience → EFC → LS 1*	0.05	[0.021, 0.084]
Resilience → EFC → LS 2*	0.03	[0.013, 0.051]
Resilience → PFC → Depression 1*	0.098	[0.04, 0.159]
Resilience → PFC → Depression 1 → Depression 2*	0.025	[0.011, 0.045]
Resilience → PFC → LS 1	-0.003	[-0.046, 0.04]
Resilience → PFC → LS1 → LS 2	-0.002	[-0.029, 0.024]

Note: Reference group for Resilient personality is the non-resilient group. Depression 1 & 2 and LS 1 & 2 refer to Depression and Life Satisfaction variables at MIDUS Phase II and Phase III. EFC = Emotion-focused Coping; PFC = Problem-focused Coping. CI = confidence interval (lower bound, upper bound).
*$p < .01$, **$p < .001$.

Table 16

Indirect Effect Differences between Non-Caregivers and Transitional Caregivers

Effect	Unstandardized Coefficient	Unstandardized 95% CI
Resilience → Positive Affect → Depression 1	-0.192	[-0.528, 0.078]
Resilience → Positive Affect → Depression 2	-0.020	[-0.185, 0.069]
Resilience → Positive Affect → LS 1	0.127	[-0.048, 0.389]
Resilience → Positive Affect → LS 2	0.026	[-0.082, 0.193]
Resilience → Social Support → Depression 1	0.137	[-0.028, 0.326]
Resilience → Social Support → Depression 2	0.028	[0.00, 0.088]
Resilience → Social Support → LS1	-0.008	[-0.123, 0.128]
Resilience → Social Support → LS 2	-0.017	[-0.075, 0.066]
Resilience → EFC → Depression 1	-0.106	[-0.343, 0.06]
Resilience → EFC → Depression 2	-0.015	[-0.106, 0.025]
Resilience → EFC → LS 1	0.036	[-0.071, 0.178]
Resilience → EFC → LS 2	0.013	[-0.039, 0.087]
Resilience → PFC → Depression 1	-0.055	[-0.2, 0.107]
Resilience → PFC → Depression 2	-0.016	[-0.047, 0.025]
Resilience → PFC → LS 1	-0.006	[-0.096, 0.097]
Resilience → PFC → LS 2	-0.003	[-0.05, 0.05]

Note: Reference group for Resilient personality is the non-resilient group. Depression 1 & 2 and LS 1 & 2 refer to Depression and Life Satisfaction variables at MIDUS Phase II and Phase III. EFC = Emotion-focused Coping; PFC = Problem-focused Coping. CI = confidence interval (lower bound, upper bound).

Figure 1. A priori Path Model Including Predictor, Mediator, and Outcome Relationships

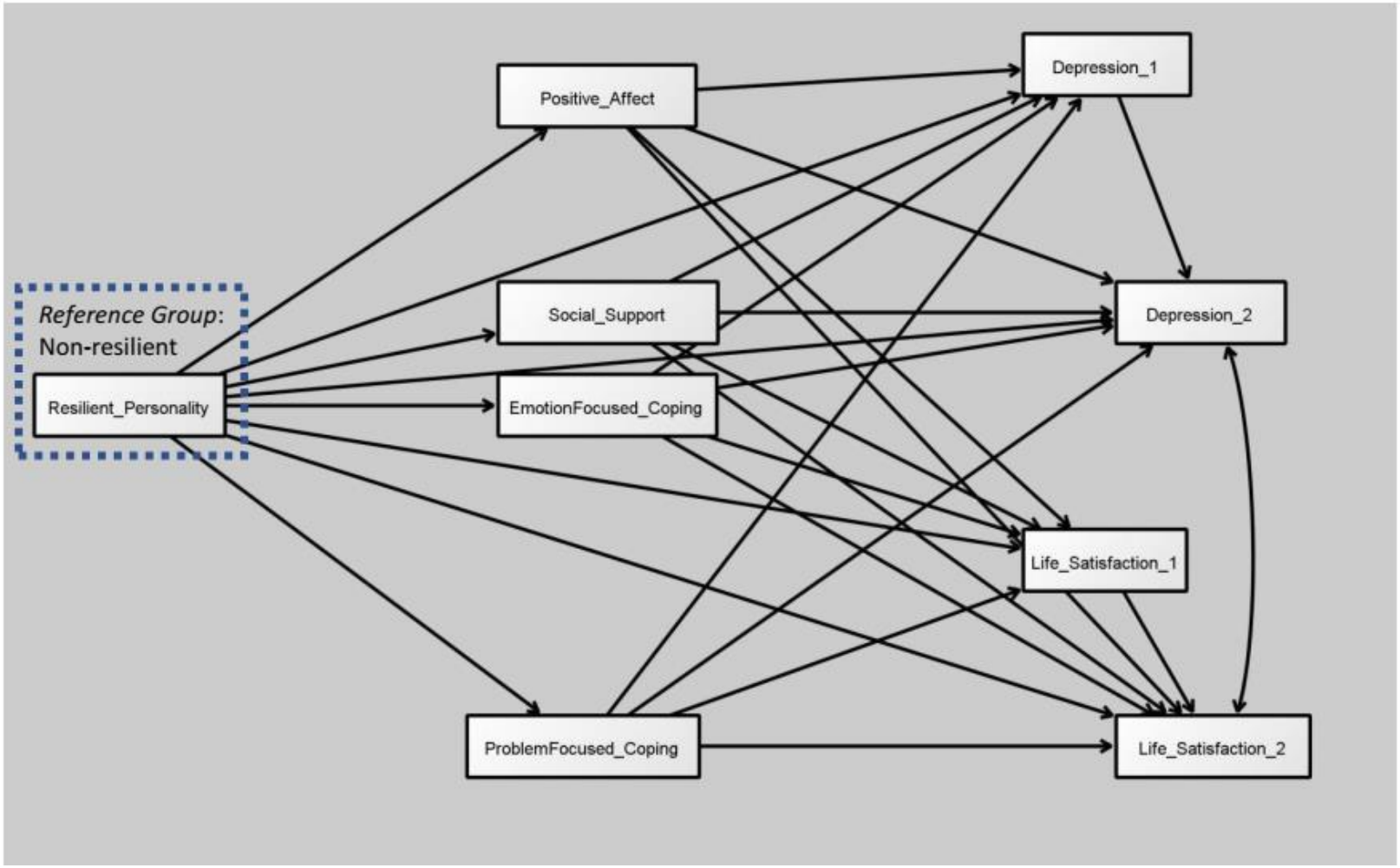

Figure 2. Personality Prototypes Based on Five-Factor Model Traits

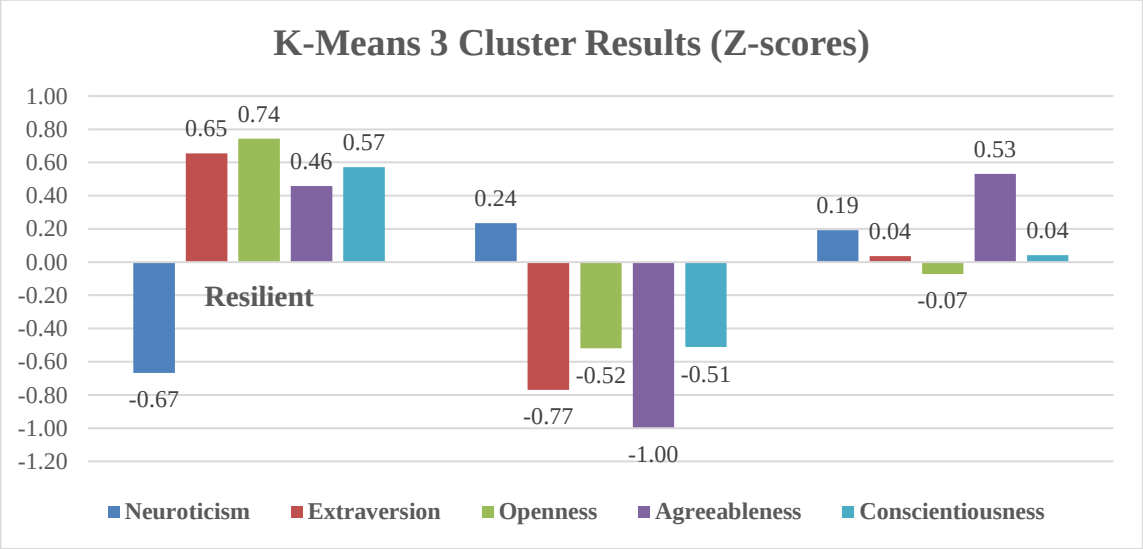

Figure 2. Three personality prototypes based on the Five-Factor Personality traits. Resilient prototype = 45% (*n* =1,131) of the sample, and non-resilient = 55% (*n* = 1,403) of the sample.