

The effects of financial strain on health, morale, and social functioning

by

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B.B.A., Saginaw Valley State University, 1982

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AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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School of Family Studies and Human Services  
College of Human Ecology

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

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## **Abstract**

Guided by Lazarus and Folkman's (1984) transactional theory of stress and coping as the theoretical framework, the objective of this research was to determine the association between financial stressors and the outcomes of health, morale, and social functioning. Additionally, the impact of the individual and environment, and the appraisal and coping process were examined. A literature review was conducted based on the theoretical constructs of the individual and environment, stressful events, the appraisal and coping process, morale, social functioning, and health.

The sample consisted of 811 individuals age 50 and older, evenly split between males and females, from the 2012 Health and Retirement Study (HRS). Respondents were mostly white, married, and retired. The majority had at least some college and owned a home. Respondents were mainly under the age of 69 and had a mean income of \$95,753. The sample reported better than the median scores for morale, social functioning, subjective health, and objective health. Likewise, respondents' control of finances and mastery scores were also better than the median. However, lower than median scores for financial stressors were reported.

OLS regression was utilized to model morale and social functioning while cumulative logistic regression analysis was used to model subjective and objective health. In an effort to model subjective and objective health, morale, and social functioning as one unit, an ad hoc composite measure for all three outcomes was developed which was modeled utilizing cumulative logistic regression. Either full or partial support for some of the hypotheses was indicated. As it pertains to the financial stressor construct, there were some significant relationships with social functioning and morale as theoretically anticipated and hypothesized. Namely, ongoing financial strain was the most frequent variable of significance. However, as a

whole, financial stressors were as not as significant under the models as were some of the other variables when modeling the outcomes. Mastery, control over one's finances, coping behaviors, and positive or negative social support were more frequently significant in the modeling. Control variables of significance often included marital status, gender, education, employment status, income, age, and homeownership status.

This research fills a gap by examining the influence of financial stressors individually and simultaneously on physical health, well-being, and social functioning based on a large dataset of secondary data robed in a theoretical framework. By understanding the relationship between financial stress and these outcomes, financial practitioners and educators can develop interventions to promote positive adaptations.

*Keywords:* Financial stress, health, morale, social functioning, coping

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## **Dedication**

First and foremost I would like to dedicate this research to my Heavenly Father. This project and degree would be inconceivable without His support, guidance, and encouragement through His Word. With Him, all things are possible. All glory be to God!

Secondly, I would also like to dedicate this study to my best friend and wife of 35+ years, Kim. Her support of my career, academic dreams, and aspirations over the past 35 years has been unwavering. She has had to sacrifice for my pursuit of this project and degree, and for that I am forever grateful.

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## **Chapter 1 - Introduction**

Financial stress is commonplace in today's society (American Psychological Association, 2015) and can come from a variety of sources and at varying levels of intensity. Unfortunately, the repercussions of this stress may go far beyond the stress itself. While many individuals are able to cope with financial stress and adapt, others cannot. As a consequence, potential long-term implications from an inability to cope with financial stressors may be problematic and lead to such things as poor physical health, diminished well-being, and reduced social functioning (Lazarus & Folkman, 1984). Given the potential negative societal impact from these stressors, it seems prudent to study their effect. Additionally, through a better understanding of the association between these variables, the appropriate remedies can be developed to better cope with financial stress and reduce the societal impact. By understanding the relationship between financial stress and its outcomes, financial practitioners can develop interventions which promote positive adaptations to stress.

### **Financial Stress**

Ongoing financial strain, difficulty paying bills, carrying over credit card debt, and even bankruptcy are all examples of events that may lead to financial stress. Financial stress, like stress in general, is thought to arise from "life events" and/or the incidence of ongoing problems (Pearlin, Menaghan, Lieberman, & Mullan, 1981). Life events are important changes which require big behavioral adjustments within a short period of time, such as divorce, or in the case of financial stress, bankruptcy. Chronic strains, such as ongoing financial strain, are another focus of this research. These are recurring demands which require readjustments over a longer time frame. Additionally, daily aggravations may be another source of financial stress. These are

“mini-events” that require minor behavioral adjustments during the day, for example a spike in gasoline prices (Thoits, 1995).

Life events and chronic strain account for most stress, and one’s self-concept plays an important role in how one copes with this strain. Research suggests that life events and the resulting strain on oneself are especially likely to result in stress when they also result in a “diminishment of self” as measured by self-esteem and mastery (Pearlin et al., 1981). In this context, mastery refers to the extent to which people see themselves in control, while self-esteem involves the judgements about one’s own self-worth (Pearlin et al., 1981).

It is not the life event or chronic strain by itself that is associated with health or other negative outcomes; one’s reaction to stress is also a factor. The reaction or response to stress refers to the state of emotional arousal that occurs as a result of the demands on the individual (Thoits, 1995). Thus, stress is thought to be the stimulus that triggers the “fight” or “flight” mechanisms within us. The fight-or-flight response is a physiological reaction that occurs in response to a perceived harmful event, attack, or threat to survival (Thoits, 1995). For this research, stress is defined as any environmental, social, or internal request that requires one to adjust existing behavior patterns (Thoits, 1995). Not all stress is bad, and in many cases it can be good for an individual. By coping and adapting to stress in a positive manner, an individual grows psychologically and adapts to their environment (Thoits, 1995). While some people can successfully adapt or cope with stress, others cannot, which is when negative outcomes arise. For example, one of the negative outcomes may be the impact of stress on one’s physical health, which has recently received increased attention (Krantz & McCeney, 2002). Therefore, the focus of this research is on those individuals who do not successfully cope with stress.

## Previous Literature Preview

Previous research has primarily examined the impact of financial stress on specific health conditions or on the relationship between financial well-being and physical or mental health. For example, O'Neill, Sorhaindo, Xiao, and Garman (2005) examined the associations between financial practices, financial well-being, and health of financially distressed consumers. This research found a relationship between credit counseling, financial practices, and physical health for the participants of a debt management program. In a study similar to this current research, Kahn and Pearlin (2006) explored the impact of financial strain on the health of older adults. Like O'Neill et al. (2005), this research was limited in scope to exploring the impact of financial strain on health utilizing primary data but with no linkage to theory. Drentea and Lavrakas (2000) tested whether credit card debt as a financial stressor is related to health. Although this research found an association between debt stress and health, it did not explore financial stress's relationship to well-being and/or social functioning. Unique in nature and limited in scope, another study utilizing data from the 1996-2004 Health and Retirement Study discovered an association between financial hardship and mortality rates (Tucker-Seeley, Li, Subramanian, & Sorensen, 2009). This research provided an interesting look into the potential impact of financial stressors but was primarily focused on examining the impact of stress on mortality rates. In a study that comes close to the current study, Price, Choi, and Vinokur (2002) examined how financial strain and loss of personal control due to job loss lead to depression, impaired functioning, and poor health. Similarly, another study sought to examine the relationship between low income individuals and physical health as well as cognitive, psychological, and social functioning (Lynch, Kaplan, & Shema, 1997). Lynch et al. found that ongoing economic hardship leads to lower physical, psychological, and cognitive functioning, but their research was

limited to studying low income individuals. While this previous research as a whole is useful, it does not explore the relationship between financial stressors and health status, well-being, and social functioning. This research is framed in theory and attempts to fill these gaps, while utilizing a large dataset of secondary data.

## **Theoretical Framework**

The overwhelming majority of previous research referenced here does not offer a conceptual framework. Systems theory or some version of it, such as the Roy adaptation model, was occasionally cited as a response based approach (Heckman, Lim, & Montalto, 2014; Prawitz et al., 2006). While the Roy model offers some insight, it is not widely used. Affect regulation theory is another conceptual framework that has been used to explain the relationship between stress and behavior. This model is more clinical in nature and is focused primarily on alcohol abuse as the outcome (Peirce, Frone, & Cooper, 1994). Stress has also been modeled as a process by which social and physical stressors result in poor health outcomes, or as a model whereby stress events increase the risk of adverse outcomes (Price et al., 2002). Even so, these models do not adequately address the entire focus of this research. Seyle's (1956) theory of systemic risk, a response-based model based in physiology and psychobiology, is another theory that was used in the past to explain one's reaction to stress. Lazarus and Folkman's (1984) transactional theory of stress and coping (TTSC), or parts of it, has served as a replacement and is cited the most often in the literature (Folkman, Lazarus, Gruen, & DeLongis, 1986; Lyon, 2000; Caplan & Schooler, 2007; Herbert & Cohen, 1994; Krohne, 2002; Lantz, House, Mero, & Williams, 2005; Thoits, 1995).

Lazarus and Folkman (1984) suggested that stress has a "heuristic value" and that stress, in and of itself, was not measurable as a single factor. Lazarus and Folkman (1984) believed that

stress is a relational concept, so it is not defined by some external stimulation nor a specific pattern of physiological, behavioral, or subjective reactions. Rather, stress is viewed as a relationship, such as the product of a “transaction” between an individual and the environment (Krohne, 2002; Lazarus & Folkman, 1984; Lyon, 2000). To provide direction for this research, TTSC served as the conceptual framework to explain and predict the impact of financial stress on physical health, morale, and social functioning. Operationalized, the TTSC suggests that the immediate and long-term effects (outcomes) of health, well-being, and social functioning are a function of (a) “causal antecedents” involving a “transaction” between individual and environmental variables, and (b) the “mediating processes” linking stressful events, such as financial stressors, with the “appraisal” (expectations) of those events. These constructs are combined with the individual’s coping skills to form the “outcomes” (health, well-being, social functioning) that follow (Lazarus & Folkman, 1984).

### **Research Purpose and Question**

The primary purpose of this research was to examine the consequences of financial stressors on physical health, well-being, and social functioning. While previous research has examined the impact of stress in general, or of a specific outcome from financial stress, such as a change in one’s physical health, very little research exists that examines these three outcomes of financial stress. A secondary research goal of this study was to investigate how individual and environmental factors and the appraisal and coping process affect one’s physical health, morale, and social functioning. The current research seeks to address the following hypotheses, with the TTSC serving as the theoretical framework to explain and predict the outcomes.

## **Hypotheses**

**Hypothesis 1:** There is a negative association between ongoing financial strain and one's health status, morale, and social functioning.

**Hypothesis 2:** There is a negative association between one's debt/income ratio and health status, morale, and social functioning.

**Hypothesis 3:** There is a negative association between difficulty paying bills and one's health status, morale, and social functioning.

**Hypothesis 4:** There is a negative association between carrying over credit card debt and one's health status, morale, and social functioning.

**Hypothesis 5:** There is a positive association between one's control over finances and health status, morale, and social functioning.

**Hypothesis 6:** There is a positive association between mastery and one's health status, morale, and social functioning.

**Hypothesis 7:** There is a positive association between one's conscientiousness and beliefs, and health status, morale, and social functioning.

**Hypothesis 8:** There is a positive association between one's coping mechanisms and health status, morale, and social functioning.

## **Population of Interest**

The population of interest for this study was individuals age 50 and older. This population was selected because elderly people suffering from chronic financial strain may be more susceptible to negative outcomes than older adults without as much financial strain (Krause, 2003). The variables were measured and coded based on the responses to questions from the 2012 Health and Retirement Study (HRS) Leave-Behind and RAND N datasets. This

dataset is a biennial longitudinal survey of 20,000 individuals that is representative of the United States population over 50 years of age.

## **Implications**

For social and financial professionals alike, the implications of this research are noteworthy and suggest the need to develop interventions to promote positive well-being and financial behaviors. Social practitioners can develop interventions that provide positive adaptations to counter financial stress. They can suggest adaptations to replace unhealthy behaviors, such as substance abuse or over-eating, by offering alternative coping mechanisms for financial stress. For example, by developing problem-focused coping techniques or social support programs, social practitioners can invoke positive stress coping techniques. Likewise, financial professionals can offer education and tools to reduce the occurrence of financial stress. They can suggest budgeting tools and ratio analysis to better manage one's finances to reduce the occurrence of financial stress. The objective of these interventions and preventative measures is to curtail financial stress or develop improved adaptations resulting in better well-being.

## **Summary**

The primary purpose of this research was to determine the association between financial stressors and physical health, well-being, and social functioning. Previous research has primarily examined the impact of financial stress on specific health conditions, or on the relationship between financial well-being and physical or mental health. This research attempts to fill that gap. Lazarus and Folkman's (1984) transactional theory of stress and coping served as the conceptual framework to explain and predict the impact of financial stress on physical health, well-being, and social functioning. OLS and cumulative logistical regression were used to determine variable significance and goodness of fit for the model, utilizing data from the 2012

Health and Retirement Study of individuals age 50 and older. The implications of this study are equally significant for both financial and social practitioners.



## Chapter 2 - Theoretical Framework and Literature Review

### Introduction

The purpose of this research was to examine the relationship between financial stressors and physical health, morale (well-being), and social functioning. Based on a review of the literature, previous research that explores the implications of stress in general is quite varied in its focus. Much of the literature has primarily focused its attention on stress in the generic sense. In doing so, it has typically found an association between stress and a number of physical illnesses. Additionally, some of the research has also examined the impact of *financial* stress. However, the primary focus of the previous research was limited to the impact of financial stress on physical health. Physical illness is likely only one of several outcomes from stress. Research that examines the impact of financial stress on not only physical health, but on well-being and social functioning holistically, is rather limited. Although it is known that stress in general is associated with high blood pressure, headaches, ulcers, colitis, and insomnia (U.S. Department of Health and Human Services, 1991), the specific impact of *financial* stress on health, well-being, and social functioning outcomes is less understood.

Much of the research does not specifically address these relationships based on a theoretical framework. In addition to theoretical challenges, previous research that explores the association between financial stressors and *multiple* outcomes specifically is also quite limited. These studies provided a foundation for this research, but were also often limited in scope by sample size, sample type, or treatment provided (Steptoe, Brydon, & Kunz-Ebrecht, 2005; O'Neill, Sorhaindo, Xiao, & Garman, 2005). Likewise, previous literature that has explored a relationship of this nature is rather dated, indicating a need for updated research. This research attempts to fill these gaps.

## Theoretical Framework

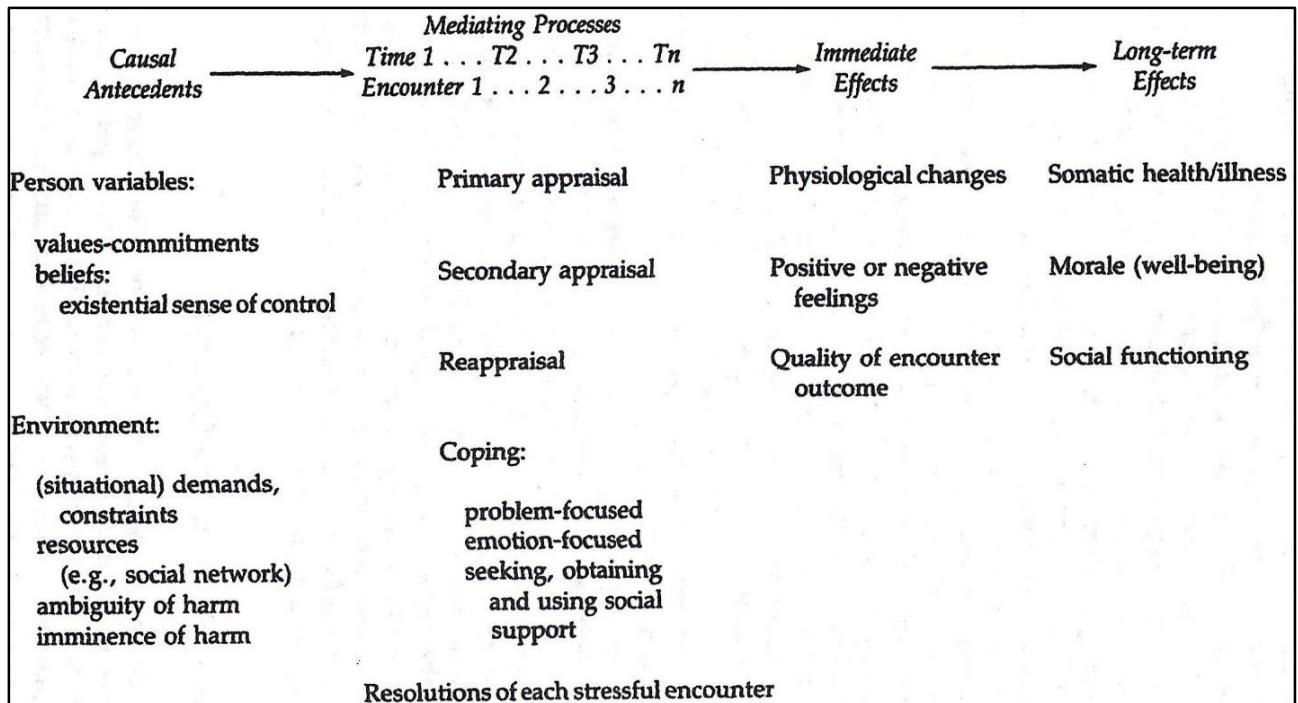
The objective of the theoretical framework for this research is to explain and predict the impact of financial stress on one's health, morale, and social functioning. Systems theory or some version of it, such as the Roy adaptation model, a health care model, was utilized by Heckman, Lim, and Montalto (2014) to examine the impact of financial stress on student wellness among a group of college students. This model suggests that people are subject to constantly changing environmental stimuli within the four methods of adaptation, consisting of physiological, self-concept, role function, and interdependence (Roy, 2011). The path from the environmental stimuli to these modes is "mediated" by the two coping processes of the regulator and cognator (Roy, 2011). In essence, the Roy adaptation model suggests that inputs, which are products of one's environment, will actuate a method of adaptation to the input which produces a favorable or unfavorable output (Roy, 2011). While this seems reasonable and the model does possess certain strengths, operationalizing it to this research was not feasible. The model offers measures for self-concept and financial optimism, but these variables fit the adaptation construct of the model rather than explaining outcomes. Additionally, given the initial intent of the model, which is to help patients "adapt" to their new environment (Roy, 2011), this is probably a model which offers guidance for behavior *change* rather than *explaining* behavior, which is the intent of the present research.

Kahn (1981) developed a model describing stress as a process whereby social and physical stressors lead to poor physical and psychological health. His model indicates that these stressors result in the short-term responses of heightened arousal, distress, withdrawal, and poor motivation, which may lead to chronic health problems (Kahn, 1981). This process is influenced by social, biological, chemical, and environmental factors (Price, Choi, & Vinokur, 2002). This

model has the strength of connecting a response from a stressor to an outcome based on environmental factors. However, there is no discussion regarding the impact of one's coping and mediation of the stressors, which presents a weakness for the current research.

Seyle's theory of systemic risk based in physiology and psychobiology is another theory that was used in the past to explain one's reaction to stress. This model is based on the premise that certain stimulus events will elicit common outcomes. (Krohne, 2002). Although Seyle's work was influential initially, concern developed over his conception of stress as nothing more than a reaction to many different events. Additionally, the nonspecific causation assumption of the model was questioned, and it did not acknowledge the presence of cognitive and coping mechanisms (Krohne, 2002). Given these weaknesses of the model, Lazarus and Folkman's Transactional Model of Stress and Coping (TTSC), or parts of it, has served as a replacement and is cited the most often in the literature (Folkman, Lazarus, Gruen, & DeLongis, 1986; Lyon, 2000; Caplan & Schooler, 2007; Herbert & Cohen, 1994; Krohne, 2002; Lantz, House, Mero, & Williams, 2005; Thoits, 1995).

Accordingly, the TTSC served as the conceptual framework for this study to explain and predict the impact of financial stress on physical health, morale, and social functioning. The use of this theory seems to also align well with prior studies that lack a theoretical framework. With this theory, as illustrated in Figure 2.1, immediate and long-term effects (outcomes) such as physical health, morale, and social functioning are a function of (a) "causal antecedents" involving a "transaction" between the individual and environment, and (b) the "mediating processes" linking stressful events and the evaluation (appraisal) of those events with the coping and effects (outcomes) that follow (Lazarus & Folkman, 1984).



**Figure 2.1. Transactional Model of Stress and Coping.**  
 Adapted from “Stress, Appraisal, and Coping,” by R. S. Lazarus and S. Folkman, 1984, p. 305. Copyright 1984 by Springer Publishing Company, Inc.

### TTSC Model Demonstrated

Given the illustration of the components of the transactional model of stress and coping theory as presented in Figure 2.1, it should be noted that these constructs do not function in isolation, but rather as a whole. Perhaps the best way to demonstrate the functionality of the model as a whole for this research is with an example. At the onset, there is a “transaction” which takes place between the individual and environment, which is based on one’s individual factors, such as personal control, combined with one’s environmental factors, such as social support. This transaction sets the stage for a stressful encounter. Suppose for a moment that an individual encounters a stressful occurrence in their environment, such as a loss of income. Based on the results of the transaction between the individual and environment, the appraisal and coping process begins. This process consists of a constant appraisal and reappraisal of the

situation, based on the individual and environment transaction as well as one's coping mechanisms. Appraisal is based on one's beliefs of what might happen as a result of the lost income, while coping is focused on the management of that event given one's belief in self. Based on the appraisal and coping of the event, the outcome could be nil, positive, or negative in the short and/or long-term. Using the loss of income event as an example, the event might be dismissed given that remaining income is still more than sufficient, or it might create immediate tension followed by chronic high blood pressure. On the other hand, if the loss of income resulted in more time to focus on something enjoyable, the event might also be interpreted as positive, resulting in immediate happiness and improved health outcomes. Note that outcomes might also appear in forms other than "feelings" and "health," given the full model. To further understand the premise behind this theory, a synopsis for each of the constructs of the theory follows.

**Individual and Environment.** One of the key theoretical constructs of the TTSC is the interaction that takes place between the individual and the environment (Lazarus & Folkman, 1984). This interaction affects the appraisal and coping processes, thus an examination of these factors is appropriate. An individual's commitments and beliefs are the most critical factors affecting the "person" component. Commitments and beliefs alone do not explain this process. They work interdependently with situational (environmental) factors to determine how the threat, harm, or challenge will be experienced (Lazarus & Folkman, 1984). Environmental factors that interact with the individual include situational demands and create the potential for threat, harm, or challenge. Whether it is a threat, harm, or challenge depends on the event's novelty, predictability, and uncertainty (Lazarus & Folkman, 1984).

**Stressful events.** Another component of the TTSC is stress itself. Stress in general refers to any environmental, social, or internal request which requires one to adjust existing behavior patterns (Thoits, 1995). *Forms* of stressors include life events, chronic strains, and daily aggravations. Life events are important changes that require big behavioral adjustments within a short period of time, such as a divorce. Chronic strains, a focus of this research, are recurring demands which require readjustments over a longer time frame, for example financial strain. Daily aggravations, such as a traffic jam, are “mini-events” that require minor behavioral adjustments during the day (Thoits, 1995).

The reaction or response to stress refers to the state of emotional arousal that occurs as a result of the request (Thoits, 1995). Typical *immediate physical* reactions to stress include headache, shortness of breath, light headedness, muscle tension, fatigue, heart palpitations, or problems with sleep. Common *immediate behavioral* expressions to stress include crying, smoking, excessive eating, substance abuse, fast talking, and trembling (Lyon, 2000).

**Appraisal and coping.** The TTSC further indicates that the transaction between the individual and environment is aided through an “appraisal” or self-evaluation and coping process (Lazarus & Folkman, 1984). The concept of “appraisal” is based on the idea that emotional processes such as stress are dependent on what one *expects* with respect to the significance and outcome of a specific situation. The “appraisal” explains the individual differences or relativity in quality, intensity, and duration of the emotion (Lazarus & Folkman, 1984; Lyon, 2000). Lazarus and Folkman (1984) defined *coping* as the mind and body’s constantly changing efforts to manage external or internal demands that are “appraised” as demanding or exceeding one’s resources. Additionally, coping involves *managing* the stressful event, which may include

attempts to minimize, avoid, tolerate, or accept a stressful event based on the environment (Lyon, 2000).

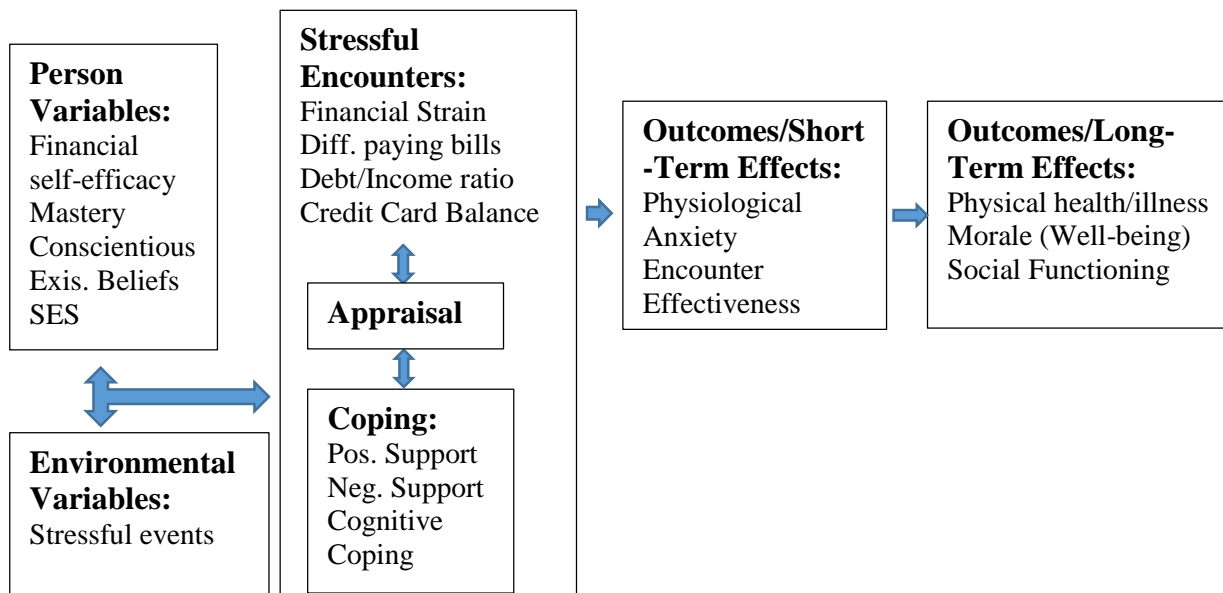
**Outcomes.** The TTSC also suggests that the appraisal and coping process will lead to the *long-term* adaptation outcomes of (a) social functioning, (b) morale, and (c) somatic health (Lazarus & Folkman, 1984). Social functioning refers to the ways an individual fulfills their social roles and satisfaction with interpersonal relationships. One's social functioning is based on the effectiveness of appraisal and coping with the events of day-to-day living. The outcome of morale refers to the emotions generated from a specific event. Like social functioning, morale is also based on one's appraisal and coping process. Morale depends on how well challenges are dealt with, and how well negative outcomes are handled (Lazarus & Folkman, 1984).

It is also widely held that stress, emotion, and coping are factors affecting health (Lyon, 2000). Health is viewed as a "subjective phenomenon" that incorporates a somatic sense of self and functional ability (Lyon, 2000). Many disciplines have contributed resources to theory and research on the relationship between stress and health, and many have identified stress and the ability to cope as key variables affecting health (Thoits, 1995). Stress has been linked to heart disease, breast cancer, colds, and compounding of symptoms for other chronic conditions. In particular, chronic stress can have a significant impact on mental and physical health (Lyon, 2000).

## **Literature Review**

The TTSC framework provides for an understanding of how the individual and their environment mediates the appraisal and coping process for stress, and the outcomes that may occur due to stressful experiences. Given this clear framework, the literature review has been organized via the key constructs of the model. Specifically, the literature is presented and

organized based on the theoretical constructs of (a) the individual and their environment, (b) stressful events, (c) appraisal and coping, and (d) outcomes, which are adapted to this research in illustrated Figure 2.2. Despite this organization and framework, it should be noted that there is considerable overlap in these constructs and they do not function independently of one-another.



**Figure 2.2. Adaptation of the Model of the Transactional Theory of Stress and Coping.** Adapted from “Stress, Appraisal, and Coping,” by R. S. Lazarus and S. Folkman, 1984, p. 305. Copyright 1984 by Springer Publishing Company, Inc.

## Individual and Environment

One of the key theoretical constructs of the TTSC is the interaction or “transaction” that takes place between the individual and the environment, as illustrated in Figure 2.2 (Lazarus & Folkman, 1984). This interaction affects the individual, environment, and subsequent process of appraisal and coping. Lazarus and Folkman (1984) characterized stress as neither in the environment nor in the person. Rather, stress is a byproduct of the *transaction* between the individual and environment which is a “dynamic, mutually reciprocal, and bi-directional relationship” (Lazarus & Folkman, 1984). Thus, an outcome at Time 1 can become a cause at



Time 2, and the cause can come from either the individual or environment. For example, an immediate effect of financial stress might be restricted arteries. This may lead to coronary disease and/or high blood pressure due to the mind and body's response to this stress. This process also asserts that the person and environment are "joined together" to form a new relationship (Lazarus & Folkman, 1984). The environment is constantly changing and so the person must change along with the environment.

**The individual.** The person or "individual" factors affect all constructs of the TTSC but are especially important when it comes to the appraisal and coping assumptions. The individual determines what is important for their well-being, their understanding of the event, and their estimation of outcomes (Lazarus & Folkman, 1984). Given the interaction between the individual and environment from a theoretical standpoint, Herbert and Cohen (1994) suggested that different people may respond to the same stressor in different ways based on their individuality, personality, and social system (environment), and therefore these factors should be examined. For example, they noted that "Type A" individuals tend to be more susceptible to stressors than "Type B" individuals. Type A individuals are characterized as being competitive, achievement oriented, hasty, impatient, and very tense. In contrast, Type B individuals are able to relax, do not worry about time, are less hostile, and are more content with themselves (Herbert & Cohen, 1994).

In addition to one's personality, a factor affecting the "individual" aspect of the transaction between the individual and environment in the model is one's perceived control (self-efficacy) (Lazarus & Folkman, 1984). Moreover, an individual's commitments and beliefs are the most critical factors affecting the "person" component in the transaction (Lazarus & Folkman, 1984). Commitments are an expression of what is important to an individual and affect

the choices that people make. They affect the process by guiding an individual into, or away from, situations that threaten, harm, or benefit the individual (Lantz et al., 2005). Beliefs determine how a person assesses what is happening or about to happen to them. They involve the extent to which one believes outcomes can be controlled and are of particular interest in this theory (Lazarus & Folkman, 1984). Zurlo (2009) examined the impact of beliefs by studying perceived mastery and the relationship between the personal attributes of older adults and their financial well-being. Such research utilized the following question to determine beliefs: “Using a 0 to 10 scale where 0 means ‘no control at all’ and 10 means ‘very much control,’ how would you rate the amount of control you have over your financial situation these days?” (Zurlo, 2009). However, commitments and beliefs alone do not explain this process. They work interdependently with situational (environmental) factors to determine how the threat, harm, or challenge will be experienced (Lazarus & Folkman, 1984).

In addition to one’s beliefs, Caplan and Schooler (2007) studied the relationship between an individual’s specific socioeconomic status (SES) factors and financial stress. Their research included the three primary SES indicators of income, education, and occupational prestige. Control factors included race, age, and religious affiliation. In addition to SES factors that may provide an objective look at an association with the outcomes, Archuleta, Britt, Tonn, and Grable (2011) suggested too that subjective factors such as an individual’s financial satisfaction may also be appropriate as another “person” deciding factor.

**The environment.** In addition to personality factors, Lazarus and Folkman (1984) suggested that one’s ability to deal with stressful events is based to some extent on one’s available resources in their environment. The relationship between the individual and the environment as per TTSC was also addressed by Herbert and Cohen (1994). They noted that

stress is determined by an individual's *perception* of the environment. Environmental factors that interact with the individual include situational demands, which create the potential for threat, harm, or challenge. Whether the stressful event is a threat, harm, or challenge depends on the event's novelty, predictability, and uncertainty. Novelty refers to situations where the individual has not had any previous experience. If it is novel, and no aspect of it is associated with harm, it will not result in an appraisal of a threat (Lazarus & Folkman, 1984).

To determine the impact of social systems in the environment on outcomes, Haley et al. (1996) utilized the Social Support Questionnaire, a 12-item instrument in which individuals are asked to list the people (up to nine) in their social network who they perceive as helpful in six different areas. Individuals with unsupportive social relationships were more likely to experience difficulty dealing with stressful demands (DeLongis, Folkman, & Lazarus, 1988).

Another environmental characteristic is predictability. This factor implies that there are environmental characteristics that can be discovered or learned. The uncertainty of the event is also a factor, and refers to the likelihood of the event influencing the appraisal process (Lazarus & Folkman, 1984). There are also *temporal* situational factors affecting the appraisal process, which include imminence, duration, and temporal uncertainty (Lazarus & Folkman, 1984). The more likely (imminent) an event, the more urgent and intense the appraisal. Duration, which refers to the length of time of the event, will also impact the appraisal process. Finally, temporal uncertainty refers to not knowing when the event will occur (Lazarus & Folkman, 1984). Although not a temporal factor, there is also concern for event ambiguity because the greater the ambiguity, the more likely the event will be shaped by the person (Lazarus & Folkman, 1984).

## Stressful Events

Another one of the key theoretical constructs of the transactional theory of stress and coping is stress itself. Thoits (1995) submits that stress in general refers to any environmental, social, or internal request that requires one to adjust existing behavior patterns. The reaction or response to stress refers to the state of emotional arousal that occurs as a result of the request (Thoits, 1995). Typical *immediate physical* reactions to stress include headache, shortness of breath, light headedness, muscle tension, fatigue, heart palpitations, or problems with sleep (Lyon, 2000). Common *immediate behavioral* reactions to stress include crying, smoking, excessive eating, substance abuse, fast talking, and trembling (Lyon, 2000).

*Forms* of stressors include life events, chronic strains, and daily aggravations (Thoits, 1995). Life events are important changes that require big behavioral adjustments within a short period of time, such as a divorce. Chronic strains, the primary focus of this research, are recurring demands that require readjustments over a longer time frame, such as financial strain. Daily aggravations, such as traffic jams, are “mini-events” which require minor behavioral adjustments during the day (Thoits, 1995).

Theoretical approaches to explaining stress have been categorized as either (a) response based, (b) stimulus based, or (c) transactional based (Lyon, 2000). However, unlike the response and stimulus based models, which do not explicitly include coping efforts, Lazarus and Folkman’s (1984) transactional model incorporated a coping component. They contended that stress has a “heuristic value” and that stress, in and of itself, was not measurable as a single factor. They believed that stress is a *relational* concept not defined by some external stimulation or a specific pattern of physiological, behavioral, or subjective reactions. Rather, stress is the *product or result* of the “transaction” between an individual and the environment (Krohne, 2002;

Lazarus & Folkman, 1984; Lyon, 2000). Additionally, Herbert and Cohen (1994) suggest that stress is not defined solely by the environment or an individual's physiologic response to it. Instead, stress is thought to be defined by the person's *perception* of the environmental event. They contend that there are two kinds of physiological reactions to stress, consisting of "sympathetic nervous system with neuroendocrine responses" and "immune system responses" (Herbert & Cohen, 1994). It is important to note that, in both cases, stress may be directly related to these responses, OR the behavioral changes resulting from the stress (Herbert & Cohen, 1994).

Of particular interest to this research is stress from financial challenges. Financial challenges specifically account for another form of stress for many individuals. In fact, Krause (1987) suggests that one in five respondents reported difficulty living on his or her present income. These individuals are insecure about their finances and are often forced to cut expenses because of financial problems (Krause, 1987). The impact of financial strain amongst older people, the population of interest for this research, is especially important, because research indicates that it may have a particularly negative effect on older people (Krause, 1987).

Kahn and Pearlin (2006) focused on the differences in death and illness among certain social and economic groups over a certain period of life. This research discovered that the duration and chronic nature of the financial strain contributed significantly to the damage of one's health. Additionally, individual life stage, economic status, race, and gender also impacted the outcomes (Kahn & Pearlin, 2006). Likewise, the degree to which stress and an environment with "negative life events" impacted outcomes was examined by Lantz et al. (2005). In this study, researchers hypothesized that stress and negative life events are related to poor health outcomes. Similar to the Kahn and Pearlin (2006) research, which explored stress *duration*,

Lantz et al. (2005) discovered that the *number* of negative lifetime stressors was positively related to mortality. To determine financial stressors among college students, researchers Britt, Canale, Fernatt, Stutz, and Tibbetts (2015) focused on an environment limited to college students who sought help from a financial counseling center. They discovered certain student characteristics that were associated with financial stress, and the positive impact that financial counseling can have in a student's environment.

Of the negative lifetime events one might experience in their environment, job loss is one of the more difficult to confront. Such an event can result in multiple adverse health and mental outcomes (Price et al., 2002). In a two year longitudinal study of 756 people experiencing job loss, researchers studied the link between job loss and depression, leading to poor health. The results indicated that financial strain and reduction in self-control are factors in the environment determining the health impact of job loss (Price et al., 2002). Interestingly, self-control (the individual) is a "pathway" through which diversity is transformed into poor health (Price et al., 2002). Likewise, Choi (2009) referenced the most recent recession, during which the environment was characterized by foreclosure, job loss, reduced retirement portfolios, and limited credit markets. These stressful events can translate into immediate negative health in the way of headaches, backaches, increased blood pressure, ulcers, depression, and anxiety. Of particular interest in her analysis was the impact of debt load on health. Her report references a "debt stress index," as developed by Ohio State University, that had a record high in July 2009. Individuals with high debt stress were found to have a higher incidence of digestive problems and severe anxiety (Choi, 2009).

**Financial stressors defined.** The study of financial stress involves (a) chronic or ongoing stress, typically due to persistent economic challenges, often associated with lower SES,

and (b) singular critical financial challenges, which may be major or acute in nature (Skinner, Zautra, & Reich, 2004). Chronic stressors are defined as those which are “continuous strains” without resolution, such as low SES and the constant difficulty in making ends meet. Filing bankruptcy might constitute a singular critical financial challenge, whereas an acute stressor is defined as the “minor” event that comes up in everyday life, such as the unexpected expense of a car repair or replacing a hot water heater (Skinner et al., 2004).

Other factors that may lead to financial stress include home ownership, insolvency, income below a poverty level threshold, and financial behaviors, such as overspending (Joo & Grable, 2004). Additional “financial stressors” may include such events as ongoing financial strain, difficulty in making payments, and carryover credit card debt. Financial stress examines not only one’s socioeconomic status but the possibility to balance one’s cash inflow with cash outflow, and one’s ability to meet one’s obligations (Georgiades, Janszky, Blom, Ahnve, & Laszlo, 2009). Furthermore, Aldana and Liljenquist (1998) proposed that financial strain consists of the cognitive, emotional, and behavioral response to a financial hardship. This “strain” typically occurs when expenses exceed income and one is unable to meet his or her responsibilities. Additionally, financial stress may lead to a feeling of lower personal control, which in turn can exacerbate the impact of financial stress (Caplan & Schooler, 2007).

As it relates to stressful events, Sweet, Nandi, Adam, and McDade (2013) and Drentea and Lavrakas (2000) explored the association between the amount of credit card and household debt, including burdening student loan debt (the stressors) and health or specific disorders such as high blood pressure (the outcomes). The findings from these studies indicated that high financial debt was associated with a decrease in self-reported general health and the incidence of higher diastolic blood pressure, suggesting that debt is indeed a stressor affecting physical health.

Likewise, O'Neill et al. (2005) examined a change in health status for a sample of already financially stressed consumers participating in a debt management program. This study is significant because researchers found that for respondents whose financial behaviors and debt load improved as a result of an intervention in the form of credit counseling, financial *and* physical health also improved. A total of nine hypotheses predicting positive associations between health and finances were supported (O'Neill et al., 2005). Despite these findings and the impact of debt on one's health, research also indicates there may be a difference in the presence of mortgage debt vs. non-mortgage debt. In a study that examined the impact of having a mortgage into retirement, Seay, Asebedo, Thompson, Stueve, and Russi (2015) discovered that there is no relationship between holding a mortgage in retirement and financial satisfaction after controlling for an individual's financial capability.

To determine the impact of financial stressors on financial satisfaction, Prawitz, Garman, Sorhaindo, O'Neill, Kim, & Drentea, (2006) developed a specific questionnaire to understand financial stressors. As one of the more prominent attempts and heavily utilized tools, the "InCharge Financial Distress/Financial Well-Being Scale" attempts to examine financial satisfaction. This questionnaire is an eight-item self-reported questionnaire of financial stress that includes four items to determine one's present state of financial well-being, and four items to determine one's *reaction* to their present state of financial well-being (Prawitz et al., 2006). If there is an association between financial stress and health, this instrument can be utilized to determine the financial well-being of a specific group. Subsequently, interventions to help reduce financial stress and improve financial well-being could be suggested (Prawitz et al., 2006).

Similarly, based on the literature and practitioner expertise, Aldana and Liljenquist (1998) developed a questionnaire to determine one's financial strain and its detrimental health



effects. This tool examines one's ability to meet obligations, relationship problems, physical stress, financial education, and financial strain. In a comparable study, Archuleta, Dale, and Spann (2013) explored the influence of debt and other associations on student financial anxiety, utilizing the "Financial Anxiety Scale." Statistical results from their research indicated that financial satisfaction, student loans, and gender were associated with financial anxiety (Archuleta et al., 2013).

### **Appraisal and Coping**

The TTSC also suggests that the transaction between the individual and environment is aided through an "appraisal" or self-evaluation and coping process. Psychology, sociology, nursing, and medicine have all identified the ability to appraise stress and cope as important mechanisms in affecting physical, mental, and social health outcomes (Skinner et al., 2004). According to Skinner et al. (2004), adaptation to stress is accomplished through both physiological and psychosocial accommodation, such as increased awareness and utilization of coping resources. However, successful adaptation to stress can be compromised when the individual is under chronic stress (Skinner et al., 2004).

**Appraisal.** The concept of "appraisal" is based on the idea that emotional processes such as stress are dependent on what one *expects* with respect to the significance and outcome of a specific situation. Appraisal is the process through which an individual assesses whether a given environmental event is "relevant" to his or her well-being (DeLongis et al., 1988). The "appraisal" explains the individual differences or relativity in quality, intensity, and duration of the emotion (Lazarus & Folkman, 1984; Lyon, 2000). There are three appraisal types in Lazarus and Folkman's (1984) model: primary, secondary, and reappraisal. As illustrated in Figure 2.1, a "situation or event" first goes through a primary appraisal process. This process involves an

individual's initial assessment about whether an event's demand on resources and well-being represents a threat or not. If a threat is detected, the event goes through a secondary appraisal process that elicits which coping strategy, adaptations, or behaviors are available to deal with the threat, and how effective the action may be. Often, primary and secondary appraisal can occur simultaneously and even interact, which makes measurement very difficult. Reappraisal is the process of constantly assessing, changing, or renaming previous appraisals as the situation evolves (Lazarus & Folkman, 1984; Lyon, 2000).

**Coping styles and mechanisms.** As noted, *appraisal* is an individual's *perception* of the stressful event based on expectations of a particular situation in the environment. On the other hand, *coping* is the behavior one uses to respond to the stressful event (Lyon, 2000). In conjunction with appraisal, Lazarus and Folkman (1984) defined *coping* as the mind and body's constantly changing efforts to *manage* external or internal demands that are "appraised" as demanding or exceeding one's resources (Lazarus & Folkman, 1984). Thus, coping is a process in connection with appraisal and not a trait or an outcome (Lyon, 2000). It is also different from automatic adaptive behavior that has been learned. Because coping involves *managing* a stressful event, it may include attempts to minimize, avoid, tolerate, or accept a stressful event based on the environment (Lyon, 2000). To explore the relationship between the personal attributes of older adults and financial well-being, Zurlo (2009) queried respondents on whether they felt helpless in dealing with the problems of life. Given the focus on "dealing with the problems of life," which would also include stressful financial events, this factor appears to serve as a valid determinant of one's ability to cope with stress.

Coping takes the form of problem-focused or emotion-focused strategies (Lazarus & Folkman, 1984; Lyon, 2000; DeLongis et al., 1988). Problem-focused strategies involve defining

and addressing the problem that is causing the stress, and then generating potential solutions. In comparison, emotion focused strategies utilize distancing, avoiding, blaming, minimizing, venting, exercising, and meditating behaviors to cope with stress. Typically, individuals use both forms of coping in almost every type of stressful encounter (Lazarus & Folkman, 1984; Lyon, 2000; DeLongis et al., 1988). Additionally, problem-focused strategies are positively related to well-being, and emotion-focused strategies are negatively related to well-being (Westman, 2001).

Research specifically exploring the appraisal and coping process due to financial strain is pretty narrow and is primarily focused on the coping aspect. However, Caplan and Schooler (2007) examined socioeconomic status, perceived control, problem-focused and emotion-focused coping styles, and the corresponding response to financial stress. The results of this research were interesting because they found that lower socioeconomic status individuals were more likely to use emotion-focused coping strategies compared to problem-focused strategies. Additionally, the effect of socioeconomic status on the utilization of problem-focused strategies was facilitated by perceived control. Thus, the greater the perceived control, the more likely one was to utilize problem-focused coping strategies (Caplan & Schooler, 2007).

Likewise, Folkman et al. (1986) explored the association between mastery and self-efficacy and such factors as (a) the appraisal process, (b) problem and emotion-focused coping, and (c) physical and mental health. While this research did not explore financial stress specifically, it utilized five different stressful situations that an individual might experience day-to-day. This research found a relationship between mastery/self-efficacy and mental health but not physical health (Folkman et al., 1986). Mastery reflects the extent to which an individual believes they can control certain events and the outcomes of those events (Lazarus & Folkman,

1984). One of the constructs of mastery is the notion of “internal locus of control,” which refers to the idea that what happens to one is based on one’s own behavior rather than, say luck, chance, fate, or “powerful others” (Lazarus & Folkman, 1984). On the other hand, Bandura (1977) has defined self-efficacy as “one's belief in one's ability to succeed in specific situations or accomplish a task.” Self-efficacy can play a major role in how one approaches goals, tasks, and challenges involved in dealing with financial stress (Bandura, 1977). Clearly, both mastery and self-efficacy have implications for coping with financial stress. To operationalize this to effectively cope with financial stress, one must believe what happens is up to them and that they have the tools to cope with stress. Thus, being in control is one thing, but one must *believe in the ability* to cope with stress as well. To examine the influence of mastery, one could examine an individual’s belief in their ability to accomplish and influence things in life, utilizing a series of questions. Likewise, self-efficacy may be determined using three single-item factors for the domain specific controls for health, social life, and finances. Essentially, individuals are asked to determine the amount of control they have over each one of these domains (Smith et al., 2013).

DeLongis et al. (1988) also examined daily stress and the impact of psychological and social resources on health and mood. Not surprisingly, there was a significant relationship between stress and the occurrence of health problems, but the relationship between stress and mood was more limited in duration. Furthermore, individuals with unsupportive social relationships and low self-esteem were more likely to experience an increase in mental and physical health problems. Thus, individuals with lower resources are more vulnerable to illness and mood issues when stress increases (DeLongis et al., 1988).

Krause (2003) examined religiosity as a coping mechanism and the impact on health status. Specifically, he examined the impact of prayer as a mechanism to cope with financial

strain and its effect on physical health status. Results indicated that the effects of chronic financial stress on physical health were reduced significantly for older people who pray for others often. However, praying for material things did not offset the effects of economic stress on health (Krause, 2003). Similarly, social resources and spirituality have been found to cushion stress and positively impact health (Calicchia & Graham, 2006; Clements & Ermakova, 2012).

Not all appraisal and coping mechanisms are positive. At the other end of the spectrum, alcohol abuse is often utilized as a coping mechanism for financial stress. Peirce, Frone, and Cooper (1994) examined the relationship between financial stress, social resources, personal resources, depression, and alcohol use. Results of this research indicated that depression facilitated the relationship between financial stress and drinking, and drinking to cope facilitated the relationship between depression and alcohol use. Thus, when someone is depressed, they are more likely to turn to drinking with the onset of financial stress, which is likely to result in a negative outcome (Peirce et al., 1994).

### **Effects of Stress**

Outcomes represents the last of the key theoretical constructs of the transactional theory of stress and coping. Overall, the previous literature highlights many possible outcomes from financial stressors, but most are focused on physical health. Additionally, research like that of Skinner et al. (2004) has shown that financial stress is significantly associated with psychological “distress,” poor subjective physical health, decreased self-esteem and satisfaction, and increased social conflict. Like other aspects of the present study, to examine the previous literature with respect to outcomes and expand on them, Lazarus and Folkman’s (1984) transactional theory of stress and coping will be utilized. Based on this theory, the present research is concerned with all aspects of “health,” namely, physical, psychological (morale, well-being), and social functioning.

Interestingly, these components do not operate in isolation but rather are interrelated to one-another (Lazarus & Folkman, 1984). Additionally, each of these three components have outcomes from stress in both the short- and long-term.

**Short-term immediate effects.** The TTSC would suggest “immediate” outcomes from stress in the form of physiological changes, positive or negative feelings, and how well the stressful encounter is managed. Similarly, this theory suggests that these parallel the “long-term effects” of stress which may impact one’s physical health, well-being, and social functioning (Lazarus & Folkman, 1984). While the primary focus of this research is restricted to one’s physical health, well-being, and social functioning, a brief discussion of the immediate effects of stress is also warranted.

**Physiology.** Krantz and McCeney (2002) propose the notion of physiological changes in an individual as an immediate outcome of stress. In general, physiology is the study of the functioning of a living system, an individual in this case (Krantz & McCeney, 2002). When the brain detects a threat, a coordinated physiological response involving autonomic, neuroendocrine, and metabolic and immune system components is activated (Krantz & McCeney, 2002). Examples of physiological responses to stress are changes in heart rate, a higher respiration rate, sweating, and/or changes in body temperature (Krantz & McCeney, 2002). In the context of this research, physiological changes are changes that occur within an individual due to financial stress. Even these immediate effects may lead to coronary disease and/or high blood pressure due to the mind and body’s response to this stress (Krantz & McCeney, 2002). These physiological changes and their immediate impact are parallel to the long-term effect on physical health.

Determining physiological changes in research is challenging because the response to a stressor must be measured immediately due to the short-term nature of the response. Though it is not in the scope of this study, research has attempted to determine the physiological responses to stress. For example, the outcomes from changes in financial strain on blood pressure, heart disease, and cortisol levels have been examined. The results of this research suggested that a change in financial stress was associated with a change in ambulatory systolic blood pressure, recurrent coronary artery disease, and an increase in cortisol levels (Stephoe et al., 2005; Georgiades et al., 2009; Krantz & McCeney, 2002). From an intervention standpoint, these findings suggest an association between favorable changes in stress and reduced cardiovascular and neuroendocrine activation.

***Feelings.*** In addition to a change in one's physiology, an individual might also experience positive or negative "feelings" from the stress as another immediate effect. Generally speaking, "feelings" in this respect parallels the long-term outcome of "morale" (Lazarus & Folkman, 1984). This outcome is focused on the negative or positive effect generated by a stressful encounter. The encounter may have produced an improved or decreased sense of well-being immediately following. For example, an overdrawn checking account may have an immediate effect of a lack of personal control and a decrease in mastery of one's finances. Conversely, having surplus spending for the month of one's income would have the opposite effect on one's personal control and mastery. Outcomes in the form of "negative" feelings might also be described as anxiety. Initially, anxiety was not considered an outcome but rather equated to stress (Lazarus & Folkman, 1984). However, the dominant view in current research suggests that anxiety is a "product of stress" (Lazarus & Folkman, 1984). Empirical research on anxiety often utilizes the Beck Anxiety Inventory (BAI) to determine the impact of anxiety on outcomes

(Smith et al., 2013). The BAI has been shown to distinguish symptoms of anxiety from depression and to be valid for use in older populations (Smith et al., 2013). In particular, five items from this inventory seem to provide an adequate determination for anxiety. These items examine if the individual experienced (a) the worst happening, (b) nervousness, (c) trembling hands, (d) fear of dying, and (e) felt faint (Smith et al., 2013).

***Encounter management.*** Another immediate effect of stress, which parallels the long-term effect of the individual's social functioning, is the extent of one's effectiveness at managing the stressful encounter (Lazarus & Folkman, 1984). "Managing the stressful encounter" refers to the individual's ability in the short term to manage their social role as a parent, spouse, employee, or citizen as a result of the stressful encounter. Social functioning is influenced by a variety of factors including autonomy, trust, intimacy, cultural values, and expectations regarding social roles (Lazarus & Folkman, 1984). For example, if an individual is having difficulty paying their bills, the short-term effect from this stressful encounter may have an impact on the relationship with one's spouse, especially if that spouse is spending beyond the family's means. However, determining one's effectiveness in managing a stressful encounter in research could also prove daunting. Though not the intent of this study, to examine this outcome, a stressful financial event such as an overdrawn checking account would need to be paired up against a social functioning factor. Alternatively, an association between the stressful event and "loneliness" could be explored (Lazarus & Folkman, 1984).

**Physical health, well-being, and social functioning.** Parallel to short-term immediate outcomes from the TTSC, the more chronic stressors are theorized to impact physical health, morale, and social functioning (Lazarus & Folkman, 1984). While most previous research



examining the impact of financial stress has focused on the impact of physical health alone, this study also examines the impact on one's psychological and social health as well.

*Social functioning implications.* Adequate research exists regarding the “buffering” effect that one's social relationships can have on stress. In this respect, research indicates that one's social relationships have the effect of lessening the potential negative impact of stress (Folkman et al., 1986). Thus, individuals with a supportive social network are less likely to experience a decrease in morale or increase in physical health related problems (Folkman et al., 1986). *However*, unlike the impact of stress on health and morale, little research exists regarding the impact of stress *on* social functioning. Social functioning is defined as one's satisfaction with interpersonal relationships and whether one possesses the necessary disposition and interpersonal skills to fulfill their societal roles (Lazarus & Folkman, 1984). For example, how well does the individual fulfill their role as a parent, spouse, or employee? It is often determined based on one's social interactions, social network, and the number of contacts an individual has with friends each month (Lynch, Kaplan, & Shema, 1997). For example, the 2010 Health and Retirement Survey asks individuals about their use of 20 activities and the frequency of those activities. Another example of a question that might be used to determine one's social functioning is “How many people in your surroundings do you have of whom you can ask for help?” (Smith et al., 2013).

Unfortunately, the inability to cope with stress may lead to increased depression, which is also associated with diminished social functioning (Price et al., 2002). Thus, depression from general stress may have a negative impact on important social roles as a parent, family member, and/or employee. In fact, Westman (2001) has also demonstrated that interventions to reduce depression will also improve one's ability to function as a parent, at work, or within the family.

Her research is one of the limited studies that examined the impact of stress on social functioning. While her research primarily focused on developing a conceptual framework to explain what she refers to as the “crossover” process from stress, the outcomes she seeks to explain are of particular interest to this study (Westman, 2001). Additionally, the “crossover” model developed by her research has many of the same constructs and variables as the Lazarus and Folkman (1984) model. “Crossover” stress is defined as a “dyadic inter-individual transmission of the stress or strain” (Westman, 2001). Her research expands on previous research that explores the impact of one’s stress behaviors on those with whom the individual regularly interacts. It examines the effect of a spouse’s coping ability on the other spouse’s well-being (Westman, 2001). So in this respect, the effect of stress on an individual’s “social functioning” is in essence being examined. In this particular study, the impact of job stress experienced by an individual in the workplace and the “crossover” effect experienced by the individual’s spouse at home were examined. The research suggests that there is a stress “crossover” effect from job stress and stressful life events to one’s social contacts, a spouse in the case of this research (Westman, 2001).

On top of this, depression appears to lower personal control, which further erodes social functioning and physical health (Aldana & Liljenquist, 1998). Individuals experiencing financial stress often experience reduced self-esteem because they have failed to manage their money properly. Thus, in addition to a decrease in self-worth, individuals are likely to experience a decrease in self-mastery, further eroding mental health and social functioning (Aldana & Liljenquist, 1998). Moreover, evidence also exists to suggest that depression from stress can lead to substance abuse, anxiety disorders, and other mental disorders (Price et al., 2002).

***Morale implications.*** In addition to impacting physical health and social functioning, financial stress has been found to contribute to the morale or emotional well-being of an individual (Skinner et al., 2004). Specifically, financial stress and financial difficulty have been found to contribute to depression, anxiety, lower self-worth, and lower personal control (Skinner et al., 2004). The outcome of morale refers to the emotions generated from a specific event (Lazarus & Folkman, 1984). Like social functioning, morale is also based on one's appraisal and coping process. Morale depends on how well challenges and negative outcomes are handled (Lazarus & Folkman, 1984). Morale is also focused on how one "feels about themselves" and "their conditions of life" (Lazarus & Folkman, 1984). Happiness, satisfaction, and subjective well-being are terms often used interchangeably to define morale (Lazarus & Folkman, 1984).

Pinquart and Sorensen (2000) conceptualize morale as being a composite of self-esteem, life satisfaction, and happiness. They indicate that self-esteem and life satisfaction tend to reflect the more stable long-term judgements of well-being. Medley (1976) also indicates that subjective well-being tends to be driven by the seven domains of life satisfaction, consisting of housing, city, leisure, family life, financial situation, health, and overall life satisfaction. Financial satisfaction, is defined as an individual's satisfaction with their present financial situation (Joo & Grable, 2004). It is typically driven by (a) financial behaviors, (b) financial stress level, (c) financial knowledge, (d) income, (e) solvency, (f) financial stressors, (g) number of dependents, (h) risk tolerance, (i) home ownership, and (j) education (Joo & Grable, 2004). As illustrated from this list, financial satisfaction, and hence well-being, is largely driven by financial stress factors or those related to it. Additionally, Johnson and Krueger (2006) suggest that within the financial satisfaction domain, assets, net worth and income are often associated with life satisfaction.

Morale may also be affected by personality variables, mastery, and interpersonal trust, which, when combined with the appraisal and coping processes, can significantly affect psychological symptoms (Folkman et al., 1986). Of particular interest to the present study was research completed by Neal Krause (1987). His research examined the impact of chronic financial strain on a random sample of older adults and the impact of social support on the outcome. He discovered that elderly people suffering from chronic financial strain are more likely to be depressed than older adults without as much financial strain. Additionally, his research supported the notion that older people who have more social support and provide more social support are more likely to have fewer symptoms of depression as a result of financial strain than those that do not have the same support system (Krause, 1987).

Research suggests that morale is often determined by whether one is depressed, cynically hostile, or optimistic (Lynch et al., 1997). Additionally, given that subjective well-being tends to be driven by the seven domains of life satisfaction, research factors for the same are warranted (Medley, 1976). Campbell, Converse, and Rodgers (1976) also support these domains for which a questionnaire was developed for the 2010 Health and Retirement Study labeled as “Satisfaction with Domains of Life” (Smith et al., 2013). This questionnaire examines the domains of subjective well-being, life satisfaction, domain satisfaction, depressive symptoms, positive affect and negative affect, purpose in life, personal growth, and financial strain. Furthermore, given the impact of financial satisfaction and its driving forces on life satisfaction, a factor for financial satisfaction is typically included in studies seeking to determine associations with life satisfaction. In addition to subjective measures for financial satisfaction, objective socioeconomic factors are often utilized as well. As indicated, research suggests too that mastery, purpose in life, and social support also play a role in one’s morale. Accordingly, there is overlap

for these factors utilized in other components of this theoretical framework and previous research.

***Physical health implications.*** In addition to social functioning and morale outcomes, physical health represents another outcome. Health is viewed as a “subjective phenomenon” that incorporates a somatic sense of self and functional ability (Lyon, 2000). Health is also an abstract and relative construct with no single meaning which makes it very difficult to define and operationalize. However, researchers define it as a “value judgement” or “objective state” being on some continuum of illness to wellness (Lyon, 2000). The most popular approach assumes a dichotomous model for health, which defines it as the absence of disease or illness (Lyon, 2000). Herbert and Cohen (1994) suggest that when the terms “illness” or “disease” are used in health psychology they may be referring to a number of health conditions, such as infectious diseases, autoimmune disease, cancer, hypertension, coronary artery disease, gastrointestinal disorders, asthma, and chronic headaches, to name a few.

Many disciplines have contributed resources to theory and research on the relationship between stress and health, and many have identified stress and the ability to cope as key variables affecting physical health (Thoits, 1995). As stressors add up, one’s ability to cope can be overburdened, thereby depleting psychological or physical resources which increases the probability that illness may follow (Thoits, 1995). Stress has been linked to heart disease, breast cancer, colds, and compounding of symptoms for other chronic conditions (Lyon, 2000). In particular, chronic stress can have a significant impact on mental and physical health (Lyon, 2000).

Research reveals a number of possible outcomes from financial stressors. Using the 1996-2004 Health and Retirement study dataset, Tucker-Seeley, Li, Subramanian, and Sorensen,

(2009) examined the effect of financial stress, including a number of financial stressors, on mortality risk. Over and above socioeconomic status measures, respondents reporting a number of financial hardships had a substantially higher probability of death when compared to those with no financial hardships. Furthermore, the number and type of financial hardships used in predicting mortality may differ for gender (Tucker-Seeley et al., 2009). Some studies also examined *specific* health related outcomes. For example, Skinner et al. (2004) investigated the effects of weekly changes in financial stressors on the physical and mental health of arthritis patients. Health symptoms, financial stressors, and pain for arthritis patients and healthy people were measured. Financial stressors included, but were not limited to, changes in mortgage payment, reduction in income, inability to cover living expenses, and unexpected living expenses. Increases in financial stressors were associated with greater health complaints and a negative impact on arthritis. These findings suggest that financial stress contributes to the physical and mental health of arthritis patients (Skinner et al., 2004). Likewise, Hanratty, Holland, Jacoby, and Whitehead (2007) examined the existence and impact of financial stress for people dying of cancer. This study found financial stress to affect a “significant minority” of people with terminal cancer in different health systems. In general these studies came to a conclusion similar to that of other researchers exploring the impact of sustained economic hardship on physical and non-physical health – financial strain impacts health negatively (Lynch et al., 1997).

Other studies have also explored the impact of financial stressors on a variety of *other* outcomes. For example, Archuleta et al. (2011) explored the impact of financial satisfaction and financial stressors on marital satisfaction and divorce. This study found a negative relationship between financial satisfaction and financial stressors. Additionally, the study indicated couples

that are financially satisfied tend to stay together. Likewise, Grable and Joo (2004) found a similar relationship in their study examining the determinants of financial satisfaction. Indeed, a financial satisfaction is a function of financial stress levels, among other variables.

One's health in research is typically determined using both self-reported subjective and objective symptomatic factors (Lazarus & Folkman, 1984). Objective means would include quantifiable and observable symptoms such as blood pressure and/or quantified non-observable symptoms which are self-reported by the individual, such as headaches (Lazarus & Folkman, 1984). Even so, determining physical health can be a daunting task given its relative nature. In one study, respondents were queried on their perceived level of satisfaction with their health. They were also asked to conduct an "inventory" of symptoms, including blood pressure, heart rate, presence of headache, muscle tension, and the like (Lazarus & Folkman, 1984). Thus, to determine physical health, a combination of symptomatic and self-reported factors is suggested. Additionally, symptomatic factors, such as whether the respondent has or is experiencing arthritis, high blood pressure, diabetes, cancer, lung disease, heart disease, headache, pain, fatigue, stomach problems, or similar ailments, could be utilized from the symptomatic standpoint.

***Reverse causation.*** It is sometimes suggested that poor health causes financial distress instead of vice versa, although research regarding reverse causation finds little evidence that illness may have caused economic hardship instead of economic hardship causing illness (Lynch et al., 1997). Using a sample of low income individuals compared to individuals without economic hardship, Lynch et al. (1997) conducted a longitudinal study to examine reverse causation in three ways. First, the associations between sustained economic hardship and illness over time were examined for respondents with no initial ailments. The magnitude of associations

for those who developed illness over time were virtually identical to those in the complete sample. Second, a longitudinal analysis of respondents who were healthy at the onset but who reported economic hardship over time was conducted. This economic hardship proved to be a significant predictor of reduced physical, psychological, and cognitive functioning (Lynch et al., 1997). Thirdly, a sample of individuals whose income was not currently derived from wages and were in excellent health at the onset of the longitudinal study was analyzed. The addition of sustained economic hardship had a significant impact on the functional outcomes of the individual (Lynch et al., 1997). Thus, it economic hardship was associated with decreased functioning rather than decreased functioning contributing to economic hardship.

### **Conclusion**

The objective of this research was to determine the relationship between financial stress and one's physical health, morale, and social functioning. Accordingly, the transactional theory of stress and coping served as the theoretical framework for this study. This theory seems to provide an appropriate fit for this study, and one that can be operationalized. Under this model, the transaction between the *individual and the environment* is characterized by the ability of an individual to manage financial challenges based on their environment. However, this relationship in and of itself does not determine the outcome. Given the transaction between the individual and the *stressful events* from the environment, the individual goes through an *appraisal and coping* process that will generate an *outcome*. Short-term outcomes typically affect one's physiology, feelings, and the ability to manage a stressful encounter. Additionally, the TTSC links stressors to health, morale, and social functioning outcomes based on one's ability to cope and adapt (Lazarus & Folkman, 1984).



Overall, the previous literature related to this research, albeit somewhat dated and specialized, provides an interesting look into the association between financial stress and physical health, morale, and social functioning. Despite the lack of theoretical framework for most of these studies, the theoretical constructs of the transactional theory of stress and coping adapted for this study could also be adapted to these studies, as demonstrated in this review. This chapter examined literature which offered some insight for this study, and had as its focal point the theoretical constructs of the individual and the environment, stressful events, appraisal and coping, and outcomes. However, due to limited *recent* research and lack of theoretical application, additional research appears warranted. Additionally, as evidenced by this review, very little of the research examines the association between financial stressors and the three outcomes of physical health, morale, and social functioning in a holistic manner.

## **Chapter 3 - Methodology**

### **Data and Sample**

The primary purpose of this research was to examine the effect of financial stressors on physical health, well-being, and social functioning. To examine this association, the TTSC served as the framework to provide direction for the variables to be used in the modeling. Secondary cross-sectional data from the Core 2012 Health and Retirement Study (HRS) served as the principal data source for this research. However, when available, some of the variables were also obtained from the “Leave Behind” Psychosocial and Lifestyle Questionnaire from the HRS, or the user-friendly HRS data prepared by the RAND Center for the Study of Aging to supplement the Core database.

#### **Core 2012 Health and Retirement Study**

The University of Michigan HRS survey is a biennial longitudinal survey sponsored by the National Institute on Aging and the Social Security Administration, consisting of approximately 20,000 individuals who are representative of the United States population over 50 years of age (Smith et al., 2013). The purpose of the survey is to provide an overview of the growing older population in the United States (Juster & Suzman, 1995). The survey contains detail about respondents’ demographics, health status, housing, family structure, work history, current employment, disability, retirement plans, net worth, income, and health and life insurance. The content of the survey was designed to reflect the analytic and policy interests of researchers working in the area of retirement and aging (Survey Research Center, Institute for Social Research, 2008).

HRS uses a national area probability sample of U.S. households with supplemental oversamples of Blacks, Hispanics, and residents of the state of Florida. The majority of the

sample population is approaching retirement or already retired, but the sample also includes individuals who are not currently working or who have never worked outside the home (Heeringa & Connor, 1995). The HRS observational unit is an eligible “household financial unit” which must include at least one age-eligible member born in 1959 or earlier, who is either: (a) a single unmarried age-eligible person, (b) a married couple in which both persons are age eligible, or (c) a married couple in which only one spouse is age eligible (Heeringa & Connor, 1995).

Originally, the overall HRS sample size was simply the consequence of a decision about survey length and budget constraint (Survey Research Center, Institute for Social Research, 2008). The final sample size that emerged was based on recommendations given the amount of statistical power needed for certain analysis. In the end, the targets for sample size and response rates were maintained (Survey Research Center, Institute for Social Research, 2008). The sample for the HRS has been built up over time. In 1998, a sample representative of the population over age 50 in the United States was created. Since then, HRS has refreshed the sample with a new six-year birth cohort every six years.

According to the Institute for Social Research at the University of Michigan regarding sample selection:

The HRS sample is selected under a multi-stage area probability sample design. The sample includes four distinct selection stages. The primary stage of sampling involves probability proportionate to size (PPS) selection of U.S. Metropolitan Statistical Areas (MSAs) and non-MSA counties. This stage is followed by a second stage sampling of area segments (SSUs) within sampled primary stage units (PSUs). The third stage of sample selection is preceded by a complete listing (enumeration) of all housing units (HUs) that are physically located within the bounds of the selected SSU. The third

sampling stage is a systematic selection of housing units from the HU listings for the sample SSUs. The fourth and final stage in the multi-stage design is the selection of the household financial unit within a sample HU. (Survey Research Center, Institute for Social Research, 2008).

### **Leave-Behind Psychosocial and Lifestyle Questionnaire**

In 2004, the HRS piloted a new feature for data collection in the form of self-administered questionnaires that were “left behind” with respondents once they completed an in-person core interview. Since 2006, this mode of data collection has been utilized to obtain information about participants' evaluations of their subjective wellbeing, lifestyle and experience of stress, quality of social ties, personality traits, and work-related beliefs. This instrument measures psychosocial issues, such as social support, sense of control (self-efficacy), religiosity, personality, chronic stressors, and financial strain (Smith et al., 2013).

### **RAND Center for the Study of Aging**

This data is a user-friendly file derived from all waves of the HRS. It contains cleaned and processed variables with consistent and intuitive naming conventions, model-based imputations, and spousal counterparts of most individual-level variables (Chien et al., 2014). However, it does not include the complete range of measures that are included consistently across the waves. The development and maintenance of the RAND HRS dataset is supported by the National Institute on Aging and the Social Security Administration.

### **Sample**

Because the data was collected per household based on the HRS sampling procedures, only responses from the main householder were utilized for this study. The final sample size for this research was 811 respondents. However, after incorporating HRS weighting information into

the models to be more representative and account for the sampling design of the survey, these observations represented considerably more individuals.

### **Dependent Variables**

As a result of stressful events, the TTSC suggests that the appraisal and coping process will lead to adaptations in (a) social functioning, (b) morale, and (c) health. This research examines these outcomes as separate dependent variables similar to previous research. For example, in their work examining appraisal, coping, health status, and psychological symptoms, Folkman, Lazarus, Gruen, and DeLongis (1986) used separate scales to measure morale and health. Social functioning was not a focus of the research so it was not measured. In addition to similar separate measures for the current study, an ad hoc composite measure was developed to examine the outcomes as a single outcome.

**Social functioning.** Recall that as one of the long-term effects under the TTSC, social functioning is defined as one's satisfaction with interpersonal relationships and whether one possesses the necessary disposition and interpersonal skills to fulfill their societal roles (Lazarus & Folkman, 1984). By examining adaptations to stress for social functioning, a better understanding may be obtained of how financial stress affects one's interaction with their social contacts. However, social functioning should not be confused with social support. Social support focuses on the relationship quality rather than social integration. Additionally, social support examines the perceived support that one receives from their spouse, children, family, and friends, whereas social functioning focuses on the integration and number of ties.

Thus, social functioning is often measured based on one's social interactions, social network, and the number of social contacts an individual has each month (Lynch, Kaplan, & Shema, 1997). For their research examining the impact of economic hardship on social

functioning, Lynch et al. (1997) measured social interaction based on the number of contacts respondents had with friends or close friends each month. A similar measure taken from the 2012 HRS asks respondents “On average, how often do you (a) meet up with friends, (b) speak on the phone with friends, and (c) write or email friends where 1 = three or more times a week, 2 = once or twice a week, 3 = once or twice a month, 4 = every few months, 5 = once or twice a year, and 6 = less than once a year or never. While there are other "social" measures in the HRS database, this measure/scale is not combined with others. Additionally, HRS indicates that in terms of scaling, an "average or sum across items for each specific relation category, or across all relation categories for a measure of overall contact with the social network" was acceptable. Like the previous research, this research measures the number of contacts with friends, etc. Based on HRS recommendations, items will be reverse coded with an average calculated for the measure. The score would be set to missing if there is more than one item with missing values.

**Morale.** According to Lazarus and Folkman (1984), morale, as another adaption under the TTSC, is concerned with “how people feel about themselves and their conditions of life.” It is related to happiness, satisfaction, and subjective well-being (Lazarus & Folkman, 1984). The three “dimensions” of morale are also thought to focus on unhappiness, strain, and personal inadequacy (Lazarus & Folkman, 1984). In an effort to measure morale given this premise, Diener, Emmons, Larsen, and Griffin (1985) developed the “Satisfaction with Life Scale” (SWLS). According to the authors, the SWLS is narrowly focused to measure global life satisfaction and does not measure related constructs such as positive affect or loneliness. It is shown to have “favorable psychometric properties,” including high internal consistency and high temporal reliability. According to the HRS dataset, it is “an established and reliable measure of subjective well-being that has been used extensively in international comparative studies” (Smith

et al., 2013). Accordingly, the SWLS measure will be used to measure morale for this study. The measure asks respondents to “Please say how much you agree or disagree with the following statements:”

- a) In most ways my life is close to ideal.
- b) The conditions of my life are excellent.
- c) I am satisfied with my life.
- d) So far, I have gotten the important things I want in life.
- e) If I could live my life again, I would change almost nothing.

Coding is as follows: 1=Strongly disagree, 2=Somewhat disagree, 3=Slightly disagree, 4=Neither agree nor disagree, 5=Slightly agree, 6=Somewhat agree, and 7=Strongly agree. An index of life satisfaction was created by averaging the scores across all five items. The final score was set to missing if there were three or more items with missing values. For this sample, the morale scale demonstrated adequate internal reliability with a Cronbach’s Alpha score of .89.

**Physical health.** As the final categorical adaption under the TTSC, it is widely held that stress, emotion, and coping are factors affecting one’s health (Lyon, 2000). Health adaptations to stress are an essential theme of the TTSC as well as how stressful encounters may impact one physically. However, health is an abstract term and may have different meanings for different people, which makes it very difficult to define. Likewise, there is no one meaning for the construct conceptually, which also makes it difficult to operationalize. However, researchers often define it as a “value judgment” (subjective) or as an “objective state,” with the individual on some continuum of illness to wellness (Lyon, 2000). The literature regarding physical health typically uses a subjective measure when it comes to measuring physical health. However, on

occasion, such the Kahn and Pearlin (2006) study, an objective measure is used. As a result, this research used both subjective and objective health measures.

In their research examining financially distressed consumers, O’Neill, Sorhaindo, Xiao, and Garman (2005) measured subjective health status by the following question: “Overall, would you say your health is very good, good, satisfactory, or poor?” To measure subjective health for this research, a proxy variable from the HRS dataset which asks respondents the following was used: “Please think about your life and situation right now. How satisfied are you with... Your health?” where 1 = completely satisfied, 2 = very satisfied, 3 = somewhat satisfied, 4 = not very satisfied, and 5 = not at all satisfied. To model the responses to the above questions, the questions will be reverse scored so that a higher score corresponds to “completely satisfied” health.

According to Kahn and Pearlin (2006), a subjective measure is “highly correlated” with other objective health indicators. Even so, as an objective measure, they asked respondents if in the past five years they were told by a health care provider that they had cancer, stroke, heart disease, high blood pressure, or diabetes as the leading causes of death among older persons where 1 = yes and 0 = no. A summative score was provided based on the number of positive responses to the conditions.

Likewise, using the 2012 HRS RAND dataset, an objective measure for each of these conditions will be utilized. However, this database has a composite scale used to measure all of the conditions with one measure as opposed to examining separate measures, or having to create a scale for all of the conditions. This measure is the sum of conditions the respondent reports ever having, and it treats missing values as a “no” in the sum. Thus, this composite sums the positive responses by the respondent as to whether they ever had high blood pressure, diabetes,



cancer of any kind excluding skin, lung disease, heart condition, stroke, emotional/psychiatric problems, or arthritis. Responses will be reverse coded so a higher score represents fewer negative health events.

**Composite outcome for social functioning, morale, and health.** Modeling social functioning, morale, and health individually does offer some insight as to the significant associations. However, these outcome variables likely work together in some fashion or another. Unfortunately, the previous literature is void of research that attempts to accomplish this objective, and a scale to measure a group outcome is not available. Thus, in an effort to add to the literature and explore this scenario, a composite measure was developed for this research to perform this modeling. To develop this composite, the individual median scores were first noted for subjective health, objective health, morale, and social functioning outcomes. Respondent scores for these individual outcomes are then compared to the median scores. Respondents earned one point for each outcome exceeding the outcome's median score. Then, a "combined" composite measure was created which tallied the point total for each respondent with a minimum possible score of zero and a maximum possible score of four.

### **Independent Variables**

The TTSC suggests that social functioning, morale, and health adaptations to stress are a function of the transaction between the individual and environment, stressful events, and appraisal and coping mechanisms (Lazarus & Folkman, 1984). Accordingly, measures for each one of these independent variables that may affect long-term adaptations to stress, based on the TTSC and previous research, will be examined.

**Individual and environment.** One of the key theoretical constructs of the transactional theory of stress and coping as depicted in Figure 2.1 is the interaction that takes place between

the individual and the environment (Lazarus & Folkman, 1984). This interaction affects one's appraisal of stressful events, the coping mechanisms which follow and, ultimately, the impact on one's health, morale, and social functioning. According to the TTSC, "person variables" at play consist of one's mastery, beliefs, and values and commitments (Lazarus & Folkman, 1984).

The TTSC also indicates that certain "environmental" factors interact with the "person variables" to influence the appraisal and coping process, and thus affect outcomes. Given one's constraints and resources, environmental factors at work include the demands of a situation, which create the potential for threat, harm, or challenge. Recall that the demands of a situation depend on its perceived novelty, predictability, uncertainty, imminence, and ambiguity (Lazarus & Folkman, 1984). Based on these theoretical constructs of the "person" and "environment," measures are provided for each.

***Mastery.*** One of the constructs of mastery is the notion of "internal locus of control," which refers to the idea that what happens to one is based on one's own behavior rather than, say luck, chance, fate, or "powerful others" (Lazarus & Folkman, 1984). Mastery reflects the resourcefulness one may draw on and use to counter stressful events. This facilitates the management of stress and may thus serve as a "buffer" to the effect of stressful encounters (Lazarus & Folkman, 1984). In her research examining the personal attributes and financial well-being of older adults, Zurlo (2009) utilized the following measure for mastery from the HRS dataset:

"Please say how much you agree or disagree with the following statements:"

- a) I can do just about anything I really set my mind to.
- b) When I really want to do something, I usually find a way to succeed at it.
- c) Whether or not I am able to get what I want is in my own hands.

- d) What happens to me in the future mostly depends on me.
- e) I can do the things that I want to do.

Responses to the questions were coded as follows: 1=Strongly disagree, 2=Somewhat disagree, 3=Slightly disagree, 4=Slightly agree, 5=Somewhat agree, 6=Strongly agree. Likewise, this current research used this same variable from the HRS dataset to measure mastery. An index of mastery was created by averaging the scores across the questions, with the final score set to missing if there were more than three items with missing values, as recommended by the HRS dataset. Cronbach's Alpha was performed on the measure to check for internal consistency and reliability. The mastery scale demonstrated adequate internal reliability with a Cronbach's Alpha score of .91.

**Beliefs.** Although Lazarus and Folkman (1984) indicate there may be a number of relevant beliefs, of particular interest insofar as stress is concerned under the TTSC are beliefs about personal control and existential beliefs. Beliefs about personal control represent one's preexisting notions about reality and determine one's perception of the way things are in the environment (Lazarus & Folkman, 1984). Often referred to as self-efficacy, these beliefs reflect the extent to which one feels they have some power over their environment or, in the absence of self-efficacy, the extent to which one feels vulnerable (Lazarus & Folkman, 1984). Existential beliefs, such as faith in a god or religiosity, are beliefs that provide individuals with meaning in life and offer hope.

To measure beliefs about personal control as it relates to finances, Zurlo (2009) utilized the following variable from the HRS dataset: "Using a 0 to 10 scale where 0 means 'no control at all' and 10 means 'very much control,' how would you rate the amount of control you have over your financial situation these days (Zurlo, 2009)?" Accordingly, this research will use the same

variable from the HRS dataset to measure beliefs. Responses will be coded according to the scale utilized.

To measure existential beliefs in their research to examine marital satisfaction, Archuleta, Britt, Tonn, and Grable (2011) asked respondents “In general, how would you say your religious beliefs influence your daily life?” where 1 = None, 2 = Little, 3 = Some, 4 = Quite a bit, and 5 = Very much. As a proxy for this measure, the HRS dataset asks respondents to indicate how much they agree with the statement “I try hard to carry my religious beliefs over into all my other dealings in life” where 1 = strongly disagree, 2 = somewhat disagree, 3 = slightly disagree, 4 = slightly agree, 5 = somewhat agree, and 6 = strongly agree. Responses will be coded according to the answer selected.

***Conscientiousness.*** Ones’ conscientiousness reflects what is of value to and what has meaning to the individual. It determines what is of importance in a stressful encounter, and it also affects the choices people make to maintain certain values or ideals (Lazarus & Folkman, 1984). Conscientiousness also impacts the outcome by guiding individuals into or away from situations based on the harm or benefit from the stressful event. Theory and research on one’s conscientiousness suggests that it may “buffer” potential negative effects from stress (Creswell, Welch, Taylor, Sherman, & Gruenewald, 2005).

Accordingly, Creswell et al. (2005) tested whether personal values like conscientiousness could cushion physiological and psychological stress responses during a laboratory stress experiment. To determine values, participants completed a values questionnaire that examined personal values for religion, social issues, politics, theory, and aesthetics. Unfortunately, the 2012 HRS dataset does not contain such a measure. As a proxy to this questionnaire, the self-control/impulsiveness measure from the Multidimensional Personality Questionnaire (MPQ),

developed by Tellegen (1982) to assess individual differences in tendencies to impulsive behavior and decision-making, will be utilized. This measure seeks responses to the following statements:

- a) I keep close track of where my money goes.
- b) I often stop one thing before completing it and start another. (-)
- c) I often act without thinking. (-)
- d) Before I get into a new situation, I like to find out what to expect from it.
- e) I am often not as cautious as I should be. (-)
- f) I often prefer to “play things by ear” rather than to plan ahead. (-)

Coding for these measures is as follows: 1=Strongly disagree, 2=Somewhat disagree, 3=Slightly disagree, 4=Slightly agree, 5=Somewhat agree, 6=Strongly agree. The negatively phrased items (-) will be reverse coded and then the scores will be averaged across items to create an index of conscientiousness for each facet, with a high score indicating high conscientiousness. The final score will be set to missing for each facet if there are more than two items with missing values. Unfortunately, the conscientiousness scale demonstrated inadequate internal reliability with a Cronbach’s Alpha score of only .43 for this sample. However, the HRS data psychometrics for this variable indicated an Alpha of .60 for 2012. Additionally, the items selected for this scale were from the Multidimensional Personality Questionnaire (MPQ). This questionnaire was developed by Tellegen (1982) to create an index of conscientiousness, and to assess individual differences in tendencies to impulsive behavior and decision-making, so it has been used in the past. Additionally, the variable’s questions address the need and content under the TTSC. Moreover, due to limited measures for this variable in the dataset, it is the best measure available.

**Stressful events.** Another one of the key theoretical constructs of the TTSC that propels the model, as depicted in Figure 2.1, is the onset of stressful encounters. Initially, stress was defined in terms of either stimulus or response (Lazarus & Folkman, 1984). Stimulus definitions focus on environmental events such as natural disasters, illness, or being laid off from work. This definition assumes that certain events are normally stressful but does not allow for individual differences in the appraisal of events. On the other hand, response definitions refer to a state of stress from a reaction to an event (Lazarus & Folkman, 1984). By contrast, the TTSC defines stress as a *relationship* between the individual and the environment so it takes into account the characteristics of the individual and the nature of the environmental event (Lazarus & Folkman, 1984). Given this relationship, stress results from an appraisal of an event where the event exceeds the individual's resources and endangers their well-being (Lazarus & Folkman, 1984). In this respect, the concept of stress is tied directly to the aforementioned individual and environment.

Given the primary purpose of this research, which is to examine the impact of *financial* stress on health, morale, and social functioning, stress measures for this research will focus on financially stressful events. Financial stressors are often defined as “life events that impact a family unit that can produce changes in a family's social system” (McCubbin & Patterson, 1983). The study of financial stress involves (a) chronic or ongoing stress, typically due to persistent economic challenges, often associated with lower SES, and (b) singular critical financial challenges, which may be major or acute in nature (Skinner, Zautra, & Reich, 2004). Chronic stressors, the primary focus of this research, are defined as those that are “continuous strains” without resolution (Skinner et al., 2004).

***Chronic financial stress.*** To measure financial chronic stress in their study examining stress, life events, and socioeconomic disparities in health, Lantz, House, Mero, and Williams (2005) utilized a composite scale comprised of responses to the following questions: (1) “How satisfied are you with your family’s present financial situation?” with responses based on a five-point scale where 1 = completely satisfied and 5 = not satisfied at all, (2) “How difficult is it for your family to meet monthly payments on your bills?” with responses based on a five-point scale where 1 = extremely difficult and 5 = not difficult at all, and (3) “In general, how do your family’s finances usually work out at the end of the month?” where 1 = some money left over, 2 = just enough money, and 3 = not enough money. Responses to these questions were averaged by Lantz et al. (2005) to create a scale with all items given equal weight.

For the current study, only the question seeking feedback on “difficulty making payments” with like scaling was utilized from this research. The financial satisfaction question is really not a financial stressor and the question seeking feedback on family finances at month-end is not available in the dataset for this research. The “finances at month-end” question also seems redundant to the “difficulty making payments” question. However, as proxy to this question, the following question from the HRS dataset was utilized: “Please read the list below and indicate whether or not any of these are current and ongoing problems that have lasted twelve months or longer. If the problem is happening to you, indicate how upsetting it has been. Check the answer that is most like your current situation for: Ongoing financial strain where 1 = no, didn’t happen, 2 = yes, but not upsetting, 3 = yes, somewhat upsetting, and 4 = yes, very upsetting.”

***Other financial stressors.*** In another study that examined the association between health and debt, Drentea and Lavrakas (2000) asked respondents whether they “paid off their most recent credit card bill in entirety or not?” where a “yes” response was coded as a 1 and a “no”

response was coded as a 0. Likewise, for this research, a similar variable will be utilized from the 2012 HRS dataset as follows: “Last month did you pay off all your credit card debt or was there an unpaid debt that you carried over to this month? A score of 1 = paid off all, and 2 = carried over unpaid debt.”

As an objective measure for financial stress for their research on household debt and the impact on health, Sweet, Nandi, Adam, and McDade (2013) included a calculated household debt/asset ratio as a measure of debt load. Real estate equity and debt were excluded from this calculation. As a proxy for the debt/asset measure, the current research utilized a debt/income ratio using data from the 2012 HRS dataset.

**Appraisal and coping.** One of the key constructs of the TTSC is the cognitive appraisal and coping process. Cognitive appraisal refers to the individual’s evaluative processes that intervene between the event and the response. Through this process, the individual assesses the importance of the event to his or her well-being (Lazarus & Folkman, 1984). Thus, the concept of appraisal is based on the idea that emotional processes, such as stress, are dependent on what one *expects* with respect to the significance and outcome of a specific situation (Lazarus & Folkman, 1984). Note that the individual may go through an initial appraisal followed by a second appraisal and subsequent reappraisals throughout the mediating process (Lazarus & Folkman, 1984). The initial appraisal judges whether the encounter is irrelevant, positive, or stressful. The secondary appraisal is the process during which the individual examines what might and can be done regarding the encounter. The reappraisal process refers to an appraisal that has changed due to new information from the environment or person (Lazarus & Folkman, 1984).



**Appraisal.** According to Lazarus and Folkman (1984), researchers have struggled with the measurement of the appraisal process. To measure a primary appraisal, the researcher must present a stressful encounter to the respondent and then the respondent verbally evaluates the extent to which he has a “stake” in the encounter (Lazarus & Folkman, 1984). For example, previous research had respondents describe their subjective appraisal of the stressfulness of an impairment that was present, and their confidence in their ability to successfully manage (cope with) the problem (Haley et al., 1996). Such an activity is beyond the scope of this research and dataset. With respect to the secondary and reappraisal processes, Lazarus and Folkman (1984) propose as a proxy measure that the applicability of the statements below to a certain event could be rated by the respondents as follows:

- (a) You could change or do something about it.
- (b) You had to accept it.
- (c) You needed to know more before you could act.
- (d) You had to hold yourself back from doing what you wanted to do.

However, as noted by Lazarus and Folkman (1984), Bandura’s (1981) work and efforts regarding self-efficacy offer a very similar measure to the appraisal process and statements above. Given that there is a self-efficacy variable (control of finances) under the individual and environment construct, adding another measure for self-efficacy was redundant and created a multicollinearity issue between the variables. Thus, an additional measure is not provided here as a limitation of this research.

**Coping.** Coping involves *managing* the stressful event, which may include attempts to minimize, avoid, tolerate, or accept a stressful event based on the environment (Lyon, 2000). The TTSC suggests that people use problem-focused and/or emotion-focused strategies to cope with

a stressful event. Problem-focused strategies involve defining and addressing the problem that is causing the stress, and then generating potential solutions. In comparison, emotion-focused strategies utilize distancing, avoiding, blaming, minimizing, venting, exercising, and meditating behaviors to cope with stress. Individuals might also look to resources such as social support to cope with stress (Lazarus & Folkman, 1984; Lyon, 2000; DeLongis, Folkman, & Lazarus, 1988).

In an effort to measure coping, Lazarus and Folkman (1984) propose the use of a “Ways of Coping” checklist that can either be self-administered or administered by the researcher. In addition to the functions of emotion and problem-focused coping, their checklist involves the four basic modes of coping such as direct action, inhibition, information search, and cognitive coping. Additionally, Damião, Rossato, Fabri, and Dias (2009) suggest that the “Ways of Coping” could be categorized as distancing, escape-avoidance, social support, accepting responsibility, problem solving, and positive reappraisal. The list is comprised of 67 possible ways of coping with a stressful situation scaled as: not used = 0, used somewhat = 1, used quite a bit = 2, and used a great deal = 3. Because the above “ways of coping” is not available in the HRS dataset, proxy measures from the HRS dataset are proposed based on the nature of emotion and problem-focused coping, and based on the content of the 67 “Ways of Coping” from Lazarus and Folkman (1984).

As a proxy for this measure in this current research, respondents were queried for content similar to the 67 “Ways of Coping.” Specifically, questions for this measure were selected from the "Need for Cognition" scale based on extensive psychometric analyses in the CogUSA project (Fisher, Gideon, Hsu, & Helppie McFall, 2011). In that study, two dimensions were determined and associated with cognitive performance: Cognitive-enjoyment and Cognitive-effort. Cognitive enjoyment measures consisted of:

- a) I like to have the responsibility of handling a situation that requires a lot of thinking.
- b) I really enjoy a task that involves coming up with new solutions to problems.
- c) The notion of thinking abstractly is appealing to me.

These measures seem to align well with the categories of “accepting responsibility and problem solving” as suggested by Damião, Rossato, Fabri, and Dias (2009).

Cognitive effort measures consisted of:

- d) I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. (-)
- e) I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something. (-)
- f) I only think as hard as I have to. (-)

These measures seem to align well with the categories of “distancing and escape-avoidance” as also suggested by Damião, Rossato, Fabri, and Dias (2009).

Coding is as follows: 1=not at all like me, 2=somewhat like me, 3=uncertain, 4=somewhat like me, 5=very much like me. Items d, e, and f will be reverse coded. Scores will be summed with a higher score indicating a more problem-focused respondent. Additionally, each of the coping scales demonstrated adequate internal reliability with Cronbach’s Alpha scores of .78 each.

Based on the TTSC, one’s ability to deal with stressful demands is also built to some extent on one’s available resources, such as one’s social support. Consequently, research suggests that individuals with unsupportive social relationships are more likely to experience difficulty dealing with such demands (DeLongis et al., 1988). In their research examining religiosity, stress, and mental health, Ellison, Boardman, Williams, and Jackson (2001)

considered the impact of both positive and negative support. To measure positive social support respondents were asked “How much do your family members make you feel loved and cared for?” They were asked the same regarding their friends, with scores ranging from 1 = not all to 5 = a great deal. Negative social support was measured by asking respondents “How much do you feel your family members make too many demands on you?” with scores ranging from 1 = not all to 5 = a great deal. As a proxy for these two measures, the current study used the following positive and negative social support questions, which examine the perceived support that respondents receive from their spouses, family, and friends from the HRS dataset:

“Please check the answer which best shows how you feel about each statement:”

Positive Social Support (items a-c):

- a) How much do they really understand the way you feel about things?
- b) How much can you rely on them if you have a serious problem?
- c) How much can you open up to them if you need to talk about your worries?

Negative Social Support (items d-g):

- d) How often do they make too many demands on you?
- e) How much do they criticize you?
- f) How much do they let you down when you are counting on them?
- g) How much do they get on your nerves?

Coding for the response was 1=a lot, 2=some, 3=A little, 4=not at all. Items will be reverse coded and an index of positive social support and an index of negative social support will be created for each relationship category by averaging the scores within each dimension (positive (a-c) and negative (d-g)). The final score was set to missing if there was more than one item with missing values for the positive social support scale, or more than two items with missing values

for the negative social support scale. The positive support scale for spouses, family, and friends produced satisfactory internal reliability with Cronbach’s Alpha scores of .79, .85, and .84, respectively. Similar to the positive support scales, the negative support scales also produced suitable internal reliability with Cronbach’s Alpha scores of .81, .79, and .81, respectively.

**Control Variables**

Previous research has also focused on specific socioeconomic variables as impacting outcomes (Lazarus & Folkman, 1984). In their study examining the association between health and debt, Drentea and Lavrakas (2000) included socioeconomic variables for race, gender, age, education, income, and marital status. Additionally, Joo and Grable (2004) suggest that home ownership may be a factor affecting financial stress. Similarly, this research will utilize the variables as provided in Table 3.1.

**Table 3.1. Socioeconomic Variables**

Marital Status:	Gender:
Married (ref.)	Male
Partnered	Female
Separated	Education:
Divorced	Less than HS (ref.)
Widowed	HS
Never married	Some College
Age:	College or higher
50 - 59 (ref.)	Employment Status:
60 - 69	Employed (ref.)
70 - 79	Retired
80 or greater	Other
Race:	Homeowner:
White (ref.)	Yes
Black/African American	No
Other	
Income	

## **Primary Research Question**

The primary research question for this research was: How do financial stressors affect one's physical health, morale, and social functioning?

### **Hypotheses**

**Hypothesis 1:** There is a negative association between ongoing financial strain and one's health status, morale, and social functioning.

**Hypothesis 2:** There is a negative association between one's debt/income ratio and health status, morale, and social functioning.

**Hypothesis 3:** There is a negative association between difficulty paying bills and health status, morale, and social functioning.

**Hypothesis 4:** There is a negative association between carrying over credit card debt and one's health status, morale, and social functioning.

## **Secondary Research Question**

A secondary research question for this research was: How do individual and environmental factors and appraisal and coping mechanisms affect one's physical health, morale, and social functioning?

### **Hypotheses**

**Hypothesis 5:** There is a positive association between one's control over finances and their health status, morale, and social functioning.

**Hypothesis 6:** There is a positive association between mastery and one's health status, morale, and social functioning.

**Hypothesis 7:** There is a positive association between one's conscientiousness and beliefs and health, morale, and social functioning.

**Hypothesis 8:** There is a positive association between one's coping mechanisms and health status, morale, and social functioning.

### **Statistical Analysis**

This research primarily examined the association between financial stressors and outcomes for health status, morale, and social functioning. To test these hypotheses, SAS statistical software was employed to provide the analytics for this research. Prior to conducting statistical analysis on the variables, and to ensure integrity of the results, the data was screened to check for missing responses and for violation of regression assumptions. To check for missing responses, a frequency distribution was first conducted on each variable. Some of the variables had missing data so the method of list-wise deletion was utilized to remove those responses from the analysis. Parameter bias was not anticipated from this procedure.

Given the continuous nature of the “morale” and “social functioning” dependent variables, OLS regression was utilized to model these variables. Variance inflation factor (VIF) testing was also conducted to check for multi-collinearity. Given the data requirements of the statistical methodology, these variables were also examined for data normality prior to modeling. To determine the strength of the model, the adjusted R-squared was noted and the p-values for the independent variables were examined for significance.

Given the ordered nature of the “subjective health,” “objective health,” and “composite” outcome dependent variables, cumulative logistic regression analysis in SAS was used to determine the relationship with the independent and control variables for each of the dependent variables. Data normality for these dependent variables was not a concern given the data requirements of the statistical methodology. However, prior to running cumulative logistic regression, testing for multi-collinearity was conducted through OLS regression using VIF

testing. For cumulative logistic regression, a VIF of over three will indicate the presence of a potential multi-collinearity problem. The odds ratio, concordance ratio, and pseudo R-squared were observed to check for model performance.



## **Chapter 4 - Statistical Analysis and Results**

Given the theoretical framework and research methods, this chapter examines the composition of the data and prescribed statistical modeling along with subsequent results, in an attempt to address the research questions. Descriptive statistics are first provided for the dependent and independent variables to determine the nature of the sample. In an attempt to answer the primary research question “How do financial stressors affect one’s physical health, morale, and social functioning,” all five research models discuss the significance of financial stressors under the model. Likewise, to respond to the secondary research question “How do individual and environmental factors and appraisal and coping mechanisms affect one’s physical health, morale, and social functioning,” all five research models address the significance of individual, environmental, and appraisal and coping variables under the model.

The dependent variables and theoretical outcomes of morale and social functioning are modeled utilizing OLS regression, while subjective and objective health are each modeled separately utilizing cumulative logistic regression. In an effort to examine a single outcome for health, morale, and social functioning, a composite measure for all three outcomes was also developed utilizing cumulative logistic regression.

### **Descriptive Statistics**

Tables 4.1 and 4.2 provide a synopsis of the sample characteristics for this research. Due to the complex sampling techniques employed by the HRS, the weighted percentages are also provided. The Taylor series method (Wolter, 1985) was employed to incorporate the HRS’s weighting and complex sampling design information when calculating estimates and the variances associated with those estimates, based on recommended methodology (Nielsen &

Seay, 2014). The sample consisted of 811 respondents, which represented 4,256,502 individuals from the United States, aged 50 or older, when weighted.

### Sample Characteristics Results

The sample was evenly split between males (52%) and females (48%). Respondents were mostly white (86%) with Black/African American representing 8% of the sample, and most respondents were married (92%). Of particular interest was the representation of respondents who had credit card debt but reported they did not pay off their credit cards monthly (88%). Many respondents reported being employed (44%), but most were retired (49%). The majority of the individuals in the sample had at least some college (59%) and owned a home (91%). The age of the respondents was split between 50-59 year olds (38%), 60-69 year olds (42%), and 70-79 year olds (17%). Only approximately 3% of the sample was age 80 or older. The mean respondent income was \$95,753 based on a low of no income at all, and a high income of \$776,640.

**Table 4.1. Sample Characteristics (N = 811)**

Variable	<i>n</i>	<i>Unweighted %</i>	<i>Weighted %</i>		<i>n</i>	<i>Unweighted %</i>	<i>Weighted %</i>
Paid off credit cards:				Gender:			
Yes	108	13.32	12.44	Male	406	50.06	51.50
No	703	86.68	87.56	Female	405	49.94	48.50
Marital Status:				Education:			
Married (ref.)	737	90.88	92.13	Less than HS (ref.)	98	12.08	7.51
Partnered	51	6.29	5.60	HS	276	34.03	33.36
Separated	4	0.49	0.46	Some College	225	27.74	29.03
Divorced	11	1.36	1.26	College or higher	212	26.14	30.10
Widowed	5	0.62	0.34	Employment Status:			
Never married	3	0.37	0.20	Employed (ref.)	302	37.24	43.56
Age:				Retired	446	54.99	48.70
50 - 59 (ref.)	257	31.69	37.72	Other	63	7.77	7.74
60 - 69	285	35.14	41.99	Homeowner:			
70 - 79	223	27.50	17.00	Yes	715	88.16	91.04
80 or greater	46	5.67	3.30	No	96	11.84	8.96
Race:							
White (ref.)	616	75.96	86.41				
Black/African American	138	17.02	7.99				
Other	57	7.03	5.60				

## **Sample Characteristics of Scales and Continuous Variables Results**

**Social functioning.** Individuals from the sample demonstrated a reasonable level of social functioning with a mean score of 3.76 on a six point scale. Social functioning under the TTSC is defined as one's satisfaction with interpersonal relationships and whether one possesses the necessary disposition and interpersonal skills to fulfill their societal roles (Lazarus & Folkman, 1984). Like this research, social functioning is often measured based on one's social interactions, social network, and the number of contacts one has with friends each month (Lynch, Kaplan, & Shema, 1997).

**Morale.** Likewise, respondent morale was relatively high with a mean score of 4.76 compared to a maximum possible score of seven. Morale in this context is synonymous with one's well-being or life satisfaction and is measured using Diener, Emmons, Larsen, & Griffin's (1985) "satisfaction with life survey."

**Health.** Respondents reported a mean subjective health score of 3.23 on a five point scale. Likewise, individuals reported a mean of 5.64 for objective health on a seven point scale. As noted from the previous research regarding the measurement of health, both subjective and objective measures have been utilized. Subjective health is measured based on an individual's self-reported health status. Objective measures usually seek to determine whether the respondent has cancer, stroke, heart disease, high blood pressure, or diabetes, which are typically the leading causes of death among older persons. Objective health under this model utilized a composite measure of like diseases, which was reverse scored to be consistent with the subjective health scaling.

**Individual and environment.** Under this construct, respondents generally reported having control of their finances with a mean of 6.76 on a 10 point scale. They also demonstrated

high levels of overall life mastery ( $M=4.72$ ) and a high application of one's religious beliefs ( $M=4.58$ ) based on six point scales. For the conscientiousness variable, respondents generated a mean score of 4.24 compared to a maximum of six, but very few respondents reported the incidence of stressful events in their lives, with a mean score of only .51 compared to a possible maximum score of six.

**Table 4.2. Sample Characteristics of Scales and Continuous Variables**

Variable	Mean	SE	N	Min	Max
<b>Dependent Variables</b>					
Social functioning	3.76	0.04	811	1	6
Morale	4.76	0.07	811	1	7
Objective Health	5.64	0.06	811	1	7
Subjective health	3.23	0.05	811	1	5
<b>Individual and Environment</b>					
Financial control	6.76	0.10	811	0	10
Mastery	4.72	0.05	811	1	6
Existential beliefs	4.58	0.10	811	1	6
Conscientiousness	4.24	0.04	811	1	6
Stressful Events	0.51	0.05	811	0	6
<b>Financial Stressors</b>					
Difficulty paying bills	2.26	0.05	811	1	5
Ongoing financial strain	2.09	0.04	811	1	4
Debt/Income	1.29	0.07	811	0	26
<b>Appraisal and Coping</b>					
Coping - enjoyment	3.45	0.04	811	1	5
Coping - effort	3.57	0.04	811	1	5
Positive support:					
Spouse	3.47	0.03	811	1	4
Family	2.74	0.04	811	1	4
Friends	3.00	0.04	811	1	4
Negative support:					
Spouse	1.98	0.04	811	1	4
Family	1.66	0.03	811	1	4
Friends	1.46	0.02	811	1	4
<b>Control Variables</b>					
Income	\$95,753	\$6,912	811	\$4,400	\$776,640

**Financial stressors.** Respondents reported some difficulty paying bills ( $M=2.26$ , range 1-5), along with ongoing financial strain ( $M=2.09$ , range 1-4), under the financial stressor construct. According to reported debt and income data, the sample has a mean debt to income ratio of 1.29, indicating respondents on average owe \$1.29 for every \$1.00 of income.

**Appraisal and coping.** Under the appraisal and coping construct, respondent coping behaviors based on the enjoyment and effort scales indicated coping scores of 3.45 and 3.57, respectively, based on a one to five scale. With respect to the positive support scales, individuals reported reasonably high support from their spouse ( $M=3.47$ ), family ( $M=2.74$ ), and friends ( $M=3.00$ ) based on a one to four scale. Respondent feedback to the negative support scales was quite the opposite. Negative support scores from spouse ( $M=1.98$ ), family ( $M=1.66$ ), and friends ( $M=1.46$ ) were all lower based on a one to four scale where a low score is better and represents less negativity.

### **Variable Scrubbing Results**

In order to draw conclusions utilizing OLS regression to produce linear modeling for the social functioning, morale, and composite outcomes, the following assumptions were made: (a) there is a linear relationship between the dependent and independent variables, (b) the independent variables are independent of one another, (c) homogeneity of the variance, (d) there is non-collinearity of the independent variables, and (e) normality of the data (Allison, 2012).

To check for linearity violations, a scatterplot of the residuals against the predicted values was examined. These scatterplots are generated in SAS along with the regression output. The plots revealed no pattern which would indicate that linearity of the data is a reasonable assumption.

To evaluate variable independence, correlation analysis was conducted to check the strength of the relationship between independent variables utilizing Pearson's correlation testing. The results of both tests did not reveal cause for concern, with most coefficients falling below +/- .50 as demonstrated in Table 4.3. However, the variable combination of "difficulty paying bills" and "ongoing financial strain" was slightly above this threshold at .74, as might be expected given the nature of the variables.

To check for homogeneity of the data, SAS offers a "heteroscedasticity consistent covariance estimator," which was utilized for this research (Allison, 2012). This method provides consistent estimates of the standard errors even when the homogeneity of the assumption is violated. Correction for heteroscedasticity of the data when utilizing this procedure made almost no difference in the results.

To check for multicollinearity, variance inflation factor (VIF) testing was conducted on the variables utilized in the regression analysis. The results of this testing are provided in Table 4.4 along with the regression results for social functioning and morale. With all variance inflation factors falling below 10 for the OLS models, multicollinearity of the variables does not appear to be an issue.

To check for normality, the univariate procedure was also conducted on each continuous independent variable utilized in the OLS modeling of the morale and social functioning outcomes. For the most part, there did not appear to be any normality issues based on the skewness and kurtosis results, which were mostly within the -2.00 to +2.00 tolerance level. However, both the log of income and the debt/income ratio exhibited skewness and kurtosis above tolerance levels, most likely due to a preponderance of higher incomes in the sample.

Additionally, the variable “Stress Events” displayed some kurtosis, which is likely due to the small number of respondents experiencing such events.

**Table 4.3. Pearson Correlation Coefficients (N = 811)**

	Employment Status	Race	Education	Marital Status	Existential beliefs	Difficulty paying bills	Financial Strain	Financial Control	Mastery	Conscientiousness	Coping - enjoyment	Coping - effort	Positive support - spouse	Positive support - family	Positive support - friends	Negative support - spouse	Negative support - family	Negative support - friends	Income (log)	Debt/Income	Stressful Events
Race	-0.05																				
Education	-0.16 ***	-0.02																			
Marital Status	-0.03	0.13 ***	-0.05																		
Existential beliefs	0.09 **	0.09 **	-0.07 *	-0.09 **																	
Difficulty paying bills	-0.08 *	0.06	-0.14 **	0.09 **	-0.02																
Financial Strain	-0.09 **	0.02	-0.07 **	0.07 **	0.00	0.75 ***															
Financial Control	-0.04	0.12 ***	0.04 *	-0.07 **	0.04	-0.48 ***	-0.46 ***														
mastery	-0.06	0.05	0.09 **	-0.04 **	-0.01	-0.22 ***	-0.22 ***	0.41 ***													
Conscientiousness	-0.09 **	0.10 **	0.12 ***	-0.09 **	0.08 *	-0.16 ***	-0.15 ***	0.26 ***	0.22 ***												
Coping - enjoyment	-0.10 **	0.02	0.26 ***	0.05	0.00	-0.05	-0.01	0.12 ***	0.19 ***	0.14 ***											
Coping - effort	-0.18 ***	-0.02	0.26 ***	-0.05 *	-0.07 *	-0.01	0.03	0.02	0.12 ***	0.31 ***	0.36 ***										
Positive support - spouse	-0.02	-0.07 *	0.06	-0.14 ***	-0.01	-0.19 ***	-0.16 ***	0.23 ***	0.24 ***	0.16 ***	0.06	0.06									
Positive support - family	-0.03	0.12 ***	-0.11 **	-0.02	0.08 *	-0.04	-0.04	0.13 ***	0.11 **	0.05	0.03	0.00	0.19 ***								
Positive support - friends	0.00	0.05	0.08 *	-0.07 *	0.09 **	-0.07	-0.02	0.09 **	0.10 **	0.10 **	0.05	0.04	0.14 ***	0.31 ***							
Negative support - spouse	0.05 *	0.07 *	-0.03	0.01	-0.05	0.21 ***	0.18 ***	-0.21 ***	-0.19 ***	-0.20 ***	-0.01	-0.16 ***	-0.52 ***	-0.09 **	-0.04						
Negative support - family	0.03	0.06	-0.05 *	0.07 *	-0.01	0.16 ***	0.20 ***	-0.16 ***	-0.14 ***	-0.14 ***	0.04	-0.03	-0.19 ***	-0.20 ***	-0.02	0.34 ***					
Negative support - friends	-0.06	0.13 ***	-0.04	0.15 ***	-0.01	0.15 ***	0.14 ***	-0.11 ***	-0.10 **	-0.18 ***	0.06	-0.08 *	-0.14 ***	0.03 **	-0.11 **	0.32 ***	0.42 ***				
Income (log)	-0.37 ***	-0.10 **	0.43 ***	-0.16 ***	-0.11 **	-0.21 ***	-0.10 **	0.07	0.13 ***	0.07 **	0.17 ***	0.21 ***	0.14 ***	-0.03	0.08 *	-0.06	-0.04	-0.01			
Debt/Income	0.12 ***	-0.06	0.00	0.03	0.06	-0.22 ***	-0.26 ***	0.15 ***	0.01	-0.01	-0.09 **	-0.07	0.09 **	-0.01	-0.04	-0.03	-0.04	0.01	0.06		
Stressful events	-0.08 *	0.13 ***	0.01	0.09 **	-0.06	0.29 ***	0.30 ***	-0.18 ***	-0.07 *	-0.05	0.04	0.04	-0.09 *	-0.04	-0.03	0.10 *	0.14 ***	0.13 ***	-0.03	-0.07 *	
Age	0.48 ***	-0.15 ***	-0.14 ***	-0.09 **	0.11 ***	-0.20 ***	-0.24 ***	0.05	-0.07	-0.09 **	-0.12 ***	-0.16 ***	0.07 *	-0.02	-0.10 **	-0.04	-0.15 ***	-0.12 ***	-0.28 ***	0.24 ***	-0.25 ***

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



## **Regression Results**

Given the continuous nature of the scales used to separately measure the morale and social functioning dependent variables, the linear model of OLS regression was utilized to separately determine if morale and social functioning could be predicted from the independent variables. Table 4.4 provides the results for each of the regressions used to model morale and social functioning including the coefficients for the variables and their level of significance.

Note that Table 4.4 and the subsequent review of the results for each of the models are broken down into the theoretical constructs of (a) the individual and environment, (b) financial stressors, and (c) the appraisal and coping process. With respect to the individual and environment, the TTSC proposes that outcomes are determined to some extent based on the “transaction” that takes place between the individual and environment. Table 4.4 provides a list of variables under this construct which are thought to influence this transaction under the model. Given the primary purpose of this research, which is to examine the impact of financial stressors on one’s health, morale, and social functioning, stressors operationalized for this research are limited to financial stressors as listed on Table 4.4. The appraisal and coping process under the TTSC suggests that one’s appraisal of a stressful event is based on one’s expectations, while an individual’s coping is based on the individual’s ability to manage that event based to some extent on one’s support system. Expectations are based on one’s beliefs, values, and commitments. Table 4.4 also provides the list of appraisal and coping variables utilized for this research.

### **Morale Regression Results**

One of the outcome variables under the TTSC is morale. Overall, the “morale” model produced an adjusted R-squared of .4117, meaning 41.17% of the variance in morale can be

predicted from the independent variables, indicating a good fit. Under the TTSC, morale is influenced by the constructs of the individual and environment, stressors, and the appraisal and coping process for which the results are now examined.

**Individual and Environment.** As predicted under the TTSC, significant “individual and environment” variables as provided in Table 4.4 include financial control ( $b = .06, p < .05$ ) and mastery ( $b = .30, p < .001$ ). Thus, holding all else equal, a one-unit increase in the mastery scale was associated with a .30 unit increase in reported morale. Likewise, holding all else equal, a one-unit increase in the financial control scale was associated with a .06 unit increase in reported morale. Hence, individuals that believe they are in charge of their own finances and have the life skills to succeed are more likely to exhibit higher morale.

**Table 4.4. OLS Regression Results for Morale and Social Functioning with VIF ( $N = 811$ )**

Variable	Morale			Social Functioning		VIF
	<i>B</i>	<i>SE</i>		<i>B</i>	<i>SE</i>	
Constant	1.52	1.31		1.53	0.69	*
<b>Individual and Environment</b>						
Financial control	0.06	0.03	*	0.00	0.01	1.83
Mastery	0.30	0.07	***	0.05	0.04	1.45
Existential beliefs	0.03	0.03		0.00	0.02	1.12
Conscientiousness	0.01	0.07		-0.08	0.03	*
Stressful Events	-0.07	0.05		0.02	0.04	1.26
<b>Financial Stressors</b>						
Difficulty paying bills	-0.14	0.07		0.01	0.04	2.82
Ongoing financial strain	-0.17	0.07	*	0.00	0.06	2.60
Are credit cards paid-off	-0.36	0.15	*	-0.06	0.10	1.20
Debt/Income	-0.29	0.37		-0.27	0.21	1.31
<b>Appraisal and Coping</b>						
Coping - enjoyment	0.11	0.08		0.01	0.04	1.42
Coping - effort	-0.11	0.04	*	0.03	0.03	1.48
Positive support:						

Spouse	0.45	0.09	***	-0.08	0.06		1.83
Family	0.04	0.06		0.26	0.04	***	1.38
Friends	-0.07	0.07		0.16	0.04	***	1.32
Negative support:							
Spouse	-0.36	0.08	***	-0.06	0.06		1.90
Family	-0.07	0.09		-0.04	0.05		1.43
Friends	0.20	0.12		0.16	0.07	*	1.39
<b>Control Variables</b>							
Marital Status (married ref.):							
Partnered	-0.46	0.23		-0.28	0.08	***	1.14
Separated	0.29	0.70		0.19	0.20		1.12
Divorced	-0.51	0.40		-0.47	0.34		1.16
Widowed	-0.36	0.90		-0.78	0.19	***	1.04
Never married	0.92	1.14		-0.86	0.16	***	1.08
Age (50 - 59 ref.):							
60 - 69	0.06	0.13		-0.06	0.08		1.54
70 - 79	0.36	0.16	*	-0.05	0.09		1.78
80 or greater	0.40	0.23		0.05	0.14		1.33
Race (White ref.):							
Black/African American	-0.08	0.14		-0.09	0.10		1.12
Other	-0.26	0.27		-0.21	0.13		1.10
Education (Less than HS ref.):							
HS	0.18	0.15		0.11	0.10		4.03
Some College	0.16	0.19		0.35	0.13	**	4.10
College or higher	0.40	0.18	*	0.43	0.13	**	4.65
Employment Status (employed ref.):							
Retired	0.04	0.14		-0.03	0.09		1.77
Other	-0.06	0.21		-0.10	0.14		1.26
Male	-0.32	0.13	*	-0.30	0.07	***	1.27
Homeowner	-0.08	0.21		0.12	0.09		1.17
Income	0.09	0.11		0.09	0.05		1.83
R-Square	41.17%			30.88%			

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

**Financial stressors.** Significant “financial stressors” associated with morale include ongoing financial strain ( $b = -.17, p < .05$ ) and unpaid credit cards ( $b = -.36, p < .05$ ). Thus,

holding all else equal, a one-unit increase in the ongoing financial strain scale was associated with a .17 unit decrease in respondent morale. Oddly, controlling for the other variables in the model, credit card holders with balances that were paid off reported morale scores .36 lower than those who carried a credit card balance.

**Appraisal and coping.** As it pertains to the appraisal and coping construct for morale, the coping-effort ( $b = -.11, p < .05$ ) variable was significantly associated with morale. Recall that this variable reflects an avoidance coping strategy. Thus, holding all else equal, a one-unit increase in the coping-effort scale was associated with a .11 unit decrease in reported morale, which would be expected. The “positive support – spouse” ( $b = .45, p < .001$ ) and “negative support – spouse” ( $b = -.36, p < .001$ ) appraisal and coping variables were also significantly associated with morale. Thus, holding all else equal, a one-unit increase in the “positive support – spouse” scale was associated with a .45 unit increase in individual morale. On the other hand, controlling for other variables in the model, each one-unit increase in the “negative support – spouse” scale was associated with a .36 unit decrease in reported morale. In general, this analysis would indicate an improvement in morale with social support.

**Control variables.** Control variables that were significantly associated with morale include “age 70-79” ( $b = .36, p < .05$ ), “education – college or higher” ( $b = .40, p < .05$ ), and “male” ( $b = -.32, p < .05$ ). Thus, holding all else equal, morale for respondents age 70-79 is .36 higher than for individuals age 50-59, the reference category. Additionally, morale for individuals with a college education or higher is .40 higher when compared with individuals with less than a high school education, the reference category. Lastly, the results also indicated that morale for males is .32 lower than for females.

## Social Functioning Regression Results

The “social functioning” model produced an adjusted R-squared of .3088, meaning 30.88% of the variance in social functioning can be predicted from the independent variables. Like the other outcomes under the TTSC, social functioning is influenced by the constructs of the individual and environment, stressors, and the appraisal and coping process, which are now examined.

**Individual and environment.** With respect to the “social functioning” regression from Table 4.4, the only significant variable from the individual and environment construct was conscientiousness ( $b = -.08, p < .05$ ), as measured by one’s composite level of self-control and impulsiveness. Thus, holding all else equal, a one-unit increase in one’s conscientiousness was associated with a .08 unit decrease in the reported social functioning scale.

**Financial stressors.** Unfortunately, there were no significant variables from the financial stressor construct in the modeling of social functioning. Based on previous research, a negative impact on social functioning from financial stressors was expected.

**Appraisal and coping.** However, a number of variables were significant from the appraisal and coping construct. Specifically, “positive support – family” ( $b = .26, p < .001$ ) and “positive support – friends” ( $b = .16, p < .01$ ) were significant for the positive support construct. Holding all else equal, this means that a one-unit increase in the “positive support – family” scale was associated with a .26 unit increase in an individual’s social functioning scale. Likewise, controlling for other variables in the model, a one-unit increase in the “positive support – friends” scale was associated with a .16 unit increase in a respondent’s social functioning scale.

For the negative support relationships, “negative support – friends” ( $b = .16, p < .05$ ) was the only significant variable. Thus, controlling for other variables in the model, this means that a one-point increase in the “negative support – friends” scale was associated with a .16 unit *increase* in the social functioning scale for respondents. For this sample it would appear that negative support from friends may be better tolerated. Once again, social support appears to be a significant factor in improving outcomes.

**Control variables.** A significant number of control variables was also significantly associated with social functioning. Significant variables “marital status – partnered” ( $b = -.28, p < .01$ ), “marital status – widowed” ( $b = -.78, p < .001$ ), and “marital status – never married” ( $b = -.86, p < .001$ ) would suggest that a high level of social functioning for these categories is less than that of married respondents, the reference category, holding all else constant. Likewise, “males” ( $b = -.30, p < .001$ ) have a lower level of social functioning compared to females, holding all else equal. On the other hand, controlling for other variables, respondents with at least some college education ( $b = .35, p < .01$ ) or higher ( $b = .43, P < .01$ ) reported a higher level of social functioning than for individuals with less than a high school education, the reference group.

### **Subjective and Objective Health Regression Results**

Table 4.5 provides the results of the cumulative logistic regressions used to model subjective health and objective health, including variable coefficients, odds, variance inflation factors, and level of significance. According to Allison (2012), when running cumulative logistic regression, the assumptions required of OLS regression are relaxed somewhat. Specifically, the linear relationship between the dependent and independent variables is not required, nor is

normality of the data. However, problems with multicollinearity are still of concern. To address this concern, variance inflation factors are provided once again with the modeling results.

However, for logistic regression a VIF of no greater than 3.0 is acceptable. As demonstrated, most are below 3.0, so multicollinearity is not a concern. The VIFs that are near 3.0 for financial stressors or over 3.0 for education variables would be anticipated given they are within their constructs.

**Table 4.5. Cumulative Logistic Results for Subjective and Objective Health with VIF (N = 811)**

Dependent variable: Independent variables	Subjective Health			Objective Health		
	Estimate		Odds	Estimate	Odds	VIF
<b>Intercepts</b>						
2	-3.62		-	2.71	-	-
3	-5.57	**	-	0.20	-	-
4	-7.62	***	-	-1.28	-	-
5	-10.10	***	-	-2.45	-	-
6	-		-	-3.89	-	-
7	-		-	-5.35	***	-
<b>Individual and Environment</b>						
Financial control	0.09	*	1.09	0.03	1.03	1.83
Mastery	0.29	**	1.33	0.25	***	1.29
Existential beliefs	0.03		1.03	-0.01	0.99	1.12
Conscientiousness	0.15		1.16	0.02	1.02	1.31
Stressful Events	-0.02		0.98	0.21	*	1.23
<b>Financial Stressors</b>						
Difficulty paying bills	-0.15		0.86	-0.08	0.93	2.82
Ongoing financial strain	-0.14		0.87	-0.02	0.98	2.60
Are credit cards paid-off	0.03		1.03	0.15	1.16	1.20
Debt/Income	-0.25		0.78	0.09	1.10	1.31
<b>Appraisal and Coping</b>						
Coping - enjoyment	-0.14		0.87	0.09	1.10	1.42
Coping - effort	0.19	*	1.21	0.08	1.08	1.48

Positive support:						
Spouse	0.05	1.05	0.19		1.21	1.83
Family	-0.02	0.98	0.15		1.17	1.38
Friends	0.10	1.10	-0.25	*	0.78	1.32
Negative support:						
Spouse	0.15	1.17	0.23		1.26	1.90
Family	-0.10	0.90	-0.34	**	0.71	1.43
Friends	-0.05	0.95	-0.22		0.81	1.39
<b>Control Variables</b>						
Marital Status (married ref.):						
Partnered	-0.52	0.60	-0.57		0.56	1.14
Separated	0.61	1.84	0.72		2.06	1.12
Divorced	0.39	1.47	-0.80	*	0.45	1.16
Widowed	2.70	*** 14.94	0.46		1.59	1.04
Never married	-0.43	0.65	0.71		2.04	1.08
Age (50 - 59 ref.):						
60 - 69	0.38	1.46	-0.42	*	0.66	1.54
70 - 79	0.22	1.25	-0.62	**	0.54	1.78
80 or greater	0.40	1.49	-0.42		0.65	1.33
Race (White ref.):						
Black/African American	-0.63	* 0.53	0.20		1.22	1.12
Other	-0.38	0.68	0.25		1.29	1.10
Education (Less than HS ref.):						
HS	-0.13	0.88	-0.39		0.68	4.03
Some College	-0.04	0.96	-0.58	*	0.56	4.10
College or higher	0.68	1.97	-0.27		0.76	4.65
Employment Status (emp. ref.):						
Retired	-0.91	*** 0.40	-0.87	***	0.42	1.77
Other	0.14	1.15	-0.21		0.81	1.26
Male	-0.27	0.76	-0.17		0.85	1.27
Homeowner	0.55	1.73	0.50	*	1.66	1.17
Income	0.38	** 1.46	0.29		1.33	1.83
Pseudo R2	12.03%		7.51%			
Concordance ratio	69.90%		66.10%			

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



**Subjective health.** Another one of the outcomes under the TTSC is one's physical health. The subjective health model delivered a concordance ratio of 69.90%, indicating adequate model performance. A Pseudo R-squared of 12.03% was produced, indicating a 12.03% improvement from the null model, which contains no variables other than the intercept. Subjective health is also influenced by the constructs of the individual and environment, stressors, and the appraisal and coping process, which are now examined under this construct.

**Individual and environment.** With respect to the individual and environment construct, "control of finances" ( $b = .09$ ,  $OR = 1.09$ ) and "mastery" ( $b = .29$ ,  $OR = 1.33$ ) were the only significant variables. Thus, holding all else constant, each one-unit increase in one's control of finances is associated with a 9% increase in the predicted odds of one having a higher level of subjective health. Likewise, each one-unit increase in the mastery level is associated with a 33% increase in the predicted odds of a respondent having a higher level of subjective health, holding all else equal. These results mimic those from the morale modeling, reinforcing the importance of having a sense of control and mastery.

**Financial stressors.** Remarkably, the results of the regression did not indicate significance of variables for the financial stressor construct. This would suggest these variables do not have a major impact on one's health for this sample.

**Appraisal and coping.** With respect to this construct, only the coping – effort ( $b = .19$ ,  $OR = 1.21$ ) was found to have significance. Thus, for every one-unit increase in the coping – effort scale, there is an associated 21% increase in the predicted odds of the respondent reporting a higher level of health, holding all else constant.

**Control variables.** A number of control variables were also found to be significant from the modeling for subjective health. The marital status variable “widowed” ( $b = 2.70$ ,  $OR = 14.94$ ) was found significant. Holding all else constant, this indicates that the odds of a respondent reporting higher health were 1,394% higher for widowed individuals than for married individuals, the reference group. “Employment Status – retired” ( $b = -.91$ ,  $OR = .40$ ) was also significant as a control variable in the model. Thus, holding all else equal, this indicates that the odds of a retired respondent reporting higher health were 60% lower than for employed individuals, the reference group. The “black/African American” race ( $b = -.63$ ,  $OR = .53$ ) control variable was also significant under the model. Controlling for other variables in the model, this indicates that the odds of an individual reporting higher health were 47% lower for black/African Americans than for the “white” race, the reference group. Finally, the log of income ( $b = .38$ ,  $OR = 1.46$ ) was also a significant control variable under the model. When translating the log of income, this means that for every one percent increase in income, the odds of reporting a higher level of health increased by about 100%, holding everything else constant.

**Objective health.** As noted, objective health measures are sometimes used to measure health outcomes in addition to subjective measures. This model delivered a concordance ratio of 66.10%, comparable to the subjective health model, indicating adequate model performance. A Pseudo R-squared of 7.51% was produced, indicating a 7.51% improvement from the null model, which contains no variables other than the intercept. Like the other outcomes, objective health is also influenced by the constructs of the individual and environment, stressors, and the appraisal and coping process, which are now examined under this construct.

**Individual and environment.** With respect to the individual and environment construct, the “mastery” ( $b = .25$ ,  $OR = 1.29$ ) and “stressful events” ( $b = .21$ ,  $OR = 1.23$ ) variables were statistically significant, holding all else equal. Thus, each unit increase in the mastery level is associated with a 29% increase in the predicted odds of a respondent having a higher level of objective health, holding all else equal. Similarly, holding all else constant, each unit increase in the stressful event scale is associated with a 23% increase in the predicted odds of an individual having a higher level of objective health. This seems odd because the opposite outcome would be expected from stressful events.

**Financial stressors.** Like the results of the subjective health modeling, the results of the regression for objective health status did not indicate significance of variables for the financial stressor construct. This would further suggest these variables do not have a major impact on one’s health for this dataset.

**Appraisal and coping.** However, like the subjective health modeling, a couple of the variables from the appraisal and coping construct were found to have significance. “Positive support – friends” ( $b = -.25$ ,  $OR = .78$ ) and “Negative support – family” ( $b = -.34$ ,  $OR = .71$ ) were all found significant in the model. This indicates that, holding all else equal, a one-unit increase in positive support from friends is associated with a 22% decrease in the number of health conditions. Oddly, a one-unit increase in negative support from family is associated with a 29% decrease in the number of health conditions, holding all else constant. Perhaps support from family, whether positive or negative, may lead to an improvement in health conditions.

**Control variables.** Like the subjective health regression, a number of control variables were also found significant in the objective health regression model. Specifically, “marital status

– divorced” ( $b = -.80$ ,  $OR = .45$ ) was significant, indicating that the odds of a divorced respondent reporting higher health were 55% lower than for married respondents, the reference group, holding all else equal. “Age 60 – 69” ( $b = -.42$ ,  $OR = .66$ ) and “age 70 – 79” ( $b = -.62$ ,  $OR = .54$ ) were also significant under the model. Thus, holding all else equal, the odds of these age groups reporting higher health were lower than for 50 – 59 year olds, the reference group. The variable “education – some college” ( $b = -.58$ ,  $OR = .56$ ) was also rendered significant. This would indicate, holding all else equal, that the odds of a respondent with some college education having fewer health conditions are 44% less than respondents with a high school education, the reference group. This seems peculiar as one might expect the opposite to be true, yet this contrary relationship is the same for all education variables. “Employment status – retired” ( $b = -.87$ ,  $OR = .42$ ) was also significant, indicating that the odds of retirees reporting fewer health conditions were 58% lower than for employed individuals, the reference group, holding all else equal. On the other hand, holding all else constant, the odds of respondent “homeowners” ( $b = .50$ ,  $OR = 1.66$ ) reporting fewer health conditions were 66% higher than for non-homeowners.

### **Composite Outcome Regression Results**

Based on the theoretical framework, this research has thus far examined the impact of financial stressors, the individual and environment, and the appraisal and coping process on subjective and objective health, social functioning, and morale *individually*. However, it would be interesting to examine the relationship of health, social functioning, and morale functioning as a group outcome rather than individual outcomes. This may provide a better understanding of how these outcomes are related based on the TTSC. Unfortunately, the previous literature is void of research that attempts to accomplish this objective, and a scale to measure a group outcome is

not available. In an effort to explore a relationship between the outcomes, a correlation analysis for subjective health, objective health, morale, and social functioning was first conducted. Interestingly, the results of this analysis as provided in Table 4.6 demonstrate very little correlation. Even so, while a correlation analysis may examine the individual relationships between these variables, it does not examine how they function as a group.

**Table 4.6. Pearson Correlation Coefficients for Dependent Variables (*N* = 811)**

	Social Functioning	Morale	Health Conditions
Morale	0.12 ***		
Health Conditions	0.09 *	0.12 ***	
Subjective Health	0.15 ***	0.31 ***	0.39 ***

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

Thus, in an effort to add to the literature and explore this scenario, a composite measure was developed to perform this modeling. To develop this composite, the individual median scores were first noted for subjective health, objective health, morale, and social functioning outcomes. Respondent scores for these individual outcomes are then compared to the median scores. Respondents earned one point for each outcome, exceeding the outcome’s median score. Then, a “combined” composite measure was created, which tallied the point total for each respondent with a minimum possible score of zero and a maximum possible score of four. This

composite measure generated a Cronbach’s alpha score of .50. Though this is less than adequate, this measure offers at least some insight in the absence of no other.

Given the ordered nature of this scale used to measure the composite dependent variable for morale, social functioning, subjective health, and objective health combined, cumulative logistic regression was utilized to model the relationship with the independent variables. Table 4.7 provides the results of that modeling, including variable significance. The composite model delivered a concordance ratio of 74%, which was better than the subjective or objective health models, indicating more than adequate model performance. A Pseudo R-squared of 15.26% was produced indicating a 15.26% improvement from the null model, which contains no variables other than the intercept.

**Table 4.7. Cumulative Logistic Results for Health, Social Functioning, and Morale (N = 811)**

Dependent variable:	Grouped Outcome		
Independent variables	Estimate		Odds
<b>Intercepts</b>			
1	-2.43		-
2	-4.28	*	-
3	-5.92	**	-
4	-8.24	***	-
<b>Individual and Environment</b>			
Financial control	0.06		1.06
Mastery	0.46	***	1.58
Existential beliefs	0.05		1.05
Conscientiousness	-0.04		0.96
Stressful Events	0.07		1.07
<b>Financial Stressors</b>			
Difficulty paying bills	0.01		1.01
Ongoing financial strain	-0.41	***	0.66

Paid off credit cards	-0.45		0.64
Debt/Income	0.03		1.03
<b>Appraisal and Coping</b>			
Coping - enjoyment	0.03		1.03
Coping - effort	0.07		1.07
Positive support:			
Spouse	0.17		1.19
Family	0.29		1.33
Friends	0.06		1.06
Negative support:			
Spouse	-0.18		0.84
Family	-0.28		0.76
Friends	0.25		1.29
<b>Control Variables</b>			
Marital Status (married ref.):			
Partnered	-0.80	*	0.45
Separated	1.98		7.28
Divorced	-0.44		0.64
Widowed	0.08		1.09
Never married	-0.44		0.65
Age (50 - 59 ref.):			
60 - 69	0.15		1.16
70 - 79	0.19		1.21
80 or greater	0.24		1.27
Race (White ref.):			
Black/African American	-0.05		0.96
Other	-0.18		0.84
Education (Less than HS ref.):			
HS	0.09		1.10
Some College	0.24		1.27
College or higher	1.20	***	3.31
Employment Status (employed ref.):			
Retired	-0.83	***	0.44
Other	-0.10		0.90
Male	-0.71	***	0.49
Homeowner	0.70	**	2.02
Income	0.22		1.24

Psuedo R2	15.26%
Concordance ratio	74.00%

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

**Individual and environment.** With respect to the individual and environment construct under the composite model, “mastery” ( $b = .46$ ,  $OR = 1.58$ ) was the only statistically significant variable. Thus, each unit increase in the mastery level is associated with a 58% increase in the predicted odds of a respondent reporting better than the median levels of health, morale and social functioning, holding all else equal.

**Financial stressors.** The modeling also produced a statistically significant financial stressor. Specifically, “ongoing financial strain” ( $b = -.41$ ,  $OR = .66$ ) was statistically significant. Thus, holding all else equal, each unit increase in the ongoing financial strain scale was associated with a 34% decrease in the predicted odds of an individual reporting better than the median levels of health, morale, and social functioning. It is interesting to note that ongoing financial strain was significant only for the morale regression, yet it is still significant for this composite model as a whole.

**Appraisal and coping.** Surprisingly, the results of the regression for the combined outcomes for health, morale, and social functioning did not indicate significance of variables under the appraisal and coping construct. While some of these variables impacted the outcomes individually, these results would suggest these variables do not have a major impact on the outcomes as a whole for this dataset.

**Control variables.** A number of control variables were also found significant under this composite model. Specifically, “marital status – partnered” ( $b = -.80$ ,  $OR = .45$ ) was significant,



indicating that the odds of a partnered respondent reporting better than the median levels for the variables of the composite outcome were 55% lower than for married respondents, the reference group, holding all else equal. The variable “education – college” ( $b = 1.20$ ,  $OR = 3.31$ ) was also rendered significant. This would indicate, holding all else equal, that the odds of a respondent with a college education reporting better than the median levels of health, morale, and social functioning were 231% higher than respondents with a high school education, the reference group. “Employment status – retired” ( $b = -.83$ ,  $OR = .44$ ) was also significant, indicating that the odds of retirees reporting a better than the median levels for the variables of the composite outcome was 56% lower than for employed individuals, the reference group, holding all else equal. On the other hand, holding all else constant, the odds of respondent “homeowners” ( $b = .70$ ,  $OR = 2.02$ ) reporting better than the median health, social functioning, and morale were 102% higher than for non-homeowners. Finally, being “male” ( $b = -.71$ ,  $OR = .49$ ) was also significant under the model. This would indicate that the odds of males reporting a better than the median levels of health, morale, and social functioning combined outcomes were 51% lower than for females, holding all else constant.

## **Chapter 5 - Discussion of Research Findings**

The primary purpose of this study was to examine the effect of financial stressors on one's physical health, well-being, and social functioning. A secondary objective was to examine the impact of the individual and environment and the appraisal and coping process on physical health, morale, and social functioning. Lazarus and Folkman's (1984) transactional theory of stress and coping (TTSC) was utilized to provide the overall direction and served as the theoretical framework for the hypotheses in this study. This research utilized cross-sectional data from the Core 2012 Health and Retirement Study (HRS), the "Leave Behind" Psychosocial and Lifestyle Questionnaire from the HRS, and the user-friendly HRS data prepared by the RAND Center for the Study of Aging.

The purpose of this chapter is to provide a discussion of the results within the context of the theoretical framework and previous literature. Implications of the study are provided as well as a discussion of the study's contribution to the literature. Lastly, limitations and recommendations for future research are provided.

### **Financial Stressors**

The primary research goal of this study was to investigate how financial stressors affect one's physical health, morale, and social functioning. Based on the theoretical framework and previous literature, respondent financial stress was measured by one's (a) ongoing financial strain, (b) difficulty paying bills, (c) unpaid credit card debt, and (d) debt/income ratio. In general, the results found that financial stressors did have an impact on the outcomes, but only on

one's morale and the composite measure, depending on the stressor itself. Further analysis for each stressor follows.

### **Ongoing Financial Strain**

This study found that ongoing financial strain is connected with unhappiness, and this strain is also important enough to negatively influence the composite outcome as well. This result is similar to Krause (1987), who found that chronic financial strain among older Americans was linked to higher levels of depression. However, for this current study, these financial stressors did not influence one's subjective or objective health. These results are surprising, as Lynch, Kaplan, & Shema (1997) found that ongoing economic hardship led to lower physical, psychological, and cognitive health. Likewise, stress has been linked to heart disease, breast cancer, colds, and compounding of symptoms for other chronic conditions (Lyon, 2000). In general, studies typically found that financial strain impacts health negatively (Lynch et al., 1997). The lack of impact for this current study may be due to the cross-sectional nature of the study, which does not allow for detecting the long-term impacts of financial strain. It might be that the consistent presence of financial strain may only affect health and social connectedness in the long run.

### **Difficulty Paying Bills**

This study found that difficulty making ends meet was not important enough to have an impact on one's happiness, health, social interactions, or the combination of all three. Despite a lack of impact under this research, Aldana and Liljenquist (1998) proposed that financial strain typically occurs when expenses exceed income and one is unable to meet his or her responsibilities. Additionally, Krause (1987) found that one in five respondents reported

difficulty living on their present income and were often forced to cut expenses because of financial problems. This means that, for this current group of individuals, their financial situation is such that making ends meet is not an issue. Additionally, the results may be due to the mature age group of these individuals and their current life stage. These results may also indicate the presence of other more important factors that may impact the respondent's outcomes.

### **Unpaid Credit Card Debt**

With respect to credit card debt's influence on one's happiness, health, social interaction, and combined outcome, only happiness was impacted. However, the impact on happiness was the opposite of what might be expected. Normally, unpaid credit card debt would be expected to make one unhappy. However, this group of individuals reported greater happiness when credit card debt was unpaid. In comparison, Drentea and Lavrakas, (2000) tested whether credit card debt as a financial stressor is related to health. Although this research found an association between debt stress and health, it did not explore financial stress's relationship to well-being and/or social functioning. Perhaps one of the reasons for these unexpected results is the composition of the sample itself. Due to the nature of the questioning from the dataset, the sample was comprised only of those individuals with credit card debt. This sample characteristic may be impacting the outcome in a positive manner, so further research is warranted.

### **Debt/Income Ratio**

The results of this study indicated that, for this group of individuals, their debt in relation to their income does not affect their happiness, health, social connectedness, or the combined outcome for all three. However, assuming that a higher debt/income ratio is a financial stressor under the theoretical framework, a relationship would be anticipated with one of the outcomes.

Additionally, previous research has found a relationship between debt and the outcomes. For example, O'Neill, Sorhaindo, Xiao, and Garman (2005) examined a change in health status for a sample of already financially stressed consumers participating in a debt management program. They found that health and finances were positively related. Likewise, Sweet, Nandi, Adam, and McDade (2013) included a calculated household debt/asset ratio as a measure of debt load. The findings from this study also indicated that high financial debt was associated with a decrease in self-reported general health.

For the current research, this means that other variables were more important in predicting one's health, morale, and social functioning than was one's debt in relation to income. For example, individual and environment variables, such as mastery or personal control over finances, may be more important. Likewise, coping behavior or one's social support may be more important factors than one's debt to income.

### **Individual and Environment**

A secondary research goal of this study was to investigate how individual and environmental factors affect one's physical health, morale, and social functioning. Based on the theoretical framework and previous literature, the individual and environment construct for this study was measured by one's (a) control over finances, (b) mastery, (c) conscientiousness and beliefs, (d) stressful events, and (e) control variables. In general, the results found that these variables did have an impact on one's health, morale, and social functioning. Further analysis for the variables under the construct follows.

## **Control Over Finances**

As modeled under the theoretical framework, this study determined that one's belief that they are in control of their finances affected their happiness and self-reported health status in a positive way. Personal control, often referred to as self-efficacy, is a belief in one's ability to be successful in a certain situation or complete a specific task. The results here suggest that if individuals believe they have some say over their finances, it will have a positive impact on the outcomes. It might be too that this belief in itself positively affects how one feels about one's health. It is possible that just as a result of being happy we tend to feel better physically. In comparison, Zurlo (2009) researched the impact of beliefs by examining how respondents would rate the amount of control they have over their financial situation. Similar to the results of this study, she found that one's control over finance was associated with the positive outcome of improved financial satisfaction for older adults (Zurlo, 2009). Similarly, Herbert and Cohen (1994) found that different people may respond to the same stressor in different ways based on their individuality (including personal control), personality, and their social system, so these factors should be considered as well. Lazarus and Folkman (1984) also found that one's perceived control (self-efficacy) is a factor affecting the "individual" component of the transaction between the individual and environment (Lazarus & Folkman, 1984).

## **Mastery**

Mastery was determined by this research to be one of the most important variables, which was also expected based on the theoretical framework. Specifically, mastery was found to positively affect one's happiness, self-reported health status, number of health conditions, and all of the outcomes combined. Mastery represents one's resourcefulness and ability to draw upon it

in a stressful encounter (Lazarus & Folkman, 1984). Given the life stage of this sample, the results were not a surprise. At this stage of their lives, many individuals have obtained a sense of mastery, which was also reflected in the mastery mean score for this sample. This suggests that the possible stress buffering effect of mastery may have resulted in respondents feeling happier and healthier and ultimately affected the outcomes in their entirety. Similarly, Folkman, Lazarus, Gruen and DeLongis (1986) found a relationship between mastery/self-efficacy and mental health, but not physical health. Likewise, Zurlo (2009) examined the impact of beliefs by studying perceived mastery for older adults and found a positive relationship with their well-being.

### **Conscientiousness**

Recall that one's values and commitments, as measured by conscientiousness for this study, reflect what is important to them and what has meaning to them. They determine what is of importance in a stressful encounter, and they affect the choices people make to maintain certain values or ideals (Lazarus & Folkman, 1984). They also impact the outcome by serving as a buffer that guides individuals into or away from situations based on the harm or benefit from the stressful event. As a proxy measure for this variable, the scale utilized for this research was essentially a measure of one's conscientiousness. This measure was based on the Multidimensional Personality Questionnaire (MPQ) developed by Tellegen (1982) to assess individual differences in tendencies to impulsive behavior and decision-making.

For this sample, this measure of one's values and commitments was found to affect one's social interactions. Perhaps oddly though, this research found that an increase in one's conscientiousness was actually associated with a decrease in one's social interactions. Although

an opposite outcome might have been expected, these results mean that individuals with more self-control and conscientiousness actually are less participative in making social contacts. On the other hand, if this variable serves as a buffer as proposed under the theoretical framework, this result makes some sense. This might be so because perhaps these individuals are also more cautious and less spontaneous in their social interactions, hence the slight decrease in social functioning. These results also suggest that conscientiousness does not impact how happy or healthy one is. Previous research found that social functioning is influenced by a variety of factors, including autonomy, trust, intimacy, cultural values, and expectations regarding social roles (Lazarus & Folkman, 1984). In addition to the impact on social functioning, Creswell, Welch, Taylor, Sherman and Gruenewald (2005) found that personal values could cushion physiological and psychological stress responses during a laboratory stress experiment.

### **Stressful Events**

For this study, the occurrence of “stressful events” in one’s life was also an important factor, but only insofar as the number of health conditions (objective health). Essentially, “stressful events” are thought to have an impact on one’s health, morale, and social functioning. However, for this sample, the findings were the opposite of what was expected. Specifically, the results suggested that the more stressful events one has, the better their health, whereas the opposite impact would be anticipated. In comparison, the degree to which stress and an environment with “negative life events” impacted outcomes was examined by Lantz, House, Mero, and Williams (2005). In the study, Lantz et al. hypothesized that stress and negative life events are related to poor health outcomes. They discovered that the number of negative lifetime stressors was positively related to mortality, as might be expected from a theoretical perspective.



However, for the current study, the meaning of the results is puzzling, and further research regarding this association seems warranted. Even so, if one were to speculate regarding the results, the direction of this association may be an indication of how negative events in one's life can actually result in "growing" the individual. One therefore becomes tougher and less susceptible to health conditions due perhaps to a stronger stamina and immune system. Thus, the results here may reflect a positive outcome to stress.

### **Control Variables**

Previous research has also focused on specific socioeconomic variables as impacting outcomes (Lazarus & Folkman, 1984). Thus, there were also a number of control variables that were important based on the results of this study. Specifically, almost all the marital status categories were important at one point or another in the models. The results suggest that married folks are happier, healthier, and likely to have more frequent social contacts than their counterparts. One of the more interesting findings, which was pretty consistent throughout the modeling, was the impact and direction of the relationship of the "male" variable for the morale, social functioning, and composite outcomes. According to these results, males are not as happy or as apt at social functioning compared to females. Education was another control variable that was consistently connected with the outcomes. The study found that having at least some college education would lead to being happier and more active socially. However, for the objective health model, having a high school education or higher meant having poorer health, which seems odd. Further examination of this anomaly may be warranted. For the subjective and objective health models, retired individuals were not as healthy as employed individuals and, not surprisingly, the better one's income, the better one's health. Being a homeowner was also

positively linked with the composite and subjective health models, which suggests the “American Dream” of homeownership can have a positive impact on one’s life. Another noteworthy control variable was age which produced some mixed results, indicating that one can still be happy as they age, but they may not be as healthy or socially interactive.

These findings are pretty consistent with findings of previous research. For example, Caplan and Schooler (2007) studied the relationship between specific socioeconomic status (SES) factors for an individual and financial stress. Their research included the three primary SES indicators of income, education, and “occupational prestige.” Control factors included race, age, and religious affiliation. Individual life stage, economic status, race, and gender also impacted the outcomes (Kahn & Pearlin, 2006). Other factors that may lead to financial stress include home ownership, insolvency, income below a poverty level threshold, and financial behaviors such as overspending (Joo & Grable, 2004).

## **Appraisal and Coping**

Another secondary research goal of this study was to investigate how the appraisal and coping process affect one’s physical health, morale, and social functioning. Based on the theoretical framework and previous literature, the appraisal and coping construct for this study was measured by one’s coping ability and social support system. In general, the results found that one’s coping ability and social support system did have an impact on one’s health, morale, and social functioning. Further analysis for the variables under this construct follows.

### **Coping**

For this study, an individual’s coping mechanism was determined based on their responses to “coping – enjoyment” and “coping – effort” questions. Someone exhibiting coping-

enjoyment strategy faces life's challenges head-on. In comparison, a coping-effort strategy seeks to avoid stressful encounters. A positive association with the coping-enjoyment scale might be anticipated, but the results of this research indicated that the coping-enjoyment strategy was not connected to happiness, health, social interaction, or a combination of the three. However, the coping-effort strategy was found to affect one's happiness. Specifically, this study found that individuals utilizing a coping-effort strategy are likely to be less happy. This would be expected since avoiding life challenges is not likely to increase one's happiness. Additionally, given these results, this means that for this sample, utilizing negative coping skills under the coping-effort scale is more important in shaping whether one is happy or not than under the coping-enjoyment strategy. Which strategy is utilized depends to some extent on one's self-efficacy. In previous research, Caplan and Schooler (2007) discovered that the greater the perceived control, the more likely one is to utilize problem-focused coping strategies rather than emotion-focused strategies such as the coping-effort strategy. Additionally, in the CogUSA study, both of these coping dimensions were connected to one's coping (Fisher, Gideon, Hsu, & Helppie McFall, 2011).

### **Social Support**

To determine social support for this study, both one's positive and negative support from spouse, family, and friends were examined. To lay out the results for these support mechanisms, the findings will be discussed based on the type of support.

**Positive support.** For this study, positive support from one's spouse was found to increase one's happiness, while positive support from one's family, and friends was found to increase one's level of social functioning. These results would be anticipated and support the importance of healthy social relationships. Oddly, positive support from friends negatively

affected the number of one's health conditions. These results are rather puzzling, suggesting the need for additional research. However, perhaps the positive support from friends was actually perceived as negative for this sample.

**Negative support.** For this study, negative support from one's spouse was found to lower an individual's level of happiness, while negative support from family was found to lower objective health. These findings make sense and support the notion that negative social interactions are likely to have an important impact on one's well-being. Like the positive support findings, there were some oddities with the negative support findings. Specifically, negative support from friends was found to have a positive impact on one's social functioning. Clearly, negative support would be expected to have the opposite effect unless, for this sample, the negative support is perceived as coaching instead.

Overall, these results mean that one's social support from spouse, family, or friends influences one's happiness, health, and social interactions in some fashion. Given some of the unusual results, it would appear too that these results also mean that whether there is a positive or negative impact will also depend on whether the support is coming from spouse, family, or friends.

Alternatively, previous research has shown a relationship between unsupportive social relationships and an increase in health problems. DeLongis, Folkman, and Lazarus (1988) examined daily stress and the impact of psychological and social resources on health and mood. They found that individuals with unsupportive social relationships and low self-esteem were more likely to experience an increase in mental and physical health problems. Research indicates too that individuals with a supportive social network are less likely to experience a decrease in

morale or increase in physical health related problems (Folkman et al., 1986). Krause's (1987) research supported the notion that older people who have more social support and provide more social support are more likely to have fewer symptoms of depression as a result of financial strain than those who do not have the same support system. Consequently, individuals with unsupportive social relationships were more likely to experience difficulty dealing with the demands of financial stress (DeLongis et al., 1988).

### **Contributions to the Literature**

This study was uniquely designed around the transactional theory of stress and coping as a focal point in almost every aspect, in an attempt to bring a theoretical framework and consistency to the presentation. Thus, this study's previous literature discussion, methods, and results were framed around the theoretical constructs for the individual and environment, stressors, and the appraisal and coping process. This approach contributes to the literature by offering a holistic approach for the use of the TTSC. Additionally, most of the previous research primarily focused on stress's impact on the health outcome. Utilizing the TTSC framework, this study examined not only the health outcome from financial stress, but the outcomes of social functioning and morale as well. This expands the research to examine how financial stress may impact other aspects of one's well-being besides health. Likewise, while most of the previous research is void of a combined outcome, this research created an ad hoc scale to explore the impact of financial stress on health, morale, and social functioning as a combined unit. While looking at each outcome separately is worthwhile, there may be a synergy of sorts that takes place between the variables as a whole, which may also impact the outcomes.

This study also contributes to the literature by providing a more recent examination of the subject matter. Accordingly, the results support some of the previous research and provide some additional insight into the impact of stress. Specifically, this research supports the theoretical negative impact of stress on one's happiness. However, the impact of mastery and one's social support mechanisms were the most noteworthy contributions with the respect to the results.

### **Implications of Findings**

For this study, financial stressors' primary impact was on respondents' happiness and combined well-being. Variables from the individual and environment and the appraisal and coping constructs contributed to the other outcomes of health and social functioning more often than financial stressors in the analysis. Specifically, control of one's finances, mastery, and positive and negative social support from spouse, friends, and family were often cited more often as contributing to one's health and social functioning. Additionally, there were some puzzling results at times. Most notably, respondents who had not paid off their credit cards reported being happier than respondents who did pay off their credit cards. Likewise, as the number of stressful events one experiences in their lifetime increases, a decrease in an individual's health, morale, and social functioning would be anticipated. However, for this research, the results suggested that the more stressful events an individual has, the better one's health. Further research of these variables seem warranted.

With the "control of finances" serving as a key factor in determining one's happiness, health, and social connectedness, the implications of this finding for financial practitioners is noteworthy. Although financial advisors may not be able to affect one's self-efficacy, they can have an impact on the management of one's negative emotions as a source of social support

(Asebedo, 2016). This finding behooves financial practitioners to foster caring relationships with their clients and work as a team in their client's financial plan to help clients feel in control over their finances.

As it relates to financial stressors, this research suggests that practitioners should examine their client's debt and cash flow situation to check for any "ongoing financial strain." By offering strategies to improve financial strain, this study indicates clients will be happier. With ongoing financial strain being a key factor for morale and overall well-being for this research, financial professionals should coach their clients on strategies to minimize financial strain.

The findings also consistently revealed that mastery was a key factor affecting one's happiness, health, and social functioning. Mastery refers to the idea that what happens to respondents is based on their own behavior rather than, say luck, chance, or fate. Likewise, positive and negative social support was found to significantly affect the outcomes. As a result, social practitioners and educators should also develop programs that allow individuals to learn the appropriate mastery and social skills, which will positively impact outcomes.

### **Limitations of Current Study**

While this research has made some contributions to the literature, it is not without its limitations. The methodology and dataset utilized focused on the use of cross-sectional data. The TTSC would indicate that the constant presence of stress and coping behavior would have long-term implications on morale, social functioning, and health. This is especially true for outcomes such as objective health and social functioning, where significant changes are more likely to manifest themselves over time than in a concurrent time period. Consequently, a longitudinal

study that tracked the same sample at different points would better allow the long-term implications of chronic financial strain to reveal themselves.

The second limitation is due to the use of a sample that is all age 50 and over. Older individuals may be more “seasoned” and capable of coping with stress than younger individuals, especially in the short-run. Thus, if individuals under age 50 had been included in this research, the results may have been different due to less experience in dealing with financial stress. Additionally, individuals age 50 and over may be better off financially than younger individuals. Due to their age, younger individuals may be more susceptible to financial stress without having had as much time to build wealth as older individuals.

Third, there were limitations in the measures available in the HRS. Most significantly, objective health variables in the HRS are based upon whether a respondent “ever” had a specific health condition. This does not allow a researcher to determine if the individual is currently feeling the effects of a given condition. To improve this study, health condition questions that focus on “current” health conditions may be more appropriate. There were also significant limitations on information related to values and commitment, a central component of the TTSC. While an adequate proxy was used (conscientiousness), a more robust measure may have resulted in stronger results. Lastly, the biggest limitation of this study was the separate modeling of the outcomes for morale, social functioning, and health. Although this research made an attempt to model a composite outcome for subjective health, objective health, morale, and social functioning, the scale was ad hoc and untested, thus subject to validity and reliability concerns. To address this limitation, research on the development of a scale, or the use of a multiples outcome model, is necessary.



## **Recommendations for Future Research**

Given some of the limitations of this research, there are also some recommendations for future research. Namely, utilizing an analytic method that allows for having multiple outcome variables simultaneously, specifically social functioning, health, and morale, would be an enhancement to this research. While modeling these outcomes was attempted by developing an ad hoc composite measure, examining the outcome for each variable simultaneously as a single outcome would be more in-line with the theoretical framework.

Additionally, it may be more appropriate to conduct a longitudinal study that would allow researchers to examine the impact of variables such as financial stressors over a longer period of time rather than just a point in time. Additional variable significance may be discovered as a result. Another suggestion for future research would be to study younger age groups along with older age groups. As noted in the limitations of this research, the younger age groups may not be as financially sound and/or may not be able to cope with stress in the same way due to inexperience. This addition to the research may offer further insight into the impact of financial stressors and variable significance.

Another aspect of this research that deserves extra attention and further examination is the differences and inconsistencies of the impact of social support on health, morale, and social functioning. Recall that this research looked at the impact of positive and negative social support that one might receive from spouse, family, and friends. However, in some instances this research discovered inconsistencies with the associations between the support relationships and the outcomes, especially with respect to the direction of the association.

The impact of the stressful event variable under the individual and environment construct is another variable suggesting future research. The findings suggested that an increase in stressful events actually decreased the number of health conditions that an individual might have. Because the opposite would be anticipated, further research exploring the impact of stressful events on health conditions seems warranted.

Additionally, the primary focus of this research was to examine the *negative* impact of financial stressors on health, morale, and social functioning. Future research may wish to explore the impact of the *positive* impact of financial stressors on the same outcomes. While the impact of financial stressors may result in negative outcomes for some individuals, for other individuals positive outcomes may result. For example, financial stress may result in a “call to action” for some to cope with (manage) the stress. This “call to action” could take the form of additional education, resulting in growth of the individual from the challenge.

## References

- Aldana, S. G., & Liljenquist, W. (1998). Validity and reliability of a financial strain survey. *Financial Counseling and Planning, 9*(2), 11-19.
- Allison, P. D. (2012). *Logistic Regression Using SAS*. Cary, NC: SAS Institute, Inc.
- American Psychological Association. (2015). *Stress in America: Paying with our health*. Retrieved July 27, 2017, from <https://www.apa.org/news/press/releases/stress/2014/stress-report.pdf>
- Archuleta, K. L., Britt, S. L., Tonn, T. J., & Grable, J. E. (2011). Financial satisfaction and financial stressors in marital satisfaction. *Psychological Reports, 108*(2), 563-576.
- Archuleta, K. L., Dale, A., & Spann, S. M. (2013). College students and financial distress: Exploring debt, financial satisfaction, and financial anxiety. *Journal of Financial Counseling and Planning, 24*(2), 50-62.
- Asebedo, S. D. (2016). *Three essays on financial self-efficacy beliefs and the saving behavior of older pre-retirees*. Dissertation.
- Bandura, A. (1977). *Social Learning Theory*. New York: General Learning Press.
- Britt, S. L., Canale, A., Fernatt, F., Stutz, K., & Tibbetts, R. (2015). Financial stress and financial counseling: Helping college students. *Journal of Financial Counseling and Planning, 26*(2), 172-186.
- Calicchia, J. A., & Graham, L. B. (2006). Assessing the relationship between spirituality, life stressors, and social resources: Buffers of stress in graduate students. *North American Journal of Psychology, 8.2*(2006), 307-320.

- Campbell, A., Converse, P. E., & Rodgers, W. (1976). *The Quality of American Life: Perceptions, Evaluations, and Satisfaction*. New York: Russell Sage Foundation.
- Caplan, L. J., & Schooler, C. (2007). Socioeconomic Status and Financial Coping Strategies: The mediating role of perceived control. *Social Psychology Quarterly*, 70(1), 43-58.
- Chien, S., Campbell, N., Hayden, O., Hurd, M., Main, R., Mallett, J., Martin, C., Meijer, E., Moldoff, M., Rohwedder, S., & St. Clair, P. (2014). *RAND HRS Data Documentation, Version N*. Social Security Administration and the National Institute on Aging, Labor & Population Program, RAND Center for the Study of Aging.
- Choi, L. (2009). *Financial stress and its physical effects on individuals and communities*. Federal Reserve Bank of San Francisco.
- Clements, A. D., & Ermakova, A. V. (2012). Surrender to God and stress: A possible link between religiosity and health. *Psychology of Religion and Spirituality*, 4(2), 93-107.
- Creswell, J. D., Welch, W. T., Taylor, S. E., Sherman, D. K., & Gruenewald, T. L. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science*, 16(11), 846-851.
- Damiao, E., Rossato, L., Fabri, L., & Dias, V. (2009). Ways of coping inventory: A theoretical framework. SciELO. Retrieved August 2, 2017, from [http://www.scielo.br/scielo.php?pid=S0080-62342009000600009&script=sci\\_arttext&tlng=en](http://www.scielo.br/scielo.php?pid=S0080-62342009000600009&script=sci_arttext&tlng=en)
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *The Journal of Personality and Social Psychology*, 54(3), 486-495.

- Diener, E., Emmons, R. A., Larsen, R. A., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Drentea, P., & Lavrakas, P. J. (2000). Over the limit: The association among health, race and debt. *Social Science & Medicine*, 50(2000), 517-529.
- Ellison, C. G., Boardman, J. D., Williams, D. R., & Jackson, J. S. (2001). Religious involvement, stress, and mental health: Findings from the 1995 Detroit area study. *Social Forces*, 80(1), 215-249.
- Fisher, G., Gideon, M., Hsu, J. W., & Helppie McFall, B. (2011). *Cognitive economics study: Development and methodology*. University of Michigan.
- Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*, 50(3), 571-579.
- Georgiades, A., Janszky, I., Blom, M., Ahnve, S., & Laszlo, K. D. (2009). Financial strain predicts recurrent events among women with coronary artery disease. *International Journal of Cardiology*, 135(2), 178-183. doi:10.1016/j.ijcard.2008.03.093
- Haley, W. E., Roth, D. L., Coleton, M. I., Ford, G. R., West, C. A., Collins, R. P., & Isobe, T. L. (1996). Appraisal, coping, and social support as mediators of well-being in black and white family caregivers of patients with alzheimer's disease. *Journal of Consulting and Clinical Psychology*, 64(1), 121-129.
- Hanratty, B., Holland, P., Jacoby, A., & Whitehead, M. (2007). *Financial stress and strain associated with terminal cancer - A systematic review of the evidence*. Liverpool: University of Liverpool.

- Heckman, S., Lim, H., & Montalto, C. (2014). Factors related to financial stress among college students. *Journal of Financial Therapy*, 5(1), 19-39.
- Heeringa, S. G., & Connor, J. H. (1995). *Technical description of the health and retirement survey sample design*. Ann Arbor: Institute for Social Research.
- Herbert, T. B., & Cohen, S. (1994). Stress and Illnes. *Encyclopedia of Human Behavior*, 4, pp. 325-332.
- Johnson, W., & Krueger, R. F. (2006). How money buys happiness: Genetic and environmental processes linking finances and life satisfaction. *Journal of Personality and Social Psychology*, 90(4), 680-691.
- Joo, S.-h., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, 25(1), 25-50.
- Juster, F. T., & Suzman, R. (1995). An overview of the health and retirement study. *The Journal of Human Resources*, 30, 7-56.
- Kahn, J. R., & Pearlin, L. I. (2006). Financial strain over the life course and health among older adults. *Journal of Health and Social Behavior*, 47(March), 17-31.
- Kahn, R. L. (1981). *Work and Health*. New York: Wiley.
- Krantz, D. S., & McCeney, M. K. (2002). • Effects of psychological and social factors on organic disease: A critical assessment of research on coronary heart disease. *Annual Review of Psychology*, 53(February), 341-369.  
doi:10.1146/annurev.psych.53.100901.135208
- Krause, N. (1987). Chronic financial strain, social support, and depressive symptoms among older adults. *Psychology and Aging*, 2(2), 185-192.

- Krause, N. (2003). Praying for others, financial strain, and physical health status in late life. *Journal for the Scientific Study of Religion*, 42(3), 377-391.
- Krohne, H. W. (2002). Stress and Coping Theories. In N. J. Smelser, & P. B. Baltes, *The international encyclopedia of the social and behavioral sciences*. Elsevier Oxford, England.
- Lantz, P. M., House, J. S., Mero, R. P., & Williams, D. R. (2005). Stress, life events, and socioeconomic disparities in health: Results from the American's changing lives study. *Journal of Health and Social Behavior*, 46(September), 274-288.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.
- Lynch, J. W., Kaplan, G. A., & Shema, S. J. (1997). Cumulative impact of sustained economic hardship on physical, cognitive, psychological, and social functioning. *The New England Journal of Medicine*, 337(26), 1889-1895.
- Lyon, B. L. (2000). Stress, coping, and health. In B. L. Lyon, *Handbook of stress, coping and health: Implications for nursing research, theory, and practice* (pp. 3-23).
- McCubbin, H. I., & Patterson, J. M. (1983). Stress: The family inventory of life events and changes. In E. E. Filsinger, *Marriage and Family Assessment*. New York: Springer Publishing Company.
- Medley, M. L. (1976). Satisfaction with life among persons sixty-five years and older: A causal model. *Journal of Gerontology*, 31(4), 448-455.
- Nielsen, R. B., & Seay, M. C. (2014). Complex samples and regression-based inference: Considerations for consumer researchers. *Journal of Consumer Affairs*, 1-17.

- O'Neill, B., Sorhaindo, B., Xiao, J. J., & Garman, E. T. (2005). Financially distressed consumers: Their financial practices, financial well-being, and health. *Financial Counseling and Planning, 16*, 73-87.
- Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The Stress Process. *Journal of Health and Social Behavior, 22*(4), 337-356.
- Peirce, R. S., Frone, M. R., & Cooper, M. L. (1994). Relationship of financial strain and psychosocial resources to alcohol use and abuse: The mediating role of negative affect and drinking motives. *Journal of Health and Social Behavior, 35*(December), 291-308.
- Pinquart, M., & Sorensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being later in life: A meta-analysis. *Psychology and Aging, 15*(2), 187-224.
- Prawitz, A., Garman, E. T., Sorhaindo, B., O'Neill, B., Kim, J., & Drentea, P. (2006). The InCharge financial distress/financial well-being scale: Development, administration, and score interpretation. *Financial Counseling and Planning, 17*, 34-50.
- Price, R. H., Choi, J. N., & Vinokur, A. D. (2002). Links in the chain of adversity following job loss: How financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *Journal of Occupational Health Psychology, 7*(4), 302-312.
- Roy, C. (2011). Research based on the Roy adaptation model: Last 25 years. *Nursing Science Quarterly, 24*(4), 312-320.
- Seay, M., Asebedo, S., Thompson, C., Stueve, C., & Russi, R. (2015). Mortgage Holding and Financial Satisfaction in Retirement. *Journal of Financial Counseling and Planning, 26*(2), 200-216.



- Selye, H. (1956). *The Stress of Life*. New York: McGraw-Hill.
- Skinner, M. A., Zautra, A. J., & Reich, J. W. (2004). Financial stress predictors and the emotional and physical health of chronic pain patients. *Cognitive Therapy and Research*, 28(5), 695-713.
- Smith, J., Fisher, G., Ryan, L., Clarke, P., House, J., & Weir, D. (2013). *Health and Retirement Study Psychosocial and Lifestyle Questionnaire*. University of Michigan. Ann Arbor: National Institute on Aging.
- Step toe, A., Brydon, L., & Kunz-Ebrecht, S. (2005). Changes in financial strain over three years, ambulatory blood pressure, and cortisol responses to awakening. *Psychosomatic Medicine*, 67(2), 281-287.
- Survey Research Center, Institute for Social Research. (2008). *HRS design history*. Ann Arbor: Institute for Social Research.
- Sweet, E., Nandi, A., Adam, E., & McDade, T. (2013). The high price of debt: Household financial debt and its impact on mental and physical health. *Social Science and Medicine*, 91(August), 94-100.
- Tellegen, A. (1982). *Multidimensional Personality Questionnaire*. University of Minnesota Press.
- Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behavior*(Extra Issue), 53-79.
- Tucker-Seeley, R. D., Li, Y., Subramanian, S. V., & Sorensen, G. (2009). Financial hardship and mortality among older adults using the 1996–2004 Health and Retirement Study. *Annals of Epidemiology*, 19(12), 850–857. doi:10.1016/j.annepidem.2009.08.003

U.S. Department of Health and Human Services. (1991). *Plain talk about handling stress*.

Washington, D.C.: Author.

Westman, M. (2001). Stress and strain crossover. *Human Relations*, 54(6), 717-751.

Wolter, K. M. (1985). *Introduction to Variance Estimation*. New York: Springer.

Zurlo, K. A. (2009, 9 1). Personal attributes and the financial well-being of older adults: The effects of control beliefs. PARC Working Papers. Retrieved from [http://repository.upenn.edu/cgi/viewcontent.cgi?article=1026&context=parc\\_working\\_papers](http://repository.upenn.edu/cgi/viewcontent.cgi?article=1026&context=parc_working_papers)