

FINANCIAL STRESS: HOW OLDER ADULTS' HEALTH IS AFFECTED

A Dissertation by

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The following faculty members have examined the final copy of this dissertation for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Philosophy with a major in Psychology.

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DEDICATION

To my parents, Dan & Jeannie
- who unknowingly raised me with the values I have today
- who supported and encouraged me to be strong in this journey
Without you, I am nothing;

To Derek, your patience, love, and unwavering support
fills my heart to the brim
you've helped me more than you will ever know
I love life with you;

To those who have passed – Granddaddy Bill, Connie, Chuck Love –
you shaped me in ways you never knew
your words and lessons are
my driving force.

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ABSTRACT

This study investigated the impact financial stress has on the quality of older adults' physical and mental health. Current economic trends and rapidly aging populations give rise to a number of possibilities for aging adults. Furthermore, older adults often face circumstances that contribute to higher stress levels and lead to experiencing the negative effects of stress, however the specific effects of financial stress are rather unknown by researchers. 201 community dwelling older adults responded to the 53-item questionnaire. Variables examined financial stress from a personal point of view, in addition to measuring self-rated health by the Short Form Health Survey (SF-12v2). Participants completed either an internet-based survey or a face-to-face interview. The results indicated that overall there is a strong correlation between one's financial stress level and their physical and mental self-rated health. This finding suggests that managing debt stress is of importance for older adults to address. While people focus on debt elimination and management, it is also of great importance to use health-promoting strategies to reduce the stress that arises because of financial obligations. These data should be used to develop stress prevention strategies aimed at the needs of the aging population.

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CHAPTER I

INTRODUCTION

Older adults face unique life conditions that can contribute to stress, including declining health and isolation, both of which put them at risk of experiencing the deleterious effects of stress, especially financial stress. This research aims to examine how stress, which arises from financial conditions, shapes the quality of older adults' physical and mental health. Financial stress can be defined various ways, for purposes of this study it is defined as the psychological stress that arises from one's financial conditions (C. G. Davis & Mantler, 2004; G. Davis, 2013; Drentea, 2000; Drentea & Reynolds, 2012; Dunn & Mirzaie, 2010). Financial stress limits individuals' ability to think with clarity, meet financial demands, and even afford the necessities of life. People acquire debt over a number of years, for various reasons (e.g. it can become an unremitting strain for one's financial health). Because of this, their emotional health can experience imminent threat. Stressors related to debt accumulate just like resources such as income do, therefore financial stressors can be a cumulative disadvantage (Drentea & Reynolds, 2012). Financial stress includes subjective feelings that can comprise of such emotions as dread, fear, anxiety, as well as frustration and anger. The amount of stress people feel as a result of their financial circumstances is subjective; each person will react and feel differently about debt or their personal cost of living. There is not objective continuity in how people review their finances. Beliefs and feelings about financial norms are largely based on personal opinion and vary from person-to-person (Claessen, 2005; Morris, 1997; Mugenda, Hira, & Fanslow, 1990).

As people enter advanced age, they often face the possibility of becoming dependent on others for help. They may not face the risk of dependency in every area of life—from finances to personal care; however, it is almost inevitable that each of us will become dependent in some

manner (Ferraro & Su, 1999). Dependency indicates decline, whether that be physical or mental decline. The experience of decline can often be interpreted as a personal loss with far-reaching effects. For older adults, debt is the second highest factor seen to increase perceived stress, the only factor that exceeded debt was social isolation (Scott, Jackson, & Bergeman, 2011).

Researchers have observed that older adults with greater financial liabilities are more likely to experience symptoms of depression, anxiety, self-destructiveness, anger, and suicidal behaviors (Brown, Taylor, & Price, 2005; Drentea, 2000; Jacoby, 2002; Reading & Reynolds, 2001; R. Roberts, Golding, Towell, & Weinreb, 1999). In fact, researchers Drentea and Reynolds (2012) believe that “debtor status is more consistently associated with mental health than any other single traditional indicator of socioeconomic status (SES), its effect does not vary across income or other aspects of SES, and fears of never paying off debt account for its negative impact on mental health” (p. 673).

Understanding the Impact on Mental Health

Previous research examining how age impacts psychological outcomes has mainly focused on life-cycle events (such as disabilities, health problems, widowhood, etc.) (Elder, 1974; Mirowsky & Ross, 1999). However, debt and the stress that arises from it is a continuous struggle for many. Recently, several articles have investigated the relationship between age, sense of control, and depression. According to Drentea (2000), sense of control is thought to decrease with older ages and be highest among young adults. Research indicates that sense of control predicts depressive symptomology across the life span (Keeton, Perry-Jenkins, & Sayer, 2008; Mirowsky, 2013; Mirowsky & Ross, 1990). Furthermore, the elderly are at greatest risk for depressive symptoms and rates of depression are lowest near age 45 (Mirowsky & Ross, 1999). In regards to depression as we age, there appear to be two schools of thought; 1) positive

aging suggest that depressive symptomology decreases as individuals enter late life, and 2) that the elderly are a greater risk of depression than any other adult age cohort (Blazer, 2003; Charles, & Carstensen, 2010; Roberts, Kaplan, Shema, & Strawbridge 1997). For purposes of this study we are interested in examining the results from these two differing perspectives. Nevertheless, less is known about the mediating role of financial stress in relationship to age and quality of health (physical and mental). A lack of research in this area is partially due to the fact that aging populations have just now entered the steepest incline, and secondly a lack of funding in this field. This study proposes to explain part of the impact financial stress has on aging individuals' self-reported health (SRH) circumstances.

Understanding the Impact on Physical Health

In addition to mental health, changes in physical health status were found to be related to one's level of financial stress. Previous studies established that debt and the stress that arises from debt are both related to poor physical health (Drentea, 2000; Drentea & Lavrakas, 2000; Drentea & Reynolds, 2012). In particular, Drentea (2000) indicated credit card debt as having a direct affect on quality of health. Poor health, in turn, can negatively influence economic status by limiting earnings and depleting savings, thereby encouraging a cycle of decline (Kahn & Fazio, 2005).

Sargent-Cox, Butterworth, and Anstey (2011) argue that the uncertainty that financial stress creates makes older adults more vulnerable to physical health deterioration. Chronic heart disease, high blood pressure, cancer, arthritis, various chronic or recurrent strains, ulcers, digestive tract problems, and other symptoms indicative of chronic stress are common among those with the highest level of financial stress (Drentea & Lavrakas, 2000; Kahn & Fazio, 2005; O'Toole, Buckel, Redihan, DeOrsey, & Sullivan, 2012; Sargent-Cox, Butterworth, & Anstey,

2011; Sweet, Arijit, Adam, & McDade, 2013). Furthermore, the experience of stress is known to lead to short- and long-term physiological changes that play key roles in several disease processes, particularly those involving metabolic and cardiovascular systems (Sweet et al., 2013). Stress can also impact health indirectly by influencing health behaviors, including diet, physical activity, and substance use. On the contrary, Ruhm (2003) contends times of great financial strain may improve healthy behaviors, while during good financial times one may live a lifestyle of excess, such as increased alcohol and food intake. Based on this research, it is unclear whether individuals will be influenced negatively or positively by financial stress. Interestingly, Mendes de Leon, Rapp, and Kasl (1994) found that those older adults with good physical health and supportive social networks were less likely to experience depression when financial strain is high.

Implications of Health Disparities Due to Financial Stress

It is evident that as consumer debt continues to skyrocket in the U.S., there is an growing need for public health researchers to examine the physical and psychological effects of financial debt in relation to health disparities (Drentea & Reynolds, 2012). By and large, those with higher levels of SES have better mental health. In addition, SES is strongly associated with health and mortality (Deaton, 2003; Murali & Oyebode, 2004; Phelan, Link, & Tehranifar, 2012; Townsend, Davidson, & Whitehead, 1988; Wolff, Subramanian, Acevedo-Garcia, Weber, & Kawachi, 2010). Wealth potentially provides many indirect mental health benefits, spanning from its role as a safeguard against sudden financial disruptions to the importance of wealth for quality housing choices, lifestyles that are healthier (organic foods, gym memberships, etc.), and socially advantageous networks. The term prosperity indicates that it allows individuals to prosper, by living comfortably and insulating themselves from the adversities of the outside

world. Scott, Jackson, and Bergeman (2011) found that those with the highest perceived stress were often those who reported the lowest incomes. Social resources are often unevenly distributed, debt is most certainly concentrated in social patterns (Drentea, 2000; Drentea & Lavrakas, 2000). For example, debt levels are highest among those with mid-level income, as opposed to the very lowest income. Middle-income households have more access to credit or debt creating opportunities than impoverished households do (Norvilitis et al., 2006). In addition, women and young adults have higher debt levels. Self-reported disability has been found to be higher in older women than men (Guralnik et al., 1994). Debt varies by race and ethnicity as well (Drentea & Reynolds, 2012).

Differences between Financial Stress and Economic Hardship

The majority of research on the effects of financial stress draws from population samples of people challenged with a particular type of hardship. Researchers, Davis and Mantler (2004) at the Centre for Research on Stress, Coping, and Well-being explain the nuanced differences between financial stress and *economic hardship*. Davis and Mantler (2004) state,

“Economic hardship may be due to such things as the loss of a job, unexpected medical or legal expenses, chronic overspending, investment losses, or gambling. The economic hardship may be acute or chronic, anticipated or unanticipated, and it may be attributable to uncontrollable forces (such as the regional economy) or controllable forces (e.g., poor financial management).

Economic hardship is often defined in terms of family income below the poverty line (often taking into account family size), a decrease in family income of greater than 35% from one year to the next, a high debt-to-asset ratio, or loss of job by principal breadwinner” (p. 4).

For example, studies have been published on the effect that the Great Depression had on families, others have described the effect of mass job losses in company towns, and researchers have described the effects of chronic poverty. One series of studies is based on interviews conducted with farmers and community stakeholders in rural during the agricultural crisis in the late 1980's; as interest rates rose and the value of land dropped by approximately 50%. Suicide rates during this period increased during this time within the population (Yip & Yang, 2007).

In contrast to economic hardship, financial pressure or financial strain is often measured by the amount that respondents reply that they have had to postpone the purchase of household necessities (e.g., health insurance, replace broken furniture or equipment), have had to reduce their standard of living, borrow to pay monthly bills, and/or are unable to pay their monthly bills (C. G. Davis & Mantler, 2004). In fact, among research studies assessing both economic hardship and financial pressure, the financial pressure measure is most strongly linked to outcomes such as depression, marital problems, and the like. Intriguingly, the link connecting economic hardship and financial pressure is not particularly strong: some people without economic hardship (as defined by income or debt) do feel financial pressure (e.g., lack of cash flow), and some with economic hardship do not feel much financial pressure (e.g., students used to living on very little).

Though our study concentrates on the effects of financial stress, it is imperative to make a note that it is not possible to disentangle the effects of financial stress from other stresses that accompany financial stress. For instance, research conducted in the early 1930's in the United States and in Europe indicates that losing a job can trigger a variety of other stressors. A study by Jahoda and colleagues (1933) of unemployment in an Austrian community documented that the unemployed decreased their participation in clubs and volunteer activities (including use of the

free library), abandoned efforts to budget, increasingly quarreled with family members, and lost self-esteem. Often, many of these individuals began to blame themselves for their current situation and became despondent. This study and others suggest that those who lose their jobs not only lose income, they also lose an integral source of life purpose, a central activity that structured their day, and a network of coworkers who shared in a common goal. It is unclear the extent to which these changes witnessed by Jahoda and her colleagues could be attributable to the loss of income as opposed to the stress of losing status as family provider, losing one's occupational identity, losing a sense of purpose, or shame (Jahoda, 1988).

Stress Process Perspective of Financial Stress

The stress process model explains how individual's sources of stress arise from factors associated with chronic strains, major life events, self-concepts, and coping abilities (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Ultimately, one's stage in the life course is associated with their position within society and in turn, their status affects their sources of stress. Pearlin's chapter "Stressors and adaptation in late life" describes the three main components of this model, stressors, moderators, and outcomes. These three components are interactive, and their interaction captures the flow of an individual's stress reaction, this can be seen in Figure 1 (Pearlin, 1995). For older adults, financial stress can be described as a chronic stressor, or for some it could be part of a major life event (role changes for example). Regardless of whether financial stress is well-seeded from decades of worry or if it stems from a more sudden life change, it affects one's mastery of the life course (Pearlin, Nguyen, Schiemen, & Milkie, 2007).

The framework of the stress process model fits nicely within the parameters of the effects of financial stress. For example, one can clearly pinpoint exact stressors (life-strains, self-concepts, or events) related to finances, and such we can also list moderators (social supports,

coping mechanisms; internal and external). Finally, outcomes (manifestations of stress) are also easily reported when examining instances of financial stress among a cohort. The stress process model helps to flesh out the interactions of these model components to better explain the origins and results of acute or chronic financial stress.

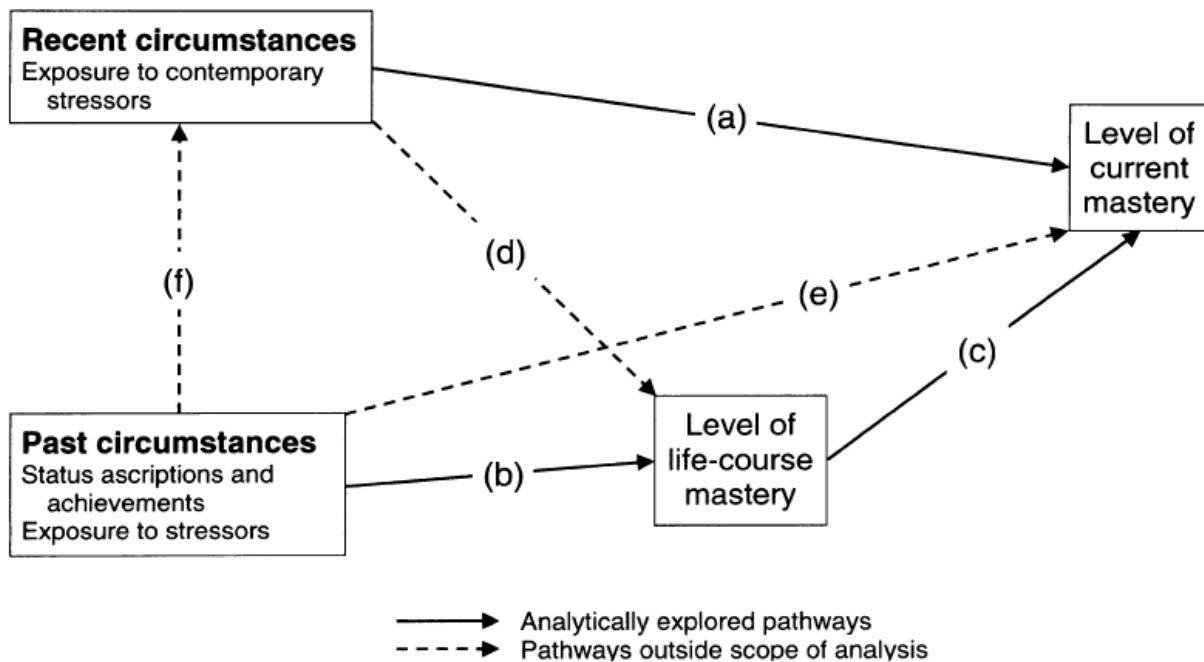


Figure 1. Analytic Diagram of Relationships of Past and Recent Circumstances to Current Mastery

Source: Pearlin, L.I., Nguyen, K.B., Schieman, S., & Milkie, M.A. (2007)

The Current Study

For the purpose of this study, the researcher was largely uninterested in the precise measurement of indebtedness or financial standing. Rather, from a psychological perspective she focused on individual's *perceptions* of their financial standing because it is the perceptions that create the stress. Regardless of how perilous one's financial situation, if they fail to see their

situation as a problem they will not feel stressed or be affected by the negative effects of the stress.

This research is essential for properly appreciating the effects of individuals' socioeconomic position in society, furthermore because wealth disparities are on the rise and expanding levels of personal debt. Society's eventual transformation has brought about longer lives, and with that longer periods of "old age", and retirement (Ferraro & Su, 1999). Living longer means increased risk of depleting resources over time, in a society with higher cost of living this can affect more than just money, but esteem as well. Yip & Yang (2007) found that financial stress is a known factor which triggers suicidal ideation. Fear of financial crises, varying financial circumstances, and an increasingly complex financial marketplace make it difficult for older adults and other age cohorts to succeed. For many aging adults changes in products and services, new complex payment systems, and rapidly changing technology magnifies financial stress. Furthermore, if there is such a significant relationship between debt, health, and SES; mental health clinicians must be seeing patients with concerns related to debt (Fitch, Chaplin, Trend, & Collard, 2007). Fitch, Chaplin, Trend and Collard (2007) indicated that patient debt is rarely discussed in psychiatric literature. This raises the question do clinicians know how to respond in a debt crisis. Learning more about the effects financial stress can have on the body and mind can assist clinicians and physicians in proactively helping patients manage and hopefully prevent future crises.

Aging Cohorts

In order to understand how financial stress affects us as we reach late life we examined four age groups (55-64 "late Adulthood", 65-74 "Young-old", 75-84 "the old", and 85+ "oldest-old"). Many developed countries accept the chronological age of 65 as "elderly", but this

definition has been noted as somewhat arbitrary (WHO, 2015). While many agree that defining old age is arbitrary and unnecessary, in order to study and measure change, the operational definitions of age above were used. When examining the literature in relation to aging cohort there was very little specific findings that evaluate the even the subtle differences between these groups rather most researcher will lump any participant over the age of 60 in the same group.

In this study we used a number of different measures to examine the relationship between financial stress and health. Among them included a sensitive indicator of self-rated health quality, the SF-12v2, which has often been used in clinical outcome studies as well as in a number of other public health research capacities (Ware, Kosinski, Turner-Bowker, & Gandek, 2002). The SF-12v2 measures both self-rated mental and physical health. Financial stress was measured by multiple measures, because it is believe that financial stress is a multifaceted condition (Sinclair, Sears, Probst, Zajack, 2010). To begin we created a measure of financial stress, the Financial Concern Index (FCI) which includes thirteen questions from the respondents' subjective point-of-view. Degree of financial hardship was measured by the number of important negative financial events one had experienced in the past year. This measure was originally developed by Sargent-Cox, Butterworth, & Anstey (2011). In addition, credit card use anxiety was measured by a scale, which we developed to examine how concerned one is with their choices in regards to credit card use. A well-known measure of general perceived stress, the PSS-4, was used to examine individuals' stress levels independent of financial stress (Cohen, Kamarck, & Mermelstein, 1983). The last predictor variable included was economic impact, which aimed to examine the extent to which one believes the economic downturn (of 2008) impacted their current financial situation. Sargent-Cox, Butterworth, & Anstey (2011) originally developed this measure. Lastly, we measured a number of different

control variables including the usual suspects such as age, gender, race, and education; but in addition we measured employment status, occupational category, disability status, number of medical conditions, marital status, number of dependents, and retirement status.

Hypotheses

This study has four initial hypotheses to be examined.

Hypothesis 1: Financial stress will be associated with self-reported health, controlling for traditional indicators of SES.

Hypothesis 2: Higher financial stress will be indicative of lower quality of self-reported health, controlling for traditional indicators of SES.

Hypothesis 3: It is believed that females will have higher financial stress levels than males.

Hypothesis 4: The oldest old (85+) will have the lowest financial stress scores of the aging adult cohorts.

CHAPTER II

METHOD

This study utilized self-administered online surveys and face-to-face survey interviews of older adults residing in Sedgwick County, Kansas. After providing their consent, participants were given a 53-item (which can be seen in Appendix B). Survey questions were designed to examine perceptions of financial stress in relation to participant's subjective mental and physical health. This study utilized a cross-sectional design, surveying participants only once and a comparison group was not used.

Participants

Participants included older adults with current membership to one of many senior centers located in the metropolitan area. In addition, adults aged 55 and above who were enrolled at Wichita State University were invited to participate. The only restriction on participation was age of 55 or above. Participants were not randomly selected but volunteered their participation. Participants were contacted between April and December of 2014. A total of 228 seniors completed the survey, 27 surveys were discarded due to missing data or refusal to complete consent yielding a final N of 201 completed surveys with an overall response rate of 32.5%. A total of 446 emails were sent to senior center members, yielded a response rate of 26 %. Additionally, 173 emails were sent to WSU adult learners, which yielded a response rate of 45.6%. Table 4 (p. 17) provides demographic information of the sample. Participants who participated in the interviews all signed an informed consent document (please see Appendix A).

The participants ranged in age from 55 to 92 years, with an average age of 64 years ($SD = 8.32$). The majority of the respondents were female (59.2%) and Caucasian (80.1%). As seen in Table 1, the sample was ethnically similar to the surrounding community, with the exception of a

low sample of Hispanic older adults (Census, 2015). The sample was representative of this metropolitan population.

Table 1. Gender, Race, and Ethnicity Compared to Population percentages ($N = 201$)

	<u>Our Sample</u>	<u>Community Population</u>
	Percent %	Percent %
Female	59.2	50.7
Caucasian	80.1	71.9
African American	8.5	11.5
Hispanic	5.5	15.3
Biracial	4.0	4.3
American Indian/Alaska Native	1.0	1.2

Source: (US Census, 2015)

Measures

Outcome Variable

Self-rated Health (SRH) was measured by The 12-Item Short Form Health Survey (SF-12) was developed for the Medical Outcomes Study (MOS), a multi-year study of patients with chronic conditions (Ware et al., 2002). Previous research indicates that this measure is used frequently in clinical practice and a variety of health evaluation research (Jenkinson et al., 1997; Mishra et al., 2011; Simon, Revicki, Grothaus, & Vonkorff, 1998; Ware et al., 2002). The SF-12v2 was chosen to examine self-rated mental and physical health in this study. This instrument aims to reduce participant burden while maintaining standards of precision when measuring multiple health dimensions. The SF-12 has ample documentation and evaluation of the effectiveness of the measure (Jenkinson et al., 1997; Mishra et al., 2011; Resnick & Nahm, 2001). It has been shown to be a sensitive indicator of change in older adults' health status the revised SF-12v2 is a reliable and valid measure of health status in independent living older adults, and has the potential for use as either a predictor or an outcome measure (Resnick & Nahm, 2001).

The SF-12v2 first asks a broad and inclusive health question, which asks respondents to evaluate their general health from excellent, very good, good, fair, or poor. The World Health Organization has regarded this measure of self-rated health as an important indicator of health status, and “has been shown to be a sensitive indicator of change in older adults’ health status” (De Bruin, 1996, p. 1107; Sargent-Cox, Anstey, & Luszcz, 2010). The SF-12v2 is a self-reported health survey, which asks adult participants to recall for the last 4 weeks functioning on eight scales, 1) physical functioning, 2) role-physical health, 3) bodily pain, 4) general health, 5) vitality, 6) social functioning, 7) role-emotional health, 8) general mental health (Ware et al., 2002). “Health domain scale reliability estimates, [were] obtained by correlating each SF-12v2 scale with the theta score for its corresponding item bank (a measure of alternate forms reliability), range from .64 to .86” (Ware et al., 2002, p. 1) (Please see Table 2 below for alpha levels). Authors of the SF-12v2 provide substantial evidence of validity of the eight scales with findings from factor analyses, tests of convergent and discriminant validity, group comparison, randomized control trials and many other measures of validity.

Table 2. Cronbach's Alpha, Means and Standard Deviations of the SF-12v2 (n = 201)

	α	Mean	<i>SD</i>
Physical Functioning	0.81	2.5	0.7
Role-Physical Health	0.94	3.8	1.2
Bodily Pain	*	2.2	1.2
General Health	*	2.6	0.8
Vitality	*	2.9	0.9
Social Functioning	*	4.2	1.1
Role-Emotional Health	0.91	4.1	1.0
General Mental Health	0.73	3.2	1.20

* Indicates a single item measure

Those eight measures are used to yield two summary scales: a Physical Component Summary (PCS) ($\alpha = .91$) and a Mental Component Summary (MCS) ($\alpha = .87$). The Physical Component Summary includes physical functioning, role-physical, bodily pain, and the general health scales, while the Mental Component Summary includes vitality, social functioning, role-emotional, and mental health scales. The scores are norm-based and standardized (0 – 100) with a mean of 50 ($SD = 10$); a higher score on Physical Component Summary or Mental Component Summary indicates better health. Both Mental Component Summary and Physical Component Summary are derived by adding scores for the scales together and standardizing, yielding a single score on physical health and mental health.

Predictor Variables

Financial Concern Index (FCI). We created a financial concern index of 13 questions that examine the extent to which one is distressed by their current financial condition. After reviewing the research on this topic the Financial Concern Index questions were created to focus on respondents' subjective level of financial stress. Three of the Financial Concern Index questions were modified from the Debt Stress Index, originally created by Dr. Pamela Drentea (2000). Drentea's measure assesses stress that resulted from debts, whereas the Financial Concern Index measures overall financial condition, which can include debts, assets, income, expenditures, and more. The Financial Concern Index can be viewed in Appendix C. An index was computed by adding the scores for first 12 questions together, (the last question was omitted as it only determined how long they had been experiencing financial stress. A higher score indicates more stress. The scores are standardized (0-100) by multiplying the raw score by 1.72. The Financial Concern Index has good reliability and validity, in this study the index had very high internal consistency ($\alpha = .959$).

Perceived stress Scale (PSS-4). The PSS-4 was developed and validated by Cohen, Kamarck, and Mermelstein to measure the degree to which respondents appraise life situations as stressful (Cohen et al., 1983). It is a four-question scale measuring perceived general or nonspecific appraisal of stress. This additional measure of stress was included to give us further information about one's general stress level beyond financial stress. PSS-4 scores were calculated by adding responses on each of the four questions and then were standardized (0-100) by a multiplier of 5.0.

Financial Hardship. To measure participants' perceived financial hardship, they were asked if over the last year they had experienced financial hardships such as (lost a job unexpectedly, unexpected medical/legal expenses, were unable to heat your home) (Sargent-Cox et al., 2011). An index was computed by adding the 15 options together; a high number indicates greater financial hardship.

Credit Card Anxiety Scale (CCAS). These nine questions examined anxiety and worry that stem from credit card use and behaviors. Respondents first answered how many credit cards they have, those who answered they have no credit cards were able to skip the subsequent questions (Drentea, 2000). The Credit Card Anxiety Scale questions can be seen in Table 3, below. These questions were shaped by the Credit Card Use Scale originally created by Roberts and Jones (2001). Their measure asked about actual behaviors whereas the Credit Card Anxiety Scale aimed to examine the *subjective* anxiety created by the credit cards one has and possibly uses (J. A. Roberts & Jones, 2001). The Credit Card Anxiety Scale was scored by adding the eight questions (eliminating question one as it was simply a prerequisite); a higher number indicates higher credit card anxiety. The scores were standardized (0-100) by multiplying the

raw score by 3.13. Cronbach's alpha of the Credit Card Anxiety Scale was more than adequate ($\alpha = .83$).

Table 3. Credit Card Anxiety Scale questions: Regarding your credit cards. I worry...

about paying off my balance(s) each month.
about how long it will take me to pay them off.
about being delinquent in making monthly payments.
about paying only the minimum payment each month.
about going over my available credit limit.
that my credit card(s) are at their maximum credit limit.
about what I use my credit card(s) to purchase.
that I am more impulsive when I use a credit card.

Economic Impact. Participants were asked three questions developed by Sargent-Cox et al., (2011) to examine the impact economic conditions have had for participants. Respondents were asked if the economic slowdown (of 2008) has impacted their financial security, if it has caused significant stress, and if they worry they would have to change plans for retirement. The three questions responses were added together where an elevated score indicates greater negative economic impact ($\alpha = .89$).

Demographics: Socioeconomic variables include age, gender, and race. Participants were coded for minority status and non-minority status. Indicators of socioeconomic status (SES) were used: employment status, previous or current occupational category, and education—the number of years of school. In addition, retirement status, physical or mental disability statuses were recorded. All of which are potentially associated with mental health. A measure of medical conditions was asked by simple having participants check all medical conditions they have ever been diagnosed with. Finally, marital status and family status (number of dependents claimed on last year's taxes) were controlled for, since both the presence of dependents and

marital status is associated with stage in the life course, financial stress, and quality of life as well.

Procedure

Participants were contacted via either email to complete an internet-based survey or in-person at a senior center to complete an interview. Email addresses were obtained from the executive director of the four senior centers and from the university reporting services with approval of the director of social science research lab. Participants were not compensated for their participation. The first email invitation took place in late April of 2014. A follow-up invitation was sent to only the participants who had not completed the survey two weeks after the first.

The survey was made available through the university's internet survey tool, Qualtrics, which allows researchers to create and administer online surveys. The data and survey for this project were generated using Qualtrics software, Copyright © 2014 Qualtrics. The survey was tested with a wide variety of operating environments, including mobile browsers. The participants completed the survey at the location of their choice, using a personal computer or device of their choice. To gain access to the survey participants were given a link through an invitation email. Informed consent was the first item in the survey. Participants who did not agree to the informed consent were directed to the end of the survey, and no data was obtained from such users. As reported by Qualtrics, the survey took participants an average of 12 minutes to complete. After completion, participants were thanked for their time and the web page was closed.

Table 4. Frequency distributions (n = 201)

	<i>n</i>	Percent %
Female	119	59.2
Disabled, receiving benefits	23	11.5
Retired	86	44.1
Single, never married	16	8.0
Married	111	55.5
Divorced	36	18.0
Separated	2	1.0
Widowed	25	12.5
Living with a partner	10	5.0
0 dependents	99	49.7
1 dependent	65	32.7
2-3 dependents	34	17.1
4-5 dependents	1	0.5
Unemployed	111	56.3
Part-time employed	39	19.8
Full-time employed	47	23.9
Less than High School	2	1.1
High School / GED	15	10.5
Technical school	3	1.5
Some College	44	22.1
2-year College Degree	25	12.6
4-year College Degree	56	25.1
Masters Degree	42	21.1
Doctoral Degree	5	2.5
Professional Degree (JD, MD)	7	3.5

In addition to online surveys, face-to-face interviews were conducted using Qualtrics “offline survey tool,” which allows surveys to be recorded without an internet connection and uploaded at a later date (Qualtrics, 2014). Both online survey participants and interview participants received the same survey. Researchers contacted interview participants while they were attending one of the metropolitan senior centers. First, researchers scheduled time with each center director to survey in the main lobby or open space during high traffic times. During approved survey times; potential participants were asked if they would like to contribute, were

given a short verbal description of the study, and a copy of the informed consent to sign if interested. Informed consent forms were collected and stored (see print version of informed consent in Appendix A). The researcher used an iPad tablet to read and record survey questions and responses. All interviews were completed at the senior center in a private space.

Hypotheses were tested using a combination of descriptive statistics, and regression analysis to assess the relationship among mental health, physical health, and financial concern. The financial concern index was correlated with both mental health ($r = .548$) and physical health ($r = .181$), signifying that while the two are correlated, they are not so related as to imply issues with multicollinearity. Analysis included regression analysis to identify and measure the associations among financial stress measures and self-reported health. In addition to correlational analyses to determine if financial stress measures were related to self-reported health. To analyze the data researchers utilized SPSS v.21, an IBM statistical software package.

CHAPTER III

RESULTS

Overall, respondents scored an average of 51 on a scale to 100 on the financial concern index, with a higher score indicating greater stress level. Responses on the financial concern index had a standard deviation of 22.72. The means and standard deviations for the variables may be found in Table 5. Respondents reported an average of 2.7 existing medical conditions with a standard deviation of 2.24. Participants indicated they had experienced an average of 3.1 financial hardships in the past year with a standard deviation of 3.01. Their credit card anxiety averaged 34 on a scale to 100; a higher score indicates greater credit card use anxiety. Stress levels, as measured by the Perceived Stress Scale, averaged 45.77 on a scale to 100; again, a higher score indicates greater level of stress. Finally, the impact economic conditions have had for respondents averaged 6.9 on a scale one to 12, where an elevated score indicates greater negative economic impact.

Table 5. Means and Standard Deviations of Major Variables (n = 201)

	Mean	SD
Physical Health (0 - 100)	48.7	10.7
Mental Health (0 - 100)	48.9	11.2
Perceived Stress Score (0 - 100)	45.8	19.4
Financial Stress Score (0 -100)	50.7	22.7
Credit Card Anxiety Score (0 -100)	34.2	25.6

Note: Higher score on both health measures indicates better health.

Higher score on all stress/anxiety scales indicates more stress.

Differences Between Genders

Differences were observed between males and females. For example, females reported a significantly lower self-reported mental health with a moderate effect size ($t(193) = 3.07, p < .001, d = .44$) and physical health ($t(187) = 2.18, p < .05, d = .32$) (see Figure 2).

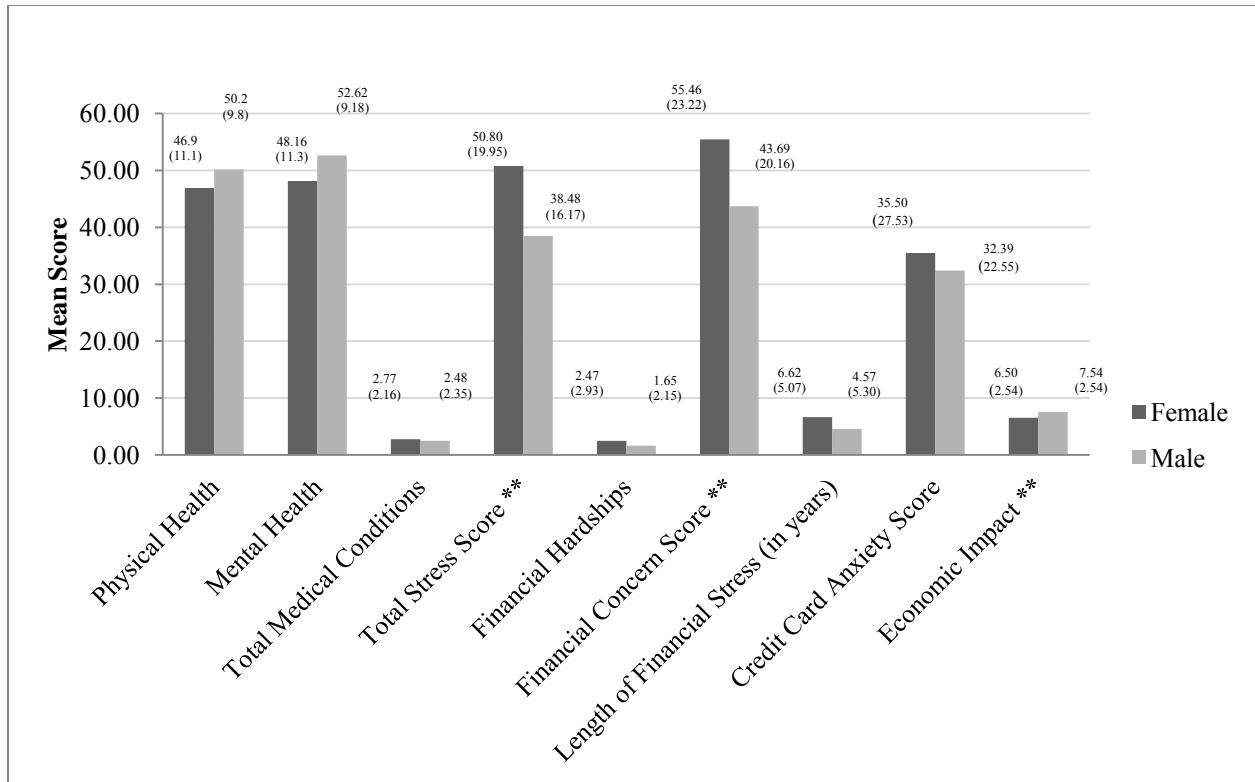


Figure 2. Mean Scores by Gender

^a Standard deviation in parentheses.

** Indicates significant difference: $p < .001$

In addition, females experienced quite a bit higher financial concern score, which was also statistically significant ($t(189) = -3.82, p < .001, d = -.55$). However, females did report a significantly higher total stress score ($t(194) = -4.82, p < .001, d = -.69$) which could indicate a hyper-sensitivity to stress. As a final point, males did report a greater degree of economic impact than females.

Differences Between Races and Ethnicities

People of color were compared to Caucasian respondents to examine any significant differences. There were interesting differences in self-reported mental and physical health; scores can be examined in Figure 3. Average numbers of reported medical conditions were fairly comparable; however, Caucasians reported slightly higher number of medical conditions.

In addition, these groups of respondents did not report significant differences in Credit Card Anxiety and Economic Impact scores.

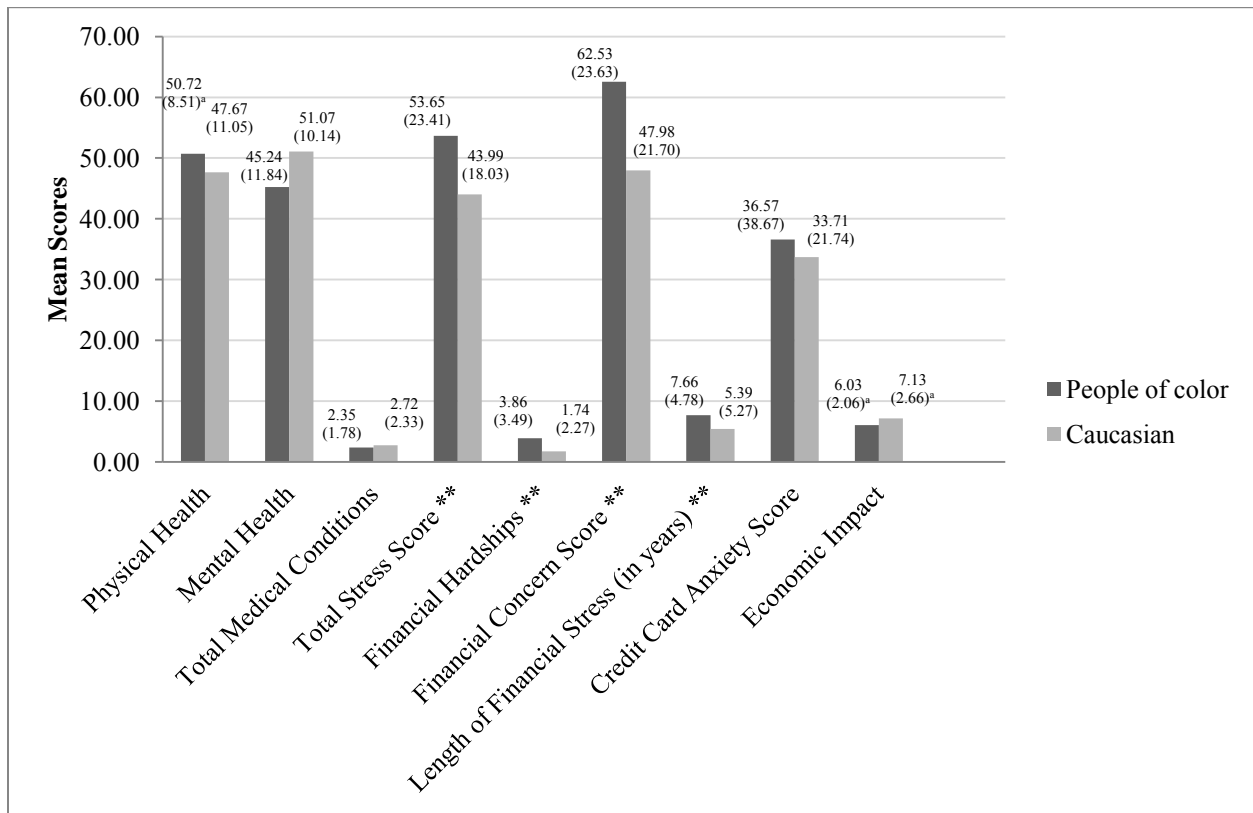


Figure 3. Mean Scores by Minority Status (n = 201)

^a Standard deviation in parentheses.

** Indicates significant difference: $p < .001$

However, respondents of color did report significantly higher Financial Concern scores than Caucasian respondents, ($t(51) = 3.43, p < .001$). Further, Cohen's effect size value ($d = .92$) suggested a high practical significance. Correspondingly, individuals of color reported a significantly longer length of time that they have experienced financial stressors, ($t(50) = 2.42, p < .001$); ($d = .68$), suggesting a moderate practical significance.

Differences Between Cohorts

Four age groups (55-64 “late Adulthood,” 65-74 “Young-old,” 75-84 “the old,” and 85+ “oldest-old”) were examined for differences between the cohorts. Correlations were performed between age and all variables (See Table 7, pg 28). Moderate correlations are seen between age and mental health, perceived stress, number of financial hardships in the past year, level of financial concern, and length of financial stress ($r(200) = -.41, p < .001, r^2 = .17$).

After correlating multiple variables with age, the four age groups were examined more closely to understand the differences between the four cohorts better. As to be expected, self-reported physical health declines slightly when comparing these four groups as seen in Table 6. While mental health improves slightly as age group increases. Correspondingly, perceived stress levels decrease with each sequential age group. Furthermore, as it is expected, financial hardships decrease with age group, finances are expected to stabilize with age (Clavet, Duclos, Fortin, & Marchand, 2014). Financial stress decreases as age groups go up in years. For instance, there is an 11.8% decrease in financial stress score between “Young Old” and the “Old” cohort. There was a spike in Credit Card Anxiety among Group 3: Age 75-84 “The Old”, an interesting phenomenon. The group hardest hit by the economic slowdown was again age group 75-84.

Table 6. Mean Scores by Age Groups (n = 201)

	Physical Health		Mental Health		Medical Conditions		Total Stress Score		Financial Hardships		Financial Concern Score		Length of Financial Stress (in years)		Credit Card Anxiety Economic Impact	
Group 1: Age 55-64 "Late Adulthood"	49.28 (9.92) ^a	47.04 (11.64)	2.66 (2.28)	49.84 (19.54)	2.65 (2.67)	56.24 (21.34)	6.88 (5.06)	37.13 (27.58)	6.26 (2.40)							
Group 2: Age 65-74 "Young Old"	46.72 (12.97)	54.46 (6.84)	2.75 (2.48)	42.79 (18.27)	1.67 (2.82)	45.39 (24.60)	4.64 (5.24)	25.24 (18.45)	7.83 (2.73)							
Group 3: Age 75-84 "Old"	46.56 (9.06)	54.77 (5.95)	2.42 (1.30)	32.11 (13.26)	0.53 (.84)	33.57 (12.63)	2.94 (4.78)	41.45 (26.78)	8.53 (2.20)							
Group 4: Age 85+ "Oldest Old"	44.39 (5.40)	58.37 (6.20)	2.20 (1.79)	27.00 (5.70)	0.20 (.45)	30.69 (6.26)	0 (0)	28.13 (4.42)	8.00 (1.22)							

^a Standard deviation in parentheses.

Differences Between Employment Statuses

Those who are not yet retired have a significantly higher financial stress level than retired individuals, ($t(178) = -2.92, p < .001, d = -.44$). Differences in financial stress concerns and health are observable in Figure 4. Self-reported health is intriguing for these two groups; those retired report poorer average of physical health, but a *higher* average of mental health than those not yet retired. Nevertheless, there are not great differences in the perceived stress levels of these two groups.

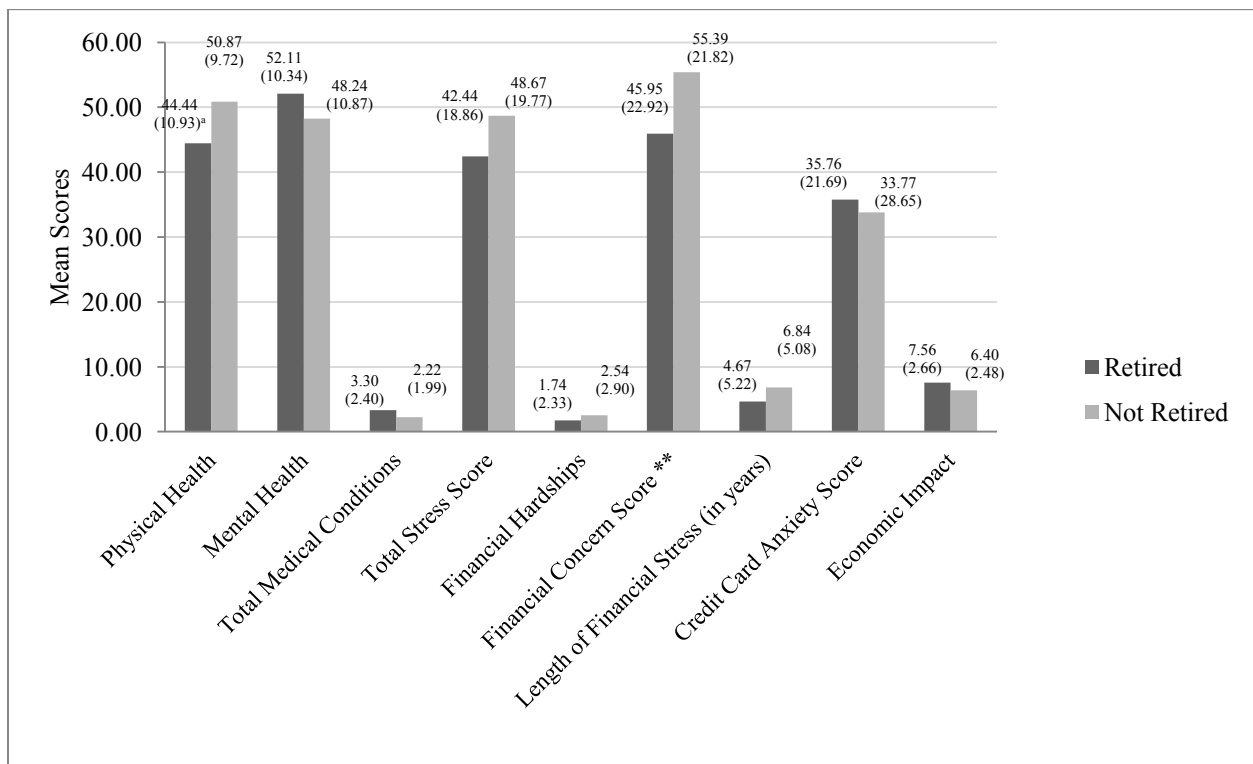


Figure 4. Mean Scores by Retirement Status (n = 201)

^a Standard deviation in parentheses.

** Indicates significant difference: $p < .001$

When examining those still in the workforce, many differences were seen between those with full-time employment and those part-time employed. In particular, those employed part-time experience a great deal more financial stress than those with full-time employment, the differences observed are statistically significant, ($t(54) = 3.53, p < .001, d = .96$). Furthermore,

those employed part-time had experienced an average of 2.73 more financial hardships in the past year than those employed full-time, ($t(48) = 4.20, p < .001$); Cohen’s effect size value ($d = 1.21$) suggests high practical significance. Likewise, part-time employed had higher credit card anxiety, and their perceived stress scores were significantly higher than those employed full-time, ($t(56) = 3.91, p < .001, d = 1.04$). A comparison of the means and standard deviations may be found in Figure 5.

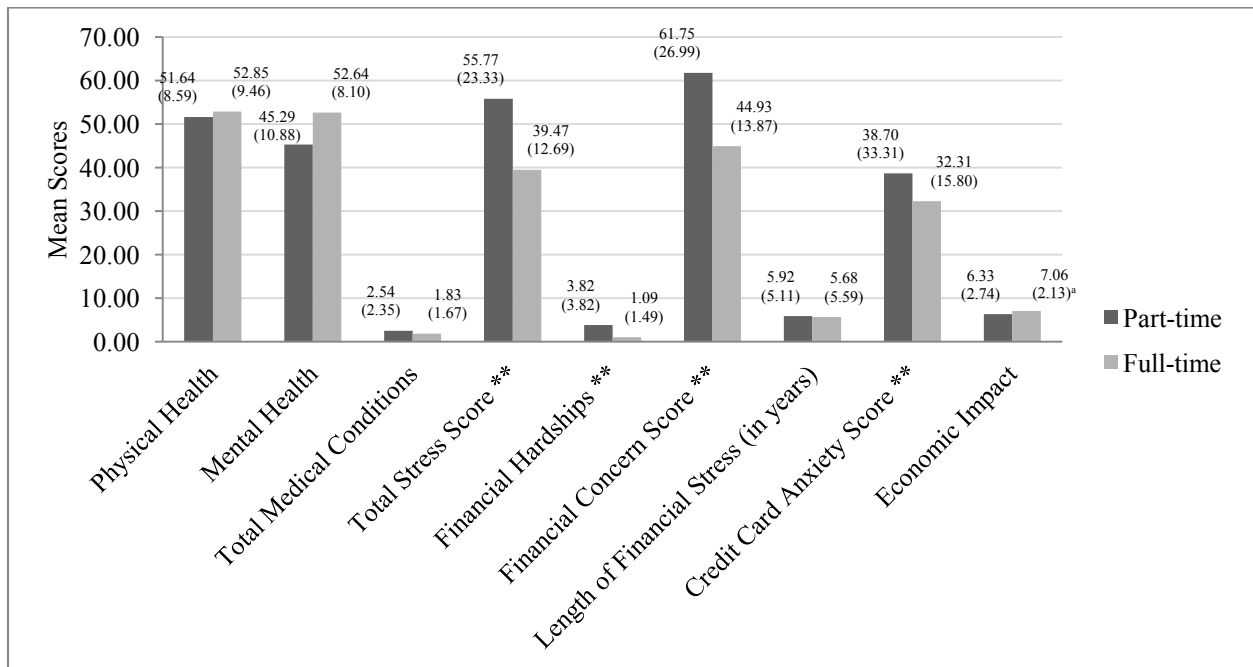


Figure 5. Mean Scores by Employment Status (n = 201)

^a Standard deviation in parentheses.

** Indicates significant difference: $p < .001$

Relationship Between Health and Financial Stress

Correlations were performed to examine relationships between financial stress level and mental/physical health. Results indicated that the financial concern index had a significant negative correlated relationship with one’s mental health component score, ($r(200) = -.55, p < .001, r^2 = .30$) (see Table 7). However, Financial Concern Index had only a negligible, yet

significant negative correlation with one's physical component score, ($r(199) = -.18, p < .001, r^2 = .03$). In addition, Financial Concern Index had a very strong ($r^2 = .55$) and significant positive correlation with financial hardship, ($r(199) = .74, p < .001$). Financial Concern Index had a significant moderate positive correlation ($r^2 = .21$) with economic impact, ($r(200) = .46, p < .001$). Lastly, Financial Concern Index had a significant moderate inverse correlation with age, ($r(200) = -.41, p < .001, r^2 = .17$).

Results indicated a strong negative correlation between mental health scores and financial hardship, ($r(199) = -.48, p < .001$). Furthermore, Age is also correlated with financial hardship, ($r(199) = -.34, p < .001$). Several correlations were seen that substantiate phenomenon expected to be seen in a sample of this aging population, for instance there was a significant moderate relationship between mental health score and age, ($r(200) = .34, p < .001$). As to be expected, the number of medical conditions is correlated with physical health condition, ($r(200) = -.52, p < .001$). Moreover, physical health condition is correlated with employment, ($r(200) = .32, p < .001$). Disability status was correlated with both physical health component score and the number of medical conditions, ($r(200) = .31, p < .001, r(200) = -.38, p < .001$ respectively).

Table 7. Correlations (n = 201)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Physical Health Score	1											
2. Mental Health Score	-.189**	1										
3. Number of Medical Conditions	-.522**	-.162*	1									
4. Total Stress Score	-0.03	0.03	0.02	1								
5. Financial Hardships	-0.11	-.478**	.222**	0.03	1							
6. Total Financial Stress Score	-.181*	-.548**	.210**	-0.01	.736**	1						
7. Credit Card Anxiety Score	0.01	-.147*	0.13	.180*	.261**	.139*	1					
8. Economic Impact	-.182**	-.235**	0.11	0.001	.222**	.455**	.185**	1				
9. Age	-0.11	.335**	-0.03	0.04	-.339**	-.405**	-0.09	-.252**	1			
10. Retirement	.299**	-.147*	-.241**	-0.13	.147*	.214**	-0.04	0.13	.626**	1		
11. Disability	.313**	0.10	-.380**	0.09	-.152*	-0.14	0.04	-0.05	0.10	0.12	1	
12. Employment status	.318**	0.05	-.218**	-0.09	-0.08	-0.03	-0.001	0.11	.379**	.619**	.237**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Physical and Mental Health Regressed on Financial Stress

A multiple regression analysis was conducted to evaluate how well the financial concern measures predicted physical and mental health outcomes. The predictors were the two health indices, Mental Health Score and Physical Health Score, the criterion variable was the computed score on the Financial Concern Index. The linear combination of these measures was significant, ($F(2, 197) = 63.28, p < .001$), see Table 8. The Physical Health Score correlation coefficient was $-.41$, indicating that approximately 16.8% of the variance of can be accounted for by the linear combination of financial concern measures. The Mental Health Score correlation coefficient was $-.85$, indicating that approximately 72.3% of the variance of can be accounted for by the linear combination of financial concern measures. Both physical and mental health significantly predicted financial stress scores, ($\beta = -.30, t(196) = -5.23, p < .001, d = -.75$), and ($\beta = -.61, t(196) = -10.77, p < .001, , d = -1.53$; respectively). Mental and physical health also explained a significant proportion of variance in financial stress scores, ($R^2 = .39$). On the basis of these correlational analyses, it is tempting to conclude that the most useful predictor is mental health. It alone accounted for 61% of the variance in the Financial Concern Index, while the other variables contributed only an additional 29%. However, judgments about the relative importance of these predictors are difficult because they are correlated.

Table 8. Physical and mental health regressed on Financial Stress ($N = 201$)

Model	R	r^2	Adj. r^2	SE of Est.	
	0.63	0.39	0.39	11.60	
	b	SE	β	t	p
Mental Health Score	-0.845	0.08	-0.61	-10.77	.001
Physical Health Score	-0.411	0.08	-0.30	-5.23	.001
Constant	93.944	6.00		15.66	.001
Analysis of Variance					
Source	df	SS	MS	F	p
Regression	2	17031.93	8515.96	63.28	.001
Residual	197	26510.87	134.57		
Total	199	43542.80			

We carried out a partial correlation to clarify the relationship between Mental Health, Physical Health, and Financial Stress Level, controlling for the effects of education (a traditional measure of SES) (please see Table 9). Additional partial correlation analyses, controlling for education and occupational category (one at a time, or as a pair) could be carried out to further clarify the relationship but these analyses were not reported here. When examining the relationship between mental health, physical health, and financial stress level with the effects of education removed, it was found that while there was a small increase in the relationship between these variables, for the most part the increase was negligible.

With the effects of education removed, the correlation between physical health and financial stress increases from $r = -.181$, $p < .001$; to $r = -.207$, $p = .003$ ($r^2 = .04$). However, the correlation between mental health and financial stress with the effects of SES removed was stronger ($r = -.553$, $p < .001$, $r^2 = .31$). This indicates a moderate tendency for mental health scores to decrease as financial stress increases when controlling the effects of SES. When SES was controlled, the correlations increased, as such it appears that SES is a suppressor variable

with negligible impact on these variables. Lastly, partialing out SES suggests that mental health was the principle variable accounting for the relationship between health and financial stress.

Table 9. Partial Correlations of Physical Health, Mental Health, and Financial Stress when controlling for Education (n = 201)

	Control Variable: Education		
	Physical Health	Mental Health	Financial Stress
Physical Health	1		
Mental Health	-0.180* (-.189**) ^a	1	
Financial Stress	-0.207** (-.181*)	-0.553** (-.548**)	1

^a Initial correlation in parentheses.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

CHAPTER IV

DISCUSSION

Overall, the results find support for the hypotheses set forth in this study. There were a number of variables examined in order to test many ways to operationalize financial stress including length and degree of financial stress, perceived financial security, concerns regarding assets and debt-to-income ratio, financial hardships, economic impact, credit card anxiety, general subjective stress level, among others (full questionnaire can be viewed in Appendix C). We found that higher financial stress is associated with worse self-reported physical and mental health when controlling for traditional indicators of SES. Thus, hypothesis one and two were supported. Hypothesis three was supported given that females reported lower self-rated health and higher financial stress levels than males. Females also scored significantly higher on perceived stress level than males, which could point toward this sample of women having high stress levels in general and perhaps other variables not measured bear responsibility. However, males reported a notably different degree of economic impact than females; this finding could indicate aging male's finances rely on the economic outlook more than females.

It was not hypothesized that people of color would have significant differences in financial stress levels than their Caucasian counterparts, however there were significant findings. Caucasian respondents reported a significantly lower level of financial stress than people of color. Furthermore, people of color have been experiencing financial stress for a significantly longer amount of time. These findings have great importance to studies of health disparities, while they confirm suspicions that have been found in younger groups of adults (McLoyd, 1990). One possible explanation for greater financial stress among people of color is lack of access. People of color have been systematically denied access to financial tools for spending

and saving for many generations with our elders receiving the greatest discrimination (Harris, Henderson, & Williams, 2005). It is clear that understanding financial stress is a way to better health inequalities.

In regards to hypothesis 4, we examined older adults by age groups to distinguish what differences are found in financial stress experiences as we age into our later years. Hypothesis 4 was supported in finding that the oldest old (85+) had the lowest financial stress scores of the aging adult cohorts. Researchers supposed that by the time one enters this stage in life, finances are of little concern because they have either stabilized to a healthy level or just don't matter to the individual any longer. In addition, we found that financial stress decreases as age groups increase. Also to be expected, self-reported physical health declines slightly when comparing our four cohorts. However, in contrast, self-reported mental health improves slightly as age group increases. Findings related to general stress bode well for late life, in that perceived stress level decreases with each subsequent age group, and financial hardships decrease as well. Though, a spike in credit card anxiety was seen specifically among group 3: age 75-84. Researchers suppose that this group may have existing credit card debt they worry would burden loved ones if they are unable to repay before death or invalidity. The group hardest hit by the economic slowdown was also group 3: age 75-84; these people may be out of the workforce and relying on savings for their funds.

Speaking of workforce issues, there were several significant findings related to employment status. For instance, it was found that those not yet retired have significantly higher financial stress level than retired individuals. And that makes sense, retirement is largely a choice, those who chose to retire most likely are financially prepared to do so. Health among retired vs. not retired individuals was interesting; retired individuals reported poorer physical

health, but higher self-reported mental health. Among these two groups there were not significant differences in perceived stress scores, which suggests that the differences seen between the two groups is more directed by financial concerns. Similarly, when examining those still in the workforce there were many differences seen between those with full-time and part-time employed. Those employed part-time experienced a great deal more financial stress than those with full-time employment. Additionally, those employed part-time experienced several more financial hardships in the past year than full-time employed. Likewise, part-time employed had higher credit card anxiety scores and their perceived stress scores were significantly higher than those employed full time. These findings suggest that individuals who continue to work into old age are experiencing difficulties similar to younger generations such as under-employment. However, there may be other variables not yet measured that explain these differences. There were several correlations to be discussed next.

Significant correlations were found between one's financial stress level and both physical and mental self-rated health, which supports acceptance of hypothesis one, however mental health was a much stronger correlation than physical health. Financial Concern Index had a significant strong inverse correlation with one's mental component score, which signifies that the higher the financial stress one had the lower their Mental Health Score would be meaning the worse the perceived mental health condition one had. However, Financial Concern Index had only a negligible yet significant negative correlation with the Physical Health Score. Which means that as financial stress increases, perceived physical health was only slightly worsened. What was more; Financial Concern Index had a very strong, significant positive correlation with financial hardship which implies that the higher one's financial stress the greater number of financial hardships in the past year. Financial stress had a significant and strong negative

correlation with age, which indicates that the higher financial stress one had the lower their age. There was a significant moderate positive relationship between Mental Health Score and age, which denotes that as age increased, the better perceived mental health one reported. Financial Concern Index had a significant and strong positive correlation with economic impact, which suggests that if you have a high level of financial stress the more likely you are to believe the economy had had a detrimental impact on your life. There is a significant moderate negative correlation between financial hardship and age, the more the significant negative life events in the past year, the younger the participant was. Financial hardship was also correlated with self-reported mental health scores; this was a strong inverse correlation, suggesting that the higher one's financial hardship the lower or worse mental health was reported.

There were several correlational findings that support the validity of the results. For example, the number of medical conditions increases as physical health decreases, which is as one would expect. Furthermore, the more medical conditions one had the worse their perceived physical health, between these variables there was a significant and strong inverse correlation. There was a significant moderate correlation between physical health and employment, which means that as one was more likely to be employed full time and have better physical health reported. Likewise, was a significant moderate correlation between physical health and disability status, meaning that as one's physical health was better the more likely they are to *not* have a disability. Finally, there was a significant moderate negative correlation between number of medical conditions and disability status, meaning that as the number of medical conditions increases the likelihood that one replied "yes" to disability.

According To Pearlin et al. (1989) the stress process model proposes that stress stems from the stage in one's life course and that stress level is governed by one's structural and

historical positions in life. Financial stress is unique stressor because it not only affects daily life, but in general is persistent and not quickly or easily remedied. Financial stress is thought to affect those in middle to late adulthood less than younger cohorts (Mirowsky, 2013; Mirowsky & Ross, 1990, 1999). However, our findings suggest that as adults age financial stressors do decrease, but are not easily eliminated. Furthermore, financial stress is an important predictor of physical and mental health quality for aging adults. Possibly one of the most interesting findings is that financial stress is best predicted by mental health, which suggests mental health professionals could be a strong asset for prevention and protection of healthy financial stress levels.

Limitations

As with any study, there are many limitations that provide opportunity for improvement in future research. For instance, the fact that the sample was one of convenience and not more randomly sampled of the greater population limits the generalizability of these findings. However, the sample was representative of the population studied in race/ethnicity and by gender, though perhaps not the nation as a whole. Second, ideally one would measure exact figures of debt and resources instead of subjective levels of stress; however subjectivity was crucial to the grounding theory of this study. Third, this was a cross-sectional study, in an idyllic situation researchers would be able to employ a comparison group or longitudinal data spanning many generations to better test causality. As it stands, the results could be due to many other variables that were not measured. In particular, a clear concise measure of mental health would benefit this study greatly, perhaps focusing on depression, anxiety disorders, or locus of control. The financial concern index does eliminate some of the ambiguity in that it is measuring the subjective level of worry, instead of simply measuring how much debt one has. Most likely the

greatest limitation is the lack of causality, because this is correlational research these findings may be due to some other variable that has not been measured. Under this study's conditions it is unclear if financial stress first impacts poorer quality of mental and physical health or if poor health creates the breeding ground for greater financial stress. Regardless of this "chicken and egg" conundrum, there is clearly a connection between financial stress and health for older adults.

Conclusion

These findings suggest that managing debt stress is of importance for older adults to address. While many programs focus on debt elimination and management, it is also of great importance to use health-promoting strategies to reduce the stress that arises because of financial obligations. These data should be used to develop stress prevention strategies aimed at the needs of the aging population. In addition, future research that examines health disparities would benefit from examining financial stress level, especially if done so at a subjective level. Furthermore, this study would be greatly complimented by a qualitative study to examine the phenomenological experiences of older adults' financial stress and what they deem crucial to their quality of life.

The current economic climate coupled with the rapidly aging population creates a multitude of stressors not yet seen in earlier generations. This underlines the very importance of studies such as this, the need for future research, and attentive governing to protect and prevent decline in our elders' quality of life. This study advances the literature in understanding the relationship between financial stress and physical and mental health. These results provide some evidence that financial stress impacts health to a great degree, indicating that researchers should study how financial stress uniquely impacts bodily systems.

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APPENDICES

APPENDIX A

IN PERSON INFORMED CONSENT FORM



Consent Form

Purpose: You are invited to participate in a study of how physical and mental health is affected by stress from financial concerns. We hope to learn more about the ways debt could impact the quality of your life.

Participant Selection: You will be one of approximately 300 participants in this study. You were selected as a possible participant in this study because you are an adult age 55+ living in the city of Wichita.

Explanation of Procedures: If you decide to participate, you will be asked to complete the on-line survey after agreeing to participate. The survey will take approximately 10 minutes to complete. Questions will ask you things like: "How much stress do your finances cause you?", or "In general, how would you rate your health". The survey should only be completed once.

Discomfort/Risks: There are no anticipated risks associated with participating in this study. However, if you feel uncomfortable with a question, you may skip it.

Benefits: The benefits associated with participation in this study are: Reflecting on your life currently and your answers will help researchers and society better understand this subject in order to provide better support for those in need in the future.

Confidentiality: Any information obtained in this study in which you can be identified will remain confidential and will be disclosed only with your permission. All surveys will remain anonymous, no identifying information will be collected, and the information you provide will not be disclosed to any other agency.

Refusal/Withdrawal: Participation in this study is entirely voluntary. Your decision whether or not to participate will not affect your future relations with Wichita State University. If you agree to participate in this study, you are free to withdraw from the study at any time without penalty.

Contact: If you have any questions about this research, you can contact me at: Laura Herpolsheimer 1845 N. Fairmount, Box 34 Wichita, KS 67216; phone: (316) 978-5096; laura.herpolsheimer@wichita.edu. Dr. Charles Burdsal 1845 N. Fairmount, Box 21 Wichita, KS 67216; phone: (316) 978-3884; charles.burdsal@wichita.edu.

If you have questions pertaining to your rights as a research subject, or about research-related injury, you can contact the Office of Research and Technology Transfer at Wichita State University, Wichita, KS 67260-0007 (telephone (316) 978-3285).

You are under no obligation to participate in this study. Your signature indicates that you have read the information provided above and have voluntarily decided to participate.

You will be given a copy of this consent form to keep.

Signature of Participant

Date

Signature of Witness

Date

APPENDIX B

ONLINE CONSENT FORM



Consent Form

Purpose: You are invited to participate in a study of how physical and mental health is affected by stress from financial concerns. We hope to learn more about the ways debt could impact the quality of your life.

Participant Selection: You will be one of approximately 300 participants in this study. You were selected as a possible participant in this study because you are an adult age 55+ living in the city of Wichita.

Explanation of Procedures: If you decide to participate, you will be asked to complete the on-line survey after agreeing to participate. The survey will take approximately 10 minutes to complete. Questions will ask you things like: "How much stress do your finances cause you?", or "In general, how would you rate your health". The survey should only be completed once.

Discomfort/Risks: There are no anticipated risks associated with participating in this study. However, if you feel uncomfortable with a question, you may skip it.

Benefits: The benefits associated with participation in this study are: Reflecting on your life currently and your answers will help researchers and society better understand this subject in order to provide better support for those in need in the future.

Confidentiality: Any information obtained in this study in which you can be identified will remain confidential and will be disclosed only with your permission. All surveys will remain anonymous, no identifying information will be collected, and the information you provide will not be disclosed to any other agency.

Refusal/Withdrawal: Participation in this study is entirely voluntary. Your decision whether or not to participate will not affect your future relations with Wichita State University. If you agree to participate in this study, you are free to withdraw from the study at any time without penalty.

Contact: If you have any questions about this research, you can contact me at: Laura Herpolsheimer 1845 N. Fairmount, Box 34 Wichita, KS 67216; phone: (316) 978-5096; laura.herpolsheimer@wichita.edu. Dr. Charles Burdsal 1845 N. Fairmount, Box 21 Wichita, KS 67216; phone: (316) 978-3884; charles.burdsal@wichita.edu.

If you have questions pertaining to your rights as a research subject, or about research-related injury, you can contact the Office of Research and Technology Transfer at Wichita State University, Wichita, KS 67260-0007 (telephone (316) 978-3285).

You are under no obligation to participate in this study. By selecting "Yes" below, you are indicating that you have read the information provided above and have voluntarily decided to participate. I have read the above and agree to participate in this survey.

- Yes
- No

If Yes Is Not Selected, Then Skip To End of Survey

APPENDIX C

QUESTIONNAIRE

I would like to have a copy of the Consent Form emailed to me.

- Yes
- No

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Q1 (SF-12v2) In general, would you say your health is....

- Excellent
- Very Good
- Good
- Fair
- Poor

Q2 – Q3 (SF-12v2) The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climbing several flights of stairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4 – Q5 (SF-12v2) During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Accomplished less than you would like...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were limited in the kind of work or other activities...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 - Q7 (SF-12v2) During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Accomplished less than you would like...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did work or other activities less carefully than usual...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 (SF-12v2) During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Q9 – Q11 (SF-12v2) These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Have you felt calm and peaceful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you have a lot of energy...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you felt downhearted and blue?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 (SF-12v2) During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

- All of the time
- Most of the time
- Some of the time
- A little of the time
- None of the time

Q13 Has a doctor, nurse, or other health professional EVER told you that you had any of the following?
(Check all that apply, or none)

- cancer, any type
- high blood pressure
- Coronary heart disease (angina, heart attack, myocardial infarction, etc.)
- stroke
- asthma
- Respiratory disease (COPD (chronic obstructive pulmonary disease), emphysema, chronic bronchitis, etc.)
- Arthritis, any type
- depressive disorder
- anxiety disorder
- diabetes
- Alzheimer's or other dementia's
- chronic pain
- gastrointestinal disorders
- liver disease
- thyroid disease
- kidney disease
- obesity

Q14 – Q17 (PSS-4) These questions ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often have you...

	Never	Almost Never	Sometimes	Fairly Often	Very Often
felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt confident about your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
felt difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18 (Financial Hardship) Over the last year, have you (Check all that apply):

- Lost a job unexpectedly
- Had an unexpected medical expense(s)
- Had a steep loss in an investment
- Had a problem with social security or other retirement benefits
- Lost a large sum of money gambling
- Requested assistance from welfare or community organizations due to money shortage
- Over-spent your money several months
- Pawned or sold something
- Went without meals
- Were unable to heat your home
- Had difficulty paying utility or phone bills
- Had to borrow money to pay monthly bills
- Had to postpone the purchase of household necessities (e.g. replace broken appliances)
- Had to cut back on spending, (reducing your standard of living)
- Had an unexpected legal expense(s)

Q19 (FCI) How often do you worry about your finances?

- Not at all
- Hardly ever
- Some of the time
- Most of the time
- All of the time

Q20 (FCI) How much stress do your finances cause you?

- No stress at all
- Not very much
- Some
- Quite a bit
- A great deal of stress

Q21 (FCI) How concerned are you that you are not financially secure?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned

Q22 (FCI) How concerned are you about having enough money to live on the rest of your life?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned

Q23 (FCI) To what extent have your financial concerns affected your health?

- A lot
- Some
- Little
- None

Q24 (FCI) Is what you pay in medical expenses (i.e.: Doctor's visits, copay, insurance premiums, prescriptions, etc.) is causing you significant stress?

- Strongly agree
- Agree
- Disagree
- Strongly Disagree

Q25 (FCI) How concerned are you that you will never be able to pay off your financial obligations?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned
- N/A

Q26 (FCI) How concerned are you about bill payments (any type) that you have missed in the last year?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned
- N/A

Q27 (FCI) How concerned are you about the total amount of debt you currently have?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned
- N/A

Q28 (FCI) How concerned are you about defaulting on a financial obligation?

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned
- N/A

Q29 (FCI) How concerned are you about your current assets? (Assets can include all of your cash, checking, savings, stocks, bonds, real estate (other than your home), etc.)

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned

Q30 (FCI) How concerned are you about your debt-to-income-ratio being unbalanced? (Debt-to-income-ratio is how much you owe each month divided by how much you bring in each month)

- not at all concerned
- not very concerned
- somewhat concerned
- quite concerned
- very concerned

Q31 (FCI) Approximately, how long have you been worrying about your financial condition?

- 1 - 3 months
- 4 - 5 months
- 6 - 12 months
- 1 - 5 years
- 6 - 10 years
- 11+ years
- N/A

Q32 (CCAS) How many credit cards do you have?

- None
- 1-2
- 3-4
- 5-6
- 7-8
- 9-10
- 11+

Q33 – Q40 (CCAS) Regarding your credit cards. I worry...

	All of the time	Quite a bit	Rarely	Never
about paying off my balance(s) each month.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
about how long it will take me to pay them off.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
about being delinquent in making monthly payments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
about paying only the minimum payment each month.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
about going over my available credit limit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
that my credit card(s) are at their maximum credit limit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
about what I use my credit card(s) to purchase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
that I am more impulsive when I use a credit card.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q41 (EI) Do you feel that the economic slowdown has impacted your financial security?

- Strongly disagree
- Disagree
- Agree
- Strongly Agree

Q42 (EI) Do you feel that the economic slowdown has caused you significant stress?

- Strongly disagree
- Disagree
- Agree
- Strongly Agree

Q43 (EI) Do you worry that you will have to change your plans for retirement?

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q44 (Demographics) What is your current employment status?

- Unemployed
- Part-time
- Full-time

Q45 (Demographics) Which occupational category best describes your employment or previous employment?

- Aircraft or traffic control
- Architects, surveyors, cartographers, or engineers
- Arts, design, entertainment, sports, or media
- Building, grounds cleaning or maintenance
- Business and financial operations
- Business operations specialists
- Community and social services
- Computer or mathematical
- Construction trades workers
- Drafters, engineering, or mapping technicians
- Education, training, or library
- Extraction workers
- Farmers and farm managers
- Farming, fishing, or forestry
- Financial specialists
- Fire fighting, prevention or law enforcement workers, (including supervisors)
- Food preparation or serving-related
- Health care support
- Health diagnosing or treating practitioners & technical occupations
- Health technologists or technicians
- Installation, maintenance, or repair occupations
- Legal
- Life, physical, or social science
- Management occupations, except farmers and farm managers
- Management: business or financial operations occupations
- Management: professional or related occupations
- Material moving
- Motor vehicle operators
- Office or administrative support
- Other protective service workers (including supervisors)
- Personal care or service
- Production
- Rail, water or other transportation
- Sales or related occupations
- Supervisors, construction or extraction
- Supervisors, transportation or material moving

Q46 (Demographics) Are you currently retired?

- Yes
- No

Q47 (Demographics) Do you receive governmental benefits for a physical or mental disability?

- Yes
- No

Q48 (Demographics) How many dependents did you claim last year on your taxes?

- None
- 1
- 2-3
- 4-5
- 6-7
- 8-9
- 10 or more

Q49 (Demographics) What is your gender?

- Male
- Female

Q50 (Demographics) What year were you born?

Q51 (Demographics) What is your current marital status?

- Single, never married
- Married
- Divorced
- Separated
- Widowed
- Living with a partner

Q52 (Demographics) What is your race? (Check all that apply)

- American Indian, or Alaska Native
- Asian
- Black, African American
- Hispanic, Latino
- Pacific Islander, or Native Hawaiian
- White/Caucasian
- Other _____

Q53 (Demographics) What is the highest level of education you have completed?

- Less than High School
- High School / GED
- Technical school
- Some College
- 2-year College Degree
- 4-year College Degree
- Masters Degree
- Doctoral Degree
- Professional Degree (JD, MD)
- Other (Please list) _____