CONSIDERING THE BLUEPRINT

FOR SUCCESSFUL AGING

By

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Abstract: The purpose of this study was to examine the three core principles of the Successful Aging Model in order to advance a blueprint for successful aging. Data from this study consisted of a sample of $N = 152$ older adults, aged 65 and older, residing in private homes and assisted/long-term care facilities. A series of three hierarchical linear regression analyses were conducted and analyzed to determine the associations between key predictor variables and successful aging outcomes (health, cognitive status, and social support). After controlling for demographic variables, psychosocial attributes, religion/spirituality, and life appraisal variables, a significant negative association emerged between perceived health ($\beta = -.30$, $p < .05$) and self-reported health conditions. However, a significant positive association was evident between psychosomatic symptoms ($\beta = .27$, $p < .05$) and self-reported health conditions. It appears that older adults who maintained positive health perceptions also reported fewer self-reported health problems. However, older adults with greater psychosomatic health complaints endorsed greater self-reported health conditions. In a second hierarchical regression analysis, education ($\beta = .32$, $p < .05$) and spirituality ($\beta = .26$, $p < .05$) had a significant positive association with cognitive status. Higher educational attainment and higher rates of spiritual involvement were key indicators of cognitive functioning. Lastly, a third hierarchical regression analysis revealed a significant positive association between education ($\beta = .28$, $p < .05$) and stress ($\beta = .24$, $p < .05$) and social support, whereas loneliness ($\beta = -.61$, $p < .05$) maintained a significant negative association. Thus, older adults who feel more supported by others appeared to be better educated and less stressed; whereas older adults who feel unsupported by others experience greater loneliness. Overall findings from this study provide evidence-based identification of associated health, cognitive, and social indicators of successful aging. Study results have implications relative to confirming underlying attributes that contribute to a successful old age.

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CHAPTER I

INTRODUCTION

Health decline is a normative process of aging, which all older adults will experience at some point in their lives. The severity of health decrements varies across the lifespan for different individuals. Many people believe that when an older adult reaches an advanced age, they will somehow inevitably develop some form of chronic disease, such as Alzheimer's disease or dementia, however, this is not always the case (Perls, 2004). Although older adults often have differential health deficits, many high functioning older adults can still perform physical or mental tasks as well as younger adults (Cabeza, Anderson, Locantore, & McIntosh, 2002).

It is actually very common for human beings to live to advanced ages, such as 85 years of age, with little or no disease or disability (Rowe and Kahn, 1997). Healthy longevity is largely a result of good lifestyle habits, such as moderate diet, exercise, and modern medical and disease prevention advancements (Andel, Hughes, & Crowe, 2005). The life expectancy of older persons in the United States is continuing to increase (Jacobs et al., 2011). According to the United States Census Bureau (2015), the number of older adults who are 65 and older will outnumber individuals younger than the age of 18 within the United States by 2033. Despite the fact, that many older adults make it into advanced ages without developing a major chronic ailment there are certain older adults who are currently living with a disease or disability. It is important to study older adults who live to advanced ages because they represent a "blueprint" for optimal aging (Rowe & Kahn, 1997).

The question remains whether or not there is truly a “blueprint” for successful aging that has aided in the robust aging of the older adults who do not suffer from disease and disability.

Promoting Successful Aging

What does it mean to age successfully? Rowe and Kahn (1997) created the Successful Aging Model as an explanation for how persons can achieve successful overall health in old age. Rowe and Kahn (1997) noted three underlying principles to achieving successful aging including the avoidance of disease and disease-related disabilities, high cognitive and physical functioning, and social engagement with life. There has been some long-standing debate as to whether these three principles truly represent the only attributes to success in old age. For instance, Crowther, Parker, Achenbaum, Larimore, and Koenig (2002) considered positive spirituality as a fourth principle, which they referred to as the “forgotten factor.” Positive spirituality is a concept that has rarely been investigated in conceptual models that seek to promote successful aging (Crowther et al., 2002). Yet, religion/spirituality seems to be an important predictor variable for the health and well-being outcomes in older adults (Crowther et al., 2002).

Furthermore, one recurrent predictor of successful aging within the gerontological literature happens to be quality of life (Rejeski and Mihalko, 2001). Living to advanced ages with disease, disabilities, and limited functional health is very different from living to an advanced age without these kinds of comorbid health problems. According to Rejeski and Mihalko (2001), older adults actually prefer to have quality of life to merely longevity (pp. 23). In other words, adding life to years is as important as adding years to life when considering whether older adults who are aging successfully. Therefore, maintaining a positive perception about one’s quality of life may be essential to successful aging.

The purpose of this study was to examine the three core principles of the Successful Aging Model, as well as examine various associated variables that may further advance a “blueprint” for successful aging. The overall goal in achieving this aim is to help older adults improve their quality of life

through the avoidance of disease and disease-related disabilities, high cognitive and physical functioning, engagement with life, and other potentially beneficial methods.

CHAPTER II

LITERATURE REVIEW

Long-lived adults represent a “blueprint” for successful aging (Rowe & Kahn, 1997). Many have done something correct in avoiding disease, maintaining cognitive vitality, and remaining socially engaged. Longevity researchers acknowledge that age-associated symptoms linked to varying unavoidable clinical pathologies do not always materialize into chronic illness or disease or social losses (Perls, 2004). Instead, it is more typical for long-lived adults to gradually encounter normative age-associated problems, such as acute illness, general memory loss or delayed reaction time in information processing, and social losses involving the death of loved ones. (Rowe and Kahn, 1997). Research on health across young-old and old-old age historically focused on socio-demographic attributes contributing to chronic physical ailments, risk of dementia/Alzheimer’s disease, and conditions of social isolation and loneliness, age-association, race, and socio-economic status commonly represent key demographic indicators of such aging health outcomes. Socio-demographic attributes as very important due to the fact that gender, race, and socio-economic status can either improve or inhibit the availability of psychosocial resources, such as education, adequate nutrition, or mental health services (Crimmins & Saito, 2001; Seeman et al., 2004). Although there have been many strides in research in the study of successful aging, there has still been limited examination of how the primary principles of the successful aging model and other underlying elements are associated

with optimal well-being outcomes in very old age. Therefore, the primary purpose of this study was to examine and confirm whether the three principles of the successful aging model: avoidance of disease or disease-related disabilities, high cognitive or physical activity, and active social engagement represent a blueprint for successful aging in a sample of young-old (70-84 years) and old-old adults (85+ years; Bytheway, 2005). Results from this current study have implications relative to how gerontological and geriatric practitioners may address and help improve quality of life for older persons who desire successful aging physically, mentally, and socially.

Theoretical Framework

The Model of Successful Aging (Rowe & Kahn, 1997) is a theoretical framework often used to understand biological, psychological, and social well-being after 65 years of age. Rowe and Kahn (1997) recognized that intrinsic as well as extrinsic factors contribute to the sustainable and normative patterns in cognitive status (Rowe and Kahn, 1997). Intrinsic elements are best defined as lifestyle habits of the individual including diet and physical activity that benefit cognitive fitness; whereas extrinsic characteristics include any impact that the social environment may have on delaying or accelerating normative age-related cognitive deficits. Rowe and Kahn (1997) conceptualized and transformed these factors into a biopsychosocial model of successful aging applicable to understanding physical, mental, and social processes of well-being in old age.

Rowe and Kahn (1997) established three core principles of successful aging. First, successful aging enables the preservation of health (Rowe & Kahn, 1997). When an individual is able to avoid disease, they are healthier and more physically robust. Thus, they can potentially live disease-free in later adulthood. Second, successful aging requires maintenance of cognitive

functioning through brain fitness activities beneficial to cognitive functioning, such as reading and exercising (Rowe & Kahn, 1997). By stimulating the mind, it is believed that older adults can delay or offset the threat of acquiring dementia. Third, social engagement entails participation with social affiliates and within a cohesive network of persons including family, friends, neighbors, and others within the community. Such social ties help buffer the prospect of developing lethal morbidities that may result in mortality (Rowe & Kahn, 1997). Together, preservation of health, maintaining healthy cognitive status and social cohesion account for the primary principles of successful aging

Successful Aging Principle 1: Preservation of Health

Rowe and Kahn (1997) defined preservation of health as the ability to avoid disease or disability and build physiological resilience. One way to optimize health in old age is to limit environmental stress exposure. Limited exposure to environmental stressors helps build biological reserves in old age. Older adults who report low levels of stress exhibit greater resilience (Aldwin & Yancura, 2010). Reduced stress reflects the extent to which older adults may construct biological reserve. According to Selye (1965) “stress” has long been used by laymen to designate tension, fatigue, or exhaustion” (p. 97). Most notably, the General Adaptation Syndrome (G.A.S) is a theoretical framework that explains the link between stress, chronic illness, and resilience. G.A.S addresses many of the pertinent questions that exists about stress. G.A.S. consists of three stages: (a) alarm reaction, (b) resistance, (c), and exhaustion (Selye, 1965).

The first stage of General Adaptation Syndrome is the alarm reaction stage. In this stage, the body prepares to defend itself against the stressors that it has encountered (Selye, 1965). The body is essentially preparing for the release of a fight-or-flight response. Second, in the stage of

resistance, the organism has completely engaged in a coping process and has adapted to the stressor (Selye, 1965). In the stage of resistance, the body has chosen to elicit a fight response to the given stressor. However, the body can only ward off the stressor for a limited duration of time, therefore, the body must incorporate various mechanisms to overcome the stressor and return the body back to its natural state of homeostasis. Homeostasis is a term used to describe a state of balance or equilibrium in the body.

Although the term homeostasis is often confused with another term known as allostasis they are two very distinct concepts. Allostasis refers to the constant adaptation over time that an organism undergoes in order to achieve stability (Sterling & Eyer, 1988). When stress accumulates over time it can trigger detrimental consequences that increase the susceptibility for disease, or what is termed allostatic load (Sterling & Eyer, 1988). Third, is the exhaustion stage. During this stage, the organism has endured prolonged exposure to a stressor and has depleted its adaptive abilities (Selye, 1965). As a result, organisms are susceptible to chronic illness and other ailments that deteriorate health, which is a result of prolonged exposure to the given stressor.

Almost all human beings experience some degree of stress at varying times during their life. In particular, persons commonly experience acute or chronic stress. Sporadic or acute episodes of stress can be beneficial to biological organisms immediately following a stressor. For example, in an objective animal experiment, rats that had prior exposure to stress were able to avoid inflammation and allergic reactions, whereas rats that did not have prior exposure to stress were more susceptible to inflammation and allergic reactions (Selye, 1965). When stress becomes chronic and continues for a prolonged period it can greatly compromise immune response. There are costs that the body pays as it actively engages in adaptive mechanisms to overcome stressors (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997). The human body is better able to function

under stress for a brief period of time. Prolonged exposure to stress results in increased cortisol levels, which can cause damaging effects to the immune system. Older persons generally have lower immunity and are more susceptible to disease (Van Den Biggelaar, 2004). Thus, excessive cortisol release is much more detrimental to both their physical and cognitive health. High levels of cortisol released into the body can result in atrophy of the hippocampus (Andel et al., 2005). Thus, stress has the ability to cause structural and functional damage to the human brain, which is why we observe many older adults with cognitive deficits and various types of neurodegenerative disorders.

In the literature, it has been noted that older adults tend to cope with stress better than younger adults (Aldwin & Yancura, 2010). In fact, coping mechanisms and resources may explain why older adults generally tend to report lower levels of stress, than their younger counterparts. Older adults deal with greater chronic illness and social losses compared to younger adults. This is due to the increased susceptibility of developing diseases and smaller social networks, which is a result of losing close friends and loved ones through death. Despite the disadvantages, older adults approach stressful encounters differently than younger adults (Aldwin & Yancura, 2010). According to the literature, older adults do not usually appraise stressors as problematic (Boeninger, Shiraishi, Aldwin, & Spiro, 2009). Instead, they typically devote minimal attentional resources to aversive events. This minimizes the relevance and effects of the threat of the aversive event (Boeninger, Shiraishi, Aldwin, & Spiro, 2009). Boeninger et al. (2009) identified that age differences in personality traits, problem type, and primary stress appraisal as three possible explanations of these effects. The core belief is that because older adults have experienced a variety of situations in life, they are better able to cope and adapt to the daily stressors they encounter (Aldwin, Sutton, Chiara, & Spiro, 1996).

One health factor linked to reduction in disease and disease-related disabilities is physical activity. Physical activity promotes decreased stress, strengthens immunity against disease, and contributes to noticeable gains in biological functioning (Emery, Kiecolt-Glaser, Glaser, Malarkey, & Frid, 2005; Senchina & Kohut, 2007). For example, in a study on exercise and wound healing, Emery et al. (2005) reported that physical activity, such as exercise enhanced the rate of wound healing in older adults. Thus, it is clear that remaining physically robust serves to keep the body on a successful path of aging and has profound benefits.

Principle 2: Maintaining Cognitive Vitality

Beyond health, Rowe and Kahn (1997) also considered cognitive performance essential to successful aging. In particular, Rowe and Kahn (1997) defined cognitive maintenance as the attempt to engage in and perform fitness activities for the purposes of maintaining one's cognitive or intellectual skills and abilities. Efforts made to continually use and engage the mind helps to delay or reduce the threat of neurological pathologies of aging. As a result, this allows older adults to remain cognitively intact into very old age. Prior research reported that genetic factors account for approximately 40-80% of an individual's cognitive performance (Andel, Hughes, and Crowe, 2005). This is largely a result of the individual's neurobiological make-up and the way in which certain genes are expressed. Thus, some older adults tend to be more likely to experience disease and cognitive impairment or disease-related impairment while others do not. It appears that gene expression is influenced by one's varying interactions within the environment (Allen, Bruss, & Damasio, 2005). The finding above might explain why none of the psychosocial variables were associated with cognitive status.

The cognitive reserve hypothesis may provide a more plausible explanation for why some older adults experience severe levels of cognitive decline and others do not (Stern, 2002). The

cognitive reserve hypothesis posits that human brain functioning involves a compensatory mechanism in the presence of age-associated decline in the form of neural plasticity (Stern, 2006). Neural plasticity involves the capacity for adaptive change within the brain in the presence of injury or gradual damage and decline (Lövdén, Lindenberger, Schaefer, Bäckman, & Schmiedek, 2010). The cognitive reserve acts as a buffer to stress, by compensating for normative brain pathologies (Stern, 2006). The cognitive reserve relies heavily on one's current neural activity, and draws on alternative neural networks in order to maintain proper cognitive functioning (Barulli & Stern, 2013). Notably, the cognitive reserve plays a vital role in each of the three principles of the successful aging model. Successful aging is most evident when the older adult compensates for normative pathological age-related cognitive or functional changes (Stern, 2006). The most common cognitive pathology older adults experience is dementia (Stern, 2006). According to Langa et al. (2007) dementia affects roughly five million older adults in the United States. Older adults with more cognitive reserve tend to fare better in terms of their health and social functioning, even in the midst of normative or pathological age-related changes (Stern, 2006).

Cognitive fitness tasks, such as memory recall, reading, and mathematic games enhance the cognitive reserve and promote cognitive vitality (Scarmeas & Stern, 2003). Intellectually challenging tasks like memory and reasoning training slow or reduce the likelihood of developing a neurodegenerative disease (Fitzpatrick, 2010). For example, older adults who participate in cognitive fitness tasks experience improved vascularization of vital brain structures that supports a healthy pattern of neuronal activation that resembles the same neural activation pattern found in young adults (Andel, Hughes, & Crowe, 2005). In addition to promoting cognitive vitality, participating in cognitive fitness tasks often provides an avenue for older persons to engage

socially (Rowe & Kahn, 1997). Prior studies have also demonstrated that functional movement can greatly reduce the incidence of other co-occurring health symptoms among older persons 65 years and older (Heyn, Abreu, & Ottenbacher, 2004). Larson et al. (2006) reported that daily exercise contributes to delay in the onset of dementia and Alzheimer's disease. In another study, Fitzpatrick (2010) reported that physical activity had a beneficial effect on the frequency of chronic illness episodes. Similarly, Deary and colleagues (2006) reported that physical fitness enhances the cognitive reserve. In other words, the number of chronic illnesses that an older person encounters does not compromise cognitive health any further when the older person remains physically active. Thus, older persons who remain physically active are better off in their health. These reported findings suggest that engagement in cognitive fitness tasks and functional movement is beneficial to the avoidance of many types of neurodegenerative diseases.

Successful Aging Principle 3: Fostering Social Engagement

Rowe and Kahn (1997) identified social engagement as a third component of successful aging. Social engagement in very old age is important because it allows older persons to maintain emotional well-being by receiving social support from others, which further reduces feelings of isolation and loneliness (Rowe & Kahn, 1997). Older persons who live to an advanced age will eventually experience the loss of loved ones, and friends. As a result, they are likely to experience a period of bereavement following the loss of those close friends or relatives. Bereavement is a period in which one mourns the loss of a mutual connection with another person. Maintaining social ties helps to buffer or reduce rumination and appraisal of a stressor, as well as emotional feelings of loneliness that may follow social loss (Golden et al., 2009). Some experts contend that it is not the quantity of support that matters, but the quality of one's supportive ties that is most

effective at helping counterbalance emerging feelings of loneliness that may evolve across human aging and longevity (Lang & Carstensen, 1994).

Despite ongoing social losses, many older persons often form new social ties. For example, some older persons might volunteer for a community service, civic organization, or join a religious group. With age, older adults often become more selective in optimizing which close and meaningful social ties they will pursue (Carstensen, Fung, & Charles, 2003). Socioemotional selectivity theory (SST), coined by Carstensen (1992), posits that people become more socially selective with advanced old age, thus investing more time and resources into people or activities considered emotionally meaningful. Community engagement is one way older persons can seek positive social relationships.

Religious activity and individual spirituality are two common alternative forms of socialization that promote successful aging (Crowther et al., 2002). Crowther (2002) considered these attributes as the forgotten factors of positive spirituality. Despite failure to incorporate faith/spirituality into research models, faith/spirituality still seems to play an underlying role in promoting successful aging. For example, Pascucci and Loving (1997) reported that having a strong faith and belief system creates a buffering effect, which protects older adults from anxiety and worry stemming from negative mental rumination. Cicirelli (2004) also labeled God as the "ultimate attachment figure" for older adults. In fact, older adults who feel alone and desire support often turn to prayer to temporarily fill a social void.

Gender and Age Differences and Successful Aging

Successful aging often coincides with quality of life in old age. Rejeski and Mihalko (2001) define quality of life as "a conscious cognitive judgment of satisfaction with one's life" (p. 23). Perceived quality of life reported by older adults tends to be a recurrent predictor of

successful aging. In fact, many older adults prefer quality of life to longevity (Rejeski & Mihalko, 2001). Researchers have noted key gender differences in age-related quality of life among older men and women. For instance, Orfila et al., (2006) noted that women have a greater risk of morbidity than men, which results in overall higher healthcare utilization rates than their male counterparts. Unlike men, women live longer and experience simultaneous and multiple non-fatal chronic health impairments, such as arthritis and back problems with greater frequency (Orfila et al., 2006). There are also profound gender differences when it comes to social resources. For example, women usually invest more time into sustaining ongoing social relationships than men (Hajek et al., 2016). As women reach advanced older ages, they are better able to compensate for the ongoing loss of familiar social supports by turning to others with whom they have managed to keep within their social network (Hajek et al., 2016). Therefore, it is important to understand the psychosocial determinants surrounding gender differences in successful aging, as it allows for the detection of potential interventions that may improve quality of life for both men and women in old age (Brett et al., 2012).

Demirkan (2007) reported a significant association between age, housing situation, and health. In order for older persons to achieve feelings of satisfaction, comfort, and independence, their homes must fulfill the needs of their activities of daily living (Demirkan, 2007). In other words, the environment plays an immense role in the perceived well-being in the home and the quality of the environment at the residence. With advanced age, older adults are at an increased risk for environmental challenges, such as not being able to walk up the stairs in a two-story home (Oswald et al., 2007). According to Oswald et al. (2007), older persons who experience significant declines in functional health also have difficulty doing everyday activities instrumental to daily living. Decline in functional health increases the likelihood of hazards, such

as the risk of falls (Iwarsson, Horstmann, Carlsson, Oswald, & Wahl, 2003). This is often linked to accessibility to various rooms in one's home, which can be critical to aging well. In fact, the ability to conduct activities such as cooking, eating, bathing, and sleeping may be essential for continued aging-in-place and human survival (Horgas, Wilms, & Baltes, 1998).

One's environmental context has the potential to either enhance or diminish the processes that contribute to successful aging. In a study of the meaning of home, Leith (2005) reported that identification with one's home is also most salient relative to how older women rate their global well-being compared to older men. On the other hand, older men consider the ability to function independently within the home as most important when it comes to predicting successful aging (Smith, Braunack-Mayer, Wittert, & Warin, 2007). This is even true for those who have reached advanced ages of 85 years and beyond. As a result, older adults who are able to continue aging within their own private homes tend to rate the quality of their lives much higher than those residing in more institutionalized care settings (Leith, 2005). Nonetheless, a thriving residential context is especially crucial for older persons who lack adequate social networks (Inagami, Cohen, & Finch, 2007). Residential communities that have an abundance of social resources may indirectly help buffer stress despite the older adult maintaining small or non-existent social networks (Hughes, Andel, Small, Borenstein, & Mortimer, 2008). Few studies have investigated the differences in successful aging among community dwellers and older persons in care facilities. The question of interest here is to understand who ages more successfully - older adults who live independently in their private homes, or those who reside in care facilities?

Research Question and Hypotheses

Based on current literature surrounding successful aging, this research study was used to address the following hypotheses:

Hypothesis 1: Age differences.

H1a: Old-old adults will have a greater mean score for reported illnesses/disease than young-old adults (Ferraro, 1980).

H1b: Old-old adults will have a lower mean score reflective for cognitive status than young-old adults (Von Bastian, Langer, Jäncke, and Oberauer, 2013).

H1c: Old-old adults will report a greater mean score for social provisions than young-old adults (Litwin & Landau, 2000).

Hypothesis 2: Gender Differences.

H2a: Older women will report a greater mean score for reported illness/disease than older men (Orfila, Ferrer, Lamarca, Tebe, Domingo-Salvany, & Alonso, 2006).

H2b: Older women will report a greater mean score for cognitive functioning than older men (Peterson et al., 2010).

H2c: Older women will report a greater mean score for social provisions than older men (Shye, Mullooly, Freeborn, & Pope, 1995)

Hypothesis 3: Residential Differences.

H3a: Older adults residing in care facilities will report a greater mean score for reported illness/disease than older adults residing in the community (Olsen et al., 2016).

H3b: Older adults residing in care facilities will report a lower mean score for cognitive functioning than older adults residing in the community (Chandler & Chandler, 1988).

H3c: Older adults residing in care facilities will report a lower mean score for social provisions than older adults residing in the community (Grenade & Boldy, 2008).

Hypothesis 4: Predictors of Successful Aging Outcomes.

H4a: Poor perceptions of health, decreased functional health status, greater perceived stress, feeling lonely, lower religiosity/spirituality, greater psychosomatic complaint, and better quality of life will be associated with a greater number for self-reported health impairments (Christian, Glaser, Porter, Malarkey, Beversdorf, & Kiecolt-Glaser, 2011).

H4b: Positive health perceptions, increased functional health status, lower perceived stress, lower feelings of loneliness, greater religiosity/spirituality, fewer psychosomatic complaints and better quality of life will be associated with better cognitive health status (Slade & Kunkel, 2002).

H4c: Positive health perceptions, increased functional health status, lower perceived stress, lower feelings of loneliness, greater religiosity/spirituality, greater psychosomatic complaint, and better quality of life will be associated with greater social support (White, Philogene, Fine, Sinha, 2009)

CHAPTER III

METHODOLOGY

Participants

This research study included an analysis of data collected from the Psycho-Physiological Dynamics of Well-Being in Old-Old Age Study. This study was funded by the Oklahoma Center for the Advancement of Science and Technology (OCAST). Data collection was conducted from August 1, 2013 through September 30, 2016. Data for this study was collected through on-site assessment interviews with N = 152 older adults, residing in the private homes and assisted/long-term care facilities. The following inclusion criteria were administered: (a) participants had to be at least 65 years of age or older; (b) participants had to pass a Mini-Mental Status Examination-Brief screening with a score of 11 or higher, (c) and participants had to currently reside in a private-home or a care facility in the state of Oklahoma. For the purposes of this study, participants were divided up into two age cohorts, the young-old (70-84 years), and the old-old (85+ years). Prior to participation participants were asked to complete a University approved IRB informed consent.

Procedures

Semi-structured interviews were conducted with participants residing in private homes and assisted living/long-term care facilities. Participants were asked to respond to a battery of questionnaires compiled in order to quantify overall biopsychosocial functioning. The questionnaires were administered in two parts. Each of the two parts took one-hour respectively.

In part one, health assessments were administered. For example, participants were asked a series of questions regarding the perception of their current health, dietary habits, and vitals were taken. Upon the completion of part one, the trained researchers were required to set up a second visit to complete part two of the research study. In part two, a psychosocial evaluation was administered. Each session took approximately one-hour to complete. During this assessment, participants were asked questions pertaining to life satisfaction, quality of life, perceived social support, and residential status (see Table 1). In order to receive monetary compensation participants were required to complete both parts of the study. Participants who successfully completed both parts of the study received $25 for their time and participation.

Measurements

Sociodemographic. Socio-demographic characteristics served as key control variables in this study. In particular, self-report single-item indicators were used assess age, education, gender, marital status, and place-of-residence (e.g., private homes, assisted/long-term care facilities).

In addition, several predictor variables relevant to successful aging in old and old-old age were evaluated as key covariates. Such variables included perceived health, functional health capacity, perceived stress, psychosomatic symptoms, religiosity, and spirituality.

Perceived health. A single item self-item indicator was used to assess a self-report of perceived health status. This item was a modified version of the Older Americans' Resources and Services (OARS; Fillenbaum, 1978) perceived health status. Participants were asked to rate how they perceived their health. This single-item was scored on four-point Likert scale where 1 = poor; 2 = fair; 3 = good; 4 = excellent. Lower scored indicated poorer health, while higher scores indicated better health.

Functional Health Capacity. Functional health was assessed using the Self-Care Capacity Scales from the Older American Resources Survey (OARS; Fillenbaum, 1978). This scale is typically used a self-reported instrument of functional health ability in completing

everyday activities of living. The 13-item assessment is designed to evaluate ability to complete instrumental (e.g., shopping, cooking) as well as physical activities (e.g., walking, getting in and out of bed) of daily living. Participants were asked to rate their ability to complete each activity on a three-point Likert scale where 1 = with no help; 2 = with some help, and 3 = completely unable. It includes items, such as “can he/she use the phone”, “can he/she get to places out of walking distance”, and “can he/she prepare his/her own meals”. Items were summarized into a total score where a high score indicates high functional health capacity and a low score signifies low functional health capacity.

Perceived Stress. The Perceived Stress Scale-4 (PSS-4) were used to assess stress appraisal (Cohen, Kamarck, and Mermelstein, 1983). This instrument consists of 4-items. The PSS-4 includes items, such as “In the last month, how often have you felt that you were unable to control the important things in your life?, In the last month, how often have you felt confident about your ability to handle your personal problems?, In the last month, how often have you felt that things were going your way?, and in the last month, how often have you felt difficulties were piling up so high that you could not overcome them?”. The PSS-4 items are scored on a 5-point Likert type scale (0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often). Total scores were obtained by summing across each of the four items. Items 1 and 4 are negative items and items 2 and 3 are positive items. Items 2 and 3 require reverse coding being that they are positively coded. For example, (4 = never, 3 = almost never, 2 = sometimes, 1 = often, 0 = very often). The Cronbach’s alpha for the current study was $\alpha = .65$. High scores on this instrument indicate greater levels of stress and low scores indicate lower levels of stress.

Psychosomatic Symptoms. The Brief Symptom Inventory 18 (BSI-18; Derogatis, 1983) was used to assess psychological well-being. This instrument consists of 18-items that target a series of primary symptom dimensions, which include: anxiety, depression, and somatization. The items are scored on three levels: global scores, primary symptom dimension, and discrete

symptoms on individual items. For purposes of this study, summary scores reflecting scale sub-dimensions of anxiety, depression, and psychosomatic symptomology will be created. Participants will be asked to indicate the extent to which they have experienced various symptoms within the past week. This instrument asks participants to identify how much they have been distressed by psychosomatic symptoms such as, “faintness or dizziness”, “feelings of worthlessness”, and nervousness or shakiness inside”. The BSI-18 items are scored on a 5-point Likert type scale (0 = not at all, 1 = a little bit, 2 = moderately, 3 = quite a bit, 4 = extremely). Scores across the three primary symptom dimensions will be added and summarized into a cumulative global score. High score indicate higher levels of psychosomatic symptoms and low scores indicate lower levels of psychosomatic symptoms. The BSI-18 is a very reliable measure with high internal consistency of .71 to .85 (Derogatis, 1983). The alpha level in the current study was $\alpha = .72$.

Religiosity. The Duke University Religious Index Scale (DUREL) is a 5-item instrument developed by Koenig and Bussing (2010), it was used as a brief measure of religiosity. The DUREL has a high test-retest reliability (intra-class correlation = 0.91) and high internal consistency with $\alpha = 0.78$ and .91 (Koenig and Bussing, 2010). The alpha level in the current study was $\alpha = .89$. This instrument has an organizational vs. non-organizational intrinsic scale. Three separate subscales measure each of the items on the DUREL. For example, the first subscale of the DUREL concerns frequency of attending religious meetings (1 = never, 2 = once a year or less, 3 = a few times a year, 4 = a few times a month, 5 = once a week, 6 = more than once a week). The second subscale of the DUREL addresses frequency of attending private religious meetings (1 = rarely or never, 2 = a few times a month, 3 = once a week, 4 = two or more times a week, 5 = daily, 6 = more than once a day). Finally, the third subscale consists of a three-item assessment of intrinsic religiosity. Items on the third subscale utilize a 5-point Likert scale (1 = definitely not true, 2 = tends not to be true, 3 = unsure, 4 = tends to be true, 5 =

definitely true of me). This third subscale includes items such as “In my life, I experience the presence of the Divine “God”, “My religious beliefs are what really lie behind my whole approach to life” and “I try hard to carry my religion over into all other dealings in life.” The DUREL scoring scale ranges from 5 to 27. Higher scores indicate higher levels of religiosity and lower scores indicate lower levels of religiosity. Items were summarized across the full scale.

Spirituality. The Daily Spiritual Experiences Scale (DSES) was developed by Underwood (2002). It was used as the primary measure of daily spiritual experiences. This instrument consists of 16-items in total and respondents are asked to answer questions regarding their spiritual connection with God. Respondents are asked to consider their spiritual experiences within the past several days. The DSES includes items such as "I feel God's presence", "I experience a connection to all of life", and "I feel strength in my religion or spirituality". Higher scores indicate high daily spiritual experiences whereas a low score indicates low daily spiritual experiences. In the event that the word "God" makes the respondent feel uncomfortable, the respondents are asked to substitute the word for another term that refers to the divine or a higher power. The first 15 items are summary scored as continuous on a modified 6-point Likert type scale (1 = Never or almost never, 2 = Once in a while, 3 = Some days, 4 = Most days, 5 = Everyday, 6 = Many times a day) and item 16 is scored on a 4-point scale (1 = Not close at all, 2 = Somewhat close, 3 =Very close, 4 = As close as possible). The instrument has been demonstrated to be a very reliable measure with reliability reported at $\alpha = .94$ and .95 (Underwood & Teresei, 2002). The Cronbach’s alpha in the current study was $\alpha = .89$.

Life Satisfaction. The Satisfaction with Life Scale (SWLS) is a 5-item instrument that was developed by Diener, Emmons, Larsen, and Griffin (1985) and it was used to assess three separate dimensions of subjective well-being: positive affect, negative affect, and life satisfaction. The SWLS includes items such as "In most ways, my life is close to ideal, "The conditions of my life are excellent, and "I am satisfied with my life". This is a reliable measure of subjective well-

being with an α = .87 (Diener, Emmons, Larson, & Griffin, 1985). This instrument is scored on a 7-point scale. A total score is averaged among each of the 5-items after the questionnaire is completed with 35 being the highest possible score achieved. The scoring ranges from 5-9 (Extremely dissatisfied), 10-14 (Dissatisfied), 15-19 (Slightly below average in life satisfaction), 20-24 (Average score), 25-29 (High score), and 30-35 (Very high score; highly satisfied). Higher scores indicate higher levels of life satisfaction. The Cronbach's alpha in the current study was α = .76.

Quality of Life. The CASP-19 created by Hyde, Wiggins, Higgs, & Blane (2003) it was used to measure quality of life in old age. This measure is an adapted version of the original pilot 22-item CASP scale. The CASP-19 measures four domains: control, autonomy, pleasure, and self-realization. This instrument includes items such as "I feel that what happens to me is out of my control", "I feel free to plan for the future", and "I feel left out of things". The scores for each of the four domains are added and summarized to obtain a cumulative score. Possible scores on the CASP-19 ranges from 0 to 57. This instrument appears to be a reliable measure with Cronbach's alphas between 0.60 and 0.80 (Hyde, Wiggins, & Blane, 2003). The Cronbach's alpha in the current study was α = .57. Lower summary scores on the CASP-19 represent lower levels of quality of life; whereas higher score represent higher levels of quality of life.

Loneliness. The UCLA Loneliness Scale-Version 3 is an adapted short-form that was developed by Russell (1996). This instrument was used to measure an individual's subjective feelings of loneliness as well as social isolation. There are 20-items in total in this measure. 9 of the items are positively worded and the remaining 11-items are negatively worded. This instrument includes items, such as "How often do you feel like people are around you but not with you?", "How often do you feel like there are people you can turn to?", and "How often do you feel close to people?". The UCLA Loneliness Scale-Version 3 is a highly reliable measure

with an internal consistency of α = .89 and .94 (Russell, 1996). The Cronbach's alpha in the current study was α = .84.

Outcomes of Successful Aging

Correlates of successful aging were evaluated as key study outcomes and consisted of using self-reported health impairment, cognitive status, and social support.

Health Impairment. Self-reported health impairment was used as the primary outcome of health. Health impairment was measured by a self-report checklist of 38 acute and chronic health conditions. Participants were asked to check all health condition(s) they have experienced within the past year. A composite summary score of all self-reported health problems was calculated. A high total score indicated high endorsement of health problems, whereas a low total score reflected low endorsement of current health problems.

Cognitive status. Cognitive status was measured using the Mini-Mental State Exam (MMSE), which screened for cognitive impairment. The MMSE was designed by Folstein, Folstein, and McHugh (1975) and has proven to be a very reliable way to assess the current cognitive or mental health status of older adults. According to Miller, Mitchell, Woodard, Davey, Martin, & Poon (2010), the MMSE has a test-retest reliability rating of .99, which is why many researchers and physicians make use of this instrument. The Cronbach's alpha in the current study was α = .69. The MMSE is time efficient because it consists of 16-items and takes 5-10 minutes to complete, while it accurately assesses an individual's cognitive state without fatiguing the participant. This instrument measures attention and calculation, recall, ability to follow simple commands, and orientation. It is a commonly used instrument for measuring cognitive performance.

Social Support. The Social Provisions Scale (SPS; Cutrona & Russell, 1987) was used as the primary measure of social support. The SPS assessed the extent to which participants perceived overall quality of social ties across six key provisions including attachment, integration,

guidance, reassurance, reliability, and opportunity for nurturance. This instrument consists of a total of 12-items and scored on a 4-point scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). This instrument includes items such as "there are people I can depend on to help me if I really need it", there is no one I can turn to", and " there are people who enjoy the same social activities I do". A total score was computed by summing each of the 12-items. Higher scores on the SPS indicated a high level of perceived support and a low summary score indicated low level of perceived support. The internal consistency reliability for this scale is high with an $\alpha = .94$ (Cutrona & Russell, 1987). The Cronbach's alpha in the current study was $\alpha = .74$.

Data Analysis

First, data was assessed relative to establishing means, frequencies, and standard deviations across all demographic variables. Second, a chi-square analysis was performed to report any significant age differences relative to sociodemographic attributes among the young-old (70-84 years) and the old-old (85+ years). Third, a univariate analysis was conducted using the IBM/SPPSS general linear modeling function which was used to address Hypothesis 1, 2, and 3 to examine mean differences by age, gender, and residential status across successful aging outcomes: health impairment, cognitive status, and social support. Lastly, a series of three hierarchical linear regression analyses were conducted to analyze predictor variables and successful aging outcomes pertaining to hypothesis 4.

CHAPTER IV

RESULTS

Demographics

Table 1 displays the frequencies and percentages reflecting sample demographics. On the Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975), older participants were required to score an 11 or higher in order to participate in this study. The overall mean score of the sample was 25.6. This indicates that this sample of older adults had high levels of cognitive functioning. The majority of participants identified as White-Caucasian (89.6%) compared to remaining participants who identified as being Non-White (10.5%; Black, American-Indian, Pacific Islander, Multi-Racial, or Other). Relative to marital status, 45.5% of participants reported being widowed, 34.8% indicated they were married, and 19.7% reported being divorced. The overall participant sample was well-educated with 9% who completed grade school, 31.3% completed high school, 11.9% completed an associate's degree, 1.5% completed college, and 17.1% completed graduate school.

For this study, the sample was divided by age into two distinct and nearly equal age groups representing the young-old (70-84 years) and the old-old (85+ years). The two age groups are slightly different in terms of total number of participants. The young-old (70-84 years) consisted of N = 66 total participants, while the old-old (85+ years) consisted of N = 80 total participants. Chi-square analyses were then performed to determine any significant age differences in reported socio-demographic attributes among the young-old (70-84 years) and the

old-old (85+ years), for a total of N = 146 participants (Table 2). Old-old sample participants were determined to be significantly different from young-old participants relative to marital status only. In fact, the chi-square analysis revealed a significant difference between the two age categories pertaining to current marital status, Chi-square (4, N = 146) = 21.55, $p < .00$. However, no significant age differences emerged by gender, Chi-square (1, N = 150) = 1.21, $p < .27$, race, Chi-square (5, N = 148) = 6.07, $p < .29$, or education, Chi-square (5, N = 148), 3.10, $p < .68$.

Bivariate Correlations

Bivariate correlation analyses were conducted to determine associations across all study variables (see Table 4). Of particular interest was identifying key variables associated with successful aging outcomes. Overall, correlations ranged from -.23 to .47. The first outcome variable, self-reported health impairment, was significantly associated with cognitive status ($r = .18$, $p < .05$), perceived health ($r = -.46$, $p < .01$), stress ($r = .29$, $p < .01$), psychosomatic symptoms ($r = .44$, $p < .01$), loneliness ($r = .22$, $p < .01$), life satisfaction ($r = -.31$, $p < .01$) and quality of life ($r = -.28$, $p < .01$). The second outcome variable, cognitive status, was significantly associated with only health ($r = .18$, $p < .05$). Lastly, social support was significantly associated with perceived health ($r = .19$, $p < .05$), stress ($r = -.20$, $p < .05$), psychosomatic symptoms ($r = -.32$, $p < .01$), spirituality ($r = .33$, $p < .01$), loneliness ($r = -.61$, p < .01), life satisfaction ($r = .38$, $p < .01$), and quality of life ($r = .47$, $p < .01$).

Analysis of Variance (ANOVA)

A 3x2 factorial analysis of variance (ANOVA) was further conducted in order to identify any significant mean differences across age, gender, and residential status (Table 3). A significant mean difference emerged relative to social support by residential status, F (1, 128) = 4.17, $p < .05$. In particular, participants residing in care facilities had significantly greater mean scores of

social support compared to counterparts residing in private homes (*M* = 42.07 vs. *M* = 39.77). No other significant mean differences existed relative to age and gender.

Hierarchical Regression Analyses

To identify key predictor variables associated with successful aging outcomes including health, cognition, and social support, a series of three four-level hierarchical regressions were computed and analyzed. Successful aging outcomes (health, cognitive status, and social support) were used as separate criterion variables across four constructed models. Key independent variables across the models included; Model 1 (Demographics): gender age and education were entered in model one as control variables; Model 2 (Psychosocial): addition of perceived health, stress, psychosomatic symptoms, and loneliness. The psychosocial variables were entered in model two in this order it seemed plausible given perceived health, stress, psychosomatic symptoms, and loneliness are typically linked to overall health; Model 3 (Religious/spirituality): addition of religiosity and spirituality. Religion and spirituality were entered in model three as variables that may potentially have merit to further promote health; Model 4 (Life appraisal): addition of life satisfaction and quality of life. Lastly, life appraisal variables were entered in model four in order to observe what kind of effects would occur relative to life satisfaction and quality of life with all of the variables included in the model.

Health was first used as the primary dependent variable in the first hierarchical regression analysis (Table 5). Relative to Model 1, gender, age, and education were included and did not contribute significantly to the regression model. The inclusion of only demographic variables accounted for 1.5% of the variance in health. In Model 2, perceived health, stress, and psychosomatic symptoms were added in addition to demographic variables. This model explained an additional 28.3% of the variance in health and the change in R^2 was significant, F (6, 108) =

7.63, $p < .05$, $R^2 = .29$. The incremental variance in Model 2 was significant and this means that perceived health, stress, and psychosomatic symptoms in addition to the demographic variables represent the best model of variables to predict health. In Model 3, variables representing religiosity, spirituality, and loneliness were added to the model in addition to demographic and psychosocial attributes. This model explained an additional 1.1% of the variation in health and the change in R^2 was not significant, F (9, 105) = 5.22, $p < .05$, $R^2 = .31$. Finally, including life satisfaction and quality of life to the regression model explained an additional 0.4% of the variation in health and this change in R^2 was not significant, F (11, 103) = 4.28, $p < .05$, $R^2 = .31$. Perceived health $\beta = -.30$, $p < .05$ and psychosomatic symptoms $\beta = .27$, $p < .05$ were the only predictor variables that made a significant contribution to predicting health.

In the second hierarchical regression analysis, cognitive status was used as the dependent variable (Table 6). Relative to Model 1, gender, age, and education were included and contributed significantly to the regression model, F (3, 111) = 5.12, $p < .05$, $R^2 = .12$. The inclusion of only demographic variables accounted for 12.2% of the variation in cognitive status. In Model 2, perceived health, stress, and psychosomatic symptoms were added in addition to demographic variables and did not contribute significantly to the regression model, F (6, 108) = 3.09, $p <. 05$, $R^2 = .15$. The inclusion of psychosocial attributes and demographic variables explained an additional 2.5% of the variation in cognitive status. In Model 3, variables representing religiosity, spirituality, and loneliness were added to the model in addition to demographic and psychosocial attributes, which did not contribute significantly to the regression model, F (9, 105) = 2.57, $p <. 05$, $R^2 = .18$. Lastly, life satisfaction and quality of life were included into the model and the change in R^2 was not significant, F (11, 103) = 2.14, $p < .05$, $R^2 = .19$. This model explained an

additional 0.6% of the variation in cognitive status. Predictor variables education $\beta = .32$, $p < .05$ and spirituality $\beta = .26$, $p < .05$ made significant contribution to predicting cognitive status.

In the final hierarchical regression analysis only social support was used as the dependent variable (Table 7). In Model 1, gender, age, and education were controlled for and contributed significantly to the regression model, F (3, 111) = 2.61, $p < .05$, $R^2 = .07$. The inclusion of only demographic variables explained 6.6% of the variation in social support. In Model 2, perceived health, stress, and psychosomatic symptoms were included in addition to the demographic variables. Change in R^2 was significant, F (6, 108) = 3.12, $p <. 05$, $R^2 = .15$ and this model explained an additional 8.2% of the variation in social support. In Model 3, religiosity and spirituality were included in addition to demographic variables and psychosocial attributes. Change in R^2 was significant, F (9, 105) = 10.88, $p <. 05$, $R^2 = .49$. This model explained an additional 33.5% of the variation in social support. It appears that Model 3 seems to represent the best set of variables as predictors of social support. Finally, life satisfaction and life quality were included. Change in R^2 was not significant, F (11, 103) = 9.23, $p <. 05$, $R^2 = .50$. This model explained an additional 14% of the variation in social support. Predictor variables education $\beta = .28$, $p < .05$, stress $\beta = .24$, $p < .05$, and loneliness $\beta = -.61$, $p < .05$ each made significant contribution to predicting social support.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the three core principles of Rowe and Kahn's (1997) Successful Aging Model relative identifying associated variables which advance a "blueprint" for optimal aging. Initially, four hypotheses were made prior to conducting the study, which pertained to age differences, gender differences, residential differences, and predictors linked to successful aging outcomes across the young-old (70-84 years) and old-old (85+ years).

Relative to differences by age, gender, and residential status, results from this study partially supported the initial hypotheses. For example, the first hypothesis acknowledged that old-old adults would have greater mean scores of reported illness/diseases, lower mean scores of reflective of cognitive status, and greater mean scores of social support than the young-old. However, no significant mean differences emerged relative to age differences. This suggests that old and very old research participants did not differ on their mean scores on health, cognitive status, and social support. Likewise, the second hypothesis posited that older women would report greater mean scores of reported illnesses/diseases, greater mean scores on cognitive functioning, and greater mean scores on social support than older men. In other words, men and women did not differ significantly in their mean scores on health, cognitive status, and social support. Yet, no significant mean differences relative to gender emerged.

In the third hypothesis, it was hypothesized that older persons residing in care facilities would report greater mean scores of reported illnesses/diseases, lower mean scores of cognitive

functioning, and lower mean scores of social support than older persons that reside in the community. Results supported this hypothesis. In particular, participants residing in care facilities had significantly greater mean scores of social support compared to counterparts residing in private homes. This finding is counterintuitive. Aging-in-place is commonly cited as the best option for older adults particularly for sustaining positive sense of attachment, personal feelings of safety and security, and maintaining one's identity (Wiles, Leibing, Guberman, Reeve, & Allen, 2011). On the contrary, results from this study suggest that older persons who resided in care facilities may be better off in residing in care facility rather than in a private home. This is most evident relative to social support. Older residents in care facilities appear to have greater social support compared to those who reside privately at-home. This finding may reflect the fact that daily social interaction and engagement opportunities are structured and organized by professional staff. Such opportunities can foster the development of new social ties and contribute to the reciprocation of social support (Cummings, 2002). Thus, those who reside in care facilities may have ample opportunities to engage socially with others.

It is important to note that a growing number of older adults reside at home alone. According to the 2010 Census Bureau approximately 38,810 older adults live independently in the United States. Older persons who dwell in the community may live alone or may reside in a location where social engagement is limited (Yeh & Lo, 2004). It is plausible that many older adults living in private community homes may become increasingly social isolated as they continue to outlive familiar social network members as well as age-in-place (Steptoe, Shankar, Demakakos, & Wardle, 2013). Continued such isolation in old age has been linked to the onset of functional health decline (Crooks, Lubben, Petitti, Little, & Chiu, 2008). With functional decline, older persons are susceptible to issues, such as poor balance, increased falls, and dementia, that

require some level of medical attention or care supervision. (Holwerda et al., 2012). Further investigation is warranted to determine what contributes and characterizes low social support among old and very old adult who age in their own homes over time.

Correlates of Successful Aging

Results from this study also confirmed several key correlates of successful aging. For instance, older adults who view their health positively and complain less about it, maintain better physical and cognitive health functioning, feel less susceptible to negative emotions that warrant stress and loneliness, and have a positive outlook about life and report fewer illnesses or diseases. It appears as though the findings of this study supports the three core principles of successful aging: avoidance of disease and disease-related disabilities, high cognitive and physical functioning, and social engagement (Rowe & Kahn, 1997). Although spirituality did appear to have a significant association relative to cognitive status, the contribution of this variable relative to explained variance within the overall model was limited. Based on results from this study, it appears that spirituality does not act as a significantly valuable or strong underlying indicator of successful aging as previous cited by Crowther and colleagues (2002). Thus, the associated link between spirituality and successful aging in this study seems to be inconclusive at best.

Predictors of Health Impairment

In addition to the correlates of successful aging, results from this study revealed the importance of psychosomatic symptoms and self-reported health as key predictors in the reporting of disease. These two variables appeared to represent a “health paradox”. According to French, Sargent-Cox, and Luszcz (2012) a “health paradox” occurs when older persons who perceive their health positively underestimates a decline in their health (p.1446). On one hand, results confirmed that older adults who view their health favorably also report fewer self-reported

health conditions. Yet, older adults who endorse greater complaints relative to psychosomatic symptoms also report more health impairments. This finding provides valuable insight into the predictability of the absence or presence of disease. In other words, perceived health status seems to be more predictive of an absence of disease; whereas psychosomatic symptoms are more indicative of the presence of disease. Older adults know how they feel in terms of impending or ongoing health problems. In fact, perceived health has a strong empirical association reflecting health complications due to diabetes, heart disease, and hypertension which increase the risk of mortality (Jylha, 2009).

Yet, reliance on perceived health status as a solitary source for discovering or preventing disease is problematic (Henchoz, Cavalli, & Girardin, 2008). Older persons who complain more often about psychosomatic symptomology also admit more often to having health complications (Sargent-Cox and Luszcz, 2012). Sargent-Cox, and Luszcz (2012) reported, self-reports of illness and disease are closely linked to psychological symptoms (p. 1449). This is most salient as persons begin to reach advanced old age. Old-old adults are more likely to weigh psychosomatic symptoms, such as fatigue or anxiety, equally important as physical symptoms that may come to be characterized an on-going perception of an on-going chronic or acute health condition (French, Sargent-Cox, & Luszcz, 2012). If practitioners take the word of the older persons who report that they “feel great,” it is likely that they may miss important symptomology that could be indicative of a more serious underlying chronic or acute health condition that is impeding their ability to age successfully. As a result, some researchers suggest that self-reported health is poor predictor of health and mortality and has the potential to mask true underlying conditions that warrant the absence or presence of disease. In fact, Beyamini, Blumstein, Murad, and Lerner-Geva (2011) suggest that the ability to carry on with a meaningful life, engage in social engagement and

leisure opportunities, and remain physically active are much better predictors of one's health preservation and avoidance of disease. Further investigation is warranted to confirm whether this may be true.

Predictors of Cognitive Status

Cognitive status was the only correlate of successful aging that was associated with health impairment. It appears that the use of subjective measures of cognitive status do not correlate well with the other correlates of successful aging and predictor variables. In this study, a single subjective measure of cognitive status was used called The Mini-Mental State Exam (MMSE; Folstein, Folstein, and McHugh, 1975). Although the MMSE is considered a gold standard instrument for screening cognitive impairment, it has been well-documented to have an educational bias (Jones & Gallo, 2001). Education seems to be highly correlated with this cognitive status assessment. In other words, older adults who have greater levels of educational attainment tend to get high scores on this instrument (Kraemer, Mortiz, & Yesavage, 1998). As a result, this educational bias may have potentially led to a false association between cognitive status and self-reported health impairment with this particular sample of older adults. Perhaps, the use of more direct measures of cognition, such as a test of working memory, may be a more effective method to examine cognitive status with the use of word recall and digit span tasks. Further investigation of the effectiveness of objective measures of cognitive status versus subjective measures in relation to correlates of successful aging needs to be examined. Selection effects may have also been an issue being that older persons were required to score an 11 or higher on the MMSE for inclusion in this study, thus screening out older persons who did not meet the criterion.

Furthermore, there was also an underlying association reported between spirituality and cognitive status. Kaufman, Anaki, Binns, and Freedman (2007) reported that increased involvement in spiritual and private religious activities is linked to a general slowing of cognitive decline in patients with Alzheimer's disease. Some experts contend this may be due to spiritual and religious practices involving private prayer. According to Inzelberg et al. (2013) prayer has neurological significance. In other words, spiritual engagement through prayer helps decrease symptomatic effects of cognitive impairment. Other researchers believe this may be due to the fact that prayer is a form of psychological stimulation that contributes to mental enhancement (Koenig, George, & Titus, 2004). Results from this study suggest that spirituality contributes to improvement in cognitive status, however, the contribution is very minute.

Predictors of Social Support

Participants in this study who endorsed higher levels of social support tended to be better educated and reported lower feelings of stress. However, those who endorsed lower levels of social support reported greater feelings of loneliness. It is possible that those older adults possessing a strong sense of social support were protected from the deleterious effects of stress or loneliness. The relationship between stress and social support often presents a "buffering effect" (Cohen & McKay, 1984). In other words, greater social support in the presence of stress helps diminish the severity and impact of stress on one's overall health. Highly stressed individuals tend to seek out greater social ties (Cohen & Wills, 1985). Close social attachment ties provide high emotional security, which ultimately helps to eliminate or at least mitigate the feeling of stress. (Cohen, & McKay, 1984). Thus, the fact of being older and knowing someone can provide some form of assistance may be beneficial to individual underlying success in aging.

Findings regarding social support within this study are consistent with the Socioemotional Selectivity Theory (SST; Carstensen ,1992). With advanced older age, individuals tend to seek support from their most socially meaningful network ties. Such social relations provide the individual with the highly positive affective and emotionally beneficial feelings of safety and security. Fiore, Becker, and Coppel (1983) noted that social network members can be perceived as either beneficial or as not meeting certain support expectations. Negative social interactions tend to have more potent effects on well-being than positive interactions (Rook, 1984; Shuster, Kessler, & Aseltine, 1990). Fiore and colleagues (1983) further reported that when emotional expectations are not properly met, it could potentially lead to the exacerbation of stress. For many older adults, this may contribute to negative affect in the form of depressive symptoms, dissatisfaction toward life, and loneliness (Cacioppo & Hawkley, 2009).

Social network availability is also linked to low feelings of loneliness among older adults (Cornwell & Waite, 2009). Applying the Strength and Vulnerability Integration Model (SAVI), Charles (2010) suggested older adults develop more effective strategies over time to regulate their emotions. This contributes to a reorganizing of life that allows for continued satisfaction with life despite a disappearing social network. Meanwhile, older persons also enhance satisfaction with the members in their social network by only lending attention to positive stimuli which thereby contributes to more positive life appraisal (Charles, 2010). In doing so, older persons can fully reap the benefits of positive emotions that may originate from the social engagement with social network members.

Limitations

This study consisted of a convenience sample of older persons between the ages of 70 years and older. Being an older sample of participants many were fatigued do to the lengthiness of the psychosocial questionnaires. In order to lessen the risk of fatigue, the study was divided into two separate parts with the biological assessments being documented on the first visit and the psychosocial data collected upon a second visit. This study also did not control for changes that may have occurred in between visits. For example, participants may have either improved or declined in various areas of the biopsychosocial assessments, which remains unknown. Another limitation is that the generalizability of the findings may be limited and not applicable to other older populations of people. This was a highly educated sample of older adults, therefore, another limitation might be that of education bias.

The Mini-Mental State Exam (MMSE; Folstein, Folstein, and McHugh, 1975) was used as a screening tool for cognitive impairment. It is well-documented that MMSE is a poor overall measure of human cognition, as it is limited by participant education level (Kraemer, Mortiz, & Yesavage, 1998; Jones & Gallo, 2001). Participants who have a high level of education tend to receive better overall scores on the MMSE.

Another limitation is the use of the CASP-19 to measure quality-of-life. Prior testing identified that the CASP-19 was once a reliable measure with Cronbach's alphas between 0.60 and 0.80 (Hyde, Wiggins, & Blane, 2003). However, in the current study the Cronbach's alpha that was reported was very low $\alpha = .57$. This may indicate that the CASP-19 does not adequately measure quality of life with this particular old-old population who are challenged by on-going losses in areas, such as cognition, health, and social ties**.** Future confirmatory factor analyses across individual and subscale items are warranted to identify which overall items of CASP-19 are invariant and most reliable to use in studies involving old and very old adults.

Implications/Future Directions

This study has implications for outlining a "blueprint" to successful aging for older adults who are striving to ensure a good quality of life in advanced age. This is achieved by incorporating the three successful aging principles as well as identifying other attributes to success in old age. In addition to the three successful aging principles, spirituality was included as a fourth principle. Prior studies have found that both religiosity and spirituality can help to buffer depression and increase quality of life (Crowther et al., 2002; Lawler-Row & Elliot, 2009). In the current study, spirituality was significantly associated with cognitive impairment, however, the overall contribution of spirituality relative to explaining cognitive status was weak. Thus, the magnitude of the relationship, as well as the explained variance are too small to justify spirituality as a valuable indicator of successful aging

REFERENCES

Aldwin, M. C., & Yancura, A. L. (2010). Effects of stress on health and aging: Two paradoxes. *California Agriculture, 64(4),* 183-188. doi: 10.3733/ca.v064n04p183

Allen, S. J., Bruss, J., & Damasio, H. (2005). The aging brain: The cognitive reserve hypothesis and hominid evolution. *American Journal of Human Biology, 17,* 673-689. doi:10.1002/ajhb.20439

Andel, R., Hughes, F. T., & Crowe, M. (2005). Strategies to reduce the risk of cognitive decline and dementia. *Aging Health, 1(1),* 107-116. doi:10.2217/1745509X.1.1.107

Anderson-Ranberg, K.,Schroll, M., & Jeune, B. (2001). Healthy centenarians do not exist, but autonomous centenarians. A population-based study of morbidity among Danish centenarians. *The American Geriatrics Society*, 49, 900-908. doi: http://www.ncbi.nlm.nih.gov/pubmed/11527481

Barulli, D., & Stern, Y. (2013). Efficieny, capacity, compensation, maintenance, plasticity: Emerging concepts in cognitive reserve. *Trends in Cognitive Sciences, 17,* 502-509. doi:http://dx.doi.org/10.1016/j.tics.2013.08.012

Benyamini, Y., Blumstein, I., Murad, H., & Lerner-Geva, L. (2011). Changes over time from baseline poor self-rated health: For whom does poor self-rated health not predict mortality*? Psychology & Health, 26*, 1446-1462. doi:10.1080/08870446.2011.559231

Boeninger, K. D., Shiraishi, W. R., Aldwin, M. C., & Spiro, A. (2009). Why do older men report low stress ratings? Findings from the Veterans Affairs normative aging study. *International Journal of Aging and Human Development, 68(2),* 149-170. doi:10.2190/AG.68.2.c

Brett, E. C., Gow, J. A., Corley, J., Pattie, A., Starr, M. J., & Deary, J. I. (2012). Psychological factors and health as determinants of quality of life in community-dwelling older adults. *Quality of Life Research, 21,* 505-516. doi:10.1007/s11136-011-9951-2

Bytheway, B. (2005). Ageism and age categorization. *Journal of Social Issues, 61,* 361-374. doi: 10.1111/j.1540-4560.2005.00410.x

Cabeza, R., Anderson, D. N., Locantore, K. J., & McIntosh, R. A. (2002). Aging gracefully: Compensatory brain activity in high-performing older adults. *NeuroImage, 17,* 1394-1402. doi:10.1006/nimg.2002.1280

Cacioppo, T. J., & Hawkley, C. L. (2009). Perceived social isolation and cognition. *Trends in Cognitive Neuroscience, 13,* 447-454. doi: https://doi.org/10.1016/j.tics.2009.06.005

Cartensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging, 7,* 331-338. doi:10.1037//0882-7974.7.3.331

Cartensen, L. L., Fung, H. H., & Charles, T. S. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion, 27,* 103-123. doi:10.1023/A:1024569803230

Center for the study of aging and human development, Duke University (1978). *Multidimensional functional assessment: the OARS methodology, a manual,* 2nd ed. Durham, North Carolina.

Chandler, D. J., & Chandler, E. J. (1988). The prevalence of neuropsychiatric disorders in a nursing home population. *Journal of Geriatric Psychiatry and Neurology, 1*, 71-76. doi: http://journals.sagepub.com/doi/pdf/10.1177/089198878800100203

Charles, T. S. (2010). Strength and vulnerability integration (SAVI): A model of emotional well-being across adulthood. *Psychological Bulletin, 136*, 1068-1091. doi:1037/a0021232

Christian, M. L., Glaser, R., Porter, K., Malarkey, B. W., Beversdorf, D., & Kiecolt-Glaser, K. J. (2011). Poorer self-rated health is associated with elevated inflammatory markers among older adults. *Psychoneuroendocrinology, 36*, 1495-1504. doi:10.1016/j.psyneuen.2011.04.003

Cicirelli, V. (2004). God as the ultimate attachment figure for older adults. *Attachment & Human Development, 6*, 371-388. doi:10.1080/1461673042000303091

Cicirelli, G. V. (2010). Attachment relationships in old age. *Journal of Social and Personal Relationships, 27*, 191-199. doi:10.1177/0265407509360984

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396. doi:10.2307/2136404

Cohen, S., & McKay, G. (1984). Social support, stress, and buffering hypothesis: A theoretical analysis. In A. Baum, S. E. Taylor, & J. E. Singer (Eds.) Handbook of Psychology and Health. Hillsdale, NJ: 1984.

Cohen, S., & Wills, A. T. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*, 310-357. doi: 10.1037/0033-2909.98.2.310

Cornwell, Y. E., & Waite, J. L. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of Health and Social Behavior, 50*, 31-48. doi: 10.1177/002214650905000103

Crimmins, E. M., & Saito, Y. (2001). Trends in healthy life expectancy in the United States, 1970–1990: Gender, racial, and educational differences. *Social Science & Medicine, 52,* 1629–1641. doi:10.1016/S0277-9536(00)00273-2

Crooks, C. V., Lubben, J., Petitti, B. D., Little, D., & Chiu, V. (2008). Social network, cognitive function, and dementia incidence among elderly women. *American Journal of Public Health, 98,* 1221-1227. doi:10.2105/AJPH.2007.115923

Crowther, R. M., Parker, W. M., Achenbaum, A. W., Larimore, L. W., & Koenig, G. H. (2002). Rowe and Kahn's model of successful aging revisited: Positive spirituality- The forgotten factor. *The Gerontologist, 42,* 613-620. doi:10.1093/geront/42.5.613

Cutrona, E. C., & Russell, W. D. (1987). The social provisions of social relationships and adaptation to stress. In W. H. Jones & D. Perlman (Eds.) Advances in personal relationships (Vol. 1, pp. 37-67). Greenwich, CT: JAI Press.

Deary, J. I., Whalley, J. L., Batty, D. G., & Starr, M. J. (2006). Physical fitness and lifetime cognitive change. *Neurology, 67,* 1195-1200. doi:10.1212/01.wnl.0000238520.06958.6a

Dello Buono, M., Urciuoli, O., & De Leo, D. (1998). Quality of life and longevity: A study of centenarians. *Age and Ageing*, 27, 207-216. doi: *10.1093/ageing/27.2.207*

Demirkan, H. (2007). Housing for the aging population. *European Review of Aging and Physical Activity, 4*, 33-38. doi:10.1007/s11556-007-0016-z

Derogatis, L. R., & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine*, 13, 595-605. doi: https://doi.org/10.1017/S0033291700048017

Diener, E., Emmons, R.A., Larson, R.J., & Griffin, S. (1985). The satisfaction with life scale. Journal of Personality Assessment, 49, 71-75. doi:http://dx.doi.org/10.1207/s15327752jpa4901_13

Emery, F. C., Kiecolt,-Glaser, Glaser, R., Malarkey, B. W., & Frid, J. D. (2005). Exercise accelerates wound healing among healthy older adults: A preliminary investigation. *Journal of Gerontology, 60A*, 1432-1436. doi:10.1093/gerona/60.11.1432

Ferraro, R. K. (1980). Self-ratings of health among the old and the old-old. *Journal of Health and Social Behavior, 21*, 377-383. doi:http://www.jstor.org/stable/2136414

Fillenbaum, G. G., & Smyer, A. M. (1981). The development, validity, reliability of the OARS multidimensional functional assessment questionnaire. *Journal of Gerontology, 36*, 428-434. doi: 10.1093/geronj/36.4.428

Fillit, M. H., Butler, N. R., O'Connell, W. A., Albert, S. M., Birren, E. J., Cotman, W. C., . . . Tully, T. (2002). Achieving and maintaining cognitive vitality with age. *Mayo Clinic Proceedings, 77*, 681-696. doi:http://dx.doi.org/10.4065/77.7.681

Fiore, J., Becker, J.m & Coppel, B. D. (1983). Social network interactions: A buffer or a stress. *American Journal of Community Psychology, 11*, 423-439. doi:10.1007/BF00894057

Fitzpatrick, R. T. (2010). Brain fitness activities and health among older female senior center participants in Montreal, Quebec. *Activities, Adaptation, & Aging, 34(1)*, 30-47. doi:http://dx.doi.org/10.1080/01924780903552287

Folstein, F. M., Folstein, E. S., & McHugh, R. P. (1975). A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 12, 189-198. doi:http://dx.doi.org/10.1016/0022-3956(75)90026-6

Franke, H. G., Jaeger, S., Glaesmer, H., Barkmann, C., Petrowski, K., & Braehler, E. (2017). Psychometric analysis of the brief symptom inventory 18 (BSI-18) in a representative German sample. *BMC Medical Research, 17(14)*, 1-7. doi:10.1186/s12874-0283-3

French, J. D., Sargent-Cox, K., & Luszcz, A. M. (2012). Correlates of subjective health across the aging lifespan: Understanding self-rated health in the oldest old. *Journal of Aging and Health, 24*, 1449-1469. doi:10.1177/0898264312461151

Golden, J., Conroy, M. R., Bruce, I., Denihan, A., Greene, E., Kirby, M., & Lawler, A. B. (2009). Loneliness, social support networks, mood and well-being in community-dwelling elderly. *International Journal of Geriatric Psychiatry, 24*, 694-700. doi:10.1002/gps.2181

Grenade, L., & Boldy, D. (2008). Social isolation and loneliness among older people: Issues and future challenges in community and residential settings. *Australian Health Review, 32*, 468-478. doi:10.1071/AH080468

Hajek, A., Brettschneider, C., Lange, C., Posselt, T., Wiese, B., Steinmann, S., . . . Konig, H. (2016). Gender differences in the effect of social support on health-related quality of life: results of a population-based prospective cohort study in old age in Germany. *Quality of Life Research, 25*, 1159-1168. doi:10.1007/s11136-015-1166-5

Henchoz, K., Cavalli, S., & Girardin, M. (2008). Health perception and health status in advanced old age: A paradox of association. *Journal of Aging Studies, 22*, 282-290. doi:10.1016/j.jaging.2007.03.002

Heyn, P., Abreu, C. B., & Ottenbacher, J. K. (2004). The effects of exercise training on elderly persons with cognitive impairment and dementia: A meta-analysis. *Archives of Physical Medicine and Rehabilitation, 85*, 1694-1702. doi:10.1016/j.apmr.2004.03.019

Holwerda, J. T., Deeg, J. D., Beekman, F. I. A., Van Tilburg, G. T., Stek, L. M., Jonker, C., & Schoevers, A. R. (2014). Feelings of loneliness, but not social isolation , predict dementia onset. Results from the Amsterdam study of the elderly (AMSTEL). *Journal of Neurology, Neurosurgery, and Psychiatry, 85,* 135-142. doi:http://dx.doi.org/10.1136/jnmp-2012-304479

Horgas, L. A., Wilms, H., & Baltes, M. M. (1998). Daily life in very old age: Everyday activities as expression of successful living. *The Gerontologist, 5,* 556-568. doi: https://doi.org/10.1093/geront/38.5.556

Hughes, F. T., Andel, R., Small, J. B., Borenstein, R. A., & Mortimer, A. J. (2008). The association between social resources and cognitive in older adults: Evidence from the Charlotte county healthy aging study. *Journal of Gerontology, 63B,* P241-P244. doi:10.1093/geronb/63.4.P241

Hyde, M., Wiggins, D. R., Higgs, P., & Blane, B. D. (2003). A measure of quality of life in early old age: The theory, development and properties of a needs satisfaction model (CASP-19). *Aging & Mental Health, 7(3),* 186-194. doi:10.1080/1360786031000101157

Ignagami, S., Cohen, A. D., & Finch, K. B. (2007). Non-residential neighborhood exposures suppress neighborhood effects on self-rated health. *Social Science & Medicine, 6*5, 1779-1791. doi:10.1016/j.socsimed.2007.05.051

Inzelberg, R., Afgin, E. A., Massarwa, M., Schechtman, E., Israeli-Korn, D. S., Strugatsky, R., . . . Friedland, P. R. (2013). Prayer at midlife is associated with reduced risk of cognitive decline in Arabic women. *Current Alzheimer Research, 10,* 340-346. doi: 10.2174/1567205011310030014

Iwarsson, S., Horstmann, V., Carlsson, G., Oswald, F. & Wahl, H.-W. (2009). Person-environment fit predicts falls in older adults better than the consideration of environmental hazards only. *Clinical Rehabilitation, 23,* 558-567. doi: 10.1177/0269215508101740.

Jacobs, M. J., Maaravi, Y., Cohen, A., Bursztyn, M., Ein-Mor, E., & Stessman, J. (2012). Changing profile of health and function from age 70to 85 years. *Gerontology, 58,* 313-321. doi:10.1159/000335238.

James, D. B., Wilson, S. R., Barnes, L. L, & Bennett, A. D. (2011). Late-life social activity and cognitive decline in old age. *Journal of the International Neuropsychological Society, 17(6),* 998-1005. doi:10.1017/S1355617711000531

Jones, N. R., & Gallo, J. J. (2001). Education bias in the mini-mental state examination. *International Psychogeriatrics, 13,* 299-310. doi:10.1017/S1041610201007694

Kaufman, Y., Anaki, D., Binns, M., & Freedman, M. (2007). Cognitive decline in Alzheimer's disease: Impact of spirituality, religiosity, and QOL. *Neurology, 68,* 1509-1514. doi: 10.1212/01.wnl.0000260697.66617.59

Kirkpatrick, A. L., Shillito, J. D., & Kellas, L. S. (1999). Loneliness, social support, and perceived relationships with God. *Journal of Social and Personality Relationships, 16,* 513-522. doi: 10.1177/0265407599164006

Koenig, H. G., & Bussing, A. (2010). The Duke University Religion Index (DUREL): A Five-Item Measure for Use in Epidemiological Studies. *Religions, 1,* 78-85. http://dx.doi.org/10.3390/rel1010078

Koenig, G. H., George, K. L., & Titus, P. (2004). Religion, spirituality, and health in medically ill hospitalized older patients. *Journal of American Geriatrics Society, 52*, 554-562. doi: 10.1111/j.1532-5415.2004.52161.x

Kraemer, C. H., Mortiz, J. D., & Yesavage, J. (1998). Adjusting mini-mental state examination scores for age and education level to screen for dementia: Correcting bias or reducing validity? *International Psychogeriatrics, 10(1)*, 43-51. doi: 10.1017/S1041610298005134

Langa, M. K., Larson, B. E., Crimmins, M. E., Faul, D. J., Levine, A. D., Kabeto, U. M., & Weir, R. D. (2017). A comparison of the prevalence of dementia in the United States in 2000 and 2012. *JAMA Internal Medicine, 177(1)*, 51-58. doi:10.1001/jamainternmed.2016.6807

Lang, R. F., & Carstensen, L. L. (1994). Close emotional relationships in later life: Further support for proactive aging in the social domain. *Psychology & Aging, 9*, 315-324. doi: 10.1037//0882-7974.9.2.315

Lara, J., Cooper, R., Nissan, J., Ginty, T. J., Khaw, K., & Deary, J. I. (2015). A proposed panel of biomarkers of healthy ageing. *Bio Medical Central Medicine*, 12,1-8. doi: 10.1186/s12916-015-0470-9

Larson, B. E., Wang, L., Bowen, D. J., McCormick, C. W., Teri, L., Crane, P., & Kukull, W. (2006). Exercise is associated with reduced risk for incident dementia among persons 65 years and older. *Annals of Internal Medicine, 144*, 73-81. doi:10.7326/0003-4819-144-2-200601170-00004

Lawler-Row, A. K., & Elliot, J. (2009). The role of religious activity and spirituality in the health and well-being of older adults. *Journal of Health Psychology, 14(1)*, 43-52. doi:10.1177/1359105308097944

Leith, H. K. (2006). Home is where the heart is…or is it? A phenomenological exploration of the meaning of home for older women in congregate housing. *Journal of Aging Studies, 20,* 317-333. doi:10.1016/j.jaging.2005.12.002

Levy, R. B., Slade, D. M., Kasl, V. S., & Kunkel, R. S. (2002). Longevity increased by positive self-perceptions of aging. *Journal of Personality and Social Psychology, 83*, 261-270. doi: 10.1037//0022-3514.83.2.261

Litwin, H., & Landau, R. (2000). Social network type and social support among the old-old. *Journal of Aging Studies, 14*, 213-228. doi:https://doi.org/10.1016/S0890-4065(00)80012-2

Loveden, M., Backman, L., Lindenberger, U., Schaefer, S., & Schmiedek, F. (2010). A theoretical framework for the study of adult cognitive plasticity. Psychology Bulletin, 136, 659-676. doi:10.1037/a0020080

Miller, L. S., Mitchell, B. M., Woodard, L. J., Davey, A., Martin, P., & Poon, W. L. (2010). Cognitive performance in centenarians and the oldest old: Norms from the Georgia centenarian study. *Aging, Neuropsychology, and Cognition*, 17(5), 575-590. doi: 10.1080/13825585.2010.481355

Netuveil, G., & Blane, D. (2008). Quality of life in older ages. *British Medical Bulletin*, 85, 113-126. doi: 10.1093/bmb/idn003

Olsen, Pedersen, I., Bergland, A., Enders-Slegers, M., Joransen, N., Calogiuri, G., & Ihlebaek, C. (2016). Differences in quality of life in home-dwelling persons and nursing home residents with dementia – A cross-sectional study. *BMC Geriatrics, 16*, 1-11. doi: 10.1186/s12877-016-0312-4

Orfila, F., Ferrer, M., Lamarca, R., Tebe, C., Domingo-Salvany, A., & Alonso, J. (2006). Gender differences in health-related quality of life among the elderly: The role of objective functional capacity and chronic conditions. *Social Science & Medicine, 63*, 2367-2380

Oswald, F., Wahl, H., Schilling, O., Nygren, C., Fange, A., & Sixsmith, A., . . . Iwarsson, S. (2007). Relationships between housing and healthy aging in very old age. *The Gerontologist, 47*, 96-107. doi: https://www.ncbi.nlm.nih.gov/pubmed/17327545

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment, 5*, 164-172. doi: https://internal.psychology.illinois.edu/~ediener/Documents/Pavot-Diener_1993.pdf

Pascucci, M., & Loving, L. G. (1997). Ingredients of an old and healthy life: A centenarian perspective. *Journal of Holistic Nursing*, 15(2), 199-213. doi: 10.1177/089801019701500209

Perls, T. (2004). Centenarians who avoid dementia. *TRENDS in Neurosciences*, 27(10). doi: 10.1016/j.tins.2004.07.012

Perls, T. (2004). Dementia-free centenarians. *Experimental Gerontology*, 39, 1587-1593. doi: 10.1016/j.exger.2004.08015

Petersen, C. R., Roberts, O. R., Knopman, S. D., Geda, E. Y., Cha, H. R., Pankratz, S. V., . . . Rocca, A. W. (2010). Prevalence of mild cognitive impairment is higher in men. *Neurology, 75*, 889-897. doi:10.1212/WNL.0b013e3181f11d85

Rejeski, J., & Mihalko, L. S. (2001). Physical activity and quality of life in older adults. *Journals of Gerontology, 56A*, 23-35. doi:10.1207/s15324796abm3101_14

Rook, S. K. (1984). The negative side of social interaction: Impact on psychological well-being. *Journal of Personality and Social Psychology, 46*, 1097-1108. doi: 10.1037/0022-3514.46.5.1097

Rowe, W. J, & Kahn, L. R. (1997). Successful aging. *The Gerontologist, 37*, 433-440. doi: https://doi.org/10.1093/geront/37.4.433

Russell, D. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment, 66*, 20-40. doi:10.1207/s15327752jpa6601_2

Seeman, E. T., Singer, H. B., Rowe, W. J., Horwitz, I. R., & McEwen, S. B. (1997). Price of adaptation- Allostatic load and its health consequences. *Archives of Internal Medicine, 157*, 2259-2268. doi:10.1001/archinte.1997.00440400111013

Selye, H. (1965). The stress syndrome. *The American Journal of Nursing, 65(3),* 97-99. doi:http://www.jstor.org/stable/3453119

Senchina, S. D., & Kohut, L. M. (2007). Immunological outcomes of exercise in older adults. *Clinical Interventions and Aging, 2(3),* 3-16. doi: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2684080/pdf/cia-2-3.pdf

Scarmeas, N., & Stern, Y. (2003). Cognitive reserve and lifestyle. *Journal of Clinical and Experimental Neuropsychology, 25*, 625-633. doi:http://dx.doi.org/10.1076/jcen.25.5.625.14576

Shye, D., Mullooly, P. J, Freeborn, K. D., & Pope, R. C. (1995). Gender differences in the relationship between social network support and mortality: A longitudinal study of an elderly cohort. *Social Science & Medicine, 7*, 935-947. doi: https://doi.org/10.1016/0277-9536(94)00404-H

Shuster, L. T., Kessler, C. R., & Aseltine, H. R. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology, 18*, 423-438. doi:10.1007/BF00938116

Smith, J. A., Braunack-Mayer, A., Wittert, G., & Warin, M. (2007). I've been independent for so damn long! Independence, masculinity and aging in a help seeking context. *Journal of Aging Studies, 21*, 325-335. doi: 10.1016/j.jaging.2007.05.004

Steptoe, A., Shankar, A., Demakakos, P., & Wardle, J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences of the United States of America, 110*, 5797-5801. doi: 10.1073/pnas.1219686110

Sterling, P.; Eyer, J. Allostasis: A new paradigm to explain arousal pathology. In: Fisher, S.; Reason, J., editors. Handbook of life stress, cognition, and health. Chichester, UK: John Wiley & Sons; 1988. p. 629-649.

Stern, Y. (2006). Cognitive reserve and Alzheimer's disease. *Alzheimer Disease & Associated Disorders, 20(2)*, 112-117. doi: http://moodle.womenrunners.com/pluginfile.php/1271/mod_resource/content/0/cognitive reserve.pdf

Underwood, L. G. & Teresi, J. (2002). The Daily Spiritual Experience Scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health related data. *Annals of Behavioral Medicine, 24*, 22-33. doi: 10.1207/S15324796ABM2401_04

U.S. Census Bureau. (2014, June). *65+in the United States: 2010* (Report No. P23-212). Retrieved from https://www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf

Van Den Biggelaar, J. H. A., Huizinga, J. W. T., De Craen, M. J. A., Gussekloo, J., Heijmans, T. B., Frolich, M., & Westendorp, J. G. R. (2004). Impaired innate immunity predicts frailty in old age. Experimental Gerontology, 39, 1407-1414. doi: https://doi.org/10.1016/j.exger.2004.06.009

Von Bastian, C. C., Langer, N., Jancke, L., & OBerauer, K. (2013). Effects of working memory training in young and old adults. *Memory & Cognition, 41*, 611-624. doi:10.3758/s13421-012-0280-7

White, M. A., Philogene, S., Fine, L., & Sinha, S. (2009). Social support and self-reported health status of older adults in the united states. *American Journal of Public Health, 99*, 1873-1878. doi:10.2105/AJPH.2008.146894

Yeh, J. S. & Lo, K. S. (2004). Living alone, social support, and feeling lonely among the elderly. *Social Behavior and Personality, 32(2)*, 129-138. doi:10.2224/sbp.2004.32.2.129

Table 1. *Participant Visitation Session*

Part one	Part two
Health measures administered: o Perceived Health -Single-item indicator o Older American Resource Survey (OARS; Fillenbaum, 1978) o Self-reported Health Impairment -38 Acute and chronic conditions o Mini Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975) o The Brief Symptom Inventory (BSI-18; Derogatis, 1983)	Psychosocial measures administered: o The Perceived Stress Scale-4 (PSS-4; Cohen, Kamarck, & Mermelstein, 1983) o The Duke University Religious Scale (DUREL; Koenig & Bussing, 2010) o The Daily Spiritual Experiences Scale (DSES; Underwood, 2002) o The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) o Quality of Life Scale: The CASP-19 (Hyde, Higgs, & Blane, 2003) o The UCLA Loneliness Scale-Version 3 (Russell, 1996) o The Social Provisions Scale (SPS; Cutrona, & Russell, 1987)
Length of time: 1hr	Length of time: 1hr

Table 2.

Demographic comparisons for older persons by age group classification

	Young-Old (70-84 years)				Old-Old (85+ years)			
	Frequency	Percentage	Mean	SD	Frequency	Percentage	Mean	SD
Age	70	--	78.26	4.67	86	--	91.99	4.72
Gender								
Male	18	26.9			16	19.3		
Female	49	73.1			67	80.7		
Race								
White	60	89.6			78	96.3		
Black	1	1.5			--	--		
American Indian	3	4.5			1	1.2		
Pacific Islander	2	3.0			--	--		
Multi-Racial	1	1.5			1	1.2		
Other	--	--			1	1.2		
Marital Status*	--	3.56			1.37	80	--	4.14	1.41

Table 2.

Continued

Never Married	--	--	4	5.0
Married	23	34.8	16	20.0
Divorced	13	19.7	2	2.5
Separated	--	--	1	1.3
Widowed	30	45.5	57	71.3
Education				
Grade School	6	9.0	3	3.7
Middle School	19	28.4	18	22.2
High School	21	31.3	29	35.8
Associate	8	11.9	13	16.0
College	1	1.5	2	2.5
Graduate School	12	17.1	16	57.1
Years				

Note. A Chi-square analysis was conducted on demographic variables. For marital status Chi-square = 21.55*, df = 4.

* $p < 0.05$.

Table 3.

Mean comparisons across age, gender, and residential status

Variable	Age			Gender			Residential Status		
	Young-Old	Old-Old	*F*	Male	Female	*F*	Private	Facility	*F*
Health Impairment	4.16	3.44	1.59	3.63	3.96	.33	3.78	3.82	.00
Cognitive Status	26.0	25.13	1.85	25.34	25.69	.50	25.90	25.24	1.08
Social Support	40.67	41.16	.18	41.02	40.81	.03	39.77	42.07	4.17*

Note. * $p < 0.05$.

Table 4. *Summary of inter-correlations for successful aging outcomes and predictors and descriptive statistics*

		1	2	3	4	5	6	7	8	9	10	11
1. Health Impairment		1.00										
2. Cognitive Status		.18*	1.00									
3. Support		-.07	.09	1.00								
4. Perceived Health		-.46**	-.08	.19*	1.00							
5. Stress		.29**	-.12	-.20*	-.24**	1.00						
6. Psychosomatic		.44**	-.12	-.32**	-.45**	.59**	1.00					
7. Religiosity		.10	.01	.16	-.07	-.01	-.02	1.00				
8. Spirituality		-.05	.13	.33**	.15	-.09	-.23*	.48**	1.00			
9. Loneliness		.22**	-.07	-.61**	-.19*	.46**	.53**	-.11	-.39**	1.00		
10 .Life Satisfaction		-.31**	-.00	.38**	.32**	-.53**	-.53**	.04	.32**	-.52**	1.00	
11. Quality of Life		-.28**	.14	.47**	.32**	-.54**	-.59**	.18*	.38**	-.59**	.59**	1.00
Mean	3.78	25.59	40.37	2.83	3.61	31.07	14.79	63.48	17.51	27.71	61.27	
SD	2.69	3.13	5.30	.73	3.10	11.45	4.83	12.47	5.89	6.22	9.09	

Note. N = 98; * $p < 0.05$; ** $p < .01$.

Table 5.

Summary of Hierarchical Regression Analysis for Variables Predicting Health Impairment

	Model 1		Model 2		Model 3		Model 4	
Variables	β	t	β	t	β	t	β	t
Age	-.12	-1.29	-.11	-1.39	-.12	-1.49	-.13	-1.50
Gender	.03	.33	.03	.16	.00	.09	.01	.13
Education	.01	.102	.08	.991	.08	1.04	.10	1.17
Perceived health			-.31**	-3.44	-.31**	-3.30	-.29**	-3.11
Stress			.05	.52	.04	.38	.01	.11
Psychosomatic symptoms			.28*	2.52	.28*	2.41	.27*	2.19
Loneliness					.03	.34	.00	.04
Religiosity					.07	.82	.08	.86
Spirituality					.05	.48	.07	.65
Life Satisfaction							-.02	-.17
Quality of Life							-.09	-.70
Model R^2	.01		.29		.30		.31	
Adjusted R^2	-.01		.25*		.25		.24	

* $p < .05$; ** $p < .01$.

Table 6.

Summary of Hierarchical Regression Analysis for Variables Predicting Cognitive Status

	Model 1		Model 2		Model 3		Model 4	
Variables	β	t	β	t	β	t	β	t
Age	-.17*	-1.99	-.16	-1.76	-.16	-1.72	-.14	-1.44
Gender	.08	.90	.09	1.08	.08	.97	.09	.97
Education	.31**	3.54	.29**	3.22	.32**	3.45	.32**	3.20
Perceived health			-.14	-1.45	-.17	-1.71	-.16	-1.60
Stress			-.06	-.57	-.08	-.74	-.11	-.94
Psychosomatic symptoms			-.10	-.80	-.08	-.63	-.10	-.77
Loneliness					.07	.66	.05	.39
Religiosity					-.08	-.83	-.09	-.89
Spirituality					.23*	2.07	.25*	2.17
Life Satisfaction							-.10	-.77
Quality of Life							-.01	-.07
Model R^2	.12**		.14		.18		.18	
Adjusted R^2	.09		.09		.11		.09	

* $p < .05$; ** $p < .01$.

Table 7.

Summary of Hierarchical Regression Analysis for Variables Predicting Social Support

	Model 1		Model 2		Model 3		Model 4	
Variables	β	t	β	t	β	t	β	t
Age	-.13	-1.42	-.11	-1.39	-.02	-2.87	-.03	-.44
Gender	-.05	-.59	.04	-.46	-.08	-1.2	-.09	-1.25
Education	.21*	2.34	.17	1.87	.28*	3.81	.27*	3.53
Perceived health			.07	-3.44	.10	1.23	.08	1.01
Stress			.00	-.00	.18*	1.95	.23*	2.38
Psychosomatic symptoms			-.24*	-2.01	.04	.38	.07	.70
Loneliness					-.65*	-7.01	-.60*	-6.10
Religiosity					.05	.71	.06	.80
Spirituality					.10	1.11	.06	.70
Life Satisfaction							.13	1.34
Quality of Life							.06	.52
Model R^2	.06		.14		.48		.49	
Adjusted R^2	.04		.10*		.43*		.44	

* $p < .05$; ** $p < .01$.

APPENDIX A

Demographics

Read: I would now like to ask you a few questions about your social and demographic background.

1. **Gender:** _____Male _____Female

2. **Race/Ethnic Background**

_____White/White-Caucasian

_____ Hispanic/Latino Origin

_____ Asian or Asian-American

_____ Alaska Native
(**Specify**:_____)

_____ Other **(Specify_____)**

_____Black/African-American

_____ American Indian

_____ Native Hawaiian/Pacific Islander

_____ Multi-racial

3. **Education**

_____ Grade school (K-8)

_____ Some high school
_____ High school diploma
_____ Trade school or vocational degree
_____ Some college

_____ Associate Arts degree

_____ College degree
_____Some post graduate education
_____ Graduate degree
_____Ph.D./Doctoral degree

Total years of education: _____

4. **Marital Status**

____Never married
____Married If so, how long (year)_____
____Divorced If so, how long (year)_____
____Separated If so, how long (year)_____
____Widowed If so, how long (year)_____

5. Occupation

Are you currently retired? _____YES _____NO If **"YES"** what age**:_____**

What is/was your primary occupation:**_____ Total Years:_____**

6. Residence

a.) Place of residence:
_____

b.) Do you currently live alone? **_____Yes _____No** If **"NO"** with who:_____

c.) How long have you lived in your current place of residence:**_____**

d.) Are you happy with the condition of your home/residence? 1 2 3 4 5
Definitely Yes, Not Definitely

7. Religiosity

a.) What is your current religious orientation/affiliation:_____

1.) How often do you attend church, synagogue, or other religious meetings?

____ Never ____ Once a year or less ____ A few times a year
____ A few times a month ____ Once a week ____ More than once a week

2.) How often do you spend time in private religious activities such as prayer, meditation, or Bible study?

____ Rarely or never ____ A few times a month ____ Once a week
____ Two or more times/week ____ Daily ____ More than once a day

3.) In my life, I experience the presence of the Divine (i.e., God).

____Definitely not true
____Tends not to be true
____Unsure
____Tends to be true
____Definitely true of me

4.) My religious beliefs are what really lie behind my whole approach to life.

____Definitely not true
____Tends not to be true
____Unsure
____Tends to be true
____Definitely true of me

5.) I try hard to carry my religion over into all other dealings in life.

____Definitely not true
____Tends not to be true
____Unsure
____Tends to be true
____Definitely true of me

Mini-Mental State Examination

Category	Possible Points	Description
Orientation to time	5	From broadest to most narrow. Linked to cognitive decline.
Orientation to place	5	From broadest to most narrow. Can be narrowed down to streets and sometimes floors.
Registration	3	Repeating named prompts
Attention and Calculation	5	Serial sevens, Spelling "Worlds" backwards.
Recall	3	Registration recall
Language	2	Naming a pencil and a watch
Repetition	1	Speaking back a phrase
Complex commands	6	Varies. Can draw a figure shown.

Brief Symptom Inventory (BSI)

How much were you distressed by:

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Faintness or dizziness	0	1	2	3	4
2. Feeling no interest in things	0	1	2	3	4
3. Nervousness or shakiness inside	0	1	2	3	4
4. Pains in heart or chest	0	1	2	3	4
5. Feeling lonely	0	1	2	3	4
6. Feeling tense or keyed up	0	1	2	3	4
7. Nausea or upset stomach	0	1	2	3	4
8. Feeling blue	0	1	2	3	4
9. Suddenly scared for no reason	0	1	2	3	4
10. Trouble getting your breath	0	1	2	3	4
11. Feelings of worthlessness	0	1	2	3	4
12. Spells of terror or panic	0	1	2	3	4
13. Numbness or tingling in parts of your body	0	1	2	3	4
14. Feeling hopeless about the future	0	1	2	3	4
15. Feeling so restless you couldn’t sit still	0	1	2	3	4
16. Feeling weak in parts of your body	0	1	2	3	4
17. Thoughts of ending your life	0	1	2	3	4
18. Feeling fearful	0	1	2	3	4

ACTIVITIES OF DAILY LIVING

1. **Can you use the telephone…**
    a. Without help, including looking up numbers and dialing;
    b. With some help or
    c. Are you completely unable to use the telephone

2. **Can you get to places out of walking distance…**
    a. Without help (drive your own car, or travel alone on buses, or taxis)
    b. With some help (need someone to help you or go with you when traveling); or
    c. Are you unable to travel unless emergency arrangements are made for a specialized vehicle like an ambulance?

3. **Can you go shopping for groceries or clothes (assuming that you have transportation)**
    a. Without help (taking care of all shopping needs yourself, assuming you had transportation)
    b. With some help (need someone to go with you on all shopping trips); or
    c. Are you completely unable to do any shopping?

4. **Can you prepare your own meals…**
    a. Without help (plan and cook full meals yourself)
    b. With some help (can prepare some things but unable to cook full meals yourself); or
    c. Are you completely unable to prepare any meals?

5. **Can you do your housework…**
    a. Without help (can clean floors, etc.)
    b. With some help (can do light housework but need help with heavy work); or
    c. Are you completely unable to do any housework?

6. **Can you take your own medicine…**
    a. Without help (in the right doses at the right time);
    b. With some help (able to take medicine if someone prepares it for you and/or reminds you to take it); or
    c. Are you completely unable to take your medicines

7. **Can you handle your own money…**
    a. Without help (write checks, pay bills, etc.);
    b. With some help (manage day-to-day buying but need help with management your checkbook and paying your bills); or
    c. Are you completely unable to handle money?

8. **Can you eat…**
    a. Without help (able to feed yourself completely);
    b. With some help (need help with cutting, etc.); or
    c. Are you completely unable to feed yourself.

9. **Can you dress and undress yourself…**
    a. Without help (able to pick out clothes, dress and undress yourself);
    b. With some help; or
    c. Are you completely unable to dress and undress yourself?

10. **Can you take care of your own appearance, for example combing your hair and (for men) shaving…**
    a. Without help;
    b. With some help; or
    c. Are you completely unable to maintain your appearance yourself

11. **Can you walk…**
    a. Without help (except from a cane)
    b. With some help from a person or with the use of a walker, or crutches, etc.; or
    c. Are you completely unable to walk?

12. **Can you get in and out of bed…**
    a. Without any help or aids;
    b. With some help (either from a person or with the aid of some device); or
    c. Are you totally dependent on someone else to life you?

13. **Can you take a bath or shower…**
    a. Without help;
    b. With some help (need help getting in and out of the tub, or need special attachments on the tub); or
    Are you completely unable to bathe yourself

STRESS

For each statement, indicate how often you have felt or thought a certain way.

Never	Almost Never	Sometimes	Fairly often	Very often
0	**1**	**2**	**3**	**4**

1. In the last month, how often have you felt that you were unable to control the important things in your life?

0 1 2 3 4

2. In the last month, how often have you felt confident about your ability to handle your personal problems?

0 1 2 3 4

3. In the last month, how often have you felt that things were going your way?

0 1 2 3 4

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0 1 2 3 4

CURRENT HEALTH CONDITIONS

Which of the following health conditions are you *currently* experiencing?

____High blood pressure ____Aneurysm ____Abnormal chest X-ray
____High blood cholesterol ____Anemia ____Asthma
____High blood triglycerides ____Diabetes ____Emphysema
____Angina pectoris/chest pain ____Jaundice ____Bronchitis
____Heart attack ____Hepatitis ____Thyroid problems
____Heart surgery ____Hernia ____Cancer
____Heart failure (CHF) ____Phlebitis ____Epilepsy or seizures
____Heart murmur ____Gout ____Kidney stones
____Stroke/TIA ____Prostate problem ____Urinary tract problem
____Rheumatic fever ____Osteoporosis
____Arthritis/Rheumatism
____Arteriosclerosis ____Tuberculosis ____Parkinson's Disease
____Alzheimer's Disease ____Cerebral Palsy ____Muscular Dystrophy
____ Liver Disease ____Ulcers ____Circulatory problems
____Eating Disorder ____Obesity ____Glaucoma
____Macular Degeneration ____ Other (Specify_____

LIFE SATISFACTION

Read: Think about how currently about life and indicate your level of agreement with each statement

Strongly Disagree **Neither** **Strongly Agree**

1. **In most ways, my life is close to ideal.**

   1 2 3 4 5 6 7

2. **The conditions of my life are excellent.**

   1 2 3 4 5 6 7

3. **I am satisfied with my life.**

   1 2 3 4 5 6 7

4. **So far, I have gotten the important things I want in life.**

   1 2 3 4 5 6 7

5. **If I could live my life over, I would change almost nothing.**

   1 2 3 4 5 6 7

QUALITY OF LIFE

Think about the quality of your life and then indicate your level of agreement with each of the following statements:	**Never** 1	**Not Often** 2	**Sometimes** 3	**Often** 4
1. My age prevents me from doing the things I would like to do.	1	2	3	4
2. I can do the things I want to do	1	2	3	4
3. I look forward to each new day.	1	2	3	4
4. I feel full of energy these days.	1	2	3	4
5. I feel left out of things.	1	2	3	4
6. Shortage of money stops me from doing the things I want to do.	1	2	3	4
7. On balance, I look back on my life with a sense of happiness.	1	2	3	4
8. I feel that the future looks good for me.	1	2	3	4
9. I feel that what happens to me is out of my control.	1	2	3	4
10. Family responsibilities prevent me from doing the things I want to do.	1	2	3	4
11. I feel that my life has meaning.	1	2	3	4
12. I choose to do things that I have never done before.	1	2	3	4
13. I feel free to plan for the future.	1	2	3	4
14. I feel satisfied with the way my life has turned out.	1	2	3	4
15. My health stops me from doing the things I want to do.	1	2	3	4
16. I enjoy the things that I do.	1	2	3	4
17. I feel that life is full of opportunities.	1	2	3	4
18. I feel that I can please myself what I do.	1	2	3	4
19. I enjoy being in the company of others.	1	2	3	4

SOCIAL PROVISION SCALE

Read First: Next, I want to talk to you about social resources. Please indicate to what extent each statement describes your current social relationships.

Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**

1. There are people I can depend on to help me if I really need it.

   1 2 3 4

2. There is no one I can turn to for guidance.

   1 2 3 4

3. There are people who enjoy the same social activities I do

   1 2 3 4

4. I feel personally responsible for the well-being of another person

   1 2 3 4

5. I do not think other people respect my skills and abilities

   1 2 3 4

6. If something went wrong, no one would come to my assistance

   1 2 3 4

7. I have close relationships that provide me with a sense of emotional security and well-being

   1 2 3 4

8. I have relationships where my competence and skill are recognized

   1 2 3 4

9. There is no one who relies on me for their well-being

   1 2 3 4

10. There is no one who shares my interests and concerns

    1 2 3 4

11. There is a trustworthy person I could turn to for advice, if I were having problems

    1 2 3 4

12. I lack a feeling of intimacy with another person

    1 2 3 4

COMPANIONSHIP

Read: These questions reflect how persons feel about other people. Please indicate your level of agreement with each statement**.**

	Never	**Rarely**	**Sometimes**	**Always**
1. How often do you feel you lack companionship?	**1**	**2**	**3**	**4**
2. How often do you feel that you have a lot in common with the people around you?	**1**	**2**	**3**	**4**
3. How often do you feel close to people?	**1**	**2**	**3**	**4**
4. How often do you feel left out?	**1**	**2**	**3**	**4**
5. How often do you feel that no one really knows you well?	**1**	**2**	**3**	**4**
6. How often do you feel isolated from others?	**1**	**2**	**3**	**4**
7. How often do you feel that there are people who really understand you?	**1**	**2**	**3**	**4**
8. How often do you feel that people are around you but not with you?	**1**	**2**	**3**	**4**
9. How often do you feel that there are people you can talk to?	**1**	**2**	**3**	**4**
10. How often do you feel that there are people you can turn to?	**1**	**2**	**3**	**4**

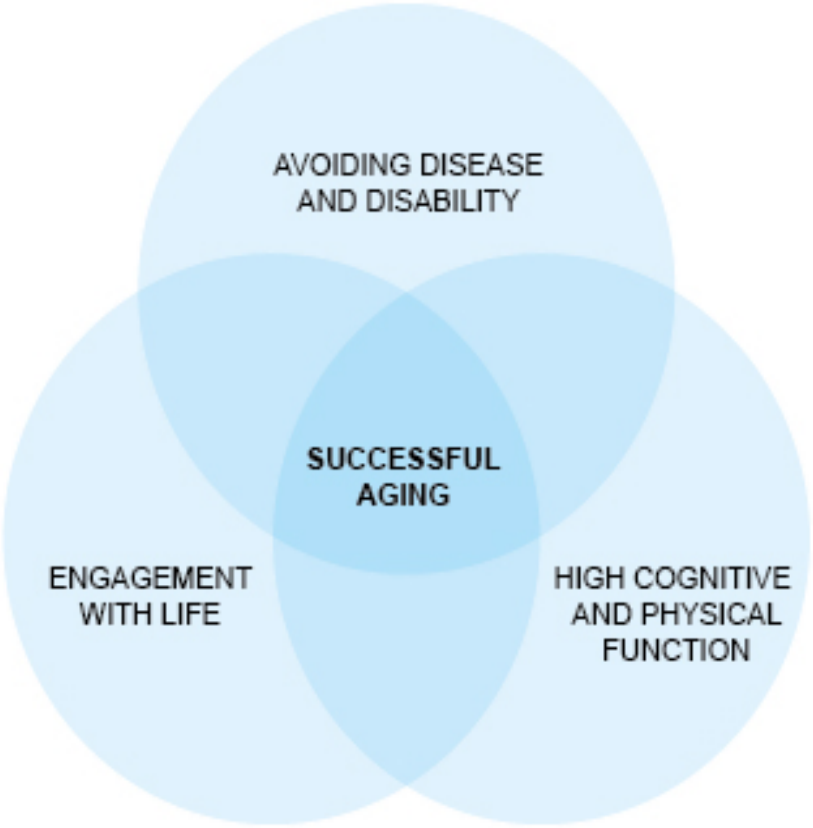
DAILY SPIRITUAL EXPERIENCES

Read: The following statements include items which you may or may not experience daily. Please consider how often you directly have each experience in the past several days and try to disregard whether you feel you should or should not have had these experiences. A number items use the word "God." If this word is not a comfortable one for you, please substitute another idea which calls to mind the divine, holy, or something greater than yourself.

	Never or Almost Never	**Once in a While**	**Some Days**	**Most Days**	**Everyday**	**Many Times a Day**
I feel God's presence	1	2	3	4	5	6
I experience a connection to all of life.	1	2	3	4	5	6
During worship, or at other times when connecting with God, I feel joy, which lifts me out of my daily concerns	1	2	3	4	5	6
I find strength in my religion or spirituality	1	2	3	4	5	6
I find comfort in my religion or spirituality	1	2	3	4	5	6
I feel a deep inner peace or harmony	1	2	3	4	5	6
I feel God's love for me directly	1	2	3	4	5	6
I feel God love for me through others	1	2	3	4	5	6
I am spiritually touched by the beauty of creation	1	2	3	4	5	6
I feel thankful for my blessings	1	2	3	4	5	6
I feel a selfless caring for others	1	2	3	4	5	6
I accept others even when they do things I think are wrong.	1	2	3	4	5	6
I desire to be closer to God or in union with Him	1	2	3	4	5	6

	Not Close at All	**Somewhat Close**	**Very Close**	**As Close as Possible**
In general, how close do you feel to God?	1	2	3	4

Appendix B



Successful Aging Model (Rowe & Kahn, 1997)

VITA

Giavanna Sharee' McCall

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Master of Science

Thesis: CONSIDERING THE BLUEPRINT FOR SUCCESSFUL AGING

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Professional Memberships:
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Professional Presentations:
McCall, S. G., Wolf, T., Bishop, J. B., & Finchum, T. (2017). Consideration of Oral History Story-telling as Essential Well-Being After 100. Presented at the 21st International Association of Gerontology and Geriatrics (IAGG) World Congress in San Francisco, CA.

McCall, S. G., Bishop, J. A., & Martin, P. (2016). The interplay between social support, loneliness, and depression among unmarried older adults. Presented at the 69th Annual Gerontological Society of America at New Orleans, LA.